



MODSIM WorldTM Conference and Expo

Enable Decision-Making in a Rapidly Changing World with Modeling & Simulation

At the Premiere International Conference and Exposition for the transfer of modeling and simulation knowledge, research and the latest technologies

September 10 - 13, 2007

Hampton Roads,
Virginia
USA

■ ENGAGE

...with world M&S leaders from industry, government and academia.

■ DISCOVER

...how emerging M&S technology trends can be applied to solve organizational decision-making problems.

■ LEARN

...how to apply M&S technology to your specific organizational needs and transfer M&S knowledge to your employees.

Virginia Beach Conference Center
www.modsimworld.com

Track 1

Medical

Track 2

Transportation

Track 3

Homeland Security/
Defense

Track 4

Education

Cross Cutting Track

Game Based Technology

Interoperability

SYNTHESIS: Conference participants will gain an understanding of how modeling and simulation can be used as a tool to enable more effective organizational decision-making as well as provide solutions to complex technology problems.

CHARTER PARTICIPANTS:



HAMPTON ROADS
TECHNOLOGY COUNCIL



NORTHROP GRUMMAN



Other Key Participants include:

United States Joint Forces Command (JFCOM) and North Atlantic Treaty Organization (NATO)/Allied Command Transformation (ACT)

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Vision

MODSIM WORLD is the premier international conference and exposition for collaboration and transfer of modeling & simulation knowledge, new research, development and applied technology across all public and private sectors to support and enhance leadership and management decision-making.

Mission

- Promote the initiation, development and research of modeling and simulation among all organizations internationally
- Share the newest innovative ideas, latest technical expertise, knowledge, applications and capabilities of simulation technology by academia, industry and government
- Promote cooperation among academia, industry and government applying M&S technologies to help organizations anticipate and prepare for the future
- Improve M&S technology to reduce its implementation cost by academia, industry and government
- Support planning, decision-making and real time operations management with state-of-the-art computer software and development expertise utilizing modeling and simulation
- Foster the transfer of leading edge simulation technology and knowledge between military community to the medical, transportation, homeland security and other applicable communities

Experience How M&S Tools...

- Provide The Platform For Collaboration
- Helps Prepare For The Future
- Breaks Down Communication Barriers
- Opens Up Future Possibilities

...for all of your team!

Track 1: Medical

Within the last 10 years, simulation technology has been implemented successfully in training that addresses a variety of procedures across medical and health professions specialties, including resuscitation, laparoscopic surgery, and vascular access. To date, however, almost all of the simulator systems currently available target medical students and junior residents in the early years of their training. There is a critical need for systems aimed at more advanced residents and at practicing medical and health professionals who have mastered the fundamentals of specific procedures and now must learn the problem solving and decision-making skills needed to become more effective clinicians and more effective members of interdisciplinary teams. Training in medical and health decision making under stress is particularly important for those whose professional practice does or will involve working in emergency situations, stressful environments, and combat. Simulation is a standard component of officer training in the military, but does not yet exist for advanced medical professionals, whether civilian or military. The goal of this portion of MODSIM is to assemble leading experts in simulation-based training for advanced cognitive skills and for contextual training and to engage them in dialogue with leading medical and health educators about current needs and future directions for the pervasive incorporation of medical modeling and simulation into medical and health professions training.

Track 2: Transportation

Modeling and simulation (M&S) tools and visualization technologies enable improved designs and operations for land, air and sea transportation systems. Analytical tools support predictions of complex transportation system performance. When combined with advanced information displays, and decision support tools, these M&S technologies can be used to test and improve the safety of transportation systems operations and provide aid to decision makers in business development, local and state planning activities, and emergency management and homeland defense. For example, from M&S studies, the nation's Next Generation Air Transportation System (NGATS) is emerging. The goal is to increase flexibility in scheduling travel and shipments, increase security, increase access to flights and reduce time and cost spent traveling to and from airports. Sophisticated ground-based simulations provide realistic environments that allow multiple human pilots and air traffic controllers to engage under a variety of conditions to test new technologies and NGATS operations strategies. These simulations greatly reduce the cost and risk of testing and, because they enable a large number of scenarios to be evaluated, increase the reliability and safety of the final system design. Transportation systems models may also be coupled to enable the security and cost of multimodal transportation operations to be assessed. In addition, derivative simulations may be used for other applications including training and decision support for business development, local and state planning for ports, roads, and airports, and emergency response.

Track 3: Homeland Security/Defense

The Homeland Security/Defense track will address how applications of command and management processes/tools are used in support of planning, experimentation, and training to effectively coordinate resources and address catastrophic events, including natural disasters and acts of terrorism. Significant detail and complexity are built into model databases exploring the effects of strategic decisions that enabling senior decision-makers to identify and address gaps in plans and processes. Advanced models and simulations can work through a variety of disaster scenarios to support national, state and local governments and agencies ensuring that consequences are better understood in advance of a disaster. Understanding flooding effects, wind damage, impact on traffic patterns etc. allows allocation/reallocation of resources and enhances our ability to respond to disaster scenarios and acts of terrorism.

Track 4: Education

Computer modeling and simulation (M&S) can accelerate learning and problem solving. Scientists and engineers develop complex models and simulations to enable more rapid understanding of physical phenomenon and to predict and test performance of new technologies and systems. Simulations are also used to decrease the time required to train people to operate equipment and systems, and to learn how to respond to manmade and natural disasters. Similarly, M&S technologies applied to the K-16 classroom can accelerate learning. Virtual laboratories, worlds, and other highly immersive game-based environments can provide opportunities for students to learn through trial and error. This more experiential learning has been demonstrated to increase a students' self efficacy over video or lecture formats alone and may provide an advantage in teaching science, technology, engineering, and math (STEM) subjects to students who struggle with the symbolic learning of the classic text and lecture formats. In addition, video games are familiar to students and the interface is well suited to introduce concepts of modeling and simulation early on.

Cross Cutting

In addition to the four core areas of concentration (Transportation, DoD/HLS, Medical and Education), MODSIM will explore some of the conceptual and technological threads that run between these various disciplines. Our cross cutting sessions will focus on the exciting worlds of both Game Based Technology and Interoperability. By exploring these topics we will begin opening the door to revolutionary new solutions.