



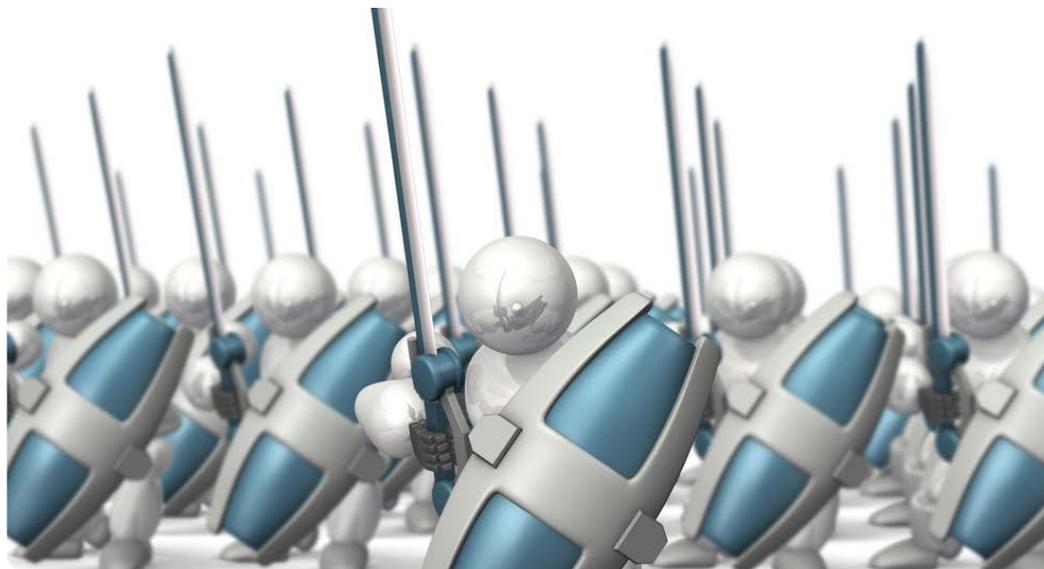
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News and Development in M&S

DIGITAL ENEMIES TEST CLB-6 MARINES BEFORE DEPLOYMENT

Digital ghosts stalked the platoon of Marines as their six-vehicle convoy braved a landscape of artificial dunes and improvised explosive devices. The troops knew any number of threats could appear in an instant as the machine gunners scanned the horizon ... and waited. The simulator utilizes a 360-degree video screen to recreate nearly any training environment for service members who visit the facility prior to deployment.

The simulator marks the beginning for the battalion's service members, who recently embarked on more than a month of training exercises meant to hone their abilities prior to deploying.

The next step for the Marines of Engineer Company will be to take their operations into the barren, rocky terrain surrounding the Twenty-nine Palms training area -- where role play combines with some of the largest live-fire exercises on the planet.

Read more at: <http://dvidshub.net/r/o23vhz>

-This news item is contributed by LuAnn Greene.

3-D MODEL SHOWS BRAIN IN FINER DETAIL

A group of international researchers announced Thursday, June 20, 2013, that they have created a three-dimensional model of the human brain in unprecedented resolution. It's called BigBrain.

"BigBrain is the first ever brain model in 3-D, which really presents a realistic human brain with all the cells and all the structures of a human brain," said Karl Zilles, senior professor of the Julich Aachen Research Alliance, in a press briefing. The research is being published in the journal Science.

This model is akin to a scaffold into which information about the living brain can be inserted. It's a reference to provide framework for research in many directions, such as how the brain is organized.

Read more at: http://thechart.blogs.cnn.com/2013/06/20/3-d-model-shows-brain-in-finer-detail/?hpt=he_c2

-This news item is contributed by Yu Zhang.

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Upcoming Conferences



2014 POWERPLANT SIMULATION CONFERENCE

Astor Crowne Plaza, New Orleans, LA, USA
January 20 - 23, 2014

The 2014 Power Plant Simulation Conference (PowerPlantSim'14) is an annual conference sponsored by The Society for Modeling and Simulation International. This conference focuses on the special needs of the nuclear and fossil power plant simulation community and includes presentations by technology and industry leaders, technical sessions, panel and roundtable discussions, and vendor exhibits. The primary goal of the conference is to promote open exchange of simulator related information between all attendees.

Who should attend?

