

2009 INTERNATIONAL SIMULATION MULTICONFERENCE



ISTANBUL, TURKEY



13-16 JULY 2009



SUMMER SIMULATION MULTICONFERENCE 2009

Conference Chairs

Honorary Chair

Tuncer Ören

Steering Committee Chair

Agostino Bruzzone

Local Organization Committee Chair

Veysi Isler

SummerSim '09 General Chair

David Cook

SISO Program Chairs

Chris Rouget & Duncan Miller



Registration

All registrants need to check in at the registration desk to receive an identification badge and reference materials.

REGISTRATION HOURS:

Sunday, 12 July 2009, 3:00 PM - 6:00 PM

Monday, 13 July 2009, 7:30 AM - 5:00 PM

Tuesday, 14 July 2009, 7:30 AM - 5:00 PM

Wednesday, 15 July 2009, 7:30 AM - 5:00 PM

Thursday, 16 July 2009, 7:30 AM - 1:00 PM

Receptions

Monday, 13 July, 2009

Social Reception

In the foyer of the Grand Cevahir, on Level L2 from 17:30-19:30.

Tuesday, 14 July, 2009

Bosphorus Cruise & Gala Dinner

Enjoy a boat ride along the Bosphorus with Turkish food, drinks and music. Transportation from the Grand Cevahir to the port will be provided at 19:00 for registrants who have signed up for the cruise.



Upcoming Conferences

Fall Simulation Interoperability Workshop 2009

20-25 September 2009 in Orlando, Florida

Huntsville Simulation Conference 2009

27-29 October 2009 in Huntsville, Alabama

Spring Simulation Conference 2010

TBD

Planning Lunches

Invite-only planning lunches will take place Monday through Thursday from 12:00-13:30 at Diliz Restaurant on Level L2.

ORDER OF SYMPOSIA IN THIS PROGRAM:

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GCMS....pg. 15

SPECTS.....pg. 25

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2009 SCSC PROGRAM



General Chair

Dr. Levent Yilmaz
Auburn University, USA

Program Chairs

Dr. Osman Balci
Virginia Tech, USA

Dr. Xiaolin Hu
Georgia State University, USA

Dr. Maartin Sierhuis
NASA Ames Research Center, USA

Tutorials

Modeling and Simulation with the Brahms Agent Environment

by Dr. Maarten Sierhuis

Carnegie Mellon University SV- NASA Ames Research Center

Thursday, July 16, 2009, 8:30-12:00

Room: Yakut

A Life Cycle for Modeling and Simulation

by Dr. Osman Balci

Virginia Tech

Wednesday, July 15, 2009, 10:30-12:00

Room: Sedef

M&S for Bioinformatics

by Dr. Isaac Barjis

New York City College of Technology

Thursday, July 16 2009, 8:30-12:00

Room: Zumrot

MONDAY, 13 JULY 2009

Session 1: Agent-Directed Simulation

Monday, 13:30-15:00

Room: Kehribar

Session Chair: Levent Yilmaz, Auburn University

Advancing Cognitive Agent-Based Modeling: Personifying the Agents

Catherine Banks and John Sokolowski

Multi-understanding: A Basis for Switchable Understanding for Agents

Tuncer Oren, Levent Yilmaz, Mohammad Kazemifard, Nasser Ghasem-Aghaee

ABSNEC - An Agent-Based System For Network Enabled Capabilities/Operations

Kevin Ng and Mark Rempel

Session 2: Engineering and Management in the M&S Discipline

Monday, 13:30-15:00

Room: Sedef

Session Chair: Andreas Tolk, Old Dominion University

Sensitivity Analysis Framework for Large and Complex Simulation Models

Ghaith Rabadi, Shannon Bowling, Charles Keating, Resit Unal

Distributed management of elements for modeling and simulation of heterogeneous models

Braulio Adriano de Mello and Anderson Albuquerque Parreiras

Effectiveness of Particle Swarm Optimization Technique in Dealing with Noisy Data in Inverse Heat Conduction Analysis

Soheyl Vakili and Mohamed Gadala



Session 3 : Emergency Simulation

Monday, 15:30-17:00

Room: Kehribar

Session Chair: Francesco Longo, MSC-LES, University of Calabria

A Decision Support System for Disaster Management in Buildings

Avgoustinos Filippoupolitis and Erol Gelenbe

Monday, 13 July 2009 Cont'd

Simulation for Education in Resource Management in Homeland Security

Agostino Bruzzone, Gerson Cunha, Priscilla Elfrey, Alberto Tremori

Modeling People Flow: A Real Life Case Study in ITU Science Center

Serdar Baysan, Didem Cinar, Dilay Celebi, Pinar Dursun, Dilek Ozdemir



Session 4: Applications in Business, Planning, & Logistics

Monday, 15:30-17:00

Room: Sedef

Session Chair: Tuncer Ören, University of Ottawa

Simulation Of Alternatives For Transmission Plant Assembly Line

John Dunbar III, Jung-wen Liu, Edward Williams

A Simulation Approach to Six Sigma in Software Development

Vojo Bubevski

An Emulation Platform for Intelligent Scheduling In Automated Container Terminal

Mingsen Guo, Zaizhou Ma, Lu Liu, Jun Ye



TUESDAY, 14 JULY 2009

Session 5: Computer Graphics for Simulation

Tuesday, 8:30-10:00

Room: Kehribar

Session Chair: Umut Durak, Tubitak

Testing the WEB3D Content Creation Pipeline: A Case Study

John Richardson

Modeling Daytime and Night Illumination

Cagatay Undeger

Third Generation of "Dynamic in-Cockpit Lighting System" for Driving Simulators

Petr Bouchner and Stanislav Novotný

Tuesday, 14 July Cont'd

Session 6: Applications in Business, Planning, & Logistics

Tuesday, 8:30-10:00

Room: Sedef

Session Chair: Resit Unal, Old Dominion University

Improving workers conditions within Industrial Workstations

Antonio Cimino, Duilio Curcio, Francesco Longo, Giovanni Mirabelli

Multilevel Forecasting Models in Manufacturing Systems

Agostino G. Bruzzone, Enrico Bocca, Luca Pierfederici, Marina Massei

Simulation as Decision Support for the Planning of Order-Picking-Systems

Alexander Ulbrich, Stefan Galka, Willibald A. Günthner



10:00-10:30, BREAK IN FOYER (LEVEL L2)



