



Welcome to the November/December 2009 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. We hope you enjoy the November/December edition and look forward to your comments.

Although the wordings in the excerpts may not always correspond to official DoD usage, the full articles available through the links provide valuable insight into the applications of M&S technologies throughout the community.

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ISSUE SPOTLIGHTS

MODSIM Conference

JTACs training simulator

Video games promote peace-building

Honing Marines' critical thinking skills

Modeling H1N1 infection rates

Developing an amputees' virtual world

Job simulations for better hires

MSSOC being taught in January

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The following article on MODSIM World Conference and Expo and the Virginia Summit on Modeling & Simulation, originally appeared in the Congressional M&S Caucus Newsletter.

MODSIM AND VIRGINIA SUMMIT A SUCCESS

The Third Annual MODSIM World Conference and Expo took place from October 12-14, 2009 in Virginia Beach. The conference focused on 21st Century Decision-Making: The

Art of Modeling & Simulation. Speakers, educational tracks, presentations, and product demonstrations focused on using modeling and simulation tools and practices in emerging & innovative operating environments.

As a kick off to the MODSIM World Conference and Expo, Senator Mark Warner hosted the Virginia Summit on Modeling & Simulation, which included panel discussions and remarks by Senator Warner, U.S. Chief Technology Officer Aneesh Chopra, and General James Mattis, Commander, U.S. Joint Forces Command. To watch their remarks, click [here](#).

Congressman Randy Forbes also presented at the Virginia Summit on Modeling & Simulation. To view his remarks, click [here](#).

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The following article on training for JTACs, originally appeared on the United States Joint Forces Command (USJFCOM) website.

SIMULATOR ALLOWS JTACs TO TRAIN WHEREVER, WHENEVER

(CAMP LEJEUNE, N.C. - Nov. 5, 2009) -- Coalition and joint terminal attack controllers (JTAC) used a simulator to hone their skills in calling in close-air support during U.S. Joint Forces Command's (USJFCOM) advanced concept technology demonstration Bold Quest (BQ) 09 here and at Marine Corps Air Station Cherry Point, N.C.

The JTAC Virtual Trainer is a system of training applications and simulators providing JTACs with an opportunity to hone their aircraft control skills in a field environment with pilots in aircraft simulators that could be located anywhere in the world, said Phil Shevis, who works in USJFCOM's Joint Training Directorate's (J7) operations office. According to Shevis, the trainer is a time-, money- and resource-saving asset.





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"We are trying to enable realistic JTAC training in a field environment. Although it is preferable for JTACs to train with live aircraft and live ordnance, this is costly and oftentimes the aircraft are diverted due to weather or mechanical issues," Shevis said.

"This capability allows the JTACs to get the training even when the live assets aren't available. Additionally, with simulations you can do a lot of things you can't do in the real world. You can work with coalition forces. You can use terrain that is in theater even though you're at home station."

The simulator was brought to Bold Quest 09 to give JTACs from the U.S. and its allied partners a chance to use and give feedback on the system to the development team. JTACs used a Remotely Operated Video Enhanced Receiver (ROVER) - a durable laptop computer with wireless capability and a radio over a network system to communicate with a pilot "flying" an F-16 simulator in Germany. The ROVER enabled JTACs to see what the pilot saw.

The pilot simulated an F-16 flight over Lejeune's training areas. The "target" - in one case a typical SUV - was replicated in the simulation as a target for a close air support mission. Using the ROVER and a Fall-of-Shot Simulations Indicator (FOSSI), a piece of equipment on loan from the United Kingdom's Ministry of Defence, the JTACs called in simulated air strikes on the vehicle.

According to U.S. Air Force Maj. Garret Lacy, the director of current operations at the Warrior Preparation Center (WPC) in Germany, the ROVER allows JTACs - both in real and simulated environments - to link up with aircraft and see what the pilots are seeing. They use this to assist pilots in finding the correct target in a chaotic battlespace. The FOSSI is an optical device enabling a JTAC to virtually see the "real" target - the SUV - on a simulated battlefield and know whether simulated munitions hit the target.

"We're using simulations connected over a network to feed that information," Shevis said. "In this particular instance, what we're doing is connecting through the Joint Training Experimentation Network to the Warrior Preparation Center in Germany. They're running two simulators: an F-16 simulator and a Predator simulator. Those two systems are going to generate video which we're going to transmit to the JTACs on their issued equipment." For complete article from United States Joint Forces Command, USJFCOM, click [here](#).

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The following article on video games promoting peace-building, originally appeared in the National Defense Magazine December 2009 issue.

MILITARY VIDEO GAMES COULD MORPH INTO PEACE-BUILDING SIMULATIONS

At a July meeting at the White House, a group of information-technology gurus brought up the topic of video games — specifically, the untapped potential of gaming as an educational tool for non-military agencies involved in diplomacy and nation-building.

