

NTSA's Training Industry *news*

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Current *news*

USAF Fast Tracks Deliveries of Predator UAVs

Reprinted from *Jane's Defense Weekly*

U.S. Air Force Chief of Staff General Michael Moseley has ordered the accelerated delivery of MQ-1 Predator unmanned aerial vehicles and crews to Iraq and Afghanistan to boost the number of combat air patrols flying missions over insurgent strongholds.

Gen. Moseley has decided to fast track the delivery of enough unmanned aerial vehicles and crews to provide 21 daily combat air patrols in the Central Command theater by December 2008—one year sooner than originally planned, according to a July 13 U.S. Air Force announcement.

There are currently 12 Predator combat air patrols flying daily in Iraq and Afghanistan, but U.S. Air Force officials will begin growing that number in the next few months with crew expansions and drone deployments to accommodate the addition of two more combat air patrols.

The U.S. Air Force also plans to increase the number of available Predator operators from 120 to 160. The drones are flown by active duty and Air National Guard personnel operating remotely from bases in Nevada, California and North Dakota. The Air Force began flying drones out of Arizona starting the week of July 16.

Backpackable Micro Air Vehicles Work in Field

Reprinted from *Aviation Week & Space Technology*

Hovering virtually invisibly and inaudibly against the background noise in the hot and dusty air of Iraq are some of the most remarkable and curious-looking unmanned air vehicles sent to war. Resembling a cross between a coffee maker and small beer keg, the Honeywell-developed, ducted-fan micro air vehicle (MAV) has been deployed to save lives from the danger of improvised explosive devices.

Honeywell's diminutive MAV, weighing 16 pounds dry and 18.5 pounds when filled with fuel, is small enough to be carried in a backpack, yet capable of being deployed for up to 50 minutes at a time on missions to "hover and stare" at suspicious targets. Deployed in Iraq for use by the U.S. multi-

service explosive ordnance disposal group under a recently awarded \$7.5 million U.S. Navy contract, the MAVs are performing a far more specialized role than the Defense Advanced Research Projects Agency originally envisioned.

The vehicles in service today trace their roots back to a 2003 DARPA advanced concept technology demonstration program. "We basically started with a clean sheet design when we joined an ongoing DARPA development which had kind of stalled," said Honeywell MAV Program Manager Vaughn Fulton.

Combining its flight controls and inertial navigation systems know-how with micro-electromechanical systems technology, Honeywell coupled them with a miniaturized global positioning system and data sensors from other suppliers. "The government picked the sensors, but the other unique technology we brought was the duct design," says Fulton, who adds that flow data and design techniques were honed by the company's engine division.

Back and Forth

Reprinted from *Defense Daily*

The Air Force's ability to control unmanned aerial vehicles like the MQ-1 Predator and RQ-4 Global Hawk during combat missions over Iraq and Afghanistan with operators sitting in ground control stations in the United States who send commands to the aircraft via secure satellite communication links is often called "reachback." But the Air Force official who actually designed this architecture has a different take. "It is more like a reach-forward since we can actually operate the entire system from the United States," says the official.

The experience can border on the surreal, he says. "If you spend more than an hour in a ground station and you are listening to all of the chatter on the secure radios and you are watching all of the video and you are seeing everything that is going on, you are now part of those combat missions," he says. "When you walk out of those ground stations, it takes you actually a few minutes to say 'I am not

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A non-profit organization that serves the interest of the simulation, training services, training support, and computer-based training systems industries.

President's *notes*

Rear Adm. Fred Lewis, USN (Ret.)

For NTSA Members:

In recent years, it has become increasingly clear that the United States must do something to redress a dangerous and growing imbalance between the declining number of young people studying technical subjects in this country and the explosion of youth overseas who are specializing in the sciences. Reversing this trend is becoming critical, not only to maintaining this nation's position in the increasingly competitive global economy, but also because of its implications for national security.

Simply put, it will be impossible for the United States to maintain its preeminent position in science and technology unless we reignite excitement for technical learning among the youth of today.

Recently, a number of States have begun implementing a comprehensive series of programs and activities known collectively as the "STEM" (Science, Technology, Engineering and Mathematics) Initiatives. These programs are designed to relate science and technology to the high-tech world in which the youth of today live, so they see the interconnection between the sciences, science learning, and their everyday activities and experiences. In this manner, excitement and interest in technical subjects is being stimulated, instead of their being shunned as irrelevant and "nerdy".

