



# MSIAC M&S Newsletter

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The Modeling and Simulation Information Analysis Center (MSIAC) M&S Newsletter is now available as an automatic service.

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If you would like to submit an article to be highlighted in the *MSIAC M&S Newsletter*, please forward the article (along with its source data and URL, if available) to the MSIAC Help Desk no later than 15 workdays prior to the publication of the next Newsletter. Normally, the Newsletter is published on/about the first of each month. Potential articles as well as questions or comments on the Newsletter can be emailed to [msiachelpdesk@msiac.dmsi.mil](mailto:msiachelpdesk@msiac.dmsi.mil).

The MSIAC also publishes the quarterly *MSIAC Journal On-line*. If you would like to see the current issue of the *MSIAC Journal On-line* visit: <http://www.msiac.dmsi.mil/journal>. If you would like to submit an article for the Journal On-line, please email your paper or article to [msiachelpdesk@msiac.dmsi.mil](mailto:msiachelpdesk@msiac.dmsi.mil) at least 45 days prior to the next publication date.

## UPCOMING EVENTS

25-27 September 2006  
[Systems Engineering and Test & Evaluation Conference \(SETE\)](#)  
Melbourne, Australia

26-29 September 2006  
[11th International Command and Control Research and Technology Symposium \(CCRTS\)](#)  
Cambridge, UK

23-30 October 2006  
[9th Annual Systems Engineering \(SE\) Conference](#)  
San Diego, CA

24-26 October 2006  
[MSIAC M&S University Modeling and Simulation Staff Officer Course \(MSSOC\)](#)  
Scott AFB, IL

30 October- 2 November 2006  
[Annual ITEA International Symposium](#)  
Lake Buena Vista, FL

30-31 October 2006  
[Serious Games Summit 2006 \(SGS DC\)](#)  
Washington, DC

## FLASH! FLASH!

The Department of Defense Acquisition Modeling and Simulation Master Plan is available for download. The purpose of the document "is to provide an action plan to improve M&S support to DoD acquisition for defining, developing, testing, producing, and sustaining capabilities. Twenty-seven actions are identified to achieve that intent." To download the Master Plan visit: [http://www.acq.osd.mil/se/publications/AMS\\_MP\\_041706\\_%20FINAL2.pdf](http://www.acq.osd.mil/se/publications/AMS_MP_041706_%20FINAL2.pdf)

## ANNUAL ITEA INTERNATIONAL SYMPOSIUM 30 October – 2 November 2006

Test and Evaluation (T&E) is in a state of change. The future for T&E will be markedly different from that of today. Yesterday's methods, practices and infrastructure will no longer be capable of meeting tomorrow's T&E needs shaped by defense transformation, the global struggle against violent extremism, joint operations,

new systems, emerging dependence on systems-of-systems and a focus on counters to irregular, disruptive and catastrophic threats. This occurs in an era of constrained budgets, and by necessity, cross-agency partnerships. If today's technology and emerging operational concepts are the engines for tomorrow's defense capabilities, what are the challenges and implications for T&E?

Symposium 2006 will provide a forum to examine influences, drivers, issues, and challenges that will confront the future T&E community, and to understand how the community must respond to ensure the right capabilities are in place. We will provide this examination and understanding from multiple perspectives; defense, federal civil, and private sector. To accommodate the breadth of interests, Symposium 2006 will address the challenges from four dimensions:

- *Future Systems T&E: What is different? What are the issues?*
- *Future T&E Capabilities: What is needed and why?*
- *Capabilities-Based Acquisitions and Other Initiatives: What do they mean for T&E?*
- *Future Perspectives From Past Experiences: What was right, wrong and due for change?*

Panel discussions in concert with technical sessions will enable articulation of perspectives and experiences from senior executives as well as T&E practitioners and system users. For more information visit: <http://www.msiac.dmsi.mil/mscalendar/month.php?cid=&catid=&m=10&y=2006>

### **AUSTRALIAN ARMY RECEIVES STATE OF THE ART SIMULATION SYSTEMS FOR THE NEW ABRAMS M1A1 AIM**

(22 August 2006) -The Minister Assisting the Minister of Defence, the Hon Bruce Billson MP, opened the new ABRAMS M1A1 AIM Tank Driver Trainer and Relocatable Advanced Gunnery Trainer System, at the School of Armour in Puckapunyal, Victoria.