The military has long been an avid user of video games to train troops for war, but civilian agencies have yet to take advantage of the increasingly sophisticated and low-cost technology available, said Beth Noveck, deputy chief technology officer for open government at the White House's office of science and technology policy.

The Obama administration is "looking very seriously at the role that games can play in achieving national priorities," Noveck told an overflowing audience attending a "simulations and serious games for peace-building" conference at the United States Institute of Peace in Washington.

"People who are playing massive multi-player games like World of Warcraft, who are engaged



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in these social and visual technologies learn the skills of coordination, learn the skills of working together, learn the skills of decision-making ... that are central to their being effective workers, but also effective citizens in democracy," she said.

Four of the priorities on the president's agenda include education, energy, economy and the environment. Games can teach citizens about energy consumption and how personal habits affect energy use and the environment. They can help students achieve higher literacy rates and improve math skills. They also can tell consumers how to manage their money better, she said.

The question before the administration is not about which games to use, Noveck said. Rather, it's about how to develop a strategy to foster partnerships with the private and public sectors to employ games in achieving national goals. There is also the challenge of encouraging federal agencies to consider simulation technologies as they craft their priorities for the 2011 budget cycle.

Some agencies already are branching out and embracing gaming opportunities. NASA has a presence in Second Life, an online virtual world where users can create an avatar, or computer-animated character, and explore islands and interact with others. The FBI has erected a billboard of its 10 most-wanted criminals on the site. The military services are building displays on "Coalition Island" to share with the public some of their ongoing research efforts, said Scott Sechser, government accounts manager. Some groups have utilized the site for training and education, he added. For complete article from the National Defense Magazine, click [here](#).

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The following article on Marines using simulations for developing critical thinking skills, originally appeared in the National Defense Magazine December 2009 issue.

MARINES USE SIMULATIONS TO HONE 'CRITICAL THINKING' SKILLS

The Marine Corps is creating a digital simulation to help leathernecks "read" the urban battlefield for signs of potential threats and to track down snipers and insurgents hiding in cities.

The simulation, which will deploy in 2011, will complement a training program called "Combat Hunter," developed three years ago by the Marine Corps. The course garners the skills of game hunters and big city cops to instruct marines on how to observe, assess and track the enemy in a combat environment. All newly minted marines take the course.

Stressed for time to teach these skills adequately to marines, officials pushed for the computer-based trainer to help alleviate pressure on course instructors. A Woburn, Mass.-based engineering firm, Aptima, is developing the multimedia system to give marines more opportunities to learn the art of combat profiling — the ability to assess a situation by interpreting the behaviors of people. Funded by the Office of Naval Research through a phase II small business innovation research contract, Aptima is focusing its efforts on producing the content of the software, called IMPACTS — "Improving and Measuring Perceptual, Attentional, and Critical Thinking Skills." It's a cognitive perception training tool, said Mike Paley, executive vice president.

The interactive program walks students through a number of scenarios in which they are asked to interpret what is going on and to look for clues that can tip them off to potential threats. For example, if troops are arriving in an area for the first time, they can look at the townspeople's body language to learn about their attitudes. Details such as whether they are standing in an open or closed posture, exposing the soles of



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their feet — an insult in many Middle Eastern cultures — or making eye contact are subtle but crucial signs of friendliness or hostility.

The team is incorporating images and video footage captured by military photographers both in combat and in training exercises to give students practice in realistic scenarios.

A sampling of themes covered includes crowds, small group situations, street events and “innocent” scenes. Scenarios that appear innocuous, such as children playing on street corners, will train troops not only in the detection of threats but also the signs of friendly force movement that can help reveal the locations of improvised explosive devices, or IEDs. Crowd scenes will highlight the dress and behaviors of the indigenous people while small group situations will emphasize leader and follower issues, body language and dangerous postures. Large street scenes will teach the detection of roadside bomb locations. For complete article from the National Defense Magazine, click [here](#).

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The following article on modeling H1N1 infection rates, originally appeared on the ScienceDaily website.

H1N1 SIMULATION MODELING SHOWS RAPID VACCINE ROLLOUT EFFECTIVE IN REDUCING INFECTION RATES

Early action, especially rapid rollout of vaccines, is extremely effective in reducing the attack rate of the H1N1 influenza virus, according to a simulation model of a pandemic outbreak reported in a new study in *CMAJ (Canadian Medical Association Journal)*.

The article presents a simulation model that projects how many people will be infected under different disease control strategies. The model simulated a pandemic outbreak based on demographic information from London, a mid-sized city in Ontario, Canada as well as epidemiologic influenza pandemic data. It looked at the impact of vaccination timing, school

closures and antiviral drug treatment strategies as well as the effect of pre-existing immunity.

