



MSIAC M&S Newsletter

March 2006

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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.

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 at least 45 days prior to the next publication date.

UPCOMING EVENTS

27-30 March 2006
[Gun & Missile Systems Conference & Exhibition](#)
Sacramento, CA

27-30 March 2006
[Joint Undersea Warfare Technology Spring Conference](#)
San Diego, CA

2-6 April 2006
[Spring Simulation Multiconference \(SpringSim\) 2006](#)
Huntsville, AL

2-6 April 2006
[Military Modeling and Simulation Symposium](#)
Huntsville, AL

2-7 April 2006
[Spring Simulation Interoperability Workshop \(SIW\) / \(SpringSim06\)](#)
Huntsville, AL

3-7 April 2006
[U.S. Army OTC Analytic Simulation and Instrumentation Suite \(OASIS\) Conference](#)
Fort Huachuca, AZ

3-5 April 2006
[DTIC 2006](#)
Alexandria, VA

4-5 April 2006
[USJFCOM Industry Symposium and Exhibition](#)
Hampton, VA

4-6 April 2006
[MORS Capabilities-Based Planning II](#)
McLean, VA

4-6 April 2006
[Sea-Air-Space Exposition](#)
Washington, D.C.

11-13 April 2006
[Modeling and Simulation Staff Officer Course \(MSSOC\)](#)
Wright-Patterson, AFB, OH

17-21 April 2006
[Defense & Security Symposium 2006](#)
Kissimmee, FL

18-21 April 2006
[7th Annual NDIA Science & Technology Conference & DoD Tech Expo](#)
Lake Buena Vista, FL

27-28 April 2006
[US-ROK Defense Modeling & Simulation Workshop](#)
Seoul, Korea

1-5 May 2006
[DoD Modeling and Simulation Conference](#)
Baltimore, MD

**SPRING SIMULATION
MULTICONFERENCE (SPRINGSIM) 2006**

April 2-6, 2006, Von Braun Convention Center, Huntsville, Alabama

The Spring Simulation Multiconference (SpringSim), an annual conference sponsored by the Society for Modeling and Simulation International, covers state-of-the-art developments in computer simulation technologies, as well as scientific, industrial, and business applications.

Areas covered include high performance computing technologies, models and algorithms, GUI visualization technologies, communications, and much more. Application disciplines covered include advanced telecommunication; computer systems; military, government, aerospace; energy, and other industries.

The conference includes keynote speeches presented by technology and industry leaders, technical sessions, professional development courses and seminars, as well as vendor exhibits. For more information visit: <http://www.scs.org/>

**2006 USJFCOM INDUSTRY SYMPOSIUM
REGISTRATION OPENS**

(NORFOLK, Va., - Feb. 27, 2006) - U.S. Joint Forces Command (USJFCOM) and the National Defense Industrial Association

(NDIA) have opened registration for this year's two-day industry symposium.

The "Building Knowledge for the Warfighter" 2006 symposium, scheduled for April 4-5, focuses on situational awareness and understanding in joint, coalition, and interagency operational environments.

The intent of the symposium is to raise industry and academia's awareness of USJFCOM's joint operational capability focus areas and to provide a venue for discussion of capability advancements.

The symposium provides the opportunity for the command to share its long-term and wide-ranging capability requirements and serves as a larger companion event to USJFCOM's focused forums which target specific areas of interest according to command officials.

Specifically, this year's topics include: coalition knowledge management; enabling technologies to support joint, coalition, and interagency operations, global perspective: knowledge fusion across multiple and critical domains; coalition battlespace awareness; modeling and simulation; and training.

The symposium, to be held at the Hampton Roads Convention Center, will feature presentations by USJFCOM Commander, Air Force Gen. Lance Smith and Rep. J. Randy Forbes (R-Va.), who is expected to brief outcomes from the Feb. 7 Modeling & Simulation Leadership Summit. For complete article visit:

<http://www.jfcom.mil/newslink/storyarchive/2006/pa022806.htm>

**AIR FORCE RESEARCH LAB (AFRL)
RELEASES BIO-SPICE 7.0**

AFRL is the lead agent for the Biological Simulation Program for Intracell Evaluation (Bio-SPICE) version 7.0, released in conjunction with the Defense Advanced Research Projects Agency Bio-Computation (BioCOMP) program meeting.

