

2003 SUMMER SIMULATION MULTICONFERENCE

July 20–24, 2003
Montreal, Quebec, Canada



Summer Computer
Simulation Conference



International Symposium
on Performance Evaluation
of Computer and
Telecommunication Systems



International Conference
on Information Systems
and Engineering



Sponsored By The Society For
Modeling and Simulation International
<http://www.scs.org>

INFORMATION

SummerSim'03 Registration Desk

The Registration is located in the Grand Salon foyer and will be open during the following days and times:

| | |
|------------------|------------------|
| Sunday | 12:00 pm–5:00 pm |
| Monday | 7:00 am–5:00 pm |
| Tuesday | 7:00 am–5:00 pm |
| Wednesday | 7:00 am–12:00 pm |

SummerSim'03 Welcome Reception

Sunday Salon Des Artes 6:00 pm–7:30 pm

Sponsored by AEGIS Technologies 

SummerSim'03 Speaker's Breakfast

Mon – Wed Alfred Roleau C 7:00am–8:00am

SCSC/SPECTS/ISE 2003 presenters are invited to enjoy breakfast and the company of co-presenters on the morning of their presentations.

SummerSim'03 Exhibit Hall Hours

| | |
|------------------|--|
| Monday | Alfred Roleau A/B 10:00 am–7:30 pm |
| Tuesday | Alfred Roleau A/B 10:00 am–5:00 pm |
| Wednesday | Alfred Roleau A/B 10:00 am–12:00 pm |

Coffee Breaks are held daily at 10:00 am and 3:00 pm in the Exhibit Area.

SummerSim'03 Exhibitor Reception

Monday Alfred Roleau A/B 6:00 pm–7:30 pm

SummerSim'03 General Session and Keynote Address Grand Salon A/B

8:30 am–10:00 am

| | |
|------------------|---|
| Monday | The Challenge of Building the Joint Simulation System <i>Laura Knight, Joint Simulation Alliance Executive, SES-2</i> |
| Tuesday | Collaborative Virtual Environments: Standards, Applications and Performance <i>Nicolas D. Georganas, University of Ottawa, Canada</i> |
| Wednesday | Storage Systems and Their Performance Analysis <i>Alexander Thomasian, New Jersey Institute of Technology, USA</i> |

SummerSim'03 2003 Luncheon and Address

Wednesday Jeanne Mance 12:00 pm–1:30 pm

The Game and Simulation Industries: Convergence or Collision

Tom Buscaglia, T.H. Buscaglia & Associates, USA

Executive Committee Salon Executif
Saturday, July 19 1:00 pm - 6:00 pm
Sunday, July 20 9:00 am - 3:00 pm
Bernard Zeigler, *President*

The Executive Committee conducts administrative reviews of the affairs of the Society. All members of the Executive committee are expected to attend. Members of the Board of Directors are welcome to observe.

MISS Annual Meeting Vaudreuil
Sunday, July 20 3:00 pm - 6:00 pm
Tuncer Ören, *Coordinating Director*

Directors and representatives of centers of the McLeod Institute of Simulation Sciences review and plan activities of the Institute.

SPECTS 2003 Pre-Conference Briefing Picardie A
Sunday, July 20 3:00 pm - 4:00 pm
Mohammad Obaidat, *SPECTS General Chair*

All with an organizing role in this year's Symposium on Performance Evaluation of Computer and Telecommunication Systems meet to coordinate the week's activities.

SCSC 2003 Pre-Conference Briefing Picardie A
Sunday, July 20 4:00 pm - 5:00 pm
Agostino Bruzzone, *SCSC General Chair*

All with an organizing role in this year's Summer Computer Simulation Conference meet to coordinate the week's activities.

SummerSim'03 Welcome Reception Salon de Arts
Sunday, July 20 6:00 pm - 7:30 pm

All SCSC, SPECTS, and ISE attendees are invited to meet the organizers and fellow presenters at an informal kick-off for the conferences.

Sponsored by AEGIS Technologies 

Bylaws, Policies and Procedures Salon Executif
Monday, July 21 10:30 am - 12:00 pm
François Cellier, *Acting Chair*

This Committee considers proposed changes to SCS Bylaws and maintains our Policies and Procedures. Members willing to assist are welcome.

Presidents Council Salon Executif
Monday, July 21 1:30 pm - 3:00 pm
Mitch Sisle, *Chair*

All Past Presidents are ex officio members of this Council. They advise the Society on matters that concern them.

MEETINGS

Publications Board Salon Executif
Monday, July 21 3:30 pm - 5:00 pm

Helena Szczerbicka, *Vice President of Publications*

Editors of Society publications meet with the Vice President of and production staff to deal with publications issues.

SCS Conference Advisory Salon Executif
Monday, July 21 5:00 pm - 6:00 pm

Mohammad Obiadat, *Chair*

This committee plans the locations, technical program issues for future SCS Conference events.

Membership Board Salon Executif
Tuesday, July 22 10:30 am - 12:00 pm

Erol Gelenbe, *Vice President of Membership*

Membership Associate Vice Presidents meet with the Vice President of Membership to discuss activities and plans for membership services, especially including development of Technical Councils and Chapters. All current and prospective members are encouraged to attend and participate.

SCSC 2004 Planning Cafe Fleuri
Tuesday, July 22 12:00 pm - 1:30 pm

Agostino Bruzzone, *SCSC 2004 General Chair*

Summer Computer Simulation Conference organizers critique this year's program, plan for next year, and suggest future sites for Conference Board consideration. All interested in participating in an organizing role are welcome.

SPECTS 2004 Planning Ete des Indiens
Tuesday, July 22 12:00 pm - 1:30 pm

Mohammad Obiadat, *SPECTS General Chair*

All interested in an organizing role for next year's Symposium on Performance Evaluation of Computer and Telecommunication Systems should attend.

European Operations Salon Executif
Tuesday, July 22 1:30 pm - 3:00 pm

Bernard Zeigler, *President*

Leading European members meet with Officers of the Society to discuss administration of SCS activities in Europe.

SummerSiMC Steering Committee **Salon Executif**
Tuesday, July 22 **3:30 pm - 5:00 pm**

Mohammad Obiadat, *Chair*

This committee plans the locations, technical program issues for future Summer Simulation MultiConference events.

Board of Directors Budget Caucus **Salon Executif**
Tuesday, July 22 **5:00 pm - 7:00 pm**

Joe Gauthier, *Treasurer*

Members of the Board of Directors review the finances of the Society, especially the proposed budget, in preparation for the Board meeting on Thursday.

Nominating Committee **Salon Executif**
Wednesday, July 23 **10:30 am - 12:00 pm**

Bruce Fairchild, *Immediate Past President*

Executive Committee and Council-appointed members of the Nominating Committee establish credentials for seating members of the Board of Directors and proceed with selection of candidates for next year's election.

Conference Board **Salon Executif**
Wednesday, July 23 **1:30 pm - 3:00 pm**

Mohammad Obiadat, *Vice President of Conferences*

Representatives of each international conference, the Vice President, and office staff discuss issues, review recent conferences, and select future sites and topics.

Senior Vice President's Board **Salon Executif**
Wednesday, July 23 **3:30 pm - 5:00 pm**

François Cellier, *Senior Vice President*

This meeting includes reports and discussions of strategic planning, bylaws, policies and procedures changes, simulation standards, and affiliations with other societies.

2003 Board of Directors **Jeanne-Mance**
Thursday, July 24 **8:00 am - 5:00 pm**

Bernie Zeigler, *President*

The Board meets to hear reports, review operations of the Society, and steer the course of the Society for the next fiscal year and beyond. All Members of the Board and Officers of the Society are expected to attend and participate. All Members are welcome to observe.

KEYNOTE SPEAKERS

SummerSim'03 Keynote Speaker:

The Challenge of Building the Joint Simulation System

Monday Grand Salon A/B 8:30 am - 10:00 am

Laura Knight, *Joint Simulation Alliance Executive, SES-2*

The Joint Simulation System (JSIMS) is the newest constructive simulation designed to train military commanders and their staffs. It is developed by nine partners including the Military Services and Department of Defense Agencies. This Acquisition Category 1D (ACAT-1D) program is managed by the Army-led JSIMS Program Office with technical direction and integration performed by the Alliance Executive Office. JSIMS represents the most challenging modeling and simulation program in the history of the Department of Defense, from both a technical and a management perspective.

JSIMS provides an environment for commanders and their staffs (the training audience) to exercise their warfighting skills in a training environment similar to what they would find in real conflict, with realistic friendly and opposing forces, and real-world command and control systems.

Ms. Knight serves as the JSIMS Alliance Executive, where she is the program and system integrator for JSIMS, directly reporting to the JSIMS Army Program Manager..

SummerSim'03 Luncheon Speaker:

The Game and Simulation Industries:

Convergence or Collision?

Wednesday Jeanne-Mance 12:00 pm - 1:30 pm

Thomas H. Buscaglia, *T.H. Buscaglia & Associates, Miami, FL, USA*

Thomas Buscaglia is an attorney practicing intellectual property and technology law in Miami, Florida. In addition to obtaining his Law degree, *cum laude*, from Georgetown University in 1985. He is admitted to practice before all Florida State and Federal Courts, the United States 11th and 9th Circuit Courts of Appeal and the United States Supreme Court. Tom is a principal in the law firm T.H. Buscaglia and Associates in Miami, Florida, where he practices law for a living and plays computer games on the side. Tom's firm's site is www.gameattorney.com.

Thomas Buscaglia will address the Confluence of Games and Simulation. As President of Games-Florida and an attorney for the Games industry, he is an international leader in the development and nurturing of Games technology and products. An active "gamer," he is well-aware of the strengths and needs of the games industry and the present and potential interfaces between the Games and Simulation industry. This conference is the first to bring these two related but different industries together -- recognizing the possibilities for cross-pollination as well as the opportunities to join forces in addressing the challenges that both face. Mr. Buscaglia's remarks will set the stage for an afternoon panel that will further explore the convergence of simulation and games.

KEYNOTE SPEAKERS

SPECTS 2003 Keynote Speaker: Collaborative Virtual Environments: Standards, Applications and Performance

Tuesday Grand Salon A/B 8:30 am - 10:00 am

Nicolas D. Georganas, *University of Ottawa, Canada*

Collaborative Virtual Environments (CVE) are Virtual Reality simulations running over several computer systems connected via a network and performing some collaborative task. In this talk, several CVE-related issues will be discussed and pertinent middleware standards for CVEs (DIS, SPLINE, HLA...) will be reviewed. Applications, ranging from defense training simulations to collaborative e-commerce, will be presented. The performance of some applications over the various middleware standards and some prototype systems will finally be discussed.

Nicolas D. Georganas, FIEEE, FRSC, FCAE, FEIC, OOnt, is Distinguished University Professor and Canada Research Chair in Information Technology at the School of Information Technology and Engineering, University of Ottawa. He received the Dipl.Ing. degree in Electrical Engineering from the National Technical University of Athens, Greece, in 1966 and the Ph.D. in Electrical Engineering (Summa cum Laude) from the University of Ottawa in 1970.

SPECTS 2003 Keynote Speaker: Storage Systems and Their Performance Analysis

Wednesday Grand Salon A/B 8:30 am - 10:00 am

Alexander Thomasian, *New Jersey Institute of Technology, USA*

Dramatic increases in disk storage recording density have resulted in significant improvements in cost per megabyte, but there has been little improvement in disk access time. At the same time “secondary storage” plays a central role, while the CPU computes the path to user-requested data and the network transports it. We therefore consider storage systems from three viewpoints: performance, reliability, and manageability. Performance can be improved via caching and prefetching, disk arm scheduling with single and mirrored disks, priority queueing, e.g., reads versus writes, data placement, and arm placement in anticipation of requests. Redundant arrays of independent disk (RAID) utilize check disks to deal with the data availability issue when disks fail. We will discuss RAID reliability models, numerous configurations, operational modes: (normal, degraded, and rebuild), and analytic and simulation models for performance evaluation. Finally, automating the storage management function is important, as it is much more expensive than storage itself. We review recent developments in this area.

Alexander Thomasian (IEEE Fellow 2000) received his PhD in Computer Science from UCLA and first joined Case Western Reserve and then Univ. of Southern California. He later spent 14 years at the IBM T. J. Watson Research Center before becoming a Professor at the Computer Science Dept. at NJIT.

EXHIBITORS

1. SiMSMART Inc.

BOOTH: #12

CONTACT: Sylvie Dufresne
6, Place du Commerce #100
Brossard, QC J4W 3J9
Canada

TEL: 450-923-0400 ext. 228

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SIMSMART Inc. has created a unique and highly advanced process and control simulation based design tool use in a wide range of military and industrial applications covering fluids, gases, HVAC, electrical, processes and controls.

SIMSMART provides a drag and drop environment where the designers select process and control icons (Pipes, valves, pumps, etc.) on to process & instrumentation diagrams. The icons brought into the diagrams are simulated using first-principle physics equations. As the icons are connected, a complete set of equation is combined to create a real-time simulation engine to test the vital systems prior to committing drawings to production. These models may be used to execute “behind” operator consoles for embedded training. The design model effectively serves as the training model.

2. CAE

BOOTH: #10

CONTACT: Ross Randle
8585 Cote de Liesse
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Canada

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CAE is a global leader in providing advanced simulation and controls equipment and integrated training solutions for customers in the civil aviation, military and marine markets.

CAE’s Integrated Platform Management System (IPMS) uses advanced, computer-based technology to control and monitor operations systems in the latest generation of naval vessels. First proven at sea in Canada’s Patrol Frigates, then DDH-280 class Destroyers, plus U.S. Navy MHC-51 Osprey Class Minehunters, many systems have now been produced for ships of these and other navies.