Session 7: Computational Social Science

Tuesday, 10:30-12:00

Room: Kehribar

Session Chair: Osman Balci, Virginia Tech

GPGSiM: A New Simulation Environment for International Politics and Economics

Muneyoshi Saito, Yutaka Yamaguchi, Hirofumi Yamaki, Eizo Akiyama, Makoto Sejima, Kazuo Yoshida

Specifying the Content of Humble Social-Science Models

Paul Davis

Research on M&S Credibility Evaluation Model

Jing Wu, Xiao-yan Wu, Zhong-chang Gao and Zi-yi Wang



Tuesday, 14 July 2009 Cont'd

Session 8: DEVS

Tuesday, 10:30-12:00

Room: Sedef

Session Chair: Francesco Longo, MSC-LES, University of Calabria

From Sequential Machines to DEVS

Norbert Giambiasi

Exploring Spatial Partition for Parallel Simulation of DEVS-FIRE

Song Guo, Xiaolin Hu, Yi Sun

Towards an automatic transformation from a DEVS to a SDL specification

Pau Fonseca i Casas



12:00-13:30, LUNCH BREAK



Session 9: Applications in Military Simulation

Tuesday, 13:30-15:00

Room: Kehribar

Session Chair: Halit Oguztuzun, METU

An Engagement Simulation to Evaluate Fighter Evasive Maneuvers Combined with Chaff Utilization against Missiles

Remzi Akdag and D.Turgay Altılar

Conceptual Modeling of a Large Scale HLA Based Simulation System Using CMMS Framework

Oguz Icoğlu and Oguz Dikenelli

ENHANCING DODAF VIEWS INTO AN INFORMATION ASSURANCE ARCHITECTURE FOR THE DIACAP

Mark Kuhr, Derek Sanders, Drew Hamilton



Tuesday, 14 July 2009 Cont'd

Session 10: Agent-Directed Simulation

Tuesday, July 14, 2009 13:30-15:00

Room: Sedef

Session Chair: Maarten Sierhuis, NASA

Rethinking M&S using Models of Creative Cognition to Enhance Computational Discovery

Levent Yilmaz and Tuncer Oren

Comparing Simulation Output Accuracy of Discrete Event and Agent Based Models: A Quantitative Approach

Mazlina Abdul Majid, Uwe Aickelin, Peer-Olaf Siebers

Anger and Aggressive Behavior in Agent Simulation

Nasser Ghasem-Aghaee, Bardia Khalesi, Mohammad Kazemifard, Tuncer I. Ören

Session 11: Panel on Emerging M&S Challenges for Human, Social, Cultural, and Behavioral Modeling

Tuesday, 13:30-15:00

Room: Firuze

Panel Chair: Andreas Tolk, Old Dominion University

Panel Members: Tim Bacon, JFCOM; Paul Davis, RAND, Tuncer Ören, University of Ottawa; John Sokolowski, VMASC



15:00-15:30, BREAK IN FOYER (LEVEL L2)



Session 12: MTSA

Tuesday, 15:30-17:30

Room: Yakut

Session Chair: Ralph Huntsinger, California State University, Chico

Moving-Intersecting-Information-Based Matching Algorithm for Dynamic DDM

Yiping Yao, Yingxing Zhang, Lili Chen, Laibin Yan

Tuesday, 14 July 2009 Cont'd

A Fully Distributed Data Collection Method for HLA based Distributed Simulations

Emrah KAYA and Fatih Erdogan Sevilgen

Federated Simulation of Network Performance Using Packet Flow Modeling

Turan Demirci and Semih Bilgen

Multi agent modeling of self adaptive system for large scale complex systems

Alain Cardon and Mhamed Itmi



Session 13: Emergency Simulation

Tuesday, 15:30-17:00

Room: Kehribar

Session Chair: Francesco Longo, MSC-LES, University of Calabria

Risk Evaluation in Transportation Systems

Francesco Russo and Antonino Vitetta

EMERGENCY EVACUATION SIMULATION IN ISTANBUL TECHNICAL UNIVERSITY

Betul EKIZOGLU

NUCLEAR, BIOLOGICAL AND CHEMICAL (NBC) ATTACK SIMULATION BASE ON EXPERT SYSTEM

Ebru Arslan



Session 14: Emergency Simulation

Tuesday, 15:30-17:00

Room: Sedef

Session Chair: Xiaolin Hu, Georgia State University

Simulating Real-Time Software Components based on Logical Execution Time

Andreas Naderlinger, Josef Templ, Wolfgang Pree

Potential Technologies for Engineering Network-Centric Simulations

Osman Balci and Ernest H. Page

WEDNESDAY, 15 JULY 2009

Session 15: Computer Graphics for Simulation

Wednesday, 8:30-10:00

Room: Kehribar

Session Chair: John Richardson, SPAWAR, Navy

EVALUATION OF FOUR ARTIFICIAL LIGHTING SIMULATION TOOLS WITH REAL AND VIRTUAL BUILDING REFERENCE

Shariful Shikder and Spyros Stravrovadis

Advanced Authoring Tools for Game-Based Training

A. Tanju Erdem, Bora Utku, Tolga Abaci, Cigdem Eroglu Erdem

SahinSim: A Flight Simulator for End-Game Simulations

Ozer Ozaydin and D. Turgay Altılar



Session 16: Engineering and Management in the M&S Discipline

Wednesday, 8:30-10:00

Session Chair: Andreas Tolk, Old Dominion University

Validating interaction-based systems behavior via simulation and detecting implied scenarios

Mamoun Sqali, Lucile Torres, Claudia Frydman

Research on Complex System Quantitative and Qualitative Synthetic M&S Platform

Shuai Fan, Bo Hu Li, Xudong Chai, Bocun Hou, Weijing Wang, Yanxun Wu

Sim-PETEK : A Parallel Simulation Execution Framework for Grid Environments

Doruk Bozagac, Gulsah Karaduman, Ahmet Kara, M. Nedim Alpdemir



10:00-10:30, BREAK IN FOYER (LEVEL L2)