Through Bio-SPICE, the BioCOMP program seeks to develop an open source

computational framework for easy insertion, modification, and validation of new models of intracellular processes; develop fundamental models and composition methods; and demonstrate Department of Defense (DoD) applications. The development of numerous usage cases illustrated Bio-SPICE's ability to help solve real-world research problems. One usage case involved toxicology experimental data (i.e., time-exposure microarray, gene chip-based data) pertaining to the mammalian toxicity response to common Air Force (AF) chemical solvents.

The usage case showed the raw microarray gene expression data being processed through the Bio-SPICE modules, which are then able (through a combination of data mining, clustering, and analysis) to detect candidate genetic regulatory networks involved in the toxicity response. These use case results will provide avenues for future research in diminishing human exposure to these substances and in increasing the treatment efficacy for the warfighter exposed to commonly used DoD chemical solvents.

Researchers continue Bio-SPICE studies in an effort to examine how AFRL personnel can leverage the technology to develop biotechnology (e.g., cell-like entities) for AF applications. Researchers used Bio-SPICE tools to model biology-based computer components. They plan to explore how the tools can assist in building hybrid architectures for information systems. For original article visit:

<http://www.afrl.af.mil/accomprpt/jan06/accompjan06.asp>

USJFCOM AND NGA WORKING TO ENHANCE GEOSPATIAL INTELLIGENCE

(NORFOLK, Va. - Feb. 22, 2006) - U.S. Joint Forces Command (USJFCOM) and National Geospatial Intelligence Agency (NGA) have agreed to move forward on a joint geospatial intelligence activity (JGA) to enhance geospatial intelligence (GEOINT) among national and tactical users.

With today's present limited capability to share GEOINT collected on the battlefield with all users, USJFCOM and NGA recently

signed a formal memorandum of understanding (MOU), which defines activities that will result in more effective GEOINT information-sharing across the services and user-domains.

USJFCOM and NGA's partnership would "provide information to forces that today do not necessarily have access to information that they could clearly benefit from, whether it's ground soldiers in Iraq, Navy forces on ship, or pilots in a cockpit," said John Greene, NGA's lead on the JGA project. "Within classification constraints, the goal is to provide information to people beyond the Beltway and command level."

For example, the Army needs information for its Future Combat System, the Air Force needs flight chart information for pilots, and the Navy needs information for the electronic bridge, but the "information compiled for Army boots on the ground may be useful for pilots" and "if a special operations unit has located an element and has a way to transmit information back, pilots would want this information as a real-time update, so they don't drop ordnance on the wrong target," Greene said.

"Over the course of time, the national, operational and tactical lines have blurred to the extent that what's good for the President may be good for the platoon leader. Some of the same information that's briefed to the President is collected by the guy in the field," said Greene. For complete article visit:

<http://www.jfcom.mil/newslink/storyarchive/2006/pa022206.htm>

AIRSTRIKE TEACHING TOOL

A new simulation - the brainchild of a veteran fighter pilot and a prolific computer war-game designer - will give rookie Air Force second lieutenants a chance to plan their own strike missions.

Theater Airpower Visualization is being tested at the Air and Space Basic Course (ASBC) at the Squadron Officers College at Maxwell Air Force Base, Ala., where newly minted officers learn the fundamental concepts of the Air Force. The real-time,

mission-level game will allow them to control flights of aircraft, including strike jets, tankers, electronic warfare planes, search-and-rescue helicopters, and reconnaissance platforms. They must plan ingress and egress routes, choose flight altitudes, and destroy or evade enemy interceptors, radar sites, surface-to-air missile batteries and anti-aircraft guns.

Theater Air Visualization is a professional education tool rather than a technical trainer. The goal is to give new officers - especially nonflying personnel - a conceptual taste of tactical air operations. This marks a first for the Air Force, whose officers have never as a group been exposed to a tactical-level game in their professional military education, according to the game's designer, Gary "Mo" Morgan.