3. Optimal Designs Enterprise

BOOTH: #9

CONTACT: Phil B. Brubaker

1860 Countrywood Court

Walnut Creek, CA 94598

TEL: 925-945-6739

EMAIL: phil@digitalcalculus.com

Calculus based computer languages are Meta Calculus and PROSE. Both languages are based on what is called "Automatic Differentiation" (AD). Calculus languages simplify computer coding to an absolute minimum; i.e., a mathematical model, constraints, and the objective function. Minimizing the amount of code allows the user to concentrate on the science or engineering problem at hand and not on the (numerical) process requirements to achieve an optimum solution

4. AEGIS Technologies Group, Inc.

BOOTH: #11

CONTACT: Beth Powell

631 Discovery Drive

Huntsville, AL 35806

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AEGIS Simulation Technologies, Inc is located in Ottawa, Canada and was founded in 2002 as a wholly owned subsidiary of AEGIS Technologies Group, Inc. Since 1988, The AEGIS Technologies Group, Inc. has been creating innovative solutions to challenges requiring specialized modeling and simulation knowledge, including expertise in simulation and software development, integration, and analysis; training simulator development; HLA/DIS technologies; C4I-to-simulation interfacing; object-oriented analysis and design; verification and validation (V&V), a variety of training courses in simulation including HLA, SEDRIS, and VV&A; and accreditation programs for software and simulations. AEGIS Technologies also provides specialized Photonics, MEMS, electro-optic, infrared, and LADAR services and products. Commercial software product offerings include HLA LabWorks(tm), a software tool suite that dramatically reduces HLA simulation/federation development costs, acsIXtreme(tm), a software tool that provides an outstanding capability to model real-world systems using continuous simulation, and BattleStorm(tm), a low-cost, flexible simulation framework on top of which multiple types of simulators are being built. More information about AEGIS Simulation Technologies, Inc. can be found at www.aegissim.ca.

SUMMER SiMC 2003 STEERING COMMITTEE CHAIR'S MESSAGE

Welcome to the 2003 Summer Simulation Multi-conference. This year's conference marks the 34th anniversary of the Summer SiMC that started in 1969 with the name, "Conference on Applications of Continuous System Languages," which was held between June 30 and July 1, 1969 in San Francisco

Summer SiMC 2003 consists of three conferences: the 2003 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS2003), 2003 Summer Computer Simulation Conference (SCSC2003), and the

newly added 2003 International Conference on Information and System Engineering (ISE2003). The program committees of Summer SiMC 2003 have accepted over 320 papers from all over the world. This multiconference is a unique setting where an author can submit papers to basically three different conferences that convene in the same place and during the same period. In addition to the stimulating environment, this multiconference has an economical attraction, as it saves a lot of expenses for the participants, presenters, and exhibitors, as well as the organizers

Summer SiMC 2003 offers a unique forum for researchers and practitioners from academia, industry, business, and government to share their expertise results and research findings in all areas of modeling and simulation, performance evaluation of computer and telecommunications systems, and information and system engineering. This year's conference includes a superb technical program, four distinguished keynote speakers, insightful tutorials, and an exhibit.

Organizing an international conference of this caliber requires the dedication and hard work of many individuals. My sincere appreciation goes to all authors including those whose papers were not included in the program. Many thanks go to the technical program committee members and their reviewers, international liaisons, session chairs, and the dedicated efforts of the Summer SiMC executive and steering committees. Special thanks go to the general chairs, vice chairs, tutorial chairs, exhibit chair, web masters, and publicity committee. Thanks are also due to the staff of the Society for Modeling and Simulation International, SCS, for their fine support.

Finally, on behalf of the Executive and Steering Committees of the 2003 Summer Simulation Multiconference (Summer SiMC 2003), and the Society for Modeling and Simulation International, SCS, I invite all of you to enjoy the conference and your stay in the beautiful city of Montreal.



Mohammad S. Obaidat
Steering Committee Chair,
Summer SiMC 2003

TUTORIALS & SPECIAL SESSIONS

TUTORIALS

1. Multimedia Technologies and Applications in the New Internet World

Sunday Anjou A 9:00 am - 5:00 pm

Speaker: Nicolas D. Georganas, *University of Ottawa, Canada*

2. NAVI: Learning HLA from an Interactive Exercise

Sunday Auteuil A 4:00 pm - 6:00 pm

Speaker: Roberto Revetria, *DIP, University of Genoa, Italy*

3. VV&T Procedures in Industrial M&S Applications

Sunday Auteuil A 1:30 pm - 3:30 pm

Speaker: Chiara Briano, *Liophant Simulation Club, Italy*

4. Design of Experiments for Simulation Projects

Sunday Auteuil A 10:00 am - 12:00 pm

Speakers: Roberto Mosca, *DIP, University of Genoa, Italy*

Matteo Brandolini, *BRB Studio, Italy*

SPECIAL SESSIONS

Modeling and Simulation Body of Knowledge Workshops I and II

Tuesday Auteuil A 1:30 pm - 5:00 pm

Organizers: Bill Waite, Jim Skinner

This series of workshops is intended to lay the foundation for explicitly discriminating and denoting the body of knowledge that correlates fundamentally to modeling and simulation and relates only peripherally with other related domains. Specifying the information that constitutes the modeling and simulation body of knowledge is seen as essential to relating M&S to science and technology, and the paramount issue in establishing the identity of modeling and simulation as a distinctive field.

Having Modeling and Simulation acknowledged as a distinct branch of knowledge is important in advancing the recognition of the profession, industry and marketplace. The workshops will work to identify the user's community for a body of knowledge, the intended uses, and the requirements.

2003 SimSummit Workshop

Wednesday Vaudreuil 1:30 pm - 5:00 pm

Acting Chair: Bill Waite

An introductory session will introduce topics provided for consideration in stimulating constructive deliberations in this workshop. The SimSummit Executive Committee and its Professional Society sponsors (SCS, NTSA and SISO), invite your participation in this serial workshop focused on the present state and future plans for the technology, industry, market and profession of modeling and simulation.

Simulation in Entertainment

Games in Simulation—Convergence or Collision?

Wednesday L'Amphitheatre 3:30 pm - 5:00 pm

Panelists: Thomas Buscaglia, Waymon Armstrong, Warren Correll

Summer Computer Simulation Conference 2003

General Chair

Agostino G. Bruzzone, MISS, DIP
University of Genoa, Italy

Program Chairs

Mhamed Itmi, PSI-MISS, INSA, Rouen, France

Steering Committee Chair

Mohammad S. Obaidat, Monmouth University, USA

AGENT- DIRECTED SIMULATION

Chair: Tuncer Ören, MISS, Canada

Session 1: Agent Direct Simulation

Monday Anjou B 3:30 pm - 5:00 pm

Chair: Tuncer Ören, MISS - Ottawa Center,
Canada

Fuzzy Agents With Dynamic Personality for the Simulation of Human Behavior

Nasser Ghasem-Aghaee, *University of Isfahan, Iran*
Tuncer Ören, *University of Ottawa, Canada*

Personality Representation Processable in Fuzzy Logic for Simulation of Human Behavior

Nasser Ghasem-Aghaee, *University of Isfahan, Iran*
Tuncer Ören, *University of Ottawa, Canada*

Simulation Using Intelligent Mobile Agents

András Jávör, Gergely Mészáros-Komáromy
Budapest University of Technology and Economics, Hungary

Session 2: Agent Direct Simulation

Tuesday Anjou B 3:30 pm - 5:00 pm

Chair: Tuncer Ören, MISS - Ottawa Center,
Canada

A Simulation-based Approach to Developing Real-time Distributed Control Systems

Robert W. Brennan, James Wang
University of Calgary, Canada

Agent-Based Modeling with Game Theory Constructs

Raymond R. Hill, *Wright State University, USA*
Joseph C. Price, *Air Force Institute of Technology, USA*
Lance E. Champagne, *Air Force Institute of Technology, USA*

BUSINESS & INDUSTRY**Chair: Priscilla Elfrey, NASA & NCS, FL USA****Session 1: Business & Industry****Monday Ete des Indiens 10:30 am - 12:00 pm****Chair: Roberto Revetria, ITIM, Italy****Predicting the Impact on Throughput of a New Information System**Robert Burnside, Johnell Gonzales-Lujan, George Tompkins
*Los Alamos National Laboratory, USA***Engine Flow Fence Actuator Sensitivity Analysis Using Mathematical Modeling & Computer Simulation**Oswald Harris, *Honeywell Engines, USA***Higher-Performance Arbitration Circuit for Inter-processor Communication**Jih-Fu Tu, Ming-Chih Lu, *St. John's & St. Mary's Institute of Technology, Taiwan***Session 2: Business & Industry****Tuesday Vaudreuil 10:30 am - 12:00 pm****Chair: Priscilla Elfrey, NASA & NCS, USA****Simulation for the Reverse Management of Business Processes**Agostino Bruzzone, Alessandra Orsoni, Simone Simeoni, Matteo Brandolini
*University of Genoa, Italy***Simulation-Based Assessment of Dense Gas Release Hazard in Industrial Facilities**Giribone Pietro, Alessandra Orsoni
*University of Genoa, Italy***Identification and Modelling of Some of the Effective Factors in the Decision Making Process of Bushehr NPP Control Room Operators**Kamran Sepanloo, Reza Jafarian, Fariba DezhbanKhan, Reza Zarghami
Atomic Energy Organisation of Iran, Iran

Session 3: Business & Industry

Tuesday Vaudreuil 1:30 pm - 3:00 pm

Chair: Priscilla Elfrey, NASA & NCS, USA

The Simulation Industry in Search of Recognition: The Next Step

Vince Amico, Lorraine Grace, *UCF, USA*

Computer Aided Multi-Paradigm Modelling of Hybrid Systems with AToM3

Juan de Lara, Manuel Alfonseca

Universidad Autonoma Madrid, Spain

Hans Vangheluwe, *McGill University, Canada*

SIMS: A Modeling and Simulation Platform for Intrusion Monitoring/Detection Systems

Ashish Garg, Shambhu Upadhyaya, Ramkumar Chinchani, Kevin Kwiat

University at Buffalo, State University of New York, USA

Session 4: Business & Industry

Wednesday Auteuil A 10:30 am - 12:00 pm

Chair: Priscilla Elfrey, NASA & NCS, USA

A Random Walk Toward Building an Agenda for the Future of Simulation

Priscilla Elfrey, *NASA NCS, USA*

An Efficient Sampling Technique for Stochastic Supply Chain Simulations

Wing Yan Hung, Sergei Kucherenko, Nouri Samsatli, Nilay Shah

Imperial College London, United Kingdom

A Robust Design of a Static VAR Compensator Controller for Power System Stability Improvement

Abu Rahim, Samir Al-Baiyat

K.F. University of Petroleum and Minerals, Saudi Arabia

LIFE SCIENCE SIMULATION

Chair: David R.C. Hill, ISIMA, France

Session 1: Life Science Simulation

Wednesday Auteuil A 1:30 pm - 3:00 pm

Chair: David R.C. Hill, ISIMA, France

Simulation of Microarray Experiments

Vincent Barra, Christophe Gouinaud

LIMOS, AUBIERE, France

FOREST: A System for Developing and Evaluating Ecosystem Simulation Models

Heather May, John Conery

University of Oregon, USA

On the Modeling and Visualization of Heart Valve Closure Mechanisms

Sriprakash Sarathy, Niranjan Talukder, Jarrell Reed

Clark Atlanta University, USA

Session 2: Energy & Minerals Production Systems Simulation and Risks Engineering

Wednesday Auteuil A 3:30 pm - 5:00 pm

Chair: Samuel Frimpong, CAMDeR University of Alberta, Canada

Performance Simulation of Shovel Excavators for Earthmoving Operations

Samuel Frimpong, Yafei Hu, Zongyu Chang

University of Alberta, Canada

Monitoring Changes: Surface Mining Area by Using Spot Satellite Images

Nuray Erdogan, Abdurrahim Ozgenoglu,

Zuhal Akyurek, Samuel Frimpong

University of Alberta, Canada

NUMSOSS: Numerical Simulation Software for Oil Sand Slurry Flow in Flexible Pipelines

Samuel Frimpong, Oluropo Rufus Ayodele, Jozef Szymanski

University of Alberta, Canada

MARITIME SIMULATION

**Chairs: Pertti Broas, VTT, Finland
Aldo Zini, Cetena/Fincantieri, Italy**

Session 1: Maritime Simulation

**Monday Auteuil B 3:30 pm - 5:00 pm
Chair: Pertti Broas, VTT, Finland**

VISION Virtual Ship Simulation

Francesco F.P. Perra, Aldo Guagnano,
Orizzonte Sistemi Navali S.P.A, Italy
Riccardo Necrisi, Davide Tozzi
CETENA, Italy

Development, Validation, and Application of the Dynaface Helicopter / Ship Dynamic Interface Simulation Software Package

Robert G. Langlois, Carleton University, Canada
Michael LaRosa, Atef R. Tadros
Indal Technologies Inc., Canada

Simulating the Effects of Ship Motion on Postural Stability Using Articulated Dynamic Models

Joyce Wedge , Robert G. Langlois
Carleton University, Canada

Simulation of Klaipeda Oil Terminal

Henrikas Pranevicius, *Kaunas University of Technology, Lithuania*

Session 2: Maritime Simulation

**Tuesday Grand Salon A 3:30 pm - 5:00 pm
Chair: Aldo Zini, Cetena/Fincantieri, Italy**

On-Board Training System with Improved Damage Control Model

Luigi Vindigni, Yves Cote
CAE Inc., Canada

Computing Simulation Model of Shipbuilding Organization Process

Ante Munitic, Slavko Simundic, Josko Dvornik
Maritime Faculty of Split, Croatia

Virtual Simulation of Open Sea and Harbour Manoeuvring of Cruise Vessels

Giovanni Cazzani, Alessia Coan, Roberta Depascale,
Andrea Lommi, Luca Sebastiani
Cetena S.p.A., Italy

MILITARY APPLICATIONS AND SIMULATION

**Chairs: Robert Lutz, Johns Hopkins University
APL, USA**

Joe Uzdinski, Lockheed Martin, USA

Session 1: Simulation Methodologies for Military Network Applications

Monday Vaudreuil 10:30 am - 12:00 pm

**Chair: Kevin A. Kwiat, Air Force Research Lab,
Information Directorate, USA**

Integrating Distributed Wireless Simulation Into Genesis Framework

Kiran Madnani , Boleslaw Szymanski
Rensselaer Polytechnic Institute, USA

Fluid Models of Wireless Networks

Atila Eryilmaz, R Srikant
University of Illinois, USA

Session 2: Air and Missile Defense Analysis

Monday Vaudreuil 1:30 pm - 3:00 pm

Chair: Joe Uzdinski, Lockheed Martin, USA

Using the High-Level Architecture to Evaluate C4ISR System Design in a Battlefield Context

C. Matthew Palmer, *Lockheed Martin, USA*

Sea-Based Systems Effectiveness Analysis

Joseph E. Uzdinski, Timothy J. Sullivan, Robert R. Koury
Lockheed Martin, USA

Missile Defense as a Capacity Planning Problem

Jerry Couretas, *Lockheed Martin, USA*

A Conceptual Model of the Capability to Deliver Military Capability-based Planning

Chris Pogue, A. Vallerand
Dept of National Defence, Canada

Session 3: Defense Systems Performance Evaluation
Monday Vaudreuil 3:30 pm - 5:00 pm
Chair: Robert Lutz, Johns Hopkins University APL, USA

Use of a Hardware-in-the-Loop Simulation to Determine System Performance as Part of a Shelf Life Extension Study for an Air Defense Missile System

David Curry, Craig Combs, Susan Christiansen, Marcia Holmes
US Army Aviation and Missile Command, USA

Search Algorithm for Nonlinear Stochastic System – Bay of Biscay Scenario

Subhashini Ganapathy, Sundaram Narayanan, Raymond Hill
Wright State University, USA

On the Use of Virtual Prototyping in Ship Design

Aldo Zini, Andrea I. Lommi, Davide Tozzi, Riccardo Necrisi
CETENA S.p.A., Italy.