Wednesday, 15 July 2009 Cont'd

Session 17: MTSA

Wednesday, 10:30-12:00

Room: Zumrot

Session Chair: Agostino Bruzzone, University of Genoa

Simulation Modeling Architecture (SiMA), A DEVS Based Modeling and Simulation Framework

Ahmet Kara, Fatih Deniz, Doruk Bozagaç, Mahmut Nedim Alpdemir

Variable Structure and Dynamism Extensions to SiMA, A DEVS Based Modeling and Simulation Framework

Fatih Deniz, Ahmet Kara, Mahmut Nedim Alpdemir, Halit Oguztuzun

DEVS in DSOL: Adding DEVS operational semantics to a generic Event-Scheduling Simulation Environment

Mamadou Seck and Alexander Verbraeck



12:00-13:30, LUNCH BREAK



Session 19: Applications in Military Simulation

Wednesday, 13:30-15:00

Room: Kehribar

Session Chair: Halit Oguztuzun, METU

A Genetic Algorithm For Weapon Target Assignment Problem

Mehmet Alper ŞAHİN and Kemal LEBLEBİCİOĞLU

High Fidelity Modeling and Simulation of Submarine in a Commercial Computer Generated Forces Toolkit

Mehmet Haklıdır, Ahmet Faik Guven, Omer Eroglu, Deniz Aldogan, Isa Tasdelen

GUN FIRING SIMULATION ANALYSIS

Yasemin Timar, Deniz Aldogan, Ömer Eroglu, Isa Tasdelen, Tolga Basturk, Cemil Akdemir



Wednesday, 15 July 2009 Cont'd

Session 20: MTSA

Wednesday, 13:30-15:00

Room: Zumrot

Session Chair: Mamadou Seck, Delft University of Technology

Key Issues in Electromagnetic Environment Modeling & Simulation

Lin Zhang, YingNian Wu, Ralph C. Huntsinger

Recursive simulation and experimental frame for multiscale simulation

Bruno Bonté, Raphaël Duboz, Gauthier Quesnel, Jean-Pierre Müller

EGR Design Using AHDL + CFD

Gilles Delaire and Kirk Ivens



15:00-15:30, BREAK IN FOYER (LEVEL L2)



Session 21: Bioinformatics

Wednesday, July 15, 2009 15:30-17:00

Room: Kehribar

Session Chair: Maarten Sierhuis, NASA

Modeling and Simulation of 3-D Virtual Cell as a Game

Isaac Barjis, David Smith, Wallied Samarrai

Healthcare Modeling and Simulation Potential and Challenges

Joseph Barjis

Modeling of Chemokine Signaling Pathway

Nasreen Haque, Niloufar Haque, Isaac Barjis



Wednesday, 15 July 2009 Cont'd

Session 22: MTSA

Wednesday, 15:30-17:00

Room: Zumrot

Session Chair: Mhamed Itmi, INSA-Rouen

A Comparison of System Dynamics and Discrete Event Simulation

Andrew Greasley

User-Guided Transformations for Ontology Based Simulation Design

Ozer OZDIKIS, Umut DURAK, Halit OGUZTUZUN

Priority-based Scheduling with Adaptive Speculative Locking in Distributed Real-Time Transaction Processing

Waqar Haque



Session 23: Agent-Directed Simulation

Wednesday, 15:30-17:30

Room: Sedef

Session Chair: Hamid Vakilzadian, University of Nebraska-Lincoln

A platform for the behavioral animation of crowds

Hakim SOUSSI, Joël SAVELLI, Marc NEVEU

Transdisciplinary Intelligent Agent Controlled Simulation of Crisis Situations

Andras Javor

Agents with Ability to Understand Emotions

Mohammad Kazemifard, Nasser Ghasem-Aghae, Tuncer Ören

Combining Agent-Based Participatory Simulation and Technology Enhanced Learning for Rodent Control

Abdelhafid Chadli, Erwan Tranvouez, Fatima Bendella



2009 GCMS PROGRAM



Program Chairs

Mr. Terry Ericson
Office of Naval Research, USA

Dr. Roy Crosbie
California State University – Chico, USA

General Chair

Dr. Hamid Vakilzadian
University of Nebraska-Lincoln, USA

MONDAY, 13 JULY 2009

Session M11: Joint Plenary
Monday, 8:30-10:00
Room: Ball Room III



10:00-10:30, BREAK IN FOYER (LEVEL L2)



Session M12: ISMc Keynote Speech
Simulation and Reality: The Big Picture and Challenges
Monday, 10:30-12:00
Room: Ball Room III
Keynote Speaker: Prof. Tuncer Ören, University of Ottawa, Canada



12:00-13:30, LUNCH BREAK



Monday, 13 July 2009 Cont'd

Session M13: Methodologies in Real-Time and Multi-Rate Simulation

Monday, 13:30-15:00

Room: Mercan

Session Chair: Steinar Dale, Florida State University, Tallahassee, USA

Solution of Non-Linear Differential Equations Using State-Transition Methods

Richard Bednar and Roy Crosbie

High-Speed Real-Time Multi-Rate Simulation

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

Development of Multi-rate Simulation Techniques in ESL

John Pearce, Richard Bednar



Session M23: M&S Applications I

Monday, 13:30-15:00

Room: Kristal

Session Chair: Francois, Cellier, ETH Zürich, Switzerland

Imperatives in the Development of Medical Simulations

C. Donald Combs

EXPLORING COGNITIVE PROCESSES UNDERLYING SITUATION AWARENESS ACQUIRED BY AVIATORS IN FULL FLIGHT SIMULATORS

Serkan ÇAK, Bilge SAY, Mine MISIRLISOY

Simulation with Occupational Work Role Competences

Jussi Kantola, Antti Piirto, Jarmo Toivonen, Hannu Vanharanta



15:00-15:30, BREAK IN FOYER (LEVEL L2)



