



**W**ELCOME TO THE JULY / AUGUST 2011 EDITION of the *Modeling and Simulation Information Analysis Center (MSIAC) M&S Newsletter*. This issue presents a variety of M&S articles and events from communities enabled by M&S within the Department of Defense and beyond.

Please note that although the wording in the excerpts may not always correspond to official DoD Usage, the full articles available through the links provide valuable insights into the significant ways that modeling and simulation help foster innovation. We hope you enjoy this issue and welcome your comments.



## Army Uses 3-D Holographic Technology to Detail Intel



More than 10,000 maps enhanced with 3-D holographic technology have been fielded to Special Forces units in Iraq and Afghanistan (Photo credit: Army Research Laboratory)

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M&S WHAT AND WHEN





## Army uses 3-D Holographic Technology to Detail Intel

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**ORLANDO, Fla.** – Imagine going from looking at the outside of a building, to seeing the internal workings of its electrical system simply by walking around a display case. The sophistication of 3-D holographic technology allows just that.

For Soldiers on the battlefield, the level of intelligence they're getting about a dangerous location — like a site they're about to ambush or a room where U.S. interests may be located — can't come to them in a more safe, realistic way.

It's called Tactical Digital Hologram technology, and more than 10,000 units, which at first glance look like flat plastic maps, have already been fielded to Special Forces in Iraq and Afghanistan.

Research engineers at the Army Research Laboratory's Simulation and Training Technology Center in Orlando, Fla., are investing in commercially available 3-D holographic technology. As the Defense Department's managing agency for all such programs, the STTC is the first organization to actually evaluate and compare 3-D holographic static images against conventional topographic data that troops currently rely on for planning and mission rehearsal.

"Although the Army has been fielding these images for about the past five years, no substantiating data existed to support their utility except for anecdotal feedback like 'this is great' or 'this really helps me' from the warfighter," said H. Michelle Kalphat, STTC chief engineer.

A study she co-authored with an Air Force Research Laboratory expert in 2009 showed that the appropriate use of 3-D holographic imagery improves training, mission rehearsal and mission operational effectiveness, due in part to visual learners making up roughly 65 percent of the military population.

A visual scene of a 3-D world is a more intuitive and natural representation than a 2-D display, and a single integrated object reduces the need for mental integration of two or three separate representations, the report stated.

*This article originally appeared on DoD Live, on the Department of Defense's website. For complete article from the Department of Defense, [click here](#).*



## Sharing the Load: How Visual Database Repositories are Helping to Save Money in the Military

### Cost reductions, budget constraints, and program cuts

- not words any of us want to hear when it relates to our jobs. With ever decreasing budgets, all branches of the military are looking for the most efficient way to maximize the use of their resources.

The Simulation Database Facility (SDBF) is no exception and was established with the intent of reducing simulation costs throughout the DoD by leveraging the repository of information already purchased within the visual simulation community.

The SDBF's primary function is to share visual data products collected from all branches of the military with other DoD programs. Since 2005, the SDBF repository has assisted over 175 DoD programs and transferred over 290TBs of data. This data includes culture (feature) data, terrain data, photo-texture data, Geo-Referenced Imagery and 3-D models. All visual data sets are made distributable through Title 50 USC 401a or NGA's LIMDIS and NEXTVIEW licenses. After a database is developed for a training system requirement, it is transferred to this facility and stored in its original format.

The SDBF makes its data available to other DoD programs at no cost to help minimize expenses and reduce database development time. In turn, those same programs are encouraged to submit their data sets to the repository for use by other programs. As a result, customers assist the SDBF in gathering resources and contributing to its future success.

To learn more about the SDBF and how to request data, visit our page on the Intelink site: <https://www.intelink.gov/wiki/SDBF>. (Note: this hyperlink requires a DoD Common Access Card –CAC– or registration.) Or to contact the SDBF directly, e-mail Jamina Fritts at: [Jamina.fritts.ctr@kirtland.af.mil](mailto:Jamina.fritts.ctr@kirtland.af.mil).





