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Welcome to the September/October 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 September/October 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

New MSIAC Director

Joint Task Force deployment preparation

Improved pilot training

Australian air-collision avoidance technologies

Games and new locations for Army training

New university for Army logistics

Blast injury research program

Upcoming SpringSim'10 Conference

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NEW MSIAC DIRECTOR

The MSIAC is pleased to announce that Mr. Bob Graebener, a veteran in the modeling and simulation industry, has been named Director of the Department of Defense's Modeling and Simulation Information Analysis Center (MSIAC). Mr. Graebener brings more than 30 years of modeling and simulation (M&S) experience and leadership to the MSIAC, and will leverage his M&S operations research and

program management to promote the use, deployment and sustainment of M&S throughout the DoD community. He will oversee the continued expansion of the center's modeling and simulation activities in support of programs throughout the government and with those allied to DoD M&S initiatives.

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

COMMAND PREPARES JOINT TASK FORCE HEADQUARTERS FOR DEPLOYMENT

(NORFOLK, VA – Sept. 24, 2009) -- U.S. Joint Forces Command (USJFCOM)'s Joint Warfighting Center (JWFC) will conduct a mission rehearsal exercise (MRX) for units preparing to deploy to Iraq Sept. 28-Oct. 8 in Suffolk, VA.

Unified Endeavor 09-3 (UE 09-3) will prepare the Army's III Corps to assume command and control of U.S. Forces - Iraq upon its expected arrival in theater, said Army Lt. Col. Mike O'Neill, JWFC's lead planner for the exercise.

"The exercise will be scenario-based," he said. "We replicate two weeks in Iraq and we try to provide what that staff would see."

UE 09-3 includes three complementary phases: academic, the MRX itself and a staff assistance visit conducted in theater after the corps assumes its new responsibilities, O'Neill said. In addition to those three phases, the JWFC will conduct a supplementary exercise in January at the request of the III Corps commanding general.

During the academic portion, subject matter experts from Iraq along with other experts provided presentations and relevant context for the operating environment as well as lessons learned and best practices, he said.





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UE 09-3's second phase uses the JWFC's Joint National Training Capability to provide a realistic environment using a mix of live events and modeling and simulation capabilities, O'Neill said.

During the MRX, III Corps and 1st Armor Division units at Fort Hood, Texas, Fort Riley, Kansas, and Grafenwoehr, Germany will use the battle rhythms, command, control, communications, computers, and intelligence systems, and joint tactics, techniques, and procedures used in theater.

In addition to replicating the USF-I headquarters, the MRX uses numerous role players from theater – including local, national, regional and interagency organizations – to portray the complex political, economic, military, social and informational environments in which the corps will operate.

"When they arrive in theater, they understand the process and what they have to do. When they come, they are ready to take over," he said.

"There isn't this big downward turn where they have to learn their jobs. They already know what's expected and what's going on."

O'Neill said USJFCOM's objectives will incorporate regional and cultural considerations and integrate senior leadership from the Iraqi army and police.

"That will be our biggest operational piece; what we can do to support the enablers to provide the Iraqis the help they need," he said. "It helps build a relationship between the Iraqis and the III Corps, so when they arrive they will at least know some faces."

O'Neill said the upcoming drawdown of combat troops in Iraq is a major operational piece that will be represented in the scenario. For complete article from the United States Joint Forces Command, click [here](#).

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The following article on pilot training, originally appeared on the United States Air Force website.

AMC SIMULATOR LINKING INITIATIVE MAKING PILOT TRAINING BETTER

SCOTT AIR FORCE BASE, Ill. (AFNS) -- Air Mobility Command is not only training its pilots, it's doing it better. The command is linking its aircraft training simulators through numerous bases to make a good flight crew an even better flight crew.

This simulator linking initiative is part of an Air Force Smart Operations for the 21st Century initiative by AMC. The effort is showing a multitude of possibilities for improving efficiency and saving time and money.

"The networking capabilities we will be employing with our high-fidelity simulators are similar to those used by many video game players who link with other participants across the world," said Mr. Sean Carey, AMC Distributed Mission Operations Branch chief. "Crews can fly in formation and talk over the radios as though they were live-flying with one another."