Monday, 13 July 2009 Cont'd

Session M14: M&S Applications II

Monday, 15:30-17:00

Room: Mercan

Session Chair: Dan Sheridan, DJS Associates INC, USA

Simulation and Analysis of Transformable Craft (T-Craft) Performance

Bobby Rowden, Michael Hellard, Eric Winn, Eugene Paulo

Simulation of Ships Impact with One-Sided Barriers Using Non-Smooth Coordinate Transformation

Ihab Grace and Raouf Ibrahim

Robust Controller and Observer for Marine Surface Vessels Maneuvering under Various Sea States

Nabil Chalhoub and Nassim Khaled



Session M24: Power Electronics

Monday, 15:30-17:00

Room: Kristal

Session Chair: Roy Crosbie, California State University-Chico, USA

Simulating Thermomigration in Electronics Packaging

Cemal Basaran

Modeling and Simulation of a High-Temperature SiC JFET/JBS Power Electronics Building Block

Zheng Chen, Puqi Ning, Dushan Boroyevich, Fei (Fred) Wang, Dong Jiang, Rolando Burgos, Khai Ngo

Multi-Physic Analysis of Electromechanical Systems via Field Reconstruction Method

Morgan Kiani, Babak Fahimi



TUESDAY, 14 JULY 2009

Session T11: GC Plenary Session

Tuesday, 8:30-10:00

Room: Safir

Speaker: Mr. Terry Ericson

Program Director

Office of Naval Research, USA



10:00-10:30, BREAK IN FOYER (LEVEL L2)



SESSION T12: Optimization, Simulation of Propulsion Systems

Tuesday, 10:30-12:00

Room: Mercan

Session Chair: Raouf Ibrahim, Wayne State University, USA

Optimization of Direct Drive Induction Motors for Electric Ship Propulsion with High Speed Propellers

Steven C Englebretson, James L Kirtley Jr., Chryssostomos Chryssostomidis

OpenProp: An Open-Sourced Parametric Design and Analysis Tool for Propellers

Brenden Epps, Julie S Chalfant, Kevin M Flood, Richard Kimball, Chryssostomos Chryssostomidis

Toward the Development of an Integrated Electric Ship Evaluation Tool

Julie S. Chalfant and Chryssostomos Chryssostomidis



SESSION T22: Stress Computation, Semiconductor Devices and Fault Classification

Tuesday, 10:30-12:00

Room: Kristal

Session Chair: Ned Mohan, University of Minnesota, USA

Stress Computation in a Single-Walled Carbon Nanotube Under Uniaxial Tension

Tarek Ragab and Cemal Basaran

Tuesday, 14 July 2009 Cont'd

Simulation of Power Semiconductor Devices Using Variable Model Levels with Simulation Agents

Zhiyang Chen, Enrico Santi, Jerry Hudgins, Alan Mantooth

Fault Classification and Accommodation in Shipboard Power Systems

A.J. Mair, R.R. Soman, S.K. Srivastava, K. Schoder, E.M. Davidson, S.D.J. McArthur, D.A. Cartes



12:00-13:30, LUNCH BREAK



SESSION T13: Methodologies in Optimization, analysis, and synthesis

Tuesday, 13:30-15:00

Room: Mercan

Chair: Dan Sheridan, DJS Associates INC, USA

Practical steady-flow evaluation for hull-form optimization

Francis Noblesse, Gerard Delhommeau, Chi Yang

Fast 3D Flow Simulations of the Waterjet Propulsion System

Xian Luo, George Em Karniadakis, Chryssostomos Chryssostomidis



Session T23: Approaches in System Simulation

Tuesday, 13:30-15:00

Room: Kristal

Session Chair: Mhamed Itmi, INSA- Rouen, France

Design of Modern Analog and Mixed-Signal Computing Hardware

Anthony Deese and Chika Nwankpa

A CO-SIMULATION APPROACH FOR ANALYSING THE IMPACT OF THE COMMUNICATION INFRASTRUCTURE IN POWER SYSTEM CONTROL

Martino Colciago, Paolo Conti, Matteo Maglio, Antonello Monti, Roger Dougal

Modeling and Simulation Approaches for Multibody Engineering Systems

Dietmar Moeller, Hamid Vakilzadian

Tuesday, 14 July 2009 Cont'd



15:00-15:30, BREAK IN FOYER (LEVEL L2)



Session T14: Shipboard Power System and Design-Aimed Simulation

Tuesday, 15:30-17:00

Room: Mercan

Session Chair: Steinar Dale, Florida State University, Tallahassee, USA

Dynamic Model Order Reduction for Shipboard Integrated Power Systems

Sudipta Lahiri, Dagmar Niebur, Harry Kwatny

A Preliminary Modeling and Simulation Platform to Investigate New Shipboard Power System Prototyping Techniques

Michael Knauff, Christian Schegan, Joseph Chunko, Robert Fischl, Karen Miu

Towards automatic level selection for design-aimed simulation

Yongjie Huang, Ferdinanda Ponci, Roger Dougal



Session T24: Modeling and Simulation of Large Systems

Tuesday, 15:30-17:00

Room: Kristal

Session Chair: Narain Hingorani, Consultant, USA

Modeling of Electric Ship Power Systems

Abdelhamid Ouroua, Angelo Gattozzi, John Herbst, Robert Hebner

Method for partitioning large system models when using latency insertion method to speed network solution

Yiwei Zhang, Jian Shi, Jijun Tang, Roger Dougal, Blake Langland

Modeling and Simulation of Electric Propulsion Concepts for a Multimodal Prototype Demonstrator

John Herbst, Angelo Gattozzi, John Uglum, Julie Chalfont, Chrys Chrysostomidis, Mike Andrus, James Langston, Mischa Steurer

WEDNESDAY, 15 JULY 2009

Session W11: Hydrodynamic Interactions and Design and Unmanned Vehicles
Wednesday, 8:30-10:00

Room: Mercan

Session Chair: Priscilla Elfrey, NASA

Numerical Studies on Nonlinear Hydrodynamic Interactions of Side-by-Side Moored Vessels in Extreme Waves