## Simulated Database Facility (SDBF)

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**Interested in other repositories?** Check out the sites below (Note: Some of these hyperlinks require a DoD Common Access Card –CAC– or registration. We have provided notes where this is the case. For additional information, contact the M&S Help Desk at [MsiacHelpDesk@dod-msiac.org](mailto:MsiacHelpDesk@dod-msiac.org)):

- NAVAIR Portable Source Initiative wiki site (registration required): [https://www.intelink.gov/wiki/NAVAIR\\_Portable\\_Source\\_Initiative](https://www.intelink.gov/wiki/NAVAIR_Portable_Source_Initiative)
- Army Model Exchange (registration or CAC required): <https://modelexchange.army.mil/>
- US Army Corps of Engineers Army Geospatial Center Products Page (registration or CAC may be required): <http://www.agc.army.mil/productsALL.html?tab=1#TabbedPanels1>
- USGS Seamless Data Warehouse: <http://seamless.usgs.gov/>
- National Geospatial Agency Products and Services Page (registration required): <https://www1.nga.mil/ProductsServices/Pages/default.aspx>

This article on the SDBF was contributed by Jamina Fritts, Visual Database Designer, ATARS II Program.

## M&S Catalog Transitioned to M&SCO

### The Modeling and Simulation Coordination Office

(M&SCO) assumed day-to-day operations responsibility for the DoD M&S Catalog on April 15, 2011. The recent move corresponds with the transition of the M&S Catalog oversight from the OSD Cost Assessment and Program Evaluation (CAPE) organization, with support from the Space and Naval Warfare Systems Command (SPAWAR), to the DoD M&SCO after the successful completion of the M&S Catalog high level task.

M&SCO operates the M&S Catalog for the DoD M&S Enterprise on behalf of the Under Secretary of Defense for Acquisition, Technology, and Logistics, and with active support and guidance from the M&S Steering Committee.

The M&S Catalog is based on a highly flexible and adaptable commercial search technology that is currently supporting the Defense intelligence community in the conduct

of complex analysis tasks.

To date, fourteen organizations have provided over 6,200 metadata records to the M&S Catalog. M&SCO is currently working with those and other M&S resource repositories across the DoD Enterprise to improve and standardize the methods by which M&S asset metadata is developed and harvested by the M&S Catalog.

The goal is to improve overall M&S asset visibility while significantly decreasing the cost of metadata development and maintenance - with the end goal being to help decision makers and users find information about M&S assets that are critical to their missions and tasks.

M&SCO is aggressively pursuing opportunities to meet with existing and new metadata sources. Briefings and demonstrations will also be used to increase user and data source awareness.

Future demonstrations and briefings include, the Simulation Interoperability Workshop (SIW) in September, and the Interservice/Industry Training, Simulation and Education Conference (I/ITSEC) in November.

M&SCO looks forward to continued support from the M&S SC and IPT members in establishing the M&S Catalog as a key element in our strategy to promote accessibility and reuse of M&S enterprise assets. Additional information about the M&S Catalog can be found at: <https://mscatalog.osd.mil/>. (CAC Required)

The M&SCO POC is Mr. Frank Mullen, [frank.mullen@osd.mil](mailto:frank.mullen@osd.mil), 703-681-6607.

## America's Army Platform Trains Soldiers in Explosive Ordnance Disposal

**Tron. It was 1982 and the world watched** as Kevin Flynn was sucked into his computer by a laser pointed at his back. We watched the laser scan and pull him into the computer. For the next hour or so, Flynn battled his way through a computer generated world. Like most computer 'geeks' of my generation, I was captivated. 'Programs' were beaten in disc games and de-rezzed, but they were





## America's Army Platform Trains Soldiers

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only computer generated. I was so looking forward to buying my own person sucking laser.

Time moves on and we all grow up. First I go to Binghamton University (Binghamton, NY) and get a degree in Physics. Then it's off to get my Masters and Ph.D in Mechanical Engineering at Northwestern University (Evanston and Chicago, IL).

Fast forward to the present: I am an engineer at the Armament Software Engineering Center at the U.S. Army's Armament Research, Development and Engineering Center in Picatinny Arsenal, NJ. The challenge: our Soldiers in Explosive Ordnance Disposal (that's mil-speak for bomb squad) use state-of-the-art robots, such as Qinetiq TALON and iRobot PackBot, to disarm or destroy explosive devices placed by our enemies. Soldiers want to practice on the robot as much as possible before they are tasked on a mission with life or death consequences, but most of them are already being used and aren't always available for training.