Currently, AMC officials have C-17 Globemaster III simulators linked together through the Distributed Mission Operations Center, or DMOC, located at Kirtland AFB, NM. The C-17 simulators and aircrews are based out of Charleston AFB, SC, McChord AFB, WA, Elmendorf AFB, AK, and Hickam AFB, HI.

In August, AMC contracted to set up its own distributed training center, or DTC, to be housed in the 126th Air Refueling Wing's simulator facility building at Scott AFB. AMC is also looking to connect its simulators throughout mobility air force locations.

Officials said this linking initiative will greatly increase the amount of training in air refueling and formation that can be accomplished in simulators. The goal is to have all 10 of the C-17





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simulator locations connected through the command's distributed training center by 2012. By 2017, the goal is for all AMC major aircraft weapon systems to be connected to the DTC.

AMC is linking the C-17 simulators first, and then plans on connecting the air refueling platforms, including the KC-10 Extender and KC-135 Stratotanker and their boom trainers, along with the C-5 Galaxy. This increment will be followed by the connection of AMC's tactical airlift fleet, the C-130 Hercules aircraft.

This capability also allows the command to complete readiness training in a low-risk environment and in a more cost effective manner than conducting the training in aircraft. Air refueling training in the simulators, for example, can save up to \$5,430 an hour in the KC-10 airframe.

The use of simulators frees up aircraft for real-world missions and deployments, Mr. Carey said. Also, through linked simulators, AMC aircrews across the globe can practice flying together in a snowstorm in Alaska or in the deserts of the Middle East without having to gather everyone to a specific location. They can even safely practice emergency scenarios in the simulators so in case the real life situation ever takes place they'll be better prepared.

Even current C-17 pilots are seeing the benefits of the simulator linking.

"It's a great thing to have people from different backgrounds providing different perspectives on similar tasks," said Capt. Sean Burke, a C-17 pilot from the 15th Airlift Squadron at Charleston AFB. "That is the foundation of what makes us the most effective Air Force on Earth." For complete article from the United States Air Force, click [here](#).

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The following article on Australian-developed technologies improving aircraft flight safety,

originally appeared in the National Defense Magazine.

TECHNOLOGIES TO HELP AIRCRAFT AVOID MID-AIR COLLISIONS

Recent flight tests of newly developed technologies are proving that it is possible to fly manned and unmanned aircraft safely in the same airspace.

"We're attacking the three or four real key enabling technologies," says Reece Clothier, project manager of the Smart Skies Project, a three-year research and development project in Australia that is focused on integrating unmanned systems into civilian airspace. It is being funded in part by the Queensland State Government Smart State Funding Program.

His team, in collaboration with Boeing Research and Technology in the United States and Australia and the Australian Research Center for Aerospace Automation (ARCAA) — a joint venture between the Commonwealth Scientific and Industrial Research Organization and the Queensland University of Technology, is helping to develop and test technologies in three areas: global aircraft separation management, aircraft tracking and onboard detection systems for collision avoidance of dynamic and static obstacles.

Boeing's airspace separation management system concept, called the automated dynamic aerospace controller, or ADAC, employs algorithms to track aircraft and resolve potential conflict situations. It can be located anywhere on the planet to provide four-dimensional separation assurance service to aircraft flying around the world.

The mobile aircraft tracking system, a portable air traffic control radar under development by Boeing Research and Technology Australia, is capable of detecting and tracking aircraft in a five- to 10-nautical mile range. It can transmit traffic information to the ADAC, to local air traffic control and to other airspace monitors.





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Finally, the detect, sense and act system is seeking to help unmanned systems perceive and avoid moving and stationary obstacles.

The team completed a full month of flight-testing of the automated dynamic airspace controller (ADAC) in July in Kingaroy, Australia, at a remote test range about four hours northwest of Brisbane. The trials were conducted with up to seven aircraft — three live aircraft including two unmanned systems, and four simulated aircraft including one flown at Sheffield University in the United Kingdom. The aircraft were linked via Iridium satellite and Telstra NextG communications networks to the ADAC separation system, located in Palmdale, Calif.