Haidong Lu, Chi Yang, Rainald Lohner

A Practical Optimization Tool for Hydrodynamic Design of Ship Hull Forms

Hyunyul Kim, Chi Yang, Heejung Kim, Francis Noblesse

Simulation of a Refueling Operation of Two Unmanned Vehicles

Ben Rosenthal, David Kring, William Milewski



Session W21: Simulation of Real-Time and Large Scale Systems

Wednesday, 8:30-10:00

Room: Kristal

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

Software Support Tools for High-Speed Real-Time Simulations

John Zenor, Roy Crosbie, Richard Bednar, Dale Word

COMBINING LATENCY INSERTION WITH TRADITIONAL SIMULATION METHODS FOR LARGE SYSTEM ANALYSIS

Andrea Benigni, Antonello Monti, Roger Dougal

Cloud Simulation Platform

Bo Hu Li, Xudong Chai, Baocun Hou, Wenhai Zhu, Yabin Zhang, Zhen Tang, Chang-feng Song, Weijing Wang, Yanxun Wu, Suchuan Mu



10:00-10:30, BREAK IN FOYER (LEVEL L2)



Wednesday, 15 July 2009 Cont'd

Session W12: Power Electronics and Converters

Wednesday, 10:30-12:00

Room: Mercan

Session Chair: Roger Dougal, University of South Carolina, USA

Novel Topologies of Power Electronic Transformers with Reduced Switch-Count

Ranjan Gupta, Krushna Mohapatra, Ned Mohan

Functional Simulation Models for Three-level Converters Using Average and Switching Function Concepts

Li Qi, Jiuping Pan, Zhenyuan Wang, John Daniel

Modeling, Simulation and Design of a Very-High-Frequency Dual-Active-Bridge Converter

Zhiyu Shen, Zheng Chen, Rolando Burgos, Dushan Boroyevich, Fei (Fred) Wang, Jing Xue



Session W22: Verification and Examining Techniques and Intelligent Supporting Environment

Wednesday, 10:30-12:00

Room: Kristal

Session Chair: Cemal Basaran, SUNY at Buffalo, USA

V&V of MSC Scenarios via Simulation and Formal Verification Techniques

Trojet Mohamed Wassim, Sqali Mamoun, Frydman Claudia, Torres Lucile

Research on Key Technologies of an Integrated, Intelligent SBA Supporting Environment

Xudong Chai, Baocun Hou, Shuai Fan, Bo Hu Li, Wenhai Zhu, Shan Feng, Deyu Kong, Weijing Wang

A Wargame Examining Systems to Defeat Maritime Improvised Explosive Device (MIED) in A Commercial Port

Richard Jimenez, Eugene Paulo, Bobby Rowden



Wednesday, 15 July 2009 Cont'd



12:00-13:30, LUNCH BREAK



Session W13: Analysis and Evaluation using MATLAB and Hardware-in-the-Loop
Wednesday, 13:30-15:00

Room: Mercan

Session Chair: Chryssostomos Chryssostomidis, MIT, USA

Simulation and Analysis of High-speed Modular Flywheel Energy Storage Systems Using MATLAB/Simulink

Parag Upadhyay and Ned Mohan

Development and Implementation of a 25kW Virtual Induction Machine Test Bed Utilizing the Power-Hardware-in-the-Loop Concept

Fletcher Fleming, Chris Edrington, Mischa Steurer, Oleg Vodyakho

Parametric Evaluation of the Ride-Through capability of Matrix Converters using MATLAB/Simulink.

Rashmi Prasad, Krushna Mohapatra, Ned Mohan



Session W23: Uncertainty Quantification and Optimization of Wave-Induced Motion

Wednesday, 13:30-15:00

Room: Kristal

Session Chair: Roy Crosbie, California State University – Chico, USA

Uncertainty Quantification in Response Surface Models in Parametric Analyses

James Langston, Chris Edrington, Svetlana Poroseva, Michael Steurer, O. Arda Vanli

Optimization of Wave-Induced Motion of Ramp-Interconnected Craft for Cargo Transfer

Miroslav Krstic, Joseph Doblack, Jacob Toubi, Aleksander Veksler, Halil Basturk



15:00-15:30, BREAK IN FOYER (LEVEL L2)



Wednesday, 15 July 2009 Cont'd

Panel Session: Issues and Innovative Methodologies in Large Scale System Simulation

Wednesday, 15:30-17:00

Room: Mercan

Moderator: Terry Ericson, Office of Naval Research, USA

Speakers: Francois, Cellier, ETH Zurich, Switzerland

Roy Crosbie, California State University-Chico, USA

Steinar Dale, Florida State University, Tallahassee, USA

Roger Dougal, University of South Carolina, USA

Bill Waite, The Aegis Technologies Group, USA

THURSDAY, 16 JULY 2009

ESL Tutorial

Thursday, 8:30-10:00

Room: Safir

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

Speaker: John Pearce - ISIM International Simulation Limited, UK



10:00-10:30, BREAK IN FOYER (LEVEL L2)



2009 SPECTS PROGRAM



MONDAY, 13 JULY 2009

Opening Session: Joint Plenary

Monday, 8:30-10:00

Room: Ball Room III

KEYNOTE SPEAKER 1

Monday, 10:30-12:00

Room: Ball Room III

Simulation and Reality: The Big Picture and Challenges

Keynote Speaker: Prof. Tuncer Ören, University of Ottawa, Canada

KEYNOTE SPEAKER 2

Monday, 13:30-15:00

Room: Ball Room III

Bio-inspired and Nano-scale Molecular Communication: From Evolution to Evaluation

Keynote Speaker: Prof. Ozgur B. Akan, Middle East Technical University, Ankara, Turkey

KEYNOTE SPEAKER 3

Monday, 15:30-17:00

Room: Ball Room III

Trends in QoS Provisioning in Multimedia Satellite Networks

Keynote Speaker: Prof. Fatih Alagoz, Bogazici University, Istanbul, Turkey

TUESDAY, 14 JULY 2009

TRACK 1:

SESSION 1: HIGH PERFORMANCE COMPUTING: ARCHITECTURES AND ALGORITHMS

Tuesday, 8:30-10:00

Room: Topaz

Session Chair: Helena Karatza, Aristotle Univ., Greece

Tuesday, 14 July 2009 Cont'd

A High Level Development, Modeling and Simulation Methodology for Complex Multicore Network Processors