Mr. Billson said that the new systems represent the state of the art in armoured vehicle simulation systems and will be commissioned prior to the arrival of the first ABRAMS M1A1 AIM tank into Australia. "These new systems will allow armoured crews and their instructors to be well prepared for the new vehicle."

"Both the driver and gunnery trainers will allow for an increase in the quality of training whilst at the same time lowering operating costs of the tank fleet and reducing environmental impacts," said Mr. Billson. The systems potentially offer a two-thirds reduction in the ammunition and kilometres needed to qualify crew on the M1 AIM ABRAMS.

The driver training system is a full motion trainer that allows for a wide variety of terrain and weather conditions to be negotiated without leaving a classroom environment. The system also enables other students to monitor the progress of the driver under training and the instructor can inject system failures for the driver to respond to, with no risk to vehicles or personnel.

The gunnery training system will enable rigorous monitoring and analysis of the training and performance of tank gunners and crew commanders. Use of the gunnery simulator offers the potential for significant savings in ammunition expenditure and a lowering of impact on the environment. Full recording and scoring of the crew's performance occurs and there is zero ammunition cost if crews require further training.

Close cooperation between Army and DMO (Defence Modeling Office) has lead to these systems being delivered ahead of schedule and within budget. For original article visit: [http://www.asd-network.com/press\\_detail/9073/Army\\_Receives\\_State\\_of\\_the\\_Art\\_Simulation\\_Systems\\_for\\_the\\_New\\_Abrams\\_M1A1\\_AIM\\_Tank.htm](http://www.asd-network.com/press_detail/9073/Army_Receives_State_of_the_Art_Simulation_Systems_for_the_New_Abrams_M1A1_AIM_Tank.htm)

## **NAVY'S VIRTUAL TRAINING EXERCISES EXPANDING IN REALISM AND SCOPE**

(NAVAL STATION NORFOLK, Va). - Inside the darkened combat information center aboard the USS Anzio, sailors wearing headsets scrutinize console screens, tracking aircraft flying in the area. Earlier, the watch team fired off Tomahawk missiles, one of many missions during an operation to stabilize a post-war region.

While on-board instruments indicate the guided missile cruiser is steaming off the coast of a landmass resembling the southeastern United States, in reality, the ship is tied to the pier in its homeport here and participating in "Operation Brimstone," one of the largest simulations ever attempted.

The Navy's use of modeling and simulation-based training has increased during the past several years, in part because of the improvement in computer technologies that can simulate complex scenarios, and in part because of better network capabilities that can connect numerous communications and battle systems.

"The technical architecture has allowed us to provide high-fidelity, challenging training across the full spectrum of strike group operations," says Capt. William Kovach, interim executive officer for the Navy's Tactical Training Group Atlantic, a command that prepares carrier and expeditionary strike groups for deployment on the East Coast. A similar command exists on the West Coast.

Major fleet training exercises, such as Operation Brimstone, now encompass multiple strike groups in varying stages of readiness and coalition forces, whose crews participate from aboard their vessels or ashore in mock control centers. Other services increasingly provide joint play — with airmen, Marines and soldiers carrying out missions from simulators on their respective bases. For complete article from National Defense Magazine visit:

<http://www.nationaldefensemagazine.org/issues/2006/September/NavyVirtual.htm>

## **WEATHER FORECAST ACCURACY GETS BOOST WITH NEW COMPUTER MODEL**

An advanced forecasting model that predicts several types of extreme weather with substantially improved accuracy has been adopted for day-to-day operational use by civilian and military weather forecasters. The new computer model was created through a partnership that includes the National Oceanic and Atmospheric Administration (NOAA), the National Center for Atmospheric Research (NCAR), and more than 150 other organizations and universities in the United States and abroad.