Alessio Carta, Marco Parapetto
Italian Navy, Italy

The Research of Simulation Grid Oriented Large-Scale Simulation Evaluation of C3I

Ling Yun-xiang, Qiu Di-shan, Gao Ming
NUDT, China

Session 4: Military Simulation

Tuesday Auteuil A 10:30 am - 12:00 pm
Chair: Joe Uzdziński, Lockheed Martin, USA

A Simulation/Prototype Co-Design Approach for Assuring the Effectiveness of Securing a Distributed System

Kevin A. Kwiat, *Air Force Research Laboratory, USA*
Joseph V. Beasock, *PAR, USA*

Suggesting a Common Framework for the Classification of Military Training and Computer Game Simulators

Torben Svane, Lars Karlsson
Halmstad University, Sweden

The Joint Simulation System (JSIMS)

Jeffrey Bradshaw, *JSIMS Alliance, USA*

M&S METHODOLOGY, TOOLS AND APPLICATIONS

Chairs: Fernando Barros

University of Coimbra, Portugal

Ralph Huntsinger, MISS - CSU Chico, USA

Session 1: M&S Methodology, Tools and Applications

Monday Anjou A 10:30 am - 12:00 pm

Chair: Fernando Barros, University of Coimbra, Portugal

MDA Compliant Design of SimExplorer—A Software Tool to Handle Simulation Experimental Frameworks

Frederic Amblard, David R.C. Hill, Stéphan Bernard, Jérôme Truffot, Guillaume Deffuant, *Cemagref, LISC, France*
David R.C. Hill, *CNRS, LIMOS, France*

Knowledge-based Computational Model Assembling

Martin van Hees, *Knowledge Based Solutions, The Netherlands*

From Class Diagrams to Zope Products with Meta-modelling Tool AToM3

Andriy Levytsky, Eugene Kerckhoffs
TU Delft, ITSMediamatica, The Netherlands

Beyond Limits in Kohonen's Self-organized Clustering

Miroslav Snorek, *Czech Technical University, Czech Republic*

Session 2: M&S Methodology, Tools and Applications

Monday Anjou A 1:30 pm - 3:00 pm

Chair: Bernard Zeigler, University of Arizona, USA

A New Framework for the Analysis of Simultaneous Events

Christoph Barz, Rolf Göppfarth, Peter Martini, Andre Wenzel
University of Bonn, Germany

A New Approach for the Parallel Solution of ODE's Expressed in Symmetric Form

Osman Abou-Rabia, *Laurentian University, Canada*

Identifying Equivalence of DEVs: A Language Approach

Moon Hwang, *Cubictek, Co., Ltd., USA*

Periodic Time Series Evaluation & Model Construction

Jerry Couretas, *LM, USA*

Session 3: M&S Methodology, Tools and Applications
Monday Anjou A 3:30 pm - 5:00 pm
Chair: Fernando Barros, University of Coimbra, Portugal

Using Simulations as a Persuasive Technology in Secondary School Technical Curriculum

Thomas Mastaglio, *MYMIC LLC, USA*
George Harrison, Narquita Snowden
Norfolk State University, USA

Remote Execution and 3D Visualization of Cell-DEVS Model

Gabriel Wainer, Wenhong Chen
Carleton University, Canada

On a Difference Equations Model for HIV/AIDS Development

Bhagwan Aggarwala
University of Calgary, Canada

Improving Finite Elements Method Models Using Cell-DEVS

Hesham Saadawi, Gabriel Wainer
Carleton University, Canada

Session 4: M&S Methodology, Tools and Applications
Tuesday Anjou A 10:30 am - 12:00 pm
Chair: Hessam Sarjoughian, Arizona State University, USA

A Model for Software Error Estimation

Darush Davani, Linda Rosenberg, Goran Trajkovski
Towson University, USA

A Faster Implementation of Devs in the Joint MEASURE Simulation Environment

Steven Hall, Shankar Venkatesan, Donald Wood
Lockheed Martin, USA

Technique for Identifying An Observable Process With One of Several Simulation Models

Nicholas Nechval, Konstantin Nechval, Edgars Vasermanis
Institute of Transport and Telecommunication, Latvia

Automated Symbolic Generation of Vector Graph Theoretic Object Based Non-Linear Dynamic Simulation Models

Sriprakash Sarathy, Khalil Shujaee
Clark Atlanta University, USA
Kayin Canon, *Georgia Institute of Technology, USA*

Session 5: M&S Methodology, Tools and Applications
Tuesday Anjou A 1:30 pm - 3:00 pm
Chair: Gabriel Wainer, Carleton University, Canada

Efficient Simulation of Large Dynamic Structure Cell Spaces

Alexandre Muzy, Eric Innocenti, Antoine Aiello
 Jean-Francois Santucci
University of Corsica, France
 Fernando Barros, *Universidade de Coimbra, Portugal*

Explanatory Reasoning: from Knowledge Based Systems to Simulation Systems

Fouad, Elamri, Jean-Pierre Pécuchet, *Insa, France*
 Itmi Mhamed, *College of Engineering, USA*

Simulating the Dynamics of Business Components to be Used in Specifying Software Systems

Boris Shishkov, Jan Dietz
Delft University of Technology, The Netherlands
 Joseph Barjis, *Thames Valley University, United Kingdom*

Simulation Speedup for DEVS Models by Composition-Based Compilation

Wan Bok Lee, Tag Gon Kim
KAIST, Korea

Session 6: M&S Methodology, Tools and Applications
Tuesday Anjou A 3:30 pm - 5:00 pm
Chair: J.M. Couretas, Lockheed Martin, USA

Mapping ODEs to DEVS: Adaptive Quantization

Jean-Sebastien Bolduc, Hans L Vangheluwe
McGill University, Canada

The Antic 2 Training Multi Agent Simulation System

Samuel Morisset, Jean-Pierre Pecuchet, Marc Savall
Insa of Rouen, PSI, France

A Simulation Based DSS For Modeling Passenger Arrivals and Departures in an Immigration Control System of a Major International Airport

Masood Badri, Abdullah A. Al-Noaimi, Khaled Lootah
United Arab Emirates University, United Arab Emirates

Session 7: M&S Methodology, Tools and Applications

Wednesday Anjou A 10:30 am - 12:00 pm

Chair: Hans Vangeleuwe, McGill University, Canada

A Unified View of Time and Causality and its Application to Distributed Systems

James Nutaro, *University of Arizona, USA*

Hessam S. Sarjoughian, *Arizona State University, USA*

Modeling and Simulation of Switched Systems: A Dynamic Structure Approach

Fernando J. Barros, *University of Coimbra, Portugal*

Empirical Analysis of Legacy Heuristics using Simulation-Based Methods

Raymond R Hill, *Wright State University, USA.*

Yong Kun Cho, James T. Moore

Air Force Institute of Technology, USA

An Application of Lean Concepts and Simulation for Drainage Systems Maintenance Operations

Albert Agbulos, Mohamed Al-Hussein, Simaan Abou Rizk

University of Alberta, Canada

John Roesch, *City of Edmonton, Canada*

ON-LINE SIMULATION

Chair: Helena Szczerbicka, University of Hannover, Germany

Session 1: On-Line Simulation

Wednesday Anjou B 1:30 pm - 3:00 pm

Chair: Helena Szczerbicka, University of Hannover, Germany

On-Line Simulation: Towards New Statistical Approaches

Thomas Bessey, *University of Hannover, Germany*

Needs and Proposals for Theoretical Research on On-Line Simulation

Thomas Bessey, *University of Hannover, Germany*

Intelligent Design and Real-time Simulation on Control Systems

Honghui Zhu, *Wuhan University of Technology, China*

OPTIMIZATION OF LOGISTIC SYSTEMS THROUGH SIMULATION

**Chairs: Miquel Angel Piera, UA Barcelona, Spain
Antoni Guasch, UPC Barcelona, Spain**

Session 1: Optimization of Logistic Systems Through Simulation

**Tuesday Anjou B 10:30 am - 12:00 pm
Chair: Miquel Angel Piera, UA Barcelona, Spain**

Simulation of a Crossdocking Operation in a Just-in-Time Environment

Karina Hauser, *Utah State University, USA*
Chen Chung, *University of Kentucky, USA*

Net-Simulation: Combining Optimisation and Simulation in the Textile Industry

Alberto Sanfeliu, Vicenç Puig, Antoni Guasch
Universitat Politècnica de Catalunya, Spain

Optimization of a Large Steelmaking Workshop Through Integration of Computer Simulation and Design of Experiment

Ali Azadeh, Pantea Hazegazam, Kaveh Asghari Rod
University of Tehran, Iran

Session 2: Optimization of Logistic Systems Through Simulation

**Tuesday Anjou B 1:30 pm - 3:00 pm
Chair: Toni Guasch, UPC Barcelona, Spain**

Professional Support for Cooperative Simulation Projects - A Challenge for the Simulation of Logistics and Production Networks

Carlos Jahn, André Hanisch, *Fraunhofer IFF, Germany*

Uncertainty in Modelling and Its Impact on Optimisation Domain; Network Services Pricing

Mariusz Kamola, Piotr Arabas, Krzysztof Malinowski
Warsaw University of Technology, Poland

Advances in Supply Chain Management: An Agent Based Approach for Supporting Distributed Optimization

Agostino Bruzzone, Roberto Revetria
University of Genoa, Italy

Session 3: Optimization of Logistic Systems Through Simulation

Wednesday Anjou B 10:30 am - 12:00 pm

Chair: Miquel Angel Piera, UA Barcelona, Spain

Simulation and Optimization of Logistic and Production Systems Using Discrete and Continuous PN

Emilio Jiménez Macías, Mercedes Pérez de la Parte
University of La Rioja, Spain

Optimization of Logistic Systems Through Simulation: Simulation based Value-added-services - Analysis and Evaluation of Predictive Alteration Planning

Andreas Hellmann, Ulrich Jessen
Fraunhofer Institute for Material Flow and Logistics, Germany

A Methodology to Improve Simulation Optimization Approach for Process Scheduling Through Petri Net Formalism

Miquel Angel Piera, Mercedes Elisabet Narciso
Toni Guasch, Josep Casanovas
Universitat Autònoma de Barcelona, Spain

PRODUCTION & MANUFACTURING

Chair: Edward Williams, PMCorp, USA

Session 1: Production & Manufacturing

Monday Anjou B 10:30 am - 12:00 pm

Chair: Edward Williams, PMCorp, USA

Exploring Alternatives in an Automotive Industry Job Shop Using Simulation

Edward Williams, Ryan VanBelle
University of Michigan, USA

Simulation-based Order Acceptance in Make-to-order Manufacturing Systems

Amitava Nandi, Nortel Networks, Canada
Paul Rogers, The University of Calgary, Canada

The Use of Data Development Analysis and Simulation in Process Redesign

Andrew Greasley, Aston University, United Kingdom

A New Dispatching Rule for Stochastic and Dynamic Job Scheduling

Umar M. Al-Turki, Abdulbasit A. Andijani, Shaikh Arifulsalam
KFUPM, Systems Engineering, Dhahran, Saudi Arabia

Session 2: Production & Manufacturing**Monday Anjou B 1:30 pm - 3:00 pm****Chair: Edward Williams, PMCorp, USA****Design and Validation of an IFDI System by the Employment of Artificial Neural Networks**

Domenico Falcone, Fabio De Felice, Alessandro Silvestri, Vincenzo Duraccio, GianPaolo Di Bona

*University of Cassino, Italy***Simulation as a Tool in Understanding the Concepts of Lean Manufacturing**Bernard J. Schroer, *University of Alabama Huntsville, USA***A Simulation Study on Color Rescheduling Storage in an Automotive Factory**Dug Hee Moon, *Changwon National University, Korea*Ha Seok Kim, *GM Daewoo Auto and Technology Co, Korea***SIMULATION IN TRANSPORTATIONS****Chairs: Fred Wieland, MITRE, USA****Essam Radwan, University of Central Florida, USA****Session 1: Aviation Applications****Monday Auteuil B 10:30 am - 12:00 pm****Chair: Fred Wieland, MITRE, USA****An Organizational Approach to Assessing the Need for a Distributed Simulation**Patricia Liguori, Celesta Ball, *The MITRE Corporation, USA***Building the Timetable from Bottom-Up Demand: A Micro-Econometric Approach**Dipasis Bhadra, Jennifer Gentry, Michael Wells, Brendan Hogan
*MITRE/CAASD, USA***A Simulation Study of the Passenger Check-in System at the Ottawa International Airport**