Gianni Antichi, Massimo Coppola, Andrea Di Pietro, Domenico Ficara, Stefano Giordano, Massimiliano Meneghin, Massimo Torquati, Marco Vanneschi and Fabio Vitucci

An Extensible Infrastructure for Benchmarking Multi-Core Processors based Systems

M. Hasan Jamal, Ghulam Mustafa, Abdul Waheed and Waqar Mahmood

Architecture Level Design Space Exploration Of Superscalar Processor For Multimedia Applications

Abdur Rahman Maud, Shahid Masud and Rehan Ahmed

Rapid Software Power Estimation of Embedded Pipelined Processor through Instruction Level Power Models

Shakeel Sultan and Shahid Masud



10:00-10:30, BREAK IN FOYER (LEVEL L2)



12:00-13:30, LUNCH BREAK



SESSION 2: REAL-TIME SYSTEMS AND APPLICATIONS

Tuesday, 13:30-15:00

Room: Topaz

Session Chair: Luca Caviglione, CNR – ISSIA, Italy

Framework for Performance Analysis of RTOS-Enabled Embedded Systems on FPGA

Ailia Gardezi, Muhammad Ahsan and Shahid Masud

Gang Scheduling in a Two-Cluster System with Critical Sporadic Jobs and Migrations

Zafeirios Papazachos and Helen Karatza

Tuesday, 14 July 2009 Cont'd

Earliest Starting and Finishing Time Duplication-Based Algorithm

Mahsa Hosseinzadeh and Hadi Shahriar Shahhosseini

Performance study of synthetic AER generation on CPUs for Real-Time Video based on Spikes

Manuel J. Domínguez-Morales, Pablo Iñigo-Blasco, Alejandro Linares-Barranco, Gabriel Jimenez, Anton Civit-Balcells and Jose L Sevillano



SESSION 3: APPLICATIONS AND CASE STUDIES I

Tuesday, 13:30-15:00

Room: Akik

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

A Versatile Generator of Instruction Set Simulators and Disassemblers

Tahiry Ratsimbahotra, Hugues Cassé and Pascal Sainrat

Assessing the Impact of a Modeling Tool and its Support for Verification and Validation

Jonathan Gibbs and Hessam Sarjoughian

Investigating Flash memory wear levelling and execution modes

Soraya Zertal and Peter Harrison

Speculative parallelization of multipath radiosity algorithm

Albert Trias, Joan Puiggalí, Francesc Castro, Teo Jove, Mateu Sbert and Jose L. Marzo



15:00-15:30, BREAK IN FOYER (LEVEL L2)



SESSION 4: APPLICATIONS AND CASE STUDIES II

Tuesday, 15:30-17:00

Room: Akik

Session Chair: Soraya Zertal, University of Versailles, France

Tuesday, 14 July 2009 Cont'd

Low Complexity EDAC Devices for Application in Random Access Memories On-Board the Algerian Satellite

Youcef Bentoutou

Networking Technique for Synchronous e-Learning Platforms

Juan C. Granda, Daniel F. García, Pelayo Nuño and Francisco J. Suárez

Teaching and Training of Network Protocols with DEVS-Suite

Ahmet Zengin and Hessam Sarjoughian

Performance Analysis of Multi-Carrier RFID Systems

Hsin-Chin Liu and Jhen-Peng Ciou



TRACK 2:

SESSION 5: WIRELESS NETWORKS I

Tuesday, 8:30-10:00

Room: Akik

Session Chair: Pawel Gburzynski, Univ. of Alberta, Canada

Energy Saving and Load Balancing in Wireless Ad Hoc Networks through Ant-based Routing

Florian De Rango and Mauro Tropea

Power Aware Decoding of a Scalable Video Bit-stream

Shakeel Sultan, Fakhar Ahsan, Ahmed Majeed and Nadeem Khan

Optimal Packet Size Estimation Using Pseudo Gradient Search Based on 2-Additive Measures

Puttipong Mahasukhon, Hamid Sharif, Michael Hempel, Ting Zhou and Wei Wang

Expected Path Length for Angle and Distance-based Localized Routing

Israat Tanzeena Haque, Ioanis Nikolaidis and Pawel Gburzynski



10:00-10:30, BREAK IN FOYER (LEVEL L2)



Tuesday, 14 July 2009 Cont'd

SESSION 6: WIRELESS NETWORKS II

Tuesday, 10:30-12:00

Room: Akik

Session Chair: Jose L. Marzo, Univ. of Girona, Spain

An Optimal Caching Technique in Wireless Ad hoc Network using Connected Dominating Set

Naveen Nahata, Namit Mishra, Tony Johri and Shashikala Tapaswi

Bandwidth Availability Aware Defragmentation based CAC for IEEE 802.16 Distributed Mesh Networks

Floriano De Rango and Andrea Malfitano

Formally Verified Authenticated Query Dissemination in Sensor Networks

Frank Werner and Zinaida Benenson

Map-Based Modeling and Design of Wireless Sensor Networks with OMNeT++

Piotr Szczytowski, Abdelmajid Khelil and Neeraj Suri



12:00-13:30, LUNCH BREAK



SESSION 7: WIRELESS NETWORKS III

Tuesday, 13:30-15:00

Room: Turkuaz

Session Chair: Jose L. Sevillano, Univ. of Sevilla, Spain

Interference-Aware Ad-hoc on Demand Distance Vector (IA-AODV) Protocol

Floriano De Rango, Fiore Veltri and Peppino Fazio

A New Sink Based Energy Efficient and Delay Sensitive MAC Protocol for Large scale WSNs

Samira Niafar and Hadishahriar Sakhoseini

An Energy-Efficient, and Secured Routing Protocol for Wireless Sensor Networks

Sudip Misra, Mohammad Obaidat, Sanchita Sanchita Roy and Debashish Debashish Mohanta

Tuesday, 14 July 2009 Cont'd

Energy Efficient OLSR Performance Evaluation Under Energy Aware Metrics
Floriano De Rango and Marco Fotino



15:00-15:30, BREAK IN FOYER (LEVEL L2)