Enter Tron, or something like it.

The America's Army game (at the time of writing) has 12 million registered users who have virtually experienced Soldiering in the U.S. Army. Using the America's Army platform, our team's goal was to insert the Soldier and his robot into the virtual world. At the core of our solution lies a software architecture that enables the team to quickly build virtual robots and training tools. We create a virtual world for the robot to drive around in, create objects to drive under, over, and through, and explosives for the Soldier to dispose of. The Soldiers use the real robot controller to operate the virtual robot and acquire the experience they need. If they make a mistake and the explosive destroys the robot, they hit the reset button and try again.

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*This article originally appeared on Armed with Science, on the Department of Defense's website. For complete article from the Department of Defense, [click here](#).*



## Medical Monday: Navy Medical Modeling and Simulation – Leading the Way

The Naval Health Research Center's (NHRC) modeling and simulation efforts encompass an all-hazards approach. Besides combat injuries the models include illness and nonbattle injuries, environmental injuries, dental conditions and even preventive medicine practices.

In the late 1990s, NHRC was tasked with developing the Estimating Supplies Program (ESP), a computer-based, patient-driven model of clinical operations to determine the logistical requirements for battlefield operations at the Emergency Forward Care and Resuscitative Care echelons in the medical network of care.

ESP decreased the size of Marine Corps medical inventories known as Authorized Medical Allowance Lists (AMALs) and at the same time increased treatment capabilities. Since then ESP has been used in the development of new combat treatment facilities.

ESP's underlying database of service-specific medical equipment and supplies, clinical tasks, treatment protocols, and models is housed in NHRC's Expeditionary Medical Knowledge Warehouse (EMedKW). EMedKW's database provides the foundation for several NHRC modeling and simulation programs. The ReSupply Validation Program (RSVP) develops time-phased medical resupply strategies, including push packages, using the ESP modeling process.

The same process is used to develop the Marine Corps' medical contingency file, a list of the medical supplies needed in the event of a major contingency.

EMedKW also provides the underlying database for the Tactical Medical Logistics Planning Tool (TML+), a medical risk assessment planning tool. With a graphic user interface and geographic information system capabilities, medical planners can use TML+ to lay down their field medical treatment network using actual maps and distances.

TML+ uses multiple iterations of varying patient streams to identify logjams caused by shortages in equipment, consumables and transportation assets, as well as shortfalls





## Navy's Medical Modeling and Simulation

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in personnel and increases in patient mortality. A planner can perform “what if” experiments to study the effects of increasing or reducing personnel, adding or subtracting treatment beds, or mixing ground and air evacuation assets.

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*This article originally appeared on DoD Live, on the Department of Defense's website. For complete article from the Department of Defense, [click here](#).*



## Sim Man Saves Lives on Battlefield

**GRAFENWOEHR, Germany, July 6, 2011** -- Spc. Matthew Primo, with the Medical Simulation Training Center, lies in a pool of blood, with a gunshot wound in the chest and an open femur fracture, waiting for his comrades to come and save his life.

Primo is one of 20 human patient simulation mannequins at the Medical Simulation Training Center, or MSTC. The mannequins look real. They breathe, blink, talk, and live or die depending how effectively their caregivers treat their wounds.

Being controlled by computer, the Specialist's vitals and injuries are documented so the instructors can monitor if the training Soldiers are performing the proper treatment. As a Soldier performs the tasks, Primo reacts just as a human casualty would react.

Offered by the Joint Multinational Training Command, or JMTC, the MSTC is the regional training site for Combat Lifesaving, or CLS, in Europe for U.S. and NATO troops fighting in coalition operations.

The MSTC takes the CLS training to a new level with advanced technology and dedicated instructors, like Primo, to simulate real-life situations troops will encounter downrange.

“If the Soldier does the right treatment, at the right time, the mannequin lives. If the Soldier doesn't we can reset them, show them what they did right and what they did wrong to get them very confident here,” says William

Goodwin, a former combat medic and certified instructor trainer with MSTC.

Primo goes above the call of duty, on a daily basis, by allowing himself to be wounded and even pronounced dead to teach his fellow Soldiers how to react to a medical emergency during combat through the simulation training at Grafenwoehr Training Area, or GTA, in Germany.