All individuals associated with the maintenance, management, regulation, or application of nuclear and fossil power plant simulators are encouraged to participate by submitting original presentations.

Topics of interest include but are not limited to:

- Next Generation Simulators
- Post Fukushima Extended Blackout Modeling
- Severe Accident Simulation
- Simulator Knowledge Retention
- Advanced Fuel Pool Modeling
- Fleet Coordination – Does it Work?
- Recent Simulator Projects
- Thermal-Hydraulics
- Post Event Testing
- Virtual Simulation
- Control of Virtual Simulation Technologies
- Smart Grid and Cyber Security Impacts
- ANSI/ISA 77.20 Fossil Functional Requirement Strategies
- Workforce Development, Re-staffing, and Knowledge Transfer/Retention

Please submit your suggested presentation title directly to the track chairs below:

Fossil Track

Chair: William H. Talbot, Ameren

PPFossil@scs.org

Nuclear Track

Chair: Scott Cupp, Entergy, Arkansas
 (479) 858-6858

PPNuclear@scs.org

2014 SPRING SIMULATION MULTI-CONFERENCE

Grand Hyatt Tampa Bay, Tampa, FL, USA

April 13 - 16, 2014

The Spring Simulation Multi-Conference 2014 (SpringSim'14) brings leading experts in various domains of Modeling and Simulation together.

The following symposia are organized under SpringSim'14:

- Annual Simulation Symposium (ANSS)
- Symposium on Theory of Modeling and Simulation (TMS/DEVS)
- Agent-Directed Simulation (ADS)
- Communications and Networking Symposium (CNS)
- High Performance Computing Symposia (HPC)
- Symposium on Simulation for Architecture and Urban Design (SimAUD)
- Posters session and Student Colloquium

Important Dates

- **Abstract Submission:** September 13, 2013
- **Paper Submission:** October 25, 2013
- **Notification:** December 6, 2013
- **Ready-Camera Paper Due:** January 6, 2014

Read more: <http://www.scs.org/springsim>

-This news item is contributed by Navonil Mustafee.

PADAMS - THE 1ST WORKSHOP ON PARALLEL AND DISTRIBUTED AGENT-BASED SIMULATIONS

Aachen, Germany | Aug. 26th – Aug. 30th, 2013

Agent-Based Simulation Models are an increasingly popular tool for research and management in many fields such as ecology, economics, sociology, etc.

In some fields, such as social sciences, these models are seen as a key instrument to the generative approach, essential for understanding complex social phenomena. But also in policy-making, biology, military simulations, control of mobile robots and economics, the relevance and effectiveness of Agent-Based Simulation Models is recently recognized.

Computer science community has responded to the need for platforms that can help the development and testing of new models in each specific field by providing tools, libraries and frameworks that speed up and make massive simulations.

(Upcoming conferences continued on Page 3)

The key objective of this workshop is to bring together the researchers that are interested in getting more performances from their simulations, by using:

- synchronized, many-core simulations (e.g., GPUs),
- strongly coupled, parallel simulations (e.g. MPI)
- loosely coupled, distributed simulations (distributed heterogeneous setting).

The workshop will be held on August 26th 2013 as a satellite workshop of 19th International European Conference on Parallel and Distributed Computing (Euro-Par 2013).

-This news item is contributed by Yu Zhang.

Book Review



DEVS Net-Centric System of Systems Engineering with DEVS Unified Process, by Saurabh

Mittal and José L. Risco-Martín: CRC Press; 1 edition (January 15, 2013). 712 pages

By Bernard P. Zeigler, Ph. D. Fellow SCS

This book is an ambitious, and successful, attempt to present a unified framework from which all practitioners of modeling and simulation would greatly profit. At over 700 pages, it exploits the available space to build the framework from basics in a step by step fashion, taking the time to cover the material at a pace that serves the needs of both novices and advanced readers. To cover the basics, the authors introduce Systems Modeling and Simulation (M&S) first in general, then in tandem with an introduction to Discrete Event Systems Specification (DEVS). They then review the DEVS Formalism and some variants, the DEVS Software Model and Simulator, and a DEVS Modeling Language, DEVSMML. The latter is a domain specific language (DSL) for the DEVS formalism and is simpler to understand than a full scale DEVS simulation language. DEVSMML is made executable through a transparent M&S layered architecture called the DEVSMML 2.0 stack which serves as a concrete vehicle to insert into the Model Driven Development (MDD) framework that is discussed later.