SESSION 8: WIRELESS NETWORKS IV

Tuesday, 15:30-17:00

Room: Topaz

Session Chair: Jose L. Marzo, Univ. of Girona, Spain

A Stochastic Model for Beaconless IEEE 802.15.4 MAC Operation

Mukul Goyal, Dawn Rohm, Hossein Hosseini, Kishor Trivedi, August Divjak and Yusuf Bashir

Performance Evaluation of Overlaid WCDMA and TDMA Systems

Maan A. S. Al-Adwany and Amin M. Abbosh

Understanding Directional Load Balancing using Per Call Measurement Data

Anuradha Vaidyanathan, Wilfred Wong, Mark Billingham and Harsha Sirisena

Power-Efficient Reliable Routing Protocol to Increase Throughput in Ad hoc Networks

Shayesteh Tabatabaei

WEDNESDAY, 15 JULY 2009

TRACK 1:

SESSION 9: AI TECHNIQUES

Wednesday, 8:30-10:00

Room: Topaz

Session Chair: Shahid Masud, Lahore Univ. of Management Sciences, Pakistan

A Standard Expert System For Weapon Target Assignment Problem

Mehmet Alper Sahin and Kemal Leblebicioglu

Wednesday, 15 July 2009 Cont'd

An optimized algorithm for abstraction based routing in connection oriented networks

Ali Habiboghli

Developing Cognitive Radio Approach Based on Dynamic SNR to reduce Handoff Latency in Cellular Systems

Jamal Raiyn



10:00-10:30, BREAK IN FOYER (LEVEL L2)



SESSION 10: PHYSICAL LAYER

Wednesday, 10:30-12:00

Room: Akik

Session Chair: Pawel Gburzynski, Univ. of Alberta, Canada

Design Of A Ultra-Wideband Microstrip Conformal Antenna Array For Space Solar Power Satellite

Lotfi Merad

Equivalent Random Analysis of a Buffered Optical Switch with General Interarrival Times

Conor McArdle, Daniele Tafani and Liam P. Barry

Impairment-aware Based Routing and Wavelength Assignment for All-Optical Networks

Mariana Massimino Feres and Luis Carlos Trevelin



12:00-13:30, LUNCH BREAK



Wednesday, 15 July 2009 Cont'd

SESSION 11: WEB CACHING

Wednesday, 13:30-15:00

Room: Topaz

Session Chair: Jose L. Sevillano, Univ. of Sevilla, Spain

A Model Validation study of Hierarchical and Distributed Web Caching Model

Rachid El Abdouni Khayari, Adisa Musovic, Axel Lehmann and Michael Boehm

Comparison of Function Based Web Proxy Cache Replacement Strategies

Hala ElAarag and Sam Romano

Training of NNPCR-2: An Improved Neural Network Proxy Cache Replacement Strategy

Hala ElAarag and Sam Romano



15:00-15:30, BREAK IN FOYER (LEVEL L2)



SESSION 12: NETWORK SECURITY

Wednesday, 15:30-17:00

Room: Akik

Session Chair: Floriano De Rango, Univ. of Calabria, Italy

A Novel Method for Detecting Attacks Towards the SIP Protocol

Christian Callegari, Michele Pagano, Rosario G. Garroppo, Stefano Giordano and Franco Russo

A visualization tool for exploring multi-scale network traffic anomalies

Romain Fontugne, Toshio Hirotsu and Kensuke Fukuda

Analysis of Serial and Parallel Soft Input Decryption schemes over a Wireless Channel

Natasa Zivic and Obaidur Rehman

Joint IP Address and Public Key Certificate Trust Model for Mobile Ad Hoc Networks

Abdelhafid Abdelmalek, Abdelmalik Taleb-Ahmed, Mohammed Feham and Zohra Slimane

Wednesday, 15 July 2009 Cont'd

TRACK 2:

SESSION 13: QUALITY OF SERVICE I

Wednesday, 8:30-10:00

Room: Akik

Session Chair: Sami Habib, Kuwait Univ., Kuwait

Design and Performance Evaluation of a Content Distribution Overlay Optimized for Streaming

Luca Caviglione and Cristiano Cervellera

Design and Performance Evaluation of Service Overlay Networks Topologies

Davide Adami, Stefano Giordano, Gianfranco Nencioni, Christian Callegari and Michele Pagano

Location-based Restoration Mechanism for Multi-Domain GMPLS Networks

Anna Manolova, Eusebi Calle, Sarah Ruepp, Jose Marzo and Lars Dittmann

Performance evaluation for multistage interconnection networks servicing unicast and multicast traffic (by partial operation)

John Garofalakis and Eleftherios Stergiou



10:00-10:30, BREAK IN FOYER (LEVEL L2)



SESSION 14: QUALITY OF SERVICE II

Wednesday, 10:30-12:00

Room: Topaz

Session Chair: Eleftherios Stergiou, ATEI of EPIRUS, Greece

The Effect of Router Buffer Size on R-Bias in High-Speed variants of TCP

Aun Haider, Akihiro Nakao

Topology considerations for the performance enhancement of localized QoS routing algorithms

Abdulbaset Mohammad

Wednesday, 15 July 2009 Cont'd

Network Redesign through Clusters Consolidation

Sami Habib, Paulvanna Nayaki Marimuthu, and Nader Al-Awadi

Simulcast Transmission for Video Applications: Performance Evaluation with an Integrated Simulation Environment

Christos Bouras, Apostolos Gkamas and George Kioumourztis



12:00-13:30, LUNCH BREAK



SESSION 15: TRAFFIC MODELING AND POLICING

Wednesday, 13:30-15:00

Room: Akik

Session Chair: Anna Manolova, DTU Fotonik, Denmark

An empirical Evaluation of Short-period Prediction Performance

Mohamed Faten Zhani, Halima Elbiaze and Farouk Kamoun

On the Use of Compression Algorithms for the Classification of IP Flows

Davide Adami, Christian Callegari, Stefano Giordano, Michele Pagano and Franco Russo