“We wanted to demonstrate that it could be anywhere,” Clothier says at the Association for Unmanned Vehicle Systems International symposium in Washington, D.C. In one scenario, a fixed-wing unmanned system and a drone helicopter were put on a collision course. For safety reasons, their actual flight paths were separated by altitude. The ADAC system altered their flight paths to keep them flying safely. In another scenario, the ARCAA airborne systems laboratory — a modified Cessna 172R aircraft — was flown in a range of conflict scenarios with a varying number of simulated aircraft, says Clothier. Pilots in the Cessna flew “hands-off” and monitored onboard displays as the ADAC transmitted separation commands directly into the autopilot system. For complete article from the National Defense Magazine, click [here](#).

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The following article on the U.S. Army shifting training for soldiers, originally appeared on the Training Simulation Journal (TSJ) Online website.

COMBAT-EXPERIENCED U.S. ARMY SHIFTS TRAINING TO FIT NEW TYPE OF SOLDIER

The U.S. Army is looking to distribute some gaming applications that can be downloaded to PDA devices for use as training tools that

soldiers can use wherever and whenever they want.

Gaming is an increasingly important tool for training soldiers across all types of operations, an Army TRADOC chief said today. Speaking at the AUSA 2009 convention, Maj. Gen. Mark Hertling, special assistant to the Training and Doctrine commanding general, said that once a gaming application becomes available, it can be used by lots of people for many different training scenarios at relatively low cost.

“This is how this generation learns,” Hertling said. “We can adjust the training to the requirement.” Hertling said the Army was about ready to start issuing the PDA devices with games-based training applications so soldiers may continue repetitive practice training even as they are doing something as routine as waiting for a flu shot.

The Army is adjusting how it approaches training in a number of ways. As well as leveraging gaming technology, it is looking to distribute more of its simulator-based training to home stations so that training moves away being from a once-a-year, centralized exercise to an ongoing program that goes where the soldier is located.

Col. Paul Funk, deputy commander, Combined Arms Center-Training, described this as a move toward a “hub-and-spoke” training concept. He gave as an example the Army’s new Home Station Instrumentation System, which will be rolled out over the next four years. This training system will sit at a number of designated base sites from where it can be quickly deployed to neighboring “spoke” bases as and when a unit needs to train.

“It’s a concept that takes resources and moves them to where the soldiers are, not the other way around,” Funk said. The Army is also focused on how best to train soldiers across all types of operations — counterinsurgency, conventional and stability operations — in the best and most efficient way.



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The key, said Maj. Gen. James Huggins, director of operations, Readiness and Mobilization, is to train people to be adaptable to their environment. For complete article from the Training Simulation Journal (TSJ) online, click [here](#).

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The following article on the Army Logistics University (ALU) opening, originally appeared on the Unites States Army website.

ARMY LOGISTICS UNIVERSITY USHERS IN NEW ERA FOR SUSTAINERS

FORT LEE - Hundreds of members of Team Lee gathered July 2 to watch history unfold as the U.S. Army Logistics University officially opened with much fanfare and celebration.

Soldiers, Marines, Department of the Army civilians, foreign military officers and community members converged on the expansive new school grounds to listen to remarks by the leaders responsible for bringing this new Army learning center to Fort Lee.

International military students began the sequence of events with a parade of international flags followed by the 50 state flags. The 74 flag-bearers represented a small portion of the more than 32,000 students who will attend the ALU annually.

The ALU is the second of many Fort Lee projects mandated by the 2005 Base Realignment and Closure law. It marks the cumulative efforts of Congressman J. Randy Forbes, the U.S. Army Training and Doctrine Command, U.S. Army Combined Arms Support Command, the U.S. Army Garrison, Fort Lee and the Army Logistics Management College.

Col. Shelley A. Richardson, ALU president, thanked those responsible for making this historical occasion a reality.

"This is a result of the incredibly hard work of

many organizations and entities, all with different viewpoints of what right should look like," said Richardson. "But who came together the last 36 months with the goal of making the vision of this university a reality."

Maj. Gen. James E. Chambers, CASCOM and Fort Lee commanding general, read a note from Gen. Ann E. Dunwoody, U.S. Army Materiel Command commanding general, marking the event. The framed note, which will be among one of the first objects to hang in the new building, reads in part: "Congratulations on this momentous event. This is a great day for the Army. It marks a milestone in sustainment training and education history."