The simulation occurs after a three-day class on the proper procedures for treating injuries commonly seen on the battlefield. Then the trainees are placed in a mass casualty situation, simulating a direct fire engagement. It begins as soon as Primo is injured. The clock ticks away on Primo's golden hour, a crucial time for treatment.

Combat sounds, low visibility with fog, strobe lights in the dark, and synthetic blood are added to create a stressful, realistic setting, which replicates today's combat zone. These Soldiers have no time to panic. If this simulation was downrange it would be their comrade lying in Primo's spot.

Instructors apply stressors, and watch and evaluate the treatment of the casualty.

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*This article originally appeared on the U.S. Army website. For complete article from the U.S. Army, [click here](#).*



## USACE Motorcyclists Test New USAREUR Training Simulator

**With sunnier days and warmer temperatures**, more motorcyclists are taking advantage of the longer days by hitting the streets for open-air views of the German countryside.

After the long winter with little to no riding, motorcyclists find their skills are a little rusty. The U.S. Army Garrison Wiesbaden Safety Office offers a course for novice and experienced riders alike. A state-of-the-art motorcycle simulator, located on McCully Barracks in Wackernheim, allows students to climb on board a motorcycle without the risk of injury while brushing up on their safety skills.

Five experienced riders from the U.S. Army Corps of





## Motorcyclists test simulator

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Engineers attended one of the simulator courses to safely practice their skills.

Lt. Col. Randy Bolz, a district program manager, attended the Emergency Situation Course as a way to formally improve his riding skills.

“Since I was never formally trained on a motorcycle, the simulator helped to reinforce some of the basic skills that I missed,” Bolz said. “I actually practiced what I learned on the simulator in the parking lot. I didn’t realize that I was doing all of those (bad) things, but I was.”

Jonathan Bach, the district’s safety manager, advocates the use of the simulator as one element of advanced training that he defines as any training that exceeds the driver’s experience and basic training.

“While experience helps, advanced training can increase [motorcycle] safety skills,” Bach said.

“Riders can be subjected to risks in the form of dangerous situations, which could only be experienced safely using simulation.”

The simulator features computerized riding exercises and options to modify weather, visibility, time of day and traffic conditions.

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*This article originally appeared on the U.S. Army website. For the complete article from the U.S. Army, [click here](#).*



## Simulations, Gaming, Lead to Realistic, Efficient Training

**With the Army’s training** budget sure to be cut and more troops returning to and staying at their home stations, leaders of the Combined Arms Center and Training and Doctrine Command are looking at innovative and efficient ways to keep Soldiers’ skills sharp. Members of the area media visited Fort Leavenworth July 22 to see and try out some of the realistic simulations and gaming currently being used to train Soldiers.

The group’s first stop was at the Engagement Skills Trainer 2000 where Soldiers from the 15th Military Police Brigade demonstrated how the hands-on weapon simulator works. Fort Leavenworth’s EST 2000 is one of more than 860 such facilities Armywide, said Col. Miciotto “Bear” Johnson, director of TRADOC Capabilities Manager Virtual for CAC-Training. Not only does the EST 2000 provide marksmanship skills training on a variety of small arms, it can also be used for squad and fire team training, and scenario-based training. And while it was originally designed primarily for infantry missions, the EST 2000 system has been expanded to include scenarios for mounted combat and convoy operations, Johnson said.

The next stop was the National Simulation Center. NSC Director Col. Tony Krogh greeted the reporters and took them to a hands-on demonstration of Virtual Battle Space 2, a first-person-shooter type game that Soldiers and small unit leaders can use to learn and practice their techniques before going out on operations in the real world.

“It’s better for them to bleed in simulation, so they don’t bleed in combat,” Krogh said.

Krogh said developers try to make the simulations as realistic as possible.

“With the Xbox generation that we have, it has to be as immersive as possible,” he said.

Hans Hall, a military analyst for gaming on the VBS2 team, said units have used a lot of imagination in exploring the capabilities of the VBS2 system.

“VBS2 is a great way to improve communication at the squad and team level before going to the field,” Hall said.

Many of the Soldiers who have used the system are collaborating on the MilGaming Portal, Krogh said.

“Soldiers are building their own scenarios,” Krogh said.