The high-resolution Weather Research and Forecasting model (WRF) is the first model to serve as both the backbone of the nation's public weather forecasts and a tool for cutting-edge weather research. Because the model fulfills both functions, it is easier for research findings to be translated into improved operational models, leading to better forecasts.

The model was adopted for use by NOAA's National Weather Service (NWS) as the primary model for its one-to-three-day U.S. forecasts and as a key part of the NWS's ensemble modeling system for short-range forecasts. The U.S. Air Force Weather Agency (AFWA) also has used WRF for several areas of operations around the world.

"The Weather Research and Forecasting model development project is the first time researchers and operational scientists have come together to collaborate on a weather modeling project of this magnitude," says Louis Uccellini, director of NOAA's National Centers for Environmental Prediction.

By late 2007, the new model will shape forecasts that serve more than a third of the world's population. It is being adopted by the national weather agencies of Taiwan, South Korea, China, and India.

"WRF is becoming the world's most popular model for weather prediction because it serves forecasters as well as researchers," says NCAR director Tim Killeen.

Tests over the last year at NOAA and AFWA have shown that the new model offers multiple benefits over its predecessor models. For complete article visit:

<http://www.sciencedaily.com/releases/2006/08/060825132313.htm>

## **COMMON DIVIDE**

*If the ultimate goal of visual systems is a common database, why is each U.S. service pursuing its own?*

Visuals simulation has become transfixed with the promise of a single world database that all users can access and that doesn't duplicate efforts. A wonderful asset, this common database would save resources and shorten the time it takes for users to grab the terrain or model needed for a specific training or mission rehearsal requirement. Everyone agrees it makes a lot of sense.

But what makes less sense, at least on the surface, is that each of the U.S. services is building its own common database, and so far there seems to be no obvious answer to the question of whether each of these databases can be correlated.

The concept of a world database is that it would provide a common foundation onto which high-resolution, detailed pieces — from newly developed areas or updated regions — are inserted as they become available. Such a database would no longer have to be reinvented for each new requirement; it would be constantly updated and users could take what they needed. It would be able to support computer-generated forces, sensor and radar simulations, and computer models of platforms such as aircraft, tanks and ships.

What's not yet clear is how this central database would be managed, who would be responsible for its upkeep and how its contents would be distributed.

At the IMAGE 06 conference in Scottsdale, Ariz., in July, common database creation was a hot topic of discussion, although there were more questions than answers. Keynote speaker Mike Mulvenon, business development manager at FlightSafety International, noted some of the challenges.

"Multi-datasets, multiple image resolutions, and different types and formats of imagery must be accommodated," he said.

"Classifications and metadata must be integrated. Formats will need a level of standardization without compromising quality or content. Terabytes of data need to be stored and instantly retrieved, and millions of small files or several very large files must be distributed. The publishing, packaging and distribution schema for future databases will become increasingly important."

This daunting list, Mulvenon concluded, provides only one certainty: "If the future world database is to become all things to all people, careful planning must be considered."

What is clear is a whole new set of visuals industry acronyms have been born. Among the common databases being built or planned are NavAir's Navy Aviation Simulation Master Plan Portable Source Initiative, or NPSI; the Army's Synthetic Environment Core, or SE Core; the Air Force's Training System Product Group common dataset standard; and the U.S. Special Operations Command's Common DataBase, or CDB.

Realizing there were so many common database efforts prompted one conference delegate, a representative of the National Geospatial-Intelligence Agency, to note cynically that "listening to all of the different plans, I started to get a little concerned, but then I'm an optimist and I realized that this provides increased job security."

NGA would like to see the world database built on its high-resolution satellite imagery.

The main driving factor behind creating a common database is economics, both in dollar and people terms. Mike Sieverding of Dynamic Animation Systems spelled out the issue.

"We have been building overlapping and duplicative databases over and over since the '70s. With the advent of digital [image generators], the same dirt keeps getting built, but with new costs," he said.

Two programs can have identical data set requirements, but without a standard database that uses common, accessible

formats, the database designers for each program must build separate databases that will not correlate or interoperate.

For complete article from Training and Simulation Journal (TS&J) Online visit:  
<http://www.tsjonline.com/story.php?F=1974412>

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