After reading Dunwoody's remarks, Chambers spoke about what the future will be like at the Army Logistics University and Simulation Training Center.

"These two buildings will deliver education, training and constructive sustainment simulation," he said. "ALU will play a defining role in producing sustainers who are more multi-functional, more proficient, more capable and clearly more effective. Each Soldier and civilian leaving ALU will be ready to support victory on the battlefield and prepared for the challenges of today and tomorrow whether in our Army, or in our sister services or with our allies."

Chambers said the ribbon cutting ushers in a new era for all who work in the sustainment field.

"It is a great and historic day for Team Lee," Chambers said. "We probably won't see something like this again for 50 or 60 years. It is one that we ought to embrace and enjoy." For complete article from Army.mil, click [here](#).

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The following article on the Blast Injury Research Program, was contributed by the Biomedical Survivability Systems Program, National Security Technology Department at Johns Hopkins University Applied Physics Laboratory.





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BLAST INJURY RESEARCH PROGRAM

In 2006, the Secretary of Defense designated by directive the Secretary of the Army as the Executive Agent to coordinate and manage Department of Defense (DoD) medical research efforts and programs relating to the prevention, mitigation, and treatment of blast injuries. The directive assigns responsibilities governing coordination and management of the Blast Injury Research Program, and directs the Armed Services Biomedical Research Evaluation and Management (ASBREM) Committee to facilitate coordination and prevent unnecessary duplication of effort within DoD biomedical research and development and associated enabling research areas. To comply with the directive, the U.S. Army Medical Research and Materiel Command (USAMRMC) established the Blast Injury Research Program Coordinating Office (PCO) in 2007.

The PCO has been chartered to coordinate all DoD blast injury research efforts in order to provide a joint focus and a common framework across the Department. To this end, the PCO is leveraging new extramural blast research partnerships with DoD medical research laboratories to achieve a cutting-edge approach to solving blast injury problems. At the PCO's request, the Johns Hopkins University Applied Physics Laboratory (JHU/APL) developed the Blast Injury Prediction Tool Assessment Process (BIPTAP) to provide an independent, objective evaluation of simulation tools. JHU/APL has assembled a broad-based, non-advocacy panel, comprised of experts from industry, academia, and government with experience in model development, T&E, clinical medicine, and IV&V to evaluate model attributes.

The expert panel is evaluating models for use in assessing toxic (fire) gas protection technologies from an injury outcome perspective. This evaluation will culminate in a recommendation to the Assistant Secretary of Defense for Health Affairs for approval as DoD medical standards. The adoption of a single model or an integrated set of models for a particular injury mechanism

will enable DoD to differentiate performance of protection technologies within a common framework.

JHU/APL is interested in information on computational fire gas inhalation models that address one or more of the following areas: multiple gas exposure; mixing of gases; and the physiological impacts of gas inhalation, including injury, incapacitation, and impacts on physical and cognitive performance for assessment as part of the BIPTAP project. If you are a model owner or developer and have a model you want considered in this evaluation please contact Mr. J. Michael Walters, john.walters@jhuapl.edu, 240-228-2470, or Ms. Simone Youngblood, simone.youngblood@jhuapl.edu, 240-228-7958 for further information on the process or the submittal procedure. JHU/APL is also hosting a Medical Standards for Blast Injury Prevention: Fire Gas Inhalation conference in February, 2009, If you are interested in attending please register at www.biptap.com.

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The following article on the 2010 Spring Simulation Conference, was contributed by the Society for Modeling and Simulation International (SCS).

2010 SPRING SIMULATION MULTICONFERENCE (SpringSim'10)

*April 11 - 15, 2010
Orlando, Florida*

The 2010 Spring Simulation Multiconference (SpringSim'10) is an annual conference which 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



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systems; military, government & aerospace; environment, 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.

Scientists, engineers, managers, educators, and business professionals who develop or use simulation tools are invited to participate and present original papers. Proposals are solicited for papers, panels, tutorials, workshops, seminars, exhibits, social activities and for other presentation, discussion and sponsorship formats.

People are always welcome to benefit by taking an organizing role. SpringSim'10 offers many ways to promote simulation products and to enhance corporate images. You are invited to use the Spring Simulation Multiconference in ways that best serve your interests. For more information from SCS on the SpringSim'10, 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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