We at the National Training and Simulation Association justifiably pride ourselves on the dynamism and growth of the Interservice/Industry Training, Simulation and Education Conference (I/ITSEC), the foremost event of its kind in the world. Along with the growth in attendance, number of exhibitors and expansion of our community of practice into many areas of vital national importance, we at NTSA have also steadily increased our efforts to support learning about simulation technology at I/ITSEC. At this point, we have a number of very successful and productive programs, including:

- The Future Leader's Pavilion, where high school level students from schools around the country demonstrate often remarkable examples of their work and research;
- An active and growing Student Tours Program, involving hundreds of young people from schools all over central Florida, which is one of the important hubs of simulation training research and development;
- Simulation Technician Scholarships, which offer community college level students support in their pursuit of degrees in simulation technology;
- Post Graduate Scholarships at the Masters and Doctorate level, in support of advanced simulation learning and research;
- Continuing Education Credits, administered by the University of Central Florida, for selected I/ITSEC tutorials and papers: an

excellent means of keeping current with the evolving technologies of the world of simulation;

- Professional Development Seminars, in response to requests from I/ITSEC attendees. These are conducted immediately following I/ITSEC each year, and are another means of staying on top of fast-moving modeling and simulation developments;
- In addition, for the past several years, we have organized a "Warfighters' Corner" at I/ITSEC, where our men and women in uniform who have been in harm's way in Iraq, Afghanistan and elsewhere, discuss the value and relevance of simulation training to their real world experiences. This "users' report" is an invaluable learning tool as we explore ways to further perfect the technology to make it even more relevant to real world situations.

All these activities, valuable as they are, have developed independently under the overall umbrella of I/ITSEC. While in some ways they are mutually reinforcing, this is more by happenstance than plan. Initiatives such as STEM are predicated on the concept of interlocking activities, each designed to be an integral part of a whole. I believe we at NTSA now face the challenge of developing a similarly unified, comprehensive approach to our educational initiatives, which will not only enhance our own organization's efforts, but will also contribute more meaningfully to the STEM Initiatives as a whole.

Our community of practice may be uniquely qualified to tap the latent enthusiasm of today's youth for science and technology. What other technical area takes everyday youth fascinations such as PC gaming to a level that boggles the minds of the students who see the I/ITSEC exhibit hall for the first time? To a boy and girl, those young people who visit I/ITSEC come away saying that this stuff is beyond cool. What better starting point can we have to directing this enthusiasm and intellectual energy into thoughts about learning how to take the technology to the next level?

I therefore believe that the time is upon us to create a disciplined, unified and reinvigorated approach to the "E" in I/ITSEC. After all, the "Training" and "Simulation", important as they are, come with the territory of the overall technology. It is the "E" which needs to constantly be made to connect to the future of this technology--the youth of today.

I therefore urge all of us at NTSA and throughout our community of practice to recognize the urgency of the need to engage young people in our technology. To this end, NTSA will aggressively explore additional means of reaching out to youth across the country as we simultaneously work to better coordinate our own educational initiatives. I welcome your thoughts and ideas on this subject of vital national interest.



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The Global marketplace

DoD Mulls Leveraging Technology

Reprinted from *Defense Daily*

The Defense Department is mulling how best to access innovative, cutting-edge technologies from commercial companies around the globe without burdening these firms with export controls that would dissuade them from wanting to do business with the Pentagon at all, a senior defense official said.

“One of the big concerns that I have is commercial companies have a fear of getting ‘ITAR taint,’” William Greenwalt, deputy under secretary of defense for Industrial Policy, said during a speech at the ComDef 2007 conference in Washington, D.C. “This is an issue that is just coming to the forefront, but it is not something that is a crisis yet.”

ITAR stands for the International Traffic in Arms Regulations, the U.S. export control regime designed to protect sensitive technology from falling into the hands of adversaries or unauthorized entities.

“A number of commercial companies have expressed concern ... that they have a commercial product and once they sell that commercial product to the Defense Department, and maybe modify it to a certain degree, it becomes ITAR controlled,” Greenwalt explained. “And, therefore, every item that they want to go out in the commercial marketplace, they have to get an export control and that could potentially leave them at a commercial disadvantage.”