"Only the aviators have understood the tactical level. Now we're familiarizing all the officers with the tactical level," he said. Theater Airpower Visualization is designed to resemble the common operating picture found in an air operations center. Crisscrossing the computer map is an array of colored circles and lines indicating radar coverage, maximum weapons range, electronic jamming radius and other factors. The key to success is planning and coordinating aircraft with differing weapons, speeds and altitudes.

ASBC students will fly scenarios simulating Package Q, the largest strike package of Operation Desert Storm. For complete article from TSJ (Training and Simulation Journal) Online visit:
<http://www.tsjonline.com/story.php?F=1414607>

AFOTEC EVALUATION OF GIANT 3.0 FOR USE IN THE AIR OPERATIONS CENTER

The GPS Interference and Navigation Tool (GIANT) is a constructive and repeatable simulation used to determine the effects of GPS jamming on navigation performance and its impact upon air-to-ground or surface-to-surface operational effectiveness. GIANT was developed by General Dynamics (Veridian). It is PC-based, Government-Owned, and includes a graphical user

interface (GUI) for setup, execution, and post-processing analysis and scenario replay.

Version 3.0 of GIANT was developed as an FY03 Warfighter Rapid Acquisition Process initiative, to be used as a mission-planning tool in the Air Operations Center (AOC). The Evaluation Division of the Air Force Operational Test and Evaluation Center (AFOTEC) has performed an independent assessment of GIANT as part of a larger Air Force Space Command (AFSPC) initiative to evaluate the effectiveness of GIANT as a tool for the AOC.

The AFOTEC assessment compared GIANT outputs to real world GPS jamming test data. The assessment was performed using two different strategies. First, the baseline performance of the GIANT model was estimated by utilizing near-perfect input information about airborne platforms exposed to GPS jamming, the GPS jammer locations, antenna patterns, waveforms and pointing angles. Additionally, the model output was optimized to best match the known test conditions.

Once the "best case" performance of GIANT was determined, AFOTEC re-ran the test scenarios through the model with operationally realistic, yet imperfect information, emulating what is available real-time in the AOC. An assessment of the near-perfect and operationally realistic scenarios and recommendations for improving GIANT were provided. Usability (i.e., user friendliness and skills required) was also evaluated during the assessment.

Open air GPS jamming test data was utilized for comparison with GIANT predictions. A C-12J aircraft with a spectrum analyzer collected jamming strength data during each of the tests. GPS receiver and overall navigation system performance data was collected from various airborne platforms and munitions via on-board data bus recorders and telemetry. Surveyed weapon impact points were compared with GIANT circular error probable (CEP) predictions.

AFOTEC completed test activities and submitted an interim summary report (ISR)

to AFSPC in support of their effort to field a limited capability. Based on this evaluation, AFOTEC recommended that GIANT be incorporated for limited use in an AOC to aid in mission planning and situational awareness. Other recommendations concerning capability improvements were also submitted. Based upon the results of the AFOTEC evaluation and other assessments, the Director of Air and Space Operations Major General Douglas M. Fraser, HQ AFSPC certified GIANT for operational use by mission planners to provide the capability to the warfighter to characterize operational impacts in the presence of both benign and hostile electronic combat environments (jamming).

IRAQ PROMPTS NEED FOR HELO-GUNNER TRAINING

The U.S. Army is training helicopter door gunners for the first time since the Vietnam War because of new operations procedures in Iraq.

Raydon Corp. of Daytona Beach, Fla., has delivered the first of three Virtual Door Gunner Trainers (VDGT) to the Army and showcased the trainer to the U.S. Marine Corps at Camp Pendleton, Calif., in January.

The VDGTT was developed in response to new operating procedures being used in Iraq, which mandate air cover for long-haul convoy operations.

Raydon says the VDGTT can be networked with its Virtual Combat Convoy Trainer, also used by the Army, for complete convoy operations training. The VDGTT has interchangeable weapons for the door gunner and allows crews to practice communications and coordination.

At the I/ITSEC exhibition and conference in Orlando, Fla., in December, L-3 Link Simulation and Training debuted its Gunner Crew Chief Station (GCCS), a helicopter-gunner simulator. Link demonstrated the simulator networked with a UH-60 helicopter flight simulator and other simulation entities, including an unmanned aircraft vehicle system and a Web-based first-person shooter training system.