Yuheng Cao, Aaron Nsakanda, Irwin Pressman

Carleton University, Canada

Session 2: Ground Transportation I

Monday Auteuil B 1:30 pm - 3:00 pm
Chair: Essam Radwan, University of Central Florida,
USA

Overview of Driving Simulator Research Capabilities at The University of Central Florida

Harold Klee, *University of Central Florida, USA*

Driving Simulators Application to Left Turn Gap Acceptance

Essam Radwan, *UCF, CATSS, USA*

Simulation of the Shuttle-Bus Pilgrim Transportation System Between the Holy Shrines of Hajj

Sahl Al-Sabban, *Ministry of Hajj, Saudi Arabia*

Hussam Soliman, *King Saud University, Saudi Arabia*

Osama Abduh, *Ministry of Communication, Saudi Arabia*

Session 3: Invited Talk of Simulation in Transportations

Tuesday Grand Salon A 10:30 am - 12:00 pm

Chair: Fred Wieland, MITRE, USA

Speaker: Amy Pritchett

Session 4: Ground Transportation II

Tuesday Grand Salon A 1:30 pm - 3:00 pm

Chair: Essam Radwan, University of Central Florida
USA

SHAKER: A Maximum Throughput Model for Toll Collection Facilities

Marguerite Zarrillo, A. Essam Radwan, Daniel Schmitt

University of Massachusetts Dartmouth, USA

A Brake Disc's Temperature Estimation Module

Samuel Artus, *IPSIS, France*

Saïd Hayat, *Institut National de Recherche sur les Transports
et leur Sécurité, France*

Marcel Staroswiecki, Vincent Cocquempot

Université des Sciences et Technologies de Lille, France

Modeling Driver Behavior: A Combined Equation-Based and Fuzzy-Based Approach

Mohamed Anis Ben Amor, Shigeyoshi Watanabe

The University of ElectroCommunications, Japan

Session 5: Ground Transportation III**Wednesday Grand Salon A 1:30 pm - 3:00 pm****Chair: Fred Wieland, MITRE, USA****TNCC and the No-Queue-Maximum-Throughput Indicator at Toll Facilities**

Marguerite Zarrillo, Ali Jaffery

*University of Massachusetts Dartmouth, USA*A. Essam Radwan, *University of Central Florida, USA***Traffic Accident Simulation and Animation**Hala El Aarag, *Stetson University, USA*Mohamed Abdel-Aty, *University of Central Florida, USA***A Simulation Study for Automated Path Planning in Transportation Systems**Dr. Balqies Sadoun, *Al-Balqa' Applied University, Jordan***Session 6: Ground Transportation IV****Wednesday Grand Salon A 3:30 pm - 5:00 pm****Chair: Abdellah El Moudni, UTBM, France****A Game-Based, Multi-Agent Coordination Mechanism - Application to Road Traffic and Driving Simulations**Alexis Champion, *INRETS, MSIS, France*

Stéphane Espié, Jean-Michel Auberlet

CS-Srilog, France

René Mandiau, Christophe Kolski

*LAMIH, RAIHM, France***Predictive Quantization-based Filtering in Distributed Traffic Simulation**JongKeun Lee, Bernard P. Zeigler, *ACIMS, USA*SungDo Chi, *Intelligent Research Lab, Korea***Vehicle Origin-Destination Petri Net: Analysis Techniques**

Abdellah El Moudni, A Abbas-Turki, O. Grunder

Université de Technologie de Belfort, France

TRACK: SCIENCE & TECHNOLOGY

Chair: Robert McGraw, RAM, CA USA

Session 1: Science & Technology

Wednesday Anjou A 1:30 pm - 3:00 pm

Chair: Abdelkhalak El Hami, INSA Rouen, France

JavaHASE: Automatic Generation of Applets From HASE Simulation Models

Frederic G. Mallet, Roland N. Ibbett
University of Edinburgh, United Kingdom

Simulating General Relativity

Stanislaw Raczynski
Universidad Panamericana, Mexico

Numerical Simulation of a Piezoelectric Engine with Progressive Wave via a Reliability Technique.

Abdelkhalak El Hami, *INSA Rouen, France*
Bouchaib Radi, *ENSAM-Meknès, Morocco*

Session 1: Science & Technology

Wednesday Anjou A 3:30 pm - 5:00 pm

Chair: Robert McGraw, RAM, USA

Simulation in the Mobile Telephony Market: Price Discrimination Strategy Under Asymmetrical Conditions

Livio Cricelli, *University of Cassino, Italy*
Francesca Di Pillo, Claudio Ferragine, Nathan Levialedi
University of Tor Vergata, Italy

Impact of Wavelet Decomposition Levels on Watermarking Robustness and Invisibility

M. Suhail, *University of Bradford, United Kingdom*
Mohammad S. Obaidat, *Monmouth University, USA*

VERIFICATION VALIDATION & ACCREDITATION

**Chairs: Lou Birta, MISS - Ottawa Center, Canada
Simone Youngblood, DMSO, USA**

Session 1: Introduction & Challenge

Monday Auteuil A 3:30 pm - 5:00 pm

**Chairs: Lou Birta, MISS - Ottawa Center, Canada
Simone Youngblood, DMSO, USA**

Research Issues in Verification and Validation from Foundations'02

D. E. Stevenson, *Clemson University, USA*

A VV&A Roadmap

Simone Youngblood, *Defense Modeling & Simulation Office, USA*

Foundations '04: The Road Ahead

David Gross, *Boeing, USA*

Session 2: Technical & Substantive Interoperability

Tuesday L'Amphitheatre 8:30 am - 10:00 am

Chairs: Mike Lightner, AEGIS, USA

Mike Metz, Innovative Management Concepts, USA

Introduction

Mike Metz, *Innovative Management Concepts, USA*

Technical Interoperability Issues

Mike Lightner, *AEGIS Technologies, USA*

Substantive Interoperability Issues

Scott Harmon, *Zetetix, USA*

Joint Virtual Battlespace (JVB) Interoperability

Laura Pegher, Kent Brookins, *US Army RDECOM*

Session 3: Technical & Substantive Interoperability

Tuesday L'Amphitheatre 10:30 am - 12:00 pm

Chairs: Mike Lightner, AEGIS, USA

Mike Metz, Innovative Management Concepts, USA

Joint Synthetic Battlespace (JSB) Interoperability

Al Zikas, *ESC/CXP, USA*

Joint Distributed Engineering Plant (JDEP) Interoperability

Jayne Talbot, *Virtual Technologies Corporation, USA*

Interoperability Panel Discussion

Session 4: Adaptive Systems

Tuesday L'Amphitheatre 1:30 pm - 3:00 pm

Chair: Scott Harmon, Zetetix, USA

Human Performance Model Validation: One Size Does Not Fit All

Michael J. Young, *Air Force Research Laboratory, USA*

Validating Human Behavioral Models for Combat Simulations Using Techniques for the Evaluation of Human Performance

Simon R. Goerger, *Naval Postgraduate School, USA*

Relationships between Story & Validity in Human Representations

Scott Harmon, *Zetetix, USA*

Audience Participation - The Future of HBR/HPM Validation

Session 5: Sensitivity Analysis

Tuesday L'Amphitheatre 3:30 pm - 5:00 pm

Chairs: Simone Youngblood, Defense Modeling & Simulation Office, USA

Michelle Kilikauskas, Joint Accreditation Support Activity (JASA), USA

Lessons Learned from Two Sensitivity Analyses

Dorothy Saitz, Michelle Kilikauskas, *Joint Accreditation Support Activity (JASA), USA*

Synthetic Theater Operations Research Model (STORM) Validation Sensitivity Analysis

Dave MacKay, *IMC, USA*

From High Level Specifications to Event Graphs

Norbert Giambiasi, Géraldine Blanc, Jean-Luc Paillet
LSIS, France

Session 6: VV&A Process Improvement**Wednesday L'Amphitheatre 8:30 am - 10:00 am****Chair: Dale K. Pace, Johns Hopkins University, USA****Foundations '02 Findings re V&V Qualitative Assessment Simulation Validation Qualitative Assessment Process Improvements**Dale Pace, *Johns Hopkins University Applied Physics Laboratory, USA***Towards A Metric Suite For Discrete Event Trace Validity: Does My Model Work The Way Intended**Levent Yilmaz, *Trident Systems, USA***Verification & Validation Program at Lawrence Livermore National Laboratory: Goals, Methods, Levels, and Metrics**Roger W. Logan and Cynthia K. Nitta
*Lawrence Livermore National Laboratory, USA***Discussion & Session Wrap-Up****Session 7: VV&A Process Improvement****Wednesday L'Amphitheatre 10:30 am - 12:00 pm****Chair: Dr. Dale Pace, Johns Hopkins University Applied Physics Laboratory, USA****Practical Application of Formal Methods in Modeling and Simulation**David Richard Kuhn, *National Institute of Standards and Technology, USA*Dan Craigen, Mark Saaltink, *ORA Canada, Canada***From DEVS to Formal Methods: A Categorical Approach**D. E. Stevenson, *Clemson University, USA***Panel Discussion: Ways to Improve an Organization's Approach to M&S V&V**

Panelists:

Chiara Briano, *3B Studio/Engineers Briano & Brandolini Assoc., USA*Roger Logan, Cynthia Nitta
*Lawrence Livermore National Labs, USA*Bill Waite, Mike Lightner, *AEgis Technology Group, USA*Levent Yilmaz, *Trident Systems, USA*

Questions to be Discussed by Panelists:

- What factors prevent an organization from improving its simulation V&V?
- What can help to overcome such obstacles?

Session 8: Applied V&V Methodologies

Wednesday L'Amphitheatre 1:30 pm - 3:00 pm

Chair: Susan Solick, TRAC-FLVN, USA

Tailoring Verification, Validation and Accreditation of Models & Simulation Systems: Canadian DND/CF Approach

Orhun O. Molyer, *TU Navy, DND/CF Synthetic Environment Coordination Office, Canada*

Andrew L. Vallerand, *DND/CF, DND/CF Synthetic Environment Coordination Office, Canada*

VV&A for Innovative Concept Design in New Vessels Simulation and Virtual Prototypes

Agostino G Bruzzone, *Revetria Roberto*

University of Genoa, MISS/DIP, Italy

VIRTUAL REALITY, VISUALIZATION AND SIMULATION

Chairs: Marielle Den Hengst, TU Delft, The Netherlands

Carlos Luis N. dos Santos, UFRJ/COPPE/PEC/LAMCE, Brazil

Session 1: VR, Visualization and Simulation

Tuesday Grand Salon B 10:30 am - 12:00 pm

Chair: Carlos Luis N. dos Santos, UFRJ/COPPE/PEC/LAMCE, Brazil

User Behavior in 3D Videoconferencing Applications

Mojtaba Hosseini, *Nicolas Georganas*

DISCOVERLab, University of Ottawa, Canada

Animation Model to Support Exploratory Analysis of Dynamic Environments

Jorge A. Campos, *Max J. Egenhofer, Kathleen Hornsby*

University of Maine, USA

Character and Language of Scientific Visualization: Applications in Medicine

Klaus de Geus, *Universidade Federale de Panama, Brazil*

José H. Dometerco, *Cássio A. Rúbio*

Companhia Paranaense de Energia, Brazil

Session 2: VR, Visualization and Simulation**Tuesday Grand Salon B 1:30 pm - 3:00 pm****Chair: Carlos Luis N. dos Santos, UFRJ/COPPE/PEC/LAMCE, Brazil****Logistic Cooperative Functional Training System based on HLA Distributed Simulation**

Agostino Bruzzone, Roberto Mosca, Simone Viazzo

University of Genoa, Italy

Chiara Briano, Marina Massei

Liophant Simulation Club, Savona, Italy

Matteo Brandolini, Attilio Rocca

*BRB Studio, Italy***Visualization of Data Filtered by Mathematical Formulations**Djalma Silva, *Universidade Tuiuti do Paraná, Brazil*Klaus de Geus, *Universidade Federal do Paraná, Brazil***Collaborative Immersive Visualization Environments at Oil Companies**

Carlos Luiz Nunes Dos Santos, Giuseppe Bacoccoli, Luiz Landau

*COPPE/UFRJ, Brazil***Session 3: VR, Visualization and Simulation****Tuesday Grand Salon B 3:30 pm - 5:00 pm****Chair: Carlos Luis N. dos Santos, UFRJ/COPPE/PEC/LAMCE, Brazil****The Use of Innovative Technologies in the Case of the Space Reduction in Urban Environment: Study of a Lane Keeping System**

Jean-Michel Auberlet, Antonino Tripoldi,

Stéphane Espie, Domenico Gattuso

*INRETS, MSIS, ARCUEIL, France***Visualization and Simulation for Restoration of Historical Monuments Through Virtual Heritage**