For traditional suppliers of military-unique equipment, dealing with ITAR is part and parcel of doing business with the Defense Department, he said. But for companies that operate predominantly in the commercial sector, dealing with an inflexible and overbearing control regime might jeopardize their commercial opportunities, causing them to say, “It’s just not worth doing business with DoD,” he said. “That is the concern.”

Now Best Chance to Remake Export Controls

Reprinted from *Aerospace Daily & Defense Report*

There has never been a better chance than now to reform the U.S. export regime, U.S. and foreign officials and experts said in September. But any change is racing the 2008 elections clock and

already faces European and industrial fatigue.

Speaking at the Common Defense 2007 conference in Washington, U.S., British, Italian and industry representatives claimed the post-Cold War defense supply chain has already become commercially based and globally sourced. In turn, U.S. laws and regulations need to evolve from relying on old lists, lengthy license applications, a focus on countries and multidecade development timelines.

They highlighted pending U.S. treaties with the United Kingdom and Australia and their preapproved community provisions, which would obviate several license applications, as a likely trend.

Raptor Capabilities Could Force Alternatives

Reprinted from *Aerospace Daily & Defense Report*

As Japan continues its quest to buy the F-22, the country could face an internal hurdle that could divert its attention to other candidate aircraft—the Raptor’s offensive capabilities could make it illegal there.

“Under the current interpretation of the Japanese constitution, (the Japanese military) is only allowed to possess defensive capability,” says a June 29 Congressional Research Service (CRS) report. “Military aircraft are almost inherently flexible weapon systems and can be difficult to classify as offensive or defensive.

“They can be used in primarily defensive roles, such as defending indigenous airspace from attack, or to attack an adversary’s homeland or air forces. When the F-22 program was threatened by congressional budget cuts, advocates argued that its offensive capabilities mandated its continuation,” CRS said. “Consistent emphasis on the F-22’s ability to penetrate contested airspace and destroy enemy defenses could lead many to believe that the Raptor is primarily an offensive weapon.”

Australian Firms to Enjoy Treaty Benefits

Reprinted from *Jane’s Defense Weekly*

Australia and the U.S. signed an agreement on September 5 that will permit license-free exporting of defense equipment and allow Australia greater access to U.S. military technology. The Australian Department of Defense said

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actually there. I am actually here in the United States.' That is how real it gets."

Networks, Software Key to U.S. Army Vehicle Experiments

Reprinted from *Defense News*

There was just one thing odd about the U.S. Army Stryker as it raced along at 55 kilometers per hour in a convoy in the desert of White Sands Missile Range, New Mexico—nobody was in the driver's seat. The Stryker's computer was driving, avoiding obstacles and navigating rugged terrain using the latest autonomous navigation sensors and software developed for the Army's Future Combat Systems.

Army officials said the August test, which also used a light medium tactical vehicle, went better than expected. Now service officials are looking at ways to give autonomous navigation systems to combat forces years earlier than planned. "This technology is advancing at a pace that the resources are in place for potential inclusion into the current fleet," Future Combat Systems spokesman Paul Mehney said.

The Army's first autonomous ground vehicle was to arrive in 2015: the armed multifunction utility logistics and equipment vehicle. The 27-ton manned ground vehicle is also to be remote-controlled when necessary. But the robot-driven Stryker and light

medium tactical vehicle drove so quickly and nimbly—some 30 kilometers per hour faster than previous test vehicles—that Army officials believe unmanned vehicles might join convoys much earlier, helping to put fewer troops at risk.

National Guard Transformation "Defying Gravity," Chief Says

Reprinted from *Defense Daily*

Starting practically from zero on 9/11, the National Guard has built the capabilities it needs, especially to cope with homeland defense and security, at unprecedented speed considering the complexity of getting it done, the Chief of the National Guard Bureau said. "You talk about transformation in this town, you tell me what organization can go from zero to these kind of numbers, defying gravity of the system, frankly," Army Lt. Gen. Steven Blum, chief of the National Guard Bureau, said at a Defense Writers Group breakfast.