The GCCS replicates the aircraft interior for each gunnery crew position with seats, communication panels, aircraft weapon mounts and weapons. Crews wear a helmet-mounted display system.

Link says the GCCS is deployable and can be reconfigured for UH-60 or CH-47 training. For original article from Training and Simulation Journal (TSJ) Online visit: <http://www.tsjonline.com/story.php?F=1480862>

NORTHROP GRUMMAN UNVEILS NEW MODELING AND RESEARCH CENTER

(NEWPORT NEWS, Va., Feb. 3, 2006) -- Northrop Grumman Corporation unveiled its new Aviation Ship Integration Center (ASIC) during a dedication ceremony today. This state-of-the-art research facility was established in partnership with the U.S. Navy to conduct modeling, simulation, research, development and in-depth analysis for CVN 21-class aircraft carriers and other aviation-capable ships.

Rep. Randy Forbes (R-Va.) was the keynote speaker for the event and spoke about the importance of maintaining a technology lead over other countries and other navies. "We've got to be faster, smarter and have greater capabilities than ever before," he said. "This one-of-a-kind, high-tech facility takes us a giant step closer to that goal."

ASIC is located in the Herbert H. Bateman Virginia Advanced Shipbuilding and Carrier Integration Center and is comprised of two laboratories called SimLab and FlexLab.

SimLab is a 9,000 square-foot laboratory that houses a modeling and simulation facility, an integration facility for validation of new concepts and designs, and a collaboration center for government and industry partners.

FlexLab is a 2,400 square-foot laboratory that houses a full-scale mock-up of a portion of the warfare command and decision center for the next-generation aircraft carrier class, CVN 21. Newport News engineers, designers and technologists will use FlexLab to investigate, prototype, test and validate

current and emerging technologies which provide the capability to rapidly reconfigure the decision centers. For complete article visit: http://www.asd-network.com/press_detail_B.asp?ID=6754

MODELING AND SIMULATION EXPERTS PLAN TO EXPAND

(SUFFOLK, Va.) - Modeling and simulation has been a boon for Hampton Roads and its burgeoning defense base. But can it be bottled and sold to every town and city in the nation?

Yes it can, experts said Monday. In fact, modeling and simulation software could one day be as widely used as Microsoft Word, they said. However, like any young technology, it needs better marketing and a skilled work force to develop it further.

So was the consensus of the first Modeling & Simulation Leadership Summit, presented by the National Training Systems Association - an affiliate of the National Defense Industrial Association - and the Congressional Modeling & Simulation Caucus, led by U.S. Rep. J. Randy Forbes, R-4th District.

About 300 modeling and simulation experts from the industry, government and academia gathered for the conference.

They came from across the country, particularly from the three hotbeds for modeling and simulation – Hampton Roads; Huntsville, Ala.; and the largest, Orlando, Fla. Participants worked for large companies such as Northrop Grumman, Lockheed Martin and Boeing, as well as small ones. They also represented not-for-profit groups, trade associations, universities and government agencies.

The experts were divided into four teams of 70 or so and asked to brainstorm opportunities and challenges that lie ahead. At the end of the day, organizers presented a list of items for caucus members to take back to Washington.

One of the biggest challenges, they said, is educating people about what modeling and simulation is. While it is widely touted as pumping more than \$400 million a year into the region's economy and creating more than 4,000 jobs with salaries twice the local average of \$32,000, most people don't fully understand it, said retired Rear Adm. Frederick Lewis, president of the National Training Systems Association. There are a number of applications for it, particularly in homeland security, transportation and health care.

"It's going to become pervasive in everyday society," he said. For complete article by Allison Connolly visit Virginia-Pilot's Pilotonline.com at: <http://home.hamptonroads.com/stories/story.cfm?story=99183&ran=213028>

The MSIAC Newsletter is compiled from various news sources, periodicals, and reports and is offered as a service by the [Modeling and Simulation Analysis Center \(MSIAC\)](#) solely for informational purposes. For comments and questions please send an email to msiachelpdesk@msiac.dmsomil.

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