“Some of the best developers we have are the very Soldiers we are training.”

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*This article originally appeared on the Ft. Leavenworth website. For complete article from Ft. Leavenworth, [click here](#).*





## U.S. Sim Market to Draw More Foreign Firms: DoD

The U. S. Defense Department sees more international companies becoming players in the modeling and simulation (M&S) field in the coming years, according to a Pentagon report.

DoD expects an increase in foreign corporations purchasing domestic M&S companies, states the March report from the Office of the Assistant Secretary of Defense for Research and Engineering. The report was mandated by the 2010 Defense Authorization Act.

Moreover, the Pentagon sees these multinational companies providing more competition in the “DoD M&S marketplace,” the report states.

“Hence, the already-global M&S marketplace will continue becoming less U.S.-centric as hardware, software and intellectual capital will be increasingly shared,” the report states. “This competitive global flow of products and technology is a vital two-way street that enables the development of new M&S capabilities, but we must be vigilant in our monitoring, guiding, selective funding, coordinating and managing to ensure continued leadership.”

Years of leadership in M&S research and development has allowed the U.S. to set global standards. The U.S. M&S industry has driven research in computer hardware, software, visualization and display systems, communications, and in operations.

The simulation workforce is “unmatched,” and the best scientists and technologists in the field have tended to remain in the U.S., the report states. But that could be changing.

“Other countries have developed effective processes that insert U.S.-developed technology into their own products, which are sold globally,” the report states.

“Other countries are also improving their academic and industrial R&D capabilities while reversing the historic ‘brain drain’ by growing a new generation of researchers in M&S-enabling fields and welcoming home more graduates of U.S. institutions.”

*This article originally appeared on the Training Simulation Journal (TSJ) website. For complete article from TSJ, [click here](#).*



## Simulated Atmosphere Research to Help NASA Interpret Data from Juno Mission to Jupiter

In August of 2016, when NASA’s Juno Mission begins sending back information about the atmosphere of the planet Jupiter, research done by Georgia Institute of Technology engineers using a 2,400-pound pressure vessel will help scientists understand what the data means. The Juno probe is scheduled to be launched August 5 from Cape Canaveral Air Force Station in Florida.

Because Jupiter has been largely unchanged since its formation at the birth of our solar system, scientists hope Juno will resolve unanswered questions not only about the massive planet, but also about how our solar system evolved. Among the key questions are how much water exists there, and how that water evolved from the hydrogen-rich early solar system.

“Jupiter collected much of the original solar nebula, that sheet of material that surrounded our sun when it formed,” said Paul Steffes, a professor in Georgia Tech’s School of Electrical and Computer Engineering and a member of the Juno Mission Team. “Knowing how much water is in the atmosphere of Jupiter is going to give us real insight into how the whole solar system has evolved. Understanding Jupiter really helps us understand how we got started.”

To detect and measure water, Juno will carry a radiometer that can measure radio emissions produced by the planet itself at microwave frequencies. As those signals pass through Jupiter’s atmosphere, they are altered by the water and other constituents. Understanding how the signals were altered can tell scientists much about the atmosphere of the giant planet. The probe will receive microwave signals at six different frequencies that scientists know are emitted at various levels of the planet’s atmosphere.

“The intensity of the microwave radiation at specific frequencies gets weaker depending on how much water is





## Simulated Atmosphere Research

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there,” Steffes explained. “We’ll be able to not only say whether or not there’s water there, but we’ll also be able to say at what altitude it exists based on the signatures of the microwaves coming out of the planet’s atmosphere.”

Interpreting that data will require knowledge that Steffes and his students are developing by simulating the Jupiter atmosphere in their pressure vessel, which is located inside an oven on the roof of Georgia Tech’s Van Leer Building.

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*This article originally appeared on the ScienceDaily website. For complete article from ScienceDaily, [click here](#).*



## Fast Prediction of Axon Behavior:

### Computer Modeling Method May Lead to More Accurate and Capable Electrodes to Stimulate Nerves

**Researchers at Case Western Reserve University** have developed a computer modeling method to accurately predict how a peripheral nerve axon responds to electrical stimuli, slashing the complex work from an inhibitory weeks-long process to just a few seconds.