Victorino Oliveira Neto, Carlos Luiz Nunes dos Santos,

Luiz Landau

*UFRJ, Brazil***Virtual Reality as a Training Tool in a Hospital Simulation**

Ludmila Gabcan, Carlos Luiz Nunes dos Santos, Luiz Landau

*COPPE/UFRJ, Brazil***3D Visualization of Airport Ground Information**

Lei Xiaoyong, Dai Shuling, Wang Xingon

Beijing University of Aeronautics & Astronautics, China

STUDENT WORKSHOP

**Chairs: Peter Kropf, University of Montreal, Canada
Ling Rothrock, Penn State University, USA**

Session 1: Student Workshop

Monday Salon de Artes 10:30 am - 12:00 pm

Chair: Peter Kropf, University of Montreal, Canada

Formal Methods in the Verification and Validation of Simulation Models

Ken Kennedy

Clemson University, USA

Generation of DEVS Modelling and Simulation Environments

Ernesto Posse, Jean-Sebastien Bolduc, Hans Vangheluwe

McGill University, Canada

A Virtual Machine Supporting Multiple Statechart Extensions

Huining Feng, Hans Vangheluwe

McGill University, Canada

Session 2: Student Workshop

Monday Salon de Artes 1:30 pm - 3:00 pm

Chair: Ling Rothrock, Penn State University, USA

Applying Cell-DEVS in Models of Complex Systems

Gabriel A. Wainer, Javier Ameghino

Carleton University, Canada

Ezequiel Glinsky, *Universidad de Buenos Aires, Argentina*

Modelling a Sand Pile Application Using Cell-DEVS

Gabriel A. Wainer, Hesham Saadaw

Carleton University, Canada

Modeling of Maze-Solving Systems using Cell-DEVS

Gabriel A. Wainer, Kevin Lam

Carleton University, Canada

Computer-Based Aiding to Reduce Human Error in Real-Time Complex Decision Making

Damodar Bhandarkar, *Pennsylvania State University, USA*

Session 3: Student Workshop

Monday Salon de Artes 3:30 pm - 5:00 pm
Chair: Peter Kropf, University of Montreal, Canada

A Multiagent Frigate Movement Survival Approach

P. Plamondon, Brahim Chahib-draa, Patrick Beaumont, Dale Blodgett, Peter Kropf, *Laval University, Canada*

Implementing Finite State Machines Using the CD++ Toolkit

Gabriel A Wainer, Tao Zheng
Carleton University, Canada

Transforming Statecharts to DEVS

Spencer C Borland, Hans Vangheluwe
McGill University, Canada

Student Workshop Overview

Monday Salon de Artes 5:30 pm - 6:30 pm
Chairs: Peter Kropf, University of Montreal, Canada
 Ling Rothrock, Penn State University, USA

SCS INTERNATIONAL TECHNICAL COUNCIL WORKSHOP: SIMPLEST (SIMULATION APPLICATIONS IN MANAGEMENT, PLANNING & FORECASTING)

Chairs: Agostino Bruzzone, DIP, Italy
 Marina Massei, Liophant Simulation Club

Session 1: SIMPLEST

Monday Ete des Indiens 1:30 pm - 3:00 pm
Chair: Agostino Bruzzone, DIP, Italy

Specifying and Simulation of Reactive Knowledge Based Systems

Aguinaldo Garrido de Ceita, Lucile Torres, Claudia Frydman
LSIS, France

A Supervised Multi-Agent Architecture for APS in Multi-site Production Systems for Demand Validation and Evaluation

Massimo Bernocco, *ATOMOS, Italy*
 Maurizio Schenone, *Politecnico di Torino, Italy*
 Filippo Queirolo, Flavio Tonelli, *University of Genoa, Italy*

Application of Simulation to Small Enterprise Management & Logistics

Marina Massei, *Liophant Simulation Club, Italy*
 Simone Simeoni, *DIP University of Genoa, Italy*

Session 2: SIMPLEST Council Meeting

Monday Ete des Indiens 3:30 pm - 5:00 pm

Chair: Agostino Bruzzone, DIP, Italy

Session 3: SIMPLEST Invited Talk: AI & Simulation

Wednesday Grand Salon A 10:30 am - 12:00 pm

Chair: Agostino Bruzzone, DIP, Italy
Speaker: Claude Frasson, University of Montreal, Canada

LESNEX WORKSHOP (LEAN SIMULATION NETWORK OF EXCELLENCE)

Chair: Stefano Saetta, University of Perugia, Italy

Session 1: LESNEX

Tuesday Vaudreuil 3:30 pm - 5:00 pm

Chair: Stefano Saetta, University of Perugia, Italy

Modeling and Simulation of the Supply Chain: A Problem of Preventative Transshipment

Stefano Saetta, Lorenzo Tiacchi

Università degli Studi di Perugia, Italy

A Methodology to Reduce Data Collection in Lean Simulation Modelling for the Assembly Line Balancing Problem

Stefano Saetta, Lorenzo Tiacchi, Andrea Martini

Università degli Studi di Perugia, Italy

An Application of a Finite MRP Procedure Based on Simulation

Tommaso Rossi, University LIUC, Italy

Nicola Sacconi, *University of Brescia, Italy*

Luigi Uglietti, *Politecnico di Milano, Italy*

Session 2: LESNEX Panel Discussion

Tuesday Vaudreuil 5:30 pm - 7:00 pm

Chair: Agostino Bruzzone, DIP, Italy

STANDARDS WORKSHOP

Chair: Stephen J. Swenson, US Navy, USA
Peggy Gravitz, AEGIS Technologies Group Inc., USA

Session 1: Standards

Wednesday Grand Salon B 10:30 am - 12:00 pm
Chair: Peggy Gravitz, AEGIS Technologies Group, USA

Discrete Event Modeling and Simulation of Distributed Architectures using the DSSV Methodology

Emmanuelle De Gentili, Fabrice Bernardi, Jean-François Santucci

University of Corsica, France

Domain Management in a Hierarchical Generic Models Library

Fabrice Bernardi, Jean-François Santucci

University of Corsica, France

The Layer of Interest Oriented to HLA

Zhong Zhou, Wei Wu

Beihang University, Computer Science and Technology, China

Session 2: Standards

Wednesday Grand Salon B 1:30 pm - 3:00 pm
Chair: Stephen J. Swenson, US Navy, USA

A Comparative Analysis of UML and IDEF0 for Modeling and Simulation

Brian Goldiez, Jose A. Sepulveda

University of Central Florida, USA

Hybrid System Modeling Using Generalised Discrete Event Specification G-DEVS

Norbert Giambiasi, Abdelaziz Naamane

Ecole Polytechnique Universitaire De Marseille, France

Sumit Ghosh, *Stevens Institute of Technology, USA*

Towards a UML Profile For HLA Federation Design, Part II

Okan Topcu, Mark Hazen

Defense Research and Development, Canada

Halit Oguztuzun, *Middle East Technical University, Turkey*

Session 3: Standards Panel Discussion

Wednesday Grand Salon B 3:30 pm - 5:00 pm
Chairs: Stephen J. Swenson, US Navy, USA
Peggy Gravitz, AEGIS Technologies Group Inc., USA

International Symposium on Performance Evaluation of Computer and Telecommunications Systems Simulation Conference 2003

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Vice Program Chair and Web Master

Imad Mahgoub, Florida Atlantic University, USA

Industrial Track Chair and Special Sessions Chair

J. Fox, Motorola, Inc., United Kingdom

TRACK 1

Keynote Speaker 1: All Tracks

Monday Grand Salon A/B 8:30 am - 10:00 am

The Challenge of Building the Joint Simulation System

Laura D. Knight, *Alliance Executive, SES-2, USA*

TCP

Monday Grand Salon C 10:30 am – 12:00 pm

Chair: Hussein Mouftah, University of Ottawa, Canada

A Simulation Study of the Interoperability of TCPW with RED and ECN

Yaxiang Shao, Medy Sanadidi, Mario Gerla, *UCLA, USA*

Dynamic Bandwidth Allocation for Lifetime-Based TCP Classification

Xudong Wu, Ioanis Nikolaidis, *University of Alberta, Canada*

Origin of Self-similarity in TCP traffic

Kensuke Fukuda, *NTT, Japan*

Hideki Takayasu, *Sony Computer Science Laboratories, Japan*

Misako Takayasu, *Future-University Hakodate, Japan*

Simulation Based Analysis of Completion Time Distribution for Short-Lived TCP Flows

Rossano Gaeta, Daniele Manini, Matteo Sereno

University of Torino, Italy

Making SCTP More Robust to Changeover

Janardhan R. Iyengar, Armando L. Caro, Paul D. Amer, Gerard J. Heinz, *University of Delaware, USA*

Randall R. Stewart, *Cisco Systems, Inc., USA*

Optical Networks

Monday Grand Salon C 1:30 pm -3:00 pm
Chair: John Fox, Motorola, United Kingdom

Resilient Lightpath Provisioning with Multiple Criteria in All-Optical Wavelength Routed WDM Networks

Bin Zhou, *Queen's University, Canada*

Hussein T. Mouftah, *University of Ottawa, Canada*

An Integrated Routing and Wavelength Assignment Scheme in WDM Networks

Ying Zhang, Gargi Banerjee, Deepinder Sidhu

University of Maryland, Baltimore, USA

A Novel Self-routing Strategy for All-optical Packet Switched Multiprocessor Systems

Ekpe Okorafor, Mi Lu

Texas A&M University, USA

An Automatic Alternative Route Selection (AARS) Scheme for GMPLS Based Wavelength Routed Optical Network

Chen Gong, Ngoh L. Heng, Cheng H. Seng

Institute for Infocomm Research, Singapore

Ananda L Akkihebbal, *National University of Singapore, Singapore*

WRONSIM - A Simulation Tool for the Performance Evaluation of Resource Reservation Protocols in Wavelength-Routed Optical Networks

Abdelhamid E. Eshoul, Hussein T. Mouftah

University of Ottawa, Canada

MPLS

Monday Grand Salon C 3:30 pm -5:00 pm
Chair: Jens Schmitt, Darmstadt University of Technology, Germany

Performance Testing Methodology of MPLS Signalling Protocols

Khaled Amer Ali, *Queen's University, Canada*

Hussein T. Mouftah, *University of Ottawa, Canada*

Protection Performance Components in MPLS Networks

Eusebi Calle, Jose L Marzo, Anna Urrea

Universitat de Girona, Spain

Label Switched Dimension and Bandwidth Assignment in MPLS Networks

Mai Hoang, *University of Potsdam, Germany*

Efficient CRM for QoS Routing in MPLS Networks

Connie M. C. Yuen, Lawrence C. C. Cheung

City University of Hong Kong, China

SPECTS

TRACK 2

WLANs

Monday **Picardie A** **10:30 am – 12:00 pm**
Chair: Vojislav Mistic, University of Manitoba, Canada

Supporting VoIP Traffic in IEEE 802.11 WLAN with Enhanced Medium Access Control (MAC) for Quality of Service

Dongyan Chen, Kishor Trivedi, *Duke University, USA*
Martin Kappes, Sachin Garg, *Avaya Labs Research, USA*

Dynamic Waveform-Power Adaptation in Mobile 802.11 Wireless LANs

David B. Green, Mohammad S. Obaidat
Monmouth University, USA

An Implementation Study of Multicast Extensions of AODV

Dinesh Dharmaraju, Manish Karir, John Baras
Center for Satellite and Hybrid Communication Networks, USA
Subir Das, *Telcordia Technologies, USA*

HIPERSIM: A Sense Range Distinctive Simulation Environment for HiperLAN Networks

Georgios I. Papadimitriou, Thomas Lagkas
Andreas S. Pomportsis
Aristotle University, Thessaloniki, Greece

Wireless I

Monday **Picardie A** **1:30 pm - 3:00 pm**
Chair: Kishor Trivedi, Duke University, USA

ATM Cell Discarding Probability Over a Rayleigh Fading Channel

Miquel Font, Sebastià Galmés, Ramon Puigjaner
University of the Balearic Islands, Spain

Delay Performance Analysis and Simulation of Real-Time Applications in GPRS Networks

Tim Irnich, Dimitri Eges
Aachen University, Germany

A New Model For Traffic Forecast in Wireless Networks with Fast Mobile Users

Raffaele Bolla, Matteo Repetto, *University of Genoa, Italy*

Wireless II

Monday **Picardie A** **3:30 pm - 5:00 pm**
Chair: Ronald Beaburn, Université Laval, Canada

Comparing Load Adaptive Inter-Piconet Scheduling Algorithms: A Simulation Study

Vojislav B. Mistic, Jelena Mistic, Ka Lok Chan
The Hong Kong University of Science and Technology, Hong Kong

A Novel CAC Strategy for Multimedia Traffic in Wireless Mobile Networks

Nagla O. Mohamed, Dervis Z. Deniz
Eastern Mediterranean University, Turkey

Teletraffic Distribution in Future Wireless Networks

Ronald Beaubrun, *University of LAVAL, Canada*
Samuel Pierre, Jean Conan
École Polytechnique de Montréal, Canada

Diagnosing Wireless TCP Performance Problems: A Case Study

Tianbo Kuang, Fang Xiao, Carey Williamson
University of Calgary, Canada

TRACK 3

Queueing

Monday **Picardie B** **10:30 am – 12:00 pm**
Chair: Krzysztof Malinowski, Warsaw Technical University, Poland

Modeling and Analysis for the Continuous-time Finite Queueing System $NxM/M/1/L/c$

Guoping Zeng, *University of Texas at Dallas, USA*
Imrich Chlamtac, *University of Texas at Dallas, USA*
Yuguang Fang, *University of Florida, USA*
Yuqiang Wu, *Qufu Normal University, China*

On Average and Worst Case Behaviour in Non-Preemptive Priority Queueing

Jens B. Schmitt, *University of Technology, Darmstadt, Germany*

Analytical Formulas for the Variance of On-line Queueing Estimations, for the Batch Size Needed and Their Application to Teletraffic Multiplexing

Michael Shalmon, *Univ. Quebec-INRS, Canada*

SPECTS

Network Simulation

Monday Picardie B 1:30 pm -3:00 pm

Chair: Medy Sanadidi, UCLA, USA

Lightweight TCP/IP Simulator for Performance Studies and Optimization Based Network Control