The authors simulated a large range of possible scenarios that may play out in reality, to determine whether any general conclusions could be drawn. The model captures how vaccination not only protects vaccinated individuals but can also help the healthcare system to cope by flattening the peak of the outbreak and delaying the peak. The model provides mathematical predictions for how and when that could happen.

The H1N1 pandemic has required decision-makers to set policy in the face of significant uncertainties, and simulation models can be used to help them decide on the best strategy to mitigate the spread of infection.

"The results of our pandemic influenza simulation model suggest that vaccination can have a disproportionately large impact on reducing the attack rate in a "fall wave," although delays can significantly erode its effectiveness," write Dr. Marija Zivkovic Gojovic and coauthors.

As well, the model predicts that school closures would be effective. However, the authors note there are important social costs of school closures that they did not examine in the analysis. The study did not attempt to predict influenza-related deaths, and did not assess vaccination strategies targeted to high risk groups or specific age groups, such as school age children.

The model was developed by researchers from the University of Toronto, the Ontario Agency for Health Protection and Promotion and the Research Institute of the Hospital for Sick Children in Toronto; and University of Guelph in Guelph, Ontario. For original article from ScienceDaily, click [here](#).

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The following article on virtual world for amputees, originally appeared on the NextGov website.

A VIRTUAL WORLD FOR AMPUTEES

Three virtual reality companies have started to develop an online world for amputees with funding from the Army's Telemedicine and Advanced Technology Research Center.

The Amputee Virtual Environment Support Space (AVESS) project will research the needs of soldiers who suffered wounds that resulted in amputation and establish protocols and prototypes for addressing those needs in a virtual environment.

Since 2001, more than a thousand troops have lost a limb in combat operations in Afghanistan or Iraq, and the new virtual environment will give them a place to practice skills that will help with their rehabilitation.

Unlike the open world of Second Life, which anyone can access, the amputee virtual world will be a closed community. But it will use virtual world technology developed by Second Life operator Linden Labs. ADL Co., which develops virtual worlds for health care providers, and Virtual Ability Inc., which helps disabled people use Second Life, also are AVESS partners. For original article from NextGov, click [here](#).

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The following article on simulating job functions to improve hiring, originally appeared on the Government Executive website.

JOB SIMULATIONS COULD HELP AGENCIES MAKE BETTER HIRES, REPORT SAYS

Federal agencies might have better luck selecting the best job candidates if they included a simulation of the work in the application process, according to a new report from the Merit Systems Protection Board. Developing tests to see how prospective employees respond to a given work environment

or how they perform a particular task can be expensive. But "agencies need to weigh the fact that it may be more costly in the long run to make poor hiring decisions than to spend the money to make good ones," MSPB wrote in the report. In fact, bad hires can end up costing as much as three times their salary after factoring in training, lost time and repeating the hiring process, according to the board.

Job simulations -- which can include everything from asking candidates during the interview to explain how they would handle a specific situation to exercises in which they must answer customer calls or perform others tasks that are part of the job requirements -- allow hiring managers to determine whether applicants have the knowledge, skills and abilities to succeed in particular positions, MSPB said. Candidates selected after such tests can end up being 32 percent more productive than their peers, according to the report.

Such simulations also help candidates determine if they want the job, said John Palguta, vice president for policy at the Partnership for Public Service, which can help avoid turnover among applicants who find out after the fact that they dislike the work.

"If they're offered the job and they accept it, they go in knowing it's a customer service job [for example], and I'm going to have to deal with rude people, but that's part of the job," Palguta said. "Some people will do the simulation and say, 'If that's what the job's about, I don't really want it.' They'll self-select out." For complete article from Government Executive, click [here](#).

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DoD MODELING AND SIMULATION STAFF OFFICER COURSE (MSSOC)

January 19-21, 2009
Alexandria, VA

This three-day course provides a broad overview of modeling and simulation (M&S) policy and activities of the Department of Defense (DoD), with discussion of how DoD employs M&S in support of training, analysis, acquisition of new products and systems, test and evaluation (T&E) and experimentation. The course focuses on M&S terms, concepts, applications, and information resources, preparing attendees for positions that require conversancy in these topics. Students will gain familiarity with major M&S concepts, policies, organizations, programs, activities, and issues within the Department of Defense. Two (2) Continuous Education Units (CEUs) are available for this course as well as twenty-one (21) Continuous Learning Points (CLPs). For more information on the MSSOC, click [here](#).

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Please visit the MSIAC [Calendar](#) for a list of events taking place in the M&S Community.

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MSIAC M&S NEWSLETTER

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