The method, which enables efficient evaluation of a nerve’s response to millions of electrode designs, is an integral step toward building more accurate and capable electrodes to stimulate nerves and thereby enable people with paralysis or amputated limbs better control of movement.

To increase the accuracy of the results, the researchers included a key parameter overlooked in past mathematical approaches that were equally fast, but inaccurate. With the new techniques, electrode design can be optimized using advanced algorithms based on natural genetics.

An explanation of the work, which the team hopes others in the field will freely use, and a second method that was simpler and faster but proved less effective, are now available online in the Journal of Neural Engineering.

“We believe this will allow the next generation of computer-aided development of electrodes,” said Dustin Tyler, associate professor of biomedical engineering at Case School of Engineering and senior author of the paper.

Since his graduate school days, Tyler has been developing electrodes to stimulate nerves in paralyzed patients and amputees. Taking the large step from animal models to human clinical trials can be improved with better computer modeling, he said.

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*This article originally appeared on the ScienceDaily website. For complete article from ScienceDaily, [click here](#).*



## Measuring Fruit Fly Behavior in Reduced Gravity on the Vertical Motion Simulator (VMS)

**Researchers from the Biomodel Permanence and Behavior Lab** and the Fluid Mechanics Lab used the **Vertical Motion Simulator (VMS)** to observe the flight behavior of fruit flies under reduced gravity. This information will be used to develop an experiment to be performed on the International Space Station.

The study was conducted on two mornings before the start of a previously scheduled simulation on the VMS. The fruit fly habitat and measurement equipment were attached inside the cockpit of the VMS and subject to positive and negative vertical accelerations. Prior to each run the fruit flies were agitated using a seat shaker to make them fly.

Gravity levels of approximately 0.3 G’s were achieved and the researchers stated that:

“Our labs have already drawn significant conclusions from the observational data gathered during the VMS run, and are working to optimize the method of agitation, fly habitat, and age of the flies for increased experimental data collection.”

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*The blog post originally appeared on the NASA Aviation Systems Division website. For original article from NASA, [click here](#).*





## Modeling Missiles

### Missile Defense Community Advances its Simulation Capabilities

Whether the targets are long range ballistic threats or portable anti-aircraft weapons, U.S. missile defense testing is increasingly relying on modeling and simulation to avoid the cost, danger and limited options of live missile firings.

“With live testing, we cannot test or simulate every type of missile threat that is out there today — not even close,” said Riki Ellison, chairman and founder of the Missile Defense Advocacy Alliance, an organization with the mission to educate and advocate for the deployment and development of missile defenses.

Live ballistic missile firings cost between \$100 million and \$150 million, according to industry officials.

Michele Miller, Northrop Grumman’s OSF program manager, said training is one of the seven use cases for the new framework, and entails instructing missile defense operators on how to operate fielded BMDS elements. She said the top concern for training is creating an accurate representation of what operators would see in a real-life scenario.

Miller said missile defense simulations tend to be oversimplified. For example, the stimulation that causes a radar to activate might do so earlier or later in a live exercise than a simulated one, providing inconsistent training.

*This article originally appeared on the Training Simulation Journal (TSJ) website. For complete article from TSJ, [click here](#).*

## M&S WHAT & WHEN

### Follow MSIAC on Twitter



To provide a broader reach throughout the M&S community and beyond, MSIAC has started utilizing social media. Twitter provides the opportunity for MSIAC to quickly share information, gather market intelligence and insights, and build relationships with people who care about M&S. MSIAC tweets range from interesting articles found within the M&S community, breakthroughs in M&S technology, to alerts for the releases of M&S publications. Follow us on twitter at [www.twitter.com/msiac](http://www.twitter.com/msiac).



### Fall Simulation Interoperability Workshop (SIW)

The Fall Simulation Interoperability Workshop (SIW) is rapidly approaching! Fall SIW will take place at the Florida Mall Conference Center in Orlando, Florida from September 19-23. Topics discussed will be M&S standards, policies, existing capabilities, interoperability, and reuse. Visit <http://www.sisostds.org/Workshops/PastWorkshops/2011FallSIW.aspx> to learn more about the conference and register.