Przemyslaw Jaskola, Krzysztof Malinowski

Warsaw University of Technology, Poland

A Call-level Network Simulator Framework based on a Standard Agent Platform

Santiago Cots, Teodor Jové, Pere Vilà

Universitat de Girona, Spain

Distributed Emulation of Shared Media Networks

Daniel J. Herrscher, Steffen D. Maier, Kurt Rothermel

University of Stuttgart, Germany

Special Session: Modeling and Simulation-Based Multiprocessor Scheduling

Monday Picardie B 3:30 pm -5:00 pm

Organizer: Helen Karatza, Aristotle University of Thessaloniki, Greece

Chair: Ana Ripoll, University of Barcelona, Spain

CPNSim: A Computational Process Network Simulator

Fabricio A Silva, UFRJ, NCE, Brazil

Flávio S. Mendes, Eliana P. Aude, Ernesto P. Lopes,

Marcela M Silva, Henrique Serdeira, Julio Silveira

Mario Martins, *Catholic University of Santos, Brazil*

On the Extensibility Properties and Performance Measures of Circuit Switched Telecommunication Networks, Using Agent-Based Distributed Routing Algorithm

Constandinos X. Mavromoustakis, Helen D. Karatza

Aristotle University of Thessaloniki, Greece

A New Two-step Approach for Scheduling Large Parallel Programs

Concepció Roig, *University of Lleida, Spain*

Ana Ripoll, Emilio Luque, *Univ. Autònoma de Barcelona, Spain*

Scheduling Distributed Server Systems with Highly Variable Processing Times

Douglas Down, Rong Wu, *McMaster University, Canada*

TRACK 4**Performance Modeling and Measurements I****Monday Auteuil A 10:30 am – 12:00 pm****Chair: Krishan Aggarwal, Guru Govind Singh
Indraprastha University, India****A Performance Study of Chip Multiprocessors with
Integrated DRAM**Linda Wang, *McGill University, Canada*Naraig Manjikian, *Queen's University, Canada***A Performance Study of System-on-Chip Network
Processor Architecture**Xuetao Li, Naraig Manjikian, *Queen's University, Canada***New Multicast Algorithms in Mesh-connected Networks**Hovhannes Harutyunyan, Xiaolin Liu, *Concordia University, Canada***A Novel Performance Metric for Evaluation of Computer
System Heterogeneity**

Kalinka Regina, Lucas Jaquie Castelo Branco,

Marcos José Santana, Regina Helena Carlucci Santana

*University at São Paulo, Brazil***Multi-level RAID Storage System Modeling**Soraya Zertal, Peter Harrison, *Universite de Versailles, France***Performance Modeling and Measurements II****Monday Auteuil A 1:30 pm - 3:00 pm****Chair: Naraig Manjikian, Queen's University, Canada****A Fuzzy Model for Measurement of Software
Understandability**

Krishan K. Aggarwal, Yogesh Singh, Jitender Kumar Chhabra

*Guru Govind Singh Indraprastha University, India***On the Sensitivity of Cooperative Caching Performance
to User Access Patterns**

Kang-Won Lee, Khalil Amiri, Sambit Sahu,

Chitra Venkatramani

*IBM Research, USA***Memory Performance Analysis of Network Applications
on PC Platforms**Abdul Waheed, *KFUPM, Saudi Arabia***A Hardware Counter Based Tool for Application's
Performance Measurement and Analysis**

Yonggang Che, Zhenghua Wang, Xiaomei Li

National University of Defense Technology, China

SPECTS

Keynote Speaker 2: All Tracks

Tuesday Grand Salon A/B 8:30 am - 10:00 am

Nicolas D. Georganas, University of Ottawa, Canada
Collaborative Virtual Environments: Standards,
Applications and Performance

TRACK 5

Resource Allocation

Tuesday Grand Salon C 10:30 am – 12:00 pm

Chair: Nicolas Georganas, University of Ottawa, Canada

Proactive Resource Provisioning for Voice over IP

Eric Chi, Michael Fu, Jean Walrand

University of California, Berkeley, USA

Derivative Estimation and Optimization of Loss Probability in Satellite Packet Networks

Stefano Canesi, Franco Davoli, Alberto Gotta

Mario Marchese, Maurizio Mongelli

DIST - University of Genoa, Italy

Extended Adaptive Resource Allocation for Satellite Channels

Mario Marchese, Igor Bisio, CNIT, *University of Genoa Research Unit, Italy*

QoS I

Tuesday Grand Salon C 1:30 pm – 3:00 pm

Chair: Tag Gon Kim, KAIST, Korea

M/G/1 Priority Scheduling with Discrete Preemption Points - On the Impacts of Fragmentation on IP QoS

Markus Fidler, *RWTH Aachen, Germany*

Improving Node Behavior in a QoS Control Environment for Local Broadcast Networks

Bernd E. Wolfinger, Jürgen Wolf

University of Hamburg, Germany

Gwendal Le Grand, *Telecom Paris, France*

Implementation Scheme for Reliable Multi-session Multicast by using Proactive Hybrid FEC/ARQ Technique

Ji Li, Qingfeng Xu, Ahmed K. Elhakeem

Concordia University, Canada

Maria Bennani, Michel Kadoch

Universite du Quebec, Canada

QoS II

Tuesday Grand Salon C 3:30 pm - 5:00 pm
Chair: Markus Fidler, RWTH Aachen, Germany

Network Quality of Service Measurement System for Application Requirements Evaluation

Razvan Beuran, Mihail L Ivanovici, Bob Dobinson
CERN, Switzerland

Peter Thompson, *U4EA Technologies Limited, United Kingdom*

Efficient QoS Scheme for Voice Traffic in Converged LAN

Yoon Suk Choi, Jong-Kwon Lee , Tag Gon Kim, Kyou Ho Lee
Korea Advanced Institute of Science and Technology, Korea

FTP – QoS Enabled Architecture: A Proposal

Mario Marchese, Luca Caviglione, Tomaso De Cola
CNIT - Italian National Consortium for Telecommunications, University of Genoa, Italy

TRACK 6

Ad Hoc Networks

Tuesday Picardie A 10:30 am -12:00 pm
Chair: Herman Hughes, Michigan State University, USA

Quality of Service Routing in Mobile Ad Hoc Networks

Baoxian Zhang, Hussein T. Mouftah
University of Ottawa, Canada

Analysis of the Effects of Entity Mobility Models on Ad Hoc Network Communication

Jean-Charles Gregoire, Jorge Raul Nuevo
Universite du Quebec, Canada

Adaptive Multi-path Routing Scheme for QoS Support in Mobile Ad-hoc networks

Hongxia Sun, Herman Hughes,
Michigan State University, USA

On the Performance of TCP VEGAS in Mobile Ad Hoc Networks

Stylianos Papanastasiou, Mohamed Ould-Khaoua
University of Glasgow, United Kingdom

SPECTS

Congestion Control I

Tuesday Picardie A 1:30 pm - 3:00 pm

Chair: Marek Malowidzki, Military Communication Institute, Poland

Balanced Queue Sizes for Arbitrary Loads with a Load-adapting RED Function

Erich Plasser, Thomas Ziegler

Telecommunication Research Center, Austria

Performance Evaluation of Multi-rate Multicast Congestion Control Protocols: FLID-DL vs. PLM

Somnuk Puangpronpitag, Roger Boyle, Karim Djemame

University of Leeds, United Kingdom

A Combination of ERICA+ and Distributed WPMM Algorithms to Guarantee the Minimum Cell Rate for ABR Service in ATM Networks

Quan Trung Le

Ho Chi Minh City University of Technology, Vietnam

Tapio Erke, *Asian Institute of Technology, Thailand*

Congestion Control II

Tuesday Picardie A 3:30 pm - 5:00 pm

Chair: Ricardo Lent, University of Central Florida, USA

Simulation-based Study of ECN Performance in RED Networks

Marek M. Malowidzki, *Military Communication Institute, Poland*

Design of TCP Traffic Controllers for AQM Routers Based on Gain Margin Specification

Yang Hong, Qiang Chen

University of Ottawa, Canada

A Novel Fuzzy Based Active Queue Management Algorithm

Mohammad Hossien Yaghmaee, Halleh Amin

Ferdowsi University of Mashhad, Khorasan, Iran

TRACK 7

Traffic Modeling and Characterization

Tuesday Picardie B 10:30 am – 12:00 pm

Chair: Sebastià Galmés, University of Balear Islands, Spain

Timescales in Models for Bursty Traffic

Kathleen Spaey, Tom Hofkens, Chris Blondia

University of Antwerp, Belgium

Danny De Vleeschauwer, *Alcatel Bell, Belgium*

A Detection Technique for Atypical Wide-Area Network Traffic

Carl Minton, *Arion Systems, Inc., USA*

Scott F Midkiff, *Virginia Tech, USA*

MLTG Traffic Re/Generator

Fakhri Moatemri, Jean-Charles Gregoire

INRS EMT, Canada

Traffic Splitting and Its Application to Network-Wise Performance Analysis

Huei-Wen Ferng, Cheng-Ching Peng

National Taiwan University of Science and Technology, Taiwan

Special Session: Composite QoS Metrics and Cognitive Networks

Tuesday Picardie B 1:30 - 3:00 pm

Organizer: Erol Gelenbe, University of Central Florida, USA

Chair: Kathleen Spaey, University of Antwerpen, Belgium

A Power-Aware Routing Algorithm

Erol Gelenbe, Ricardo Lent

University of Central Florida, USA

Using Loss and Delay as QoS Goals

Erol Gelenbe, Michael Gellman, Pu Su

University of Central Florida, USA

Traffic Engineering With Cognitive Packets

Erol Gelenbe, Arturo Nunez

University of Central Florida, USA

Genetic Algorithms for Route Discovery

Erol Gelenbe, Peixiang Liu

University of Central Florida, USA

Jeremy Laine, *Ecole Polytechnique, France*

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Special Session: Design and Performance Evaluation of Group Communication in Parallel and Distributed Systems

Tuesday **Picardie B** **3:30 - 5:00 pm**

Organizers: Ahmed Al-Dubai and Mohamed Ould-Khaoua, University of Glasgow, United Kingdom

Chair: Azzedine Boukerche, University of North Texas, USA

Core-Based Approach in Multicast Routing Protocols

Ayse Karaman, Hossam Hassanein

Queen's University, Canada

On Balancing Traffic Load in Path-Based Multicast Communication

A. Al-Dubai, M. Ould-Khaoua, L. Mackenzie

University of Glasgow, United Kingdom

K. El-Zayyat, *DePaul University, USA*

Collective Communication in DECK Parallel Programming Environment

Rafael Silva, Rafael Ávila, Philippe Navaux, Marcos Barreto

Institute of Informatics-UFRGS, Brazil

A General Analytical Model of Adaptive Wormhole Routing in k-Ary n-Cube

Interconnection Networks

Khonsari, M, Ould-Khaoua

University of Glasgow, United Kingdom

John Ferguson, *University of Strathclyde, United Kingdom*

Alternate Approaches to Data Distribution Management in Large-scale Distributed Simulation Systems

Azzedine Boukerche, Caron Dzermajko

University of North of Texas, USA

Keynote Speaker 3: All Tracks

Wednesday **Grand Salon A/B** **8:30 am - 10:00 am**

Alexander Thomasian, New Jersey Institute of Technology, USA

Storage Systems and Their Performance Analysis

Keynote Speaker 4 (Luncheon Speaker)

Wednesday **Jeanne-Mance** **12:00 pm - 1:30 pm**

Thomas H. Buscaglia, H. Buscaglia and Associates, USA

TRACK 8

Fault-Tolerant System**Wednesday Grand Salon C 10:30 am – 12:00 pm****Chair: Mariacarla Calzarossa, Università di Pavia, Italy****Evaluating the Dynamic Behavior of Performance Metrics of E-Commerce Fault-Tolerant Cluster Servers Using the TPC-W Benchmark**Daniel F. García, Javier García, Carlos López, Iñigo Canga, Diego González, *University of Oviedo, Spain***Performance of Two Disk Failure Tolerant Disk Arrays**Chunqi Han, Alexander Thomasian
*New Jersey Institute of Technology, USA***Mirrored Disk Scheduling**Alexander Thomasian, Junilda Spirollari, Chang Liu, Chunqi Han, Gang Fu, *New Jersey Institute of Technology, USA***A Fast, Accurate and Reliable Estimation for Rapid Design Space Exploration of Superscalar Architecture**Seung Bae Jee, Yeong Geol Kim, Tag Gon Kim
*Korea Advanced Institute of Science and Technology, Korea***Optimal Fault-Tolerant One-to-all Broadcasting and Efficient Fault-Tolerant All-to-all Communication Protocol in Honeycomb Networks**David Seme, *Université de Picardie Jules-Verne, France***Distributed Systems****Wednesday Grand Salon C 1:30 pm - 3:00 pm****Chair: Mohammad Obaidat, Monmouth University, USA****Simulation Study on Clustered OLTP Systems Using TPC-C Workload**Hong Cai, Hisao Kameda, Jie Li, *University of Tsukuba, Japan***A New Approach for Acquiring Knowledge of Resource Usage in Parallel Applications**Luciano José Senger
Universidade Estadual de Ponta Grossa, Brazil
Marcos José Santana, Regina Helena Carlucci Santana
*Universidade de São Paulo, Brazil***A Matching Algorithm for CIOQ Switches with Multiple Levels of Service**Tsern-Huei Lee, Ying-Che Kuo, *National Chiao-Tung University, Taiwan***Performance Analysis of DIN Cache for Data Access in Distributed System**Ligang Dong, Lek Heng Ngoh, Joo Geok Tan
Institute for Infocomm Research, Singapore

SPECTS

Web Performance

Wednesday Grand Salon C 3:30 pm - 5:00 pm

Chair: Sami Habib, Kuwait University, Kuwait

A Fuzzy Algorithm for Web Caching

Maria Carla Calzarossa, Giacomo Valli

Università di Pavia, Italy

Network-Level Impacts on User-Level Web Performance

Carey L Williamson, Nayden M Markatchev

University of Calgary, Canada

The Distribution of File Transmission Duration in the Web

Ronit Nossenson, Hagit Attiya, *Technion, Israel*

Analysis of Task Scheduling Algorithms in Distributed Web-server Systems

Marcos José Santana, Regina Helena Carluicci Santana

Universidade de Sao Paulo, Brazil

Mario M. Teixeira, *UFMA, Brazil*

TRACK 9

Network Design

Wednesday Picardie A 10:30 a.m – 12:00 pm

Chair: Kaliappa Ravindran, CUNY, USA

NETCAP: A Capacity Planning Tool for Practical Content Distribution Network Designs