Reconstructing arrival processes to G/D/1 queueing systems and tandem networks

Stephan Heckmüller and Bernd. E. Wolfinger

2009 SISO PROGRAM



MONDAY, 13 JULY 2009

Session 1: COMMAND AND CONTROL MODELING AND SIMULATION

Monday, 13:30-16:30

Room: Opal

Chair: Karen Roth, US Air Force Research Laboratory

- 1330 09E-SIW-002: Investigating Interoperability between JC3IEDM and HLA
Mr Herman le Roux, Mr Dirk Uys
- 1400 09E-SIW-007: An Overview of the C2 Wind Tunnel
Ms Karen Roth, Mrs Shelby Barrett
- 1430 09E-SIW-025: Integration of Simulations, Battle Command, and Technology
Dr J Mark Pullen, Dr. Stanley Levine



15:00-15:30, BREAK IN FOYER (LEVEL L2)



- 1530 09E-SIW-003: Adding Reports to Coalition Battle Management Language for NATO MSG-048
Dr J Mark Pullen, Douglas Corner, Ole Martin Mevassvik, Anders Alstad, Nicolas Cordonnier, Mohamed Menane, Dr Ulrich Schade, Dr Miloslaw Frey, Lionel Khimeche, Nico de Reus, Paul de Krom, Nanne LeGrand, Adam Brook
- 1600 09E-SIW-021: Automated Force Management Language
Marc St-Onge, Dr Fawzi Hassaine
- 1600 Questions and discussion

TUESDAY, 14 JULY 2009

Session 2: SYSTEM MODELING AND SIMULATION

Tuesday, 8:30-10:00

Room: Opal

Chair: Priscilla Elfrey, NASA Kennedy Space Center

0830 09E-SIW-009 : Aerial Refueling in a Real-Time Distributed Simulation Environment

Dr Peter Ryan, Will Oliver, Frank Hill

0900 09E-SIW-012: On Semantic Interoperability for International Space Programmes

Alexander Vankov, Luis Arguello, Joachim Fuchs, Petr Shlyaeu, Anton Skuratovskiy

0930 09E-SIW-028: ASNET : Ship Synthesis Model (COMBINED PRESENTATION)

Ing Francesco Perra

09E-SIW-029: ASNET: The Operational Evaluation Model

Ing. Aldo Guagnano



10:00-10:30, BREAK IN FOYER (LEVEL L2)



Session 3: DISTRIBUTED SIMULATION PROCESSING TECHNIQUES

Tuesday, 10:30-16:30

Room: Opal

Chair: Michael Conroy, NASA Kennedy Space Center

1030 09E-SIW-010: Missionland, a multinational co-operation program to construct and share a generic mission simulation environment

Arjan Lemmers, Arno Gerretsen, Frido Kuijper, Marcel Kleijhorst

1100 09E-SIW-016: Design and Implementation of Hierarchical RTI (HRTI)

Mr JungHyun Ahn, Mr TagGon Kim

Tuesday, 14 July 2009 Cont'd

1130 09E-SIW-017: Design and Implementation of Surrogate for Interoperation of HLA Federations
Mr TagGon Kim, Mr MinWook Yoo



12:00-13:30, LUNCH BREAK



1330 09E-SIW-005 HLA RTI Performance Evaluation
Mr Herman le Roux, Linda Malinga

1400 09E-SIW-020 KAMA: A Tool for Developing Conceptual Models For C4ISR Simulations
Utkan Eryilmaz, Alpay Karagoz

1430 09E-SIW-008 Advantages of a Generic Model Execution Framework in Simulation Systems
Abdulkadir Can, Murat Atun, Dr. H.Orkun Zorba



15:00-15:30, BREAK IN FOYER (LEVEL L2)



1530 09E-SIW-033 Environment Representation and Hurricane Simulation for CWID
Dr Naim Alper, Dr John Holdzkom, Mr Steven Lowe, Mr Mark Webb

1600 Questions and discussion

WEDNESDAY, 15 JULY 2009

Session 4: COMMAND AND CONTROL SIMULATION AND TRAINING

Wednesday, 8:30-10:00

Room: Opal

Chairs: Karen Roth, US Air Force Research Laboratory

Orris Hambleton, US Air Force Headquarters

- 0830 09E-SIW-004: Developing Link-16 Interoperability for the Royal Australian Air Force, Air Defence Ground Environment Simulator in a Joint and Coalition LVC Environment
Dr. Lucien Zalcmán, Mr. Jon Blacklock
- 0900 09E-SIW-013: Core Technical Framework Study: An Overview
Jan Tegnér, Dr Robert Suzic, Dr Qi Huang, Dr Choong-Ho Yi
- 0930 09E-SIW-014: Core Technical Framework Study: A Service Framework for Distributed Simulations in Net-Centric Environments
Dr Robert Suzic, Per M. Gustavsson, Dr Qi Huang, Jan Tegnér, Dr Choong-Ho Yi



10:00-10:30, BREAK IN FOYER (LEVEL L2)



Session 5: CRISIS MANAGEMENT SIMULATION AND TRAINING

Wednesday, 10:30-15:00

Room: Opal

Chair: Orris Hambleton, US Air Force Headquarters

- 1100 09E-SIW-018 Simulation and Visualization Applications for Security Analysis of Infrastructure Facilities
Dr Panagiotis Scarlatos
- 1130 09E-SIW-019 DIESIS - An Interoperable European Federated Simulation Network for Critical Infrastructures
Sandro Bologna, Erich Rome, Erol Gelenbe, Eric Luijff, Vincenzo Masucci

Wednesday, 15 July 2009 Cont'd



12:00-13:30, LUNCH BREAK



1330 09E-SIW-023 Modeling the Relationships Between Hospital Surge Capacity and Dynamic Traffic Conditions

James Coolahan, Ph.D., Evangelos Kaisar, Ph.D., Katherine Morse, Ph.D.

1400 Questions and discussion



15:00-15:30, BREAK IN FOYER (LEVEL L2)



2009 M&SNET-MISS PROGRAM



WEDNESDAY, 15 JULY 2009

M&SNet-MISS Joint Directors Meeting
Wednesday, 13:30-15:00
Room: Safir



15:00-15:30, BREAK IN FOYER (LEVEL L2)



M&SNet-MISS Joint Directors Meeting
Wednesday, 15:30-17:30
Room: Safir