Demonstrations will include the DoD M&S Catalog and the Modeling and Simulation Information System (MSIS):

<http://msis.dod-msiac.org/MSIS/Index.jsp> and  
<http://MSCatalog.osd.mil>. \*CAC required\*





## The M&S Journal

**The Fall 2011 Issue** of the M&S Journal is almost here. This issue will focus on Asset Discovery and Reuse. Topics discussed will include principles of reuse, asset discovery tools, and current efficiencies that will push M&S into the future. It will be released in September. Sign up to receive your electronic copy by sending an email to [subscribe@dod-msiac.com](mailto:subscribe@dod-msiac.com). To find previous editions of the M&S Journal, please visit <http://www.dod-msiac.org/journals.html>.

The M&S Journal is a theme-based, quarterly publication of technical articles that highlight M&S technology, applications, prototype processes or products, points of view, or emerging philosophies.

It is published by the Modeling & Simulation Coordination Office (M&SCO). The M&S Journal is a valuable resource for the M&S community: across DoD, other government

agencies, international partner organizations, industry, and academia. The M&S Journal occasionally publishes special issues devoted to a particular topic.

**The M&S Journal is currently accepting** paper submissions. All submitted technical papers for the M&S Journal undergo rigorous review following an initial screening for conformance to basic requirements. Publishing in the M&S Journal affords authors both an online and print forum for their M&S technical papers, gaining recognition and publicity throughout the DoD M&S community. Authors also receive extended visibility for their ideas through free online access to their article on the MSIAC website.

Please contact the [MsiacHelpDesk@dod-msiac.org](mailto:MsiacHelpDesk@dod-msiac.org) for more information, or if you would like to submit a technical paper to the M&S Journal.



## Modeling & Simulation Calendar of Events

**Please visit the MSIAC Calendar** for a list of events currently scheduled to take place in the M&S community. The MSIAC Calendar is available on our website, [www.dod-msiac.org/calendar.html](http://www.dod-msiac.org/calendar.html).

**Promote an Event:** If you would like to promote an M&S event on the MSIAC Calendar, please email the event information to [MsiacHelpDesk@dod-msiac.org](mailto:MsiacHelpDesk@dod-msiac.org).

### Upcoming M&S Events

#### 2011 ITEA Annual Symposium

September 12 – 14, 2011  
Orlando, FL

#### 2011 Fall Simulation Interoperability Workshop (SIW)

September 19 – 23, 2011  
Orlando, FL

#### 2011 Homeland Security Symposium

September 26 – 27, 2011  
Arlington, VA

#### 4th Annual Joint Simulation and Training

September 26 – 28, 2011  
London, England

#### 2011 Joint Undersea Warfare Technology Fall Conference

September 26 – 28, 2011  
London, England

#### Military Simulation and Training in Asia (MSTA)

September 28 – 29, 2011  
Singapore

#### MODSIM World

October 11 – 14, 2011  
Virginia Beach, VA

#### 14th Annual Systems Engineering Conference

October 24 – 27, 2011  
San Diego, CA

#### Engineering Simulation for Military Technology Summit

October 24 – 26, 2011  
Washington, DC





## M&S CALENDAR OF EVENTS

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### 2011 North American Technology Demonstration (NATD)

October 25 – 27, 2011  
Ottawa, Canada

### Fourteenth JTLS International Users Conference

October 25 – 26, 2011  
Monterey, CA

### Aircraft Survivability Symposium 2011

November 1 – 3, 2011  
Monterey, CA

### 8th Annual Disruptive Technologies Conference

November 8 – 9, 2011  
Washington, DC

### Physics-based Modeling In Design & Development for U.S. Defense Conference

November 11 – 17, 2011  
Denver, CO

### 2011 Chemical and Biological Defense Science and Technology (CBD S&T) Conference

November 14 – 18, 2011  
Las Vegas, NV

### 11th Annual CMMI Technology Conference and User Group

November 14 – 17, 2011  
Denver, CO

### I/ITSEC 2011

November 28 – December 1, 2011  
Orlando, FL

### Winter Simulation Conference (WSC)

December 11 – 14, 2011  
Phoenix, AZ



## MSIAC M&S Newsletter

The Modeling and Simulation Information Analysis Center (MSIAC) M&S Newsletter is now available as an automatic service. A bi-monthly publication, the M&S Newsletter brings you the most recent information and events from within the M&S community.

### How to Subscribe

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