Sami J Habib, *Kuwait University, Kuwait*

Alice C. Parker, *USC, USA*

Robust Network Provisioning

Vladimir Marbukh, *NIST, ANTD, USA*

Design of TMN Systems Using Interrupted Arrival Poisson Process and Simulation: A Case Study

Young Ha Hwang, Gil Haeng Lee

Electronics and Telecommunications Research Institute, Korea

Gum Il Lee, Sang Wook Chung

Chonnam National University, Korea

Performance Comparison of Resilient Packet Ring (RPR), Packet over SDH/SONET (POS) and Gigabit Ethernet (GE) for Network Design

Yew Fai Wong, Chiang Yoon Wong, Lek Heng Ngho

Wai Choong Wong, *National University of Singapore, Singapore*

Special Session: Mobile Computing

Wednesday Picardie A 1:30 pm - 3:00 pm

Organizer: Imad Mahgoub, Florida Atlantic University, USA

Chair: Imad Mahgoub, Florida Atlantic University, USA

Simulation-based Analysis of Bluetooth Networks

M. Subramani, M. Ilyas

CSE, Florida Atlantic University, USA

Mobility Pattern Based Routing Algorithms for Mobile Ad Hoc Wireless Networks

N. Vyas, I. Mahgoub

CSE, Florida Atlantic University, USA

A Multi-tier Ubiquitous Service Discovery Protocol for Mobile Clients

Choonhwa Lee, Sumi Helal

CISE, University of Florida, USA

Evaluation of Usage Scenarios in Mobile People Architecture

H. Shang and I. Mahgoub

CSE, Florida Atlantic University, USA

Security and Data Correctness

Wednesday, Picardie A 3:30 - 5:00 pm

Chair: Kevin Kwiat, Air Force Research Laboratory, USA

Communication Asynchrony and Data Timeliness Issues for Secure Voting in Distributed Sensor Systems

Kevin A Kwiat, Pat Hurley

Air Force Research Laboratory, USA

Kaliappa Ravindran, Ali Sabbir

City University of New York, New York, NY, USA

SPKI-based Trust Management in Communications Networks

Noureddine A. Boudriga, *Digital Certification Agency, Tunisia*

Mohammad S. Obaidat, *Monmouth University, USA*

'Timed Atomic Write': a Programming Primitive for Distributed Real-time Information Systems

Kaliappa Ravindran, Ali Sabbir

City University of New York, USA

Kevin A Kwiat, *Air Force Research Laboratory, USA*

TRACK 10

Software Performance

Wednesday Picardie B 10:30 am – 12:00 pm

Chair: Regina Helena Carlucci Santana, Universidade de São Paulo, Brazil

Enhancing the Performance of OpenLDAP Directory Server with Multiple Caching

Jong Hyuk Choi, Hubertus Franke, *IBM, USA*

Kurt D Zeilenga, *OpenLDAP Foundation, USA*

The Effects of Memory-Rich Environments on File System Microbenchmarks

An-I Andy Wang, Peter Reiher, Gerald J Popek, *UCLA, USA*

Geoffrey Kuenning, *Harvey Mudd College, USA*

Network Performance I

Wednesday Picardie B 1:30 pm – 3:00 pm

Chair: David Semé, Université de Picardie Jules-Verne, France

Exact Aggregation Strategies for Semi-Markov Performance Models

Jeremy T. Bradley, Nicholas J. Dingle, William J. Knottenbelt

Imperial College London, United Kingdom

Managing a Heterogeneous Network Using a General End-To-End Management Framework and Ideas from the Multiservice Switching Forum

Wolfgang Haidegger, *Siemens, Austria*

Network Performance II

Wednesday Picardie B 3:30 pm – 5:00 pm

Chair: Knottenbelt, Imperial College, UK

Towards More Fixed Identity for Internal Hosts Behind NAT Routers

Mohammad A. Awad, Yasser H. Dakroury

Ain Shams University, Egypt

An Adjustment Algorithm: A New Effective Service Rate Approach for RR Schedulers

John Tsiligaridis, Raj Acharya, *S.U.N.Y at Buffalo, USA*

Improving DCOM Communication for Automation Environments

Marcus Thoss, Reinhold Kroeger, *Univ. of Applied Sciences, Germany*

Georg Biehler, *Siemens AG, Germany*

International Conference on Information Systems and Engineering 2003

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Tutorial 1 (T1): The Promise of Data Warehousing: Remember Your Map! (Formulating Business Rules)
 Sunday Picardie B 9:05 am - 11:05 am
 Ms. Alison Torres, Teradata (NCR), USA
 Chair: Daniel Frauchiger

Tutorial 2 (T2):
Data Quality from a Business Perspective
 Sunday Picardie B 11:10 am - 12:10 pm
 Ms. Alison Torres, Teradata (NCR), USA
 Chair: Z. Maamar

Tutorial 3 (T3):
Process Model: Distance Education Course - From Planning to Evaluating e-Learning Courses
 Sunday Picardie B 1:00 pm - 3:00 pm
 Dipl. Ing. Dr. Susanne Loidl, Johannes Kepler University, Austria
 Chair: Joonsuk Yu

Tutorial 4 (T4):
Teradata Architecture and Differences: The New Generation of Data Warehousing
 Sunday Picardie B 3:30 pm - 5:30pm
 Ms. Alison Torres, Teradata (NCR), USA
 Chair: Sylvain Delisle

SSiMC Welcome and Opening Remarks
SSiMC 2003 General Chairs
 Monday Grand Salon A/B 8:30 am - 9:00 am

SSiMC 2003 Keynote Speech: The Challenge of Building the Joint Simulation System
 Ms. Laura Knight, The US Department of Navy, USA
 Monday Grand Salon A/B 9:00 am - 10:00 am

ISE'03 Keynote Speech I

Monday L'Amphitheatre 10:30 am - 12:00 pm

Integration of Sensory and Language Data

Dr. Leonid I. Perlovsky, The Air Force Research Laboratory, USA

Chair: Nordine Melab

Session 1: Agent-Based Systems and Designs

Monday L'Amphitheatre 1:00 pm - 3:05 pm

Chair: Gongzhu Hu

Inter-Domain Diffserv Dynamic Provisioning and Interconnection Peering Study using Bandwidth Management Point — A Simulation Evaluation

Junseok Hwang and Rajesh Revuru

Syracuse University, USA

Emotion-based Control Mechanisms for Agent Systems

Charles Hannon, *Christian University, Texas, USA*

Implementation of a Multi-agent System within a Diffserv Nnetwork to Improve its Performance

Nada Meskaoui, Dominique Gaiti and Karim Kabalan

American University of Beirut, Lebanon

A New General, Flexible and Java-Based Software Development Tool for Multiagent Systems

Tony Garneau and Sylvain Delisle

Université du Québec à Trois-Rivières, Québec, Canada

The Self-Discipline Guarantee Architecture in Distributed System Integration

Xu Jin and Kinji Mori

Tokyo Institute of Technology, Tokyo, Japan

Session 1: Agent-Based Systems and Designs (Cont.)

Monday L'Amphitheatre 3:30 pm - 3:55 pm

Chair: Gongzhu Hu

Aeronautical Mobile Data Management Using Agent Technology

Wathiq Mansoor and Zakaria Maamar

Zayed University, United Arab Emirates

Session 2: IS Reliability, Fault Tolerance, Security and Authentication

Monday L'Amphitheatre 3:55 pm - 5:35 pm
 Session Chair: Charles Hannon

Multi-layer Watermarking in Closed Information Systems
 Mariofanna Milanova, Charles Ford, Roumen Kountchev, Stuart Rubin, and Roumiana Kountcheva
University of Arkansas, USA

Policy-based managed and Integrated Security Router (PISER)

Jong-Gook Ko, Jeong-Nyeo Kim, Jong-Su Jang, Sung-Won Sohn
Electronics & Telecommunications Research Institute, Taejon, Korea

The Implementation of Trusted Channel between Secure Operating Systems

Joonsuk Yu, Jaedeok Lim, Jaehoon Nah, Taekyong Nam, Sungwon Sohn
Electronics & Telecommunications Research Institute, Taejon, Korea

Global Approach for Fraud Management Architecture in Telco

Oleg Golobrodsky, Guy Zamir
ECTel Ltd., Petach Tikva, Israel

Session 3: Web Services and Service-based Approaches

Tuesday Argenteuil 8:30 am - 9:20 am
 Session Chair: K. Thirunarayan

Colored Petri Net Modeling of Web Services in a Hybrid "J2EE-Software Agent" System

Margaret Lyell, David Norris
The MITRE Corporation, USA

YASE: A Hyper Textual Search Engine for Individual Web Sites

Gongzhu Hu, Amrut P. Borgaonkar
Central Michigan University, USA

Session 4: Mobile and Wireless Information Systems

Tuesday Argenteuil 9:20 am - 10:10 am
 Session Chair: Junseok Hwang

Supporting Disconnected Workflow in PDA Devices

Arroyo-Sandoval Pedro, Martinez-Garcia Ana I. and Ramirez-Fernandez Cristina
CICESE, Mexico

Towards an Environment of Mobile Services: Architecture and Security

Zakaria Maamar, Hamdi Yahyaoui, Wathiq Mansoor, Arif Bhati
Zayed University, United Arab Emirates

ISE'03 Keynote Speech II

Tuesday Argenteuil 10:30 am - 12:00 pm

Computation and Information: Two Sides of the Same Coin

Dr. J. Michael Dunn, School of Informatics, Indiana University, USA

Chair: John A. Hamilton

ISE'03 Keynote Speech III

Tuesday Argenteuil 1:00 pm - 2:15 pm

Multiagent Computing for Complex Applications

Dr. Brahim Chaib-draa, Université Laval, Québec, Canada

Chair: Takao Miura

Session 5: Integrated Information Environments and Applications

Tuesday Argenteuil 2:15 pm - 3:05 pm

Chair: A. Boulmakoul

Non-for-Profit and Academic Information Systems: A Case Study in Information System Reengineering

Youry Khmelevsky

The University of the South Pacific, Suva, Fiji

Parallelizing Probability based Protein Sequence Clustering Using Intelligent Job Allocation Mechanism

Vijay Ganesh Hariharan, Bhuvaneshwari R.

Madhusudhanan Chandrasekaran, Anusuya Venugopal

Government College of Technology, India

Session 6: Object-based and Object-Oriented Modeling and Simulation

Tuesday Argenteuil 3:30 pm - 4:45 pm

Chair: M. Milanova

Defining DFD Meta Model Using UML

Masataro Shirowa, Takao Miura, Shioya Isamu

Hosei University, Japan

Multimodal Transportation Networks: Object Modeling and the K-Multimodal Shortest Path

Hicham Mouncif, Azedine Boulmakoul

FSTM Mohammedia, Morocco

Object Oriented Approach and Java-based Distributed Simulation for Container Terminal Operational Management

M. Rida, Azedine Boulmakoul

FSTM Mohammedia, Morocco

Session 7: Architectures for Information Inoperability**Session Chair: TBA****Tuesday Argenteuil 4:45 pm - 5:45 pm****Chair: Jong-Gook Ko****A Practical Application of Enterprise Architecture for Interoperability**

John A. Hamilton, Jr., and Glen A. Catania

*Auburn University, AL, USA***Two Approaches for Ontologies Building: From-scratch and From Existing Data Sources**

Djamal Benslimane, Ahmed Arara, Kokou Yetongnon, Faiez Gargouri, and Hanene Ben Abdallah

*LIRIS-Université Claude Bernard, Villeurbanne, France***Using an Event-based Middleware in a Distributed e-Commerce Infrastructure**

E. Di Nitto, M. Pianciamore

*CEFRIEL - Politecnico di Milano, Milano, Italy***Demo Session:****Chair: TBA****Tuesday Argenteuil 5:45pm - 6:15pm****Session 8: e-Learning, ISE Programs, and Innovative Teaching Strategies and Tools****Wednesday Argenteuil 8:30 am - 10:10 am****Chair: W. Mansoor****Genesis of the New Information Systems Engineering Program at the United States Military Academy at West Point**

Gregory S. Parnell, Jean R. S. Blair, Michael D. Matthews, Curtis A. Carver Jr., Clark K. Ray

*United States Military Academy, USA***Information Systems and Engineering Education: Learning by Doing**

Gerardo Silva Chandía

*University of Santiago, Santiago, Chile***Teaching Software Engineering to Undergraduates**Jacob Sukhodolsky, *Saint Louis University, MO, USA***Toward a Comprehensive Supplement for Language Courses**

Krishnaprasad Thirunarayan and Stephen P. Carl

*Wright State University, OH, USA***The Implementation of Intelligent Tutoring System (ITS) Using Adaptive Learning Approach for Primary Schools**

Jafreezal Jaafar, Mohd Shahizan Othman, and Dayang NurFatimah A. Iskandar

Universiti Teknologi Petronas, Perak, Malaysia

ISE'03 Keynote Speech IV

Wednesday Argenteuil 10:30 am - 12:00 pm

Design and Test of Network-Centric Systems

Dr. Ann Miller, Distinguished Professor

University of Missouri at Rolla, USA

Chair: Clark K. Ray

SSiMC'03 Conference Luncheon

Wednesday 12:00 pm - 1:30 pm

The Game and Simulation Industries: Convergence or Collision?