The basics end with a first exposition of the DEVS Unified Process (DUNIP) and the DEVSMML 2.0 stack, the core

of the book's offering to the M&S literature. DUNIP takes its cue from the Rational Unified Process (RUP) associated with software development. Accordingly, it combines Model-Driven Engineering in which the model becomes the actual software, with the DEVS based integrated approach to M&S development and testing. This provides a framework that supports wide applicability to complex dynamical systems and netcentric Systems of Systems. Thus, the next part on M&S-Based Systems Engineering covers Model-Driven Engineering in depth with its concepts of metamodeling and domain specific languages and related formalisms such as Unified Modeling Language (UML), System Entity Structure (SES) and Contingency Based Systems. As an illustrative application, this part concludes with a review of the original Department of Defense Architecture Framework (DODAF 1.0) and M&S-Based Testing.

The next part goes into depth on Netcentric System of Systems with discussion of the DEVS simulation protocol, DEVS Service-oriented and Event-Driven Architectures and their deployment in Netcentric Environments. It also highlights the ease of deployment through a netcentric DEVS Virtual Machine (DEVSMML) that facilitates integration and execution of DEVS models both locally and in a distributed netcentric environment. With all the above mentioned concepts as background, the book then revisits the latest Department of Defense Architecture Framework (DODAF 2.0) to discuss its strengths, limitations and how DoDAF's metamodeling approach now allows the development of DEVS-based executable architectures. To ground the concepts and theory in reality, several defense-related case studies are then discussed including modeling Joint Close Air Support, path planning for Multiple Unmanned Aerial Vehicles in Realistic Scenarios, and Generic Network Systems Capable of Planned Expansion.

The crowning achievement of the book is now at hand where the last is saved for the best. The goal of the chapter on Executable UML is to strongly integrate UML into DUNIP by providing the here-to-fore missing capability to execute UML specifications early on in their development. This is done by using the DEVS formalism and metamodeling concepts introduced earlier supported by the DEVS simulation protocol and the DEVSMML 2.0 stack. An end-to-end example follows with an application to implementation of Business Process Modeling Notation (BPMN). As Next Steps, the challenge of Netcentric Complex Adaptive Systems is formulated in terms of the DUNIP process. This paves the way towards a formal approach to improved understanding of complex systems adapting within netcentric environments.

News from SCS Networks



SCS MEMBERSHIP UPDATE

During the last SCS Board meeting, some new SCS membership regulations were accepted. For most current SCS members, nothing will change, but we hope to break some new ground.

Only very few members choose the option of a premier membership, which included printed versions of the SCS Journals. We therefore decided to drop this type of membership, as everybody can sign up for printed versions of the journals anyhow. The new individual membership categories are:

- Student Membership
- Retiree Membership
- Regular Membership
- Professional Membership

Current membership services and associated fees are listed at <http://scs.org/membership>, where you can also download application forms. Did you know that supported SCS activities generally require membership? This includes support of SCS Student Chapters, and we want to integrate our students much more into SCS endeavors, but the Vice President for Education is going to work this out in a future update in this SCS Newsletter.

More interesting is our new approach to corporate membership. SCS is offering now Silver, Gold, and Platinum Memberships that are also explained in details on the SCS membership website. We hope to raise interest in this offer for cooperation with M&S companies on all levels, from small businesses to international companies. Of particular interest is the creating of a job market for SCS members as well as

hosting of special events during SCS conferences.

Did you know that you can apply for Senior SCS Membership after having been an SCS member in good standing for at least five years? Not many members take advantage of this opportunity, so if you are an SCS member for five years or longer, let us know that you are interested to become a senior member of SCS.

I encourage every SCS member to become an active recruiter for our society. SCS has a long and rich history and an even brighter future. We are the only society that addresses M&S as a discipline, but always addressing the practical application aspects of M&S as well. All this happens in support of the SCS, which also have been accepted during the recent Board meeting. The SCS mission is fivefold:

- To promote modeling and simulation as a discipline and a profession
- To contribute to the development of its theoretic foundations
- To foster its application in new areas through research and education
- To provide a forum to publish, present, and discuss new results, developments, applications, and lessons learned
- To provide a forum enabling the exchange between and mutual support of industry, government, and academia

-This news item is contributed by Andreas Tolk, SCS Vice President of Membership.