Luncheon Speaker: Mr. Thomas H. Buscaglia

T.H. Buscaglia & Associates, Miami, FL, USA

ISE'03 Keynote Speech V

Wednesday Argenteuil 1:45 pm - 3:00 pm

Facets of Publish/Subscribe for Large-scale Information Dissemination Applications

Dr. Hans-Arno Jacobsen

University of Toronto, Ontario, Canada

Chair: James F. Smith, III

Session 9: Architectures for Information Interoperability

Wednesday Argenteuil 3:30 pm - 4:45 pm

Chair: Jacob Sukhodolsky

Validating a Fuzzy Resource Manager through Experiment

James F. Smith, *Naval Research Laboratory, USA*

APN - A Petri Net Based Business Process Model

Daniel Frauchiger

University of Fribourg, Switzerland

An Information Quality Management Framework for Cooperative Information Systems

Paolo Missier, Carlo Batini

Universita' di Milano Bicocca, Italy

ISE'03 Panel Session:

The State of Information Systems and Engineering and Immediate Challenges

Wednesday Argenteuil 4:45 pm - 5:45 pm

Session Moderator: John A. Graniero

Panelists (Tentative):

Dr. J. Michael Dunn, *Indiana University, USA*

Dr. Margaret Lyell, *The Mitre Corporation, USA*

Dr. Clark K. Ray, *USMA, USA*

Dr. Hans-Arno Jacobsen, *University of Toronto, Canada*

Conference Closing Remarks

ISE 2003 Conference General Chairs

Wednesday Argenteuil 5:45 pm - 6:00 pm

| | SPECTS Track 1 | SPECTS Track 2 | SPECTS Track 3 | SPECTS Track 4 / SCSC | SCSC Transportation / Maritime | SCSC Methodology / Tools & Applications | SCSC Production / Agent Directed Simulation | SCSC Military Applications | SCSC Business / SIMPLEST | SCSC Student Workshop | ISE |
|--|----------------------------|---------------------------|--|--------------------------------------|---|--|--|--|---|-----------------------------------|----------------------------------|
| 8:30- 10:00 | Grand Salon C | Picardie A | Picardie B | Auteuil A | Auteuil B | Anjou A | Anjou B | Vaudreuil | Ete des Indiens | Salon de Artes | L'Amphitheatre |
| Summer Simulation Conference 2003 Keynote Address, Grand Salon A,B pg. 6 | | | | | | | | | | | |
| 10:30- 12:00 | TCP pg. 38 | WLANS pg. 40 | Queueing pg. 41 | Performance I pg. 43 | Aviation Applications pg. 25 | Methodology I pg. 19 | Production & Manufacturing I pg. 24 | Military Network Applications pg. 17 | Business & Industry I pg. 13 | Student Workshop I pg. 34 | ISE Keynote pg. 54 |
| 1:30- 3:00 | Optical Networks pg. 39 | Wireless I pg. 40 | Network Simulation pg. 42 | Performance II pg. 43 | Ground Transportation I pg. 26 | Methodology II pg. 19 | Production & Manufacturing II pg. 25 | Air & Missile Defense pg. 17 | SIMPLEST I pg. 35 | Student Workshop II pg. 34 | Agent Based Systems pg. 54 |
| 3:30- 5:00 | MPLS pg. 39 | Wireless II pg. 41 | Multiprocessor Scheduling pg. 42 | VV&AI pg. 43 | Maritime Simulation I pg. 16 | Methodology III pg. 20 | Agent Direct Simulation I pg. 12 | Systems Performance pg. 18 | SIMPLEST I Council Meeting pg. 36 | Student Workshop III pg. 35 | IS Reliability pg. 55 |

| | SPECTS Track 5 | SPECTS Track 6 | SPECTS Track 7 | SCSC Transportation / Maritime Simulation II | SCSC Virtual Reality | SCSC Methodology, Tools, & Applications | SCSC Optimization / Agent Directed Simulation | SCSC Business and Industry | SCSC Military / Body of Knowledge | SCSC Verification, Validation, & Accreditation | ISE |
|--------------------|-------------------------------|--|---|--|--------------------------------|---|---|--|---|--|--|
| 8:30-10:00 | Grand Salon C | Picardie A | Picardie B | Grand Salon A | Grand Salon B | Anjou A | Anjou B | Vaudreuil | Autueil A | L'Amphitheatre | Argentueil |
| | Resource Allocation pg. 44 | Ad Hoc pg. 45 | Traffic pg. 47 | Transport Planary Session pg. 26 | VR I pg. 32 | Methodology IV pg. 20 | Optimization I pg. 23 | Business & Industry II pg. 13 | Military Simulation pg. 18 | VV&A II pg. 29 | Web Services / Wireless Systems pg. 55 |
| 10:30-12:00 | | | | | | | | | | | |
| 1:30-3:00 | QoS I pg. 44 | Congestion Control I pg. 46 | QoS Metrics & Cognitive Nets pg. 47 | Ground Transportation II pg. 26 | VR II pg. 32 | Methodology V pg. 21 | Optimization II pg. 23 | Business & Industry III pg. 14 | M&S Body of Knowledge I pg. 11 | VV&A IV pg. 30 | Keynote III pg. 56 |
| 3:30-5:00 | QoS II pg. 45 | Congestion Control II pg. 46 | Design & Performance in PADS pg. 48 | Maritime Simulation II pg. 16 | VR III pg. 33 | Methodology VI pg. 21 | Agent Direct Simulation II pg. 12 | LESNEX pg. 36 | M&S Body of Knowledge II pg. 11 | VV&A V pg. 30 | Object Based M&S pg. 56 |

LESNEX panel
5:30-7:00 pg. 36

Demo Session
5:45-6:15 pg. 57

| | SPECTS Track 8 | SPECTS Track 9 | SPECTS Track 10 | SCSC Transportation / SIMPLEST | SCSC M&S Standards | SCSC Methodology / Science & Tech | SCSC Optimization / On-Line Simulation | SCSC Business / Life Sciences | SCSC VV&A / Simulation in Entertainment | ISE |
|-------------------------|-------------------------------------|--|-------------------------------------|---|-----------------------------------|--|---|--|--|----------------------|
| 8:30- 10:00 | Grand Salon C | Picardie A | Picardie B | Grand Salon A | Grand Salon B | Anjou A | Anjou B | Autueil A | L'Amphitheatre | Argentueil |
| 10:30- 12:00 | Fault Tolerant Systems pg. 49 | Network Design pg. 50 | Software Performance pg. 52 | SIMPLEST Invited Talk pg. 36 | Standards I pg. 37 | Methodology VII pg. 22 | Optimization III pg. 24 | Business & Industry IV pg. 14 | VV&A VI pg. 31 | Keynote IV pg. 58 |
| 1:30- 3:00 | Distributed Systems pg. 49 | Mobile Computing pg. 51 | Network Performance I pg. 52 | Ground Transportation III pg. 27 | Standards II pg. 37 | Science & Technology I pg. 28 | On-Line Simulation pg. 22 | Life Science Simulation pg. 15 | VV&A VIII pg. 32 | Keynote V pg. 58 |
| 3:30- 5:00 | Web Performance pg. 50 | Security & Data Correctness pg. 51 | Network Performance II pg. 52 | Ground Transportation IV pg. 27 | Standards Panel pg. 37 | Science & Technology II pg. 28 | Mineral Production Simulation pg. 15 | Simulation in Entertainment Panel pg. 11 | Architectures for Information Interoperability pg. 58 | |

Closing Session
4:45-6:00 pg. 58

2004 SUMMERSIM CALL FOR PAPERS

2004 Summer Computer Simulation Conference San Jose, California, USA

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Program Chair:

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Summer Computer Simulation Conference focuses on world wide usage of advanced simulation. Modeling and Simulation is a very critical area for supporting Research and Development as well as competitiveness worldwide; new technologies are enabling new use of M&S and increasing its impact in new areas; SCSC provides an International Forum for presenting the State of the Art in the International Simulation Community as well as the Effectiveness of Simulation Experiences in World Businesses.

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- Industry and Business Practice
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This annual international conference is a forum for professionals involved in performance evaluation of computer and telecommunication systems. Evaluation of computer systems and networks is needed at every stage in the life cycle of the product including design, manufacturing, sales/purchase, use, upgrade, tuning, etc. The discipline of performance evaluation has progressed rapidly in the past decade, and it has now begun to approach maturity. Significant progress has been made in analytic modeling, simulation, and measurement approaches for performance evaluation of computer and telecommunication systems. Topics of interest include, but are not limited to:

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- Computer Systems
- Tools, Methodologies, and Applications

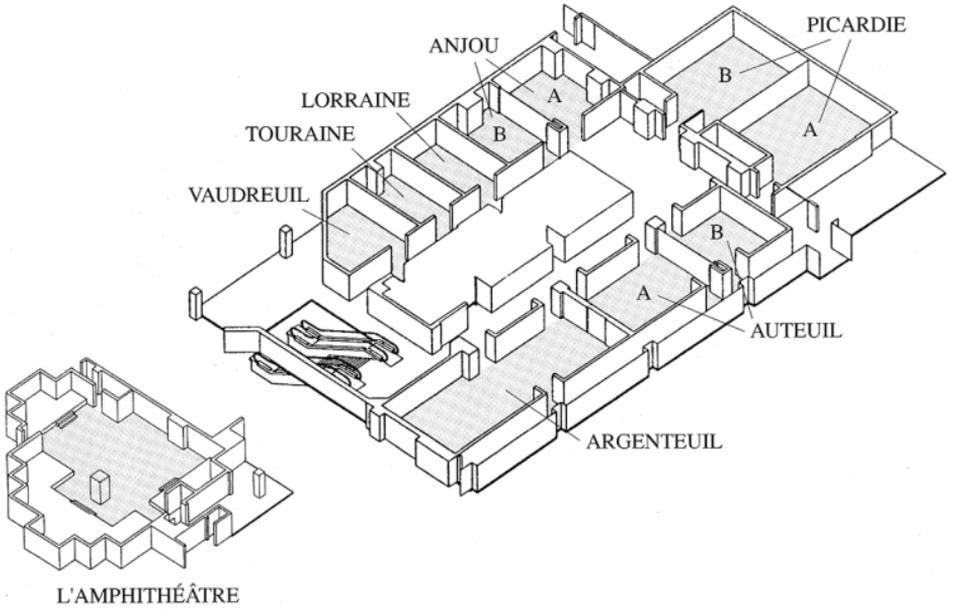
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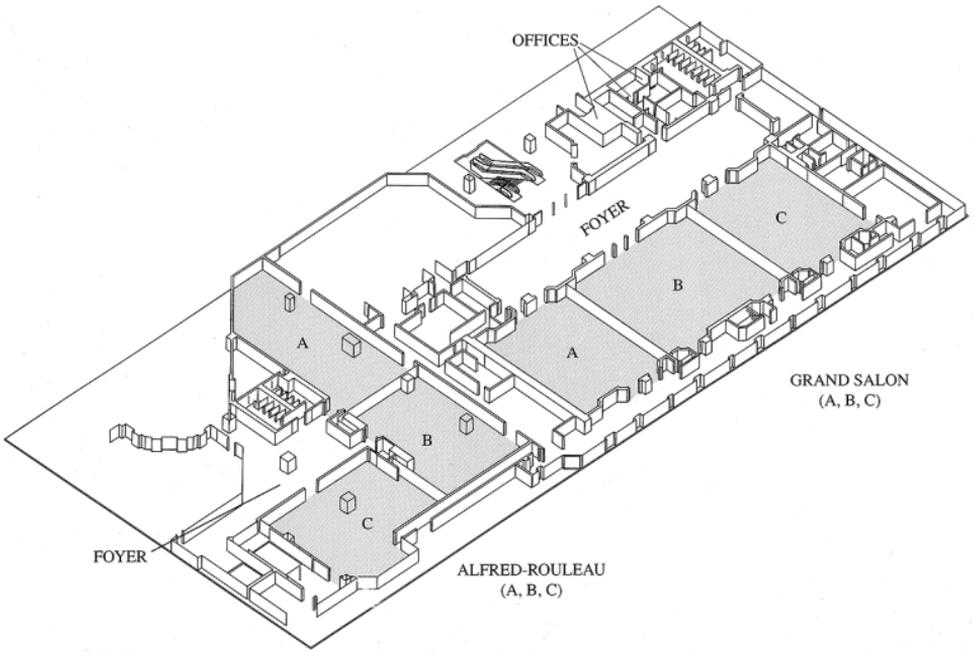
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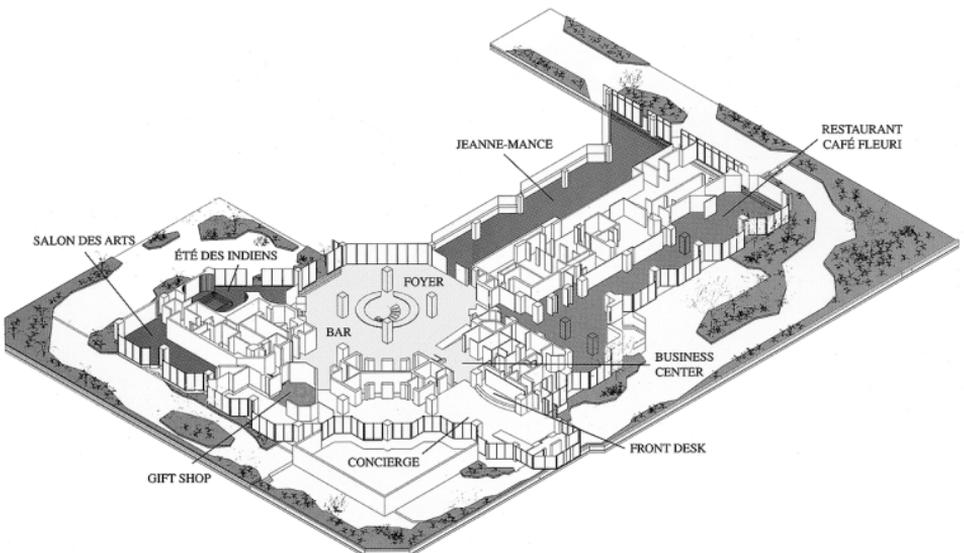
WYNDHAM MONTREAL HOTEL MAP



MEZZANINE LEVEL 2



MEZZANINE LEVEL 1



MAIN LOBBY