Where there were none on 9/11, the National Guard now has Joint Force Headquarters in every state and territory, a total of 54. There are 12 chemical, biological, radiological/nuclear and explosive enhanced response force packages that are fully equipped and certified. By the end of the year, there will be 17, he said. There are 55 Joint Operations Centers. Critical infrastructure assessment teams went from zero on 9/11 to six today. These teams assess the vulnerability of critical infrastructure for the Defense Department.

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“Eighty percent of the critical infrastructure of this nation is in the private sector—it’s not in DoD,” he said. Today there are 54 National Guard reaction forces. There were none on 9/11. There are also 54 computer emergency response teams. These damage mitigation teams know what to shut down and how to protect a system under attack, he said.

Joint incident site communications capability. “I had zero of those in Katrina. We now have 40 of those going to 72 by the end of the year,” Blum said.

There is also a joint interagency training capability, which brings together personnel from the Department of Homeland Security with the civil community and the Defense Department. This means people don’t meet for the first time at the scene of a crisis. They’ve worked together before.

What the National Guard did have on 9/11 were 10 weapons of mass destruction civil support teams. Today there are 52 trained, certified and fully equipped such teams. There will be 55 by the end of the year. These teams were mandated by Congress, not sought by the services nor the Defense Department. To reach this point was not easy, Blum said. “We had a lot of non-concurrences all the way up the line; we pushed because it was the right thing to do.”

Army to Commercially Produce Unique Armor

Reprinted from Defense Daily

To protect military personnel and vehicles from improvised explosive devices and explosively-formed penetrators, the Army has decided to commercially produce a unique steel armor based on technology developed and patented by the Department of Energy. “The Army forms those kinds of partnerships to foster technology, remain technologically strong, and ensure its preeminence on the battlefield,” Lt. Col. William Wiggins, an Army spokesman said.

Scientists at the Office of Fossil Energy’s National Energy Technology Laboratory developed the processing technology, called the lost-foam process, to produce a cast-slotted steel armor known as P-900, a Department of Energy statement said. The National Energy Technology Laboratory, which is the only source of production-sized patterns, has supplied its patterns and technical expertise to foundries as an initial step in producing the armor.

Calling this initiative its “highest priority,” the Defense Department plans to purchase about 10 million pounds of P-900 cast steel armor for use as add-ons to military vehicles. The U.S. Army Tank and Automotive Command (TACOM) expects to receive the first 2.5 million pounds by the end of 2007 to produce the initial quantity of armor.

The Army decided to commercialize the process following a series of successful ballistic tests it performed on the cast steel armor. National Energy Technology Laboratory scientists had produced the castings for the armor using a new heat-treating process to optimize ballistic performance. In late July, the Department of

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NTSA Launches Virtual Television Network

Introducing SimTV. The first Internet television network dedicated to simulation, modeling, and training.

Online video is changing how the world communicates. To meet this challenge, the National Training and Simulation Association (NTSA) is launching SimTV, the world’s first Internet television network dedicated to simulation technology. SimTV will showcase this dynamic, exciting industry, demonstrating its full capabilities in dramatic, captivating video.

Building an Online Marketplace

SimTV will be a compelling, must-visit Internet destination for anyone interested in modeling, simulation and training technology. By offering an interactive forum with high-quality video channels that include the latest in corporate news, industry developments and research information, SimTV will become the place for the world to see this technology in action.

Seize the Opportunity

Your channel on SimTV will allow you to promote your products and services worldwide, 24/7/365, in an attention-getting video environment. SimTV will:

- Drive and maintain qualified interest to your channel and, through it, to your own Website
- Allow you to ascertain overall market trends, specific market opportunities, and research directions
- Assist your organization in maintaining thought leadership and market position
- Enable you to grow your market share and move quickly to capitalize on emerging growth areas
- Immerse you in an ongoing dialogue about the modeling and simulation industry and community of practice

For further details and SimTV’s start-up schedule, visit simtv.org and contact Debbie Dyson at 703-247-9480 or ddyson@ndia.org.

Who's where

■ **L. Terry Bavaro** has been promoted to principal engineer in the Chantilly, Virginia-based Imagery Programs Division of The Aerospace Corporation's Remote Sensing Systems organization. He was systems director of a new source-and-method remote sensing demonstration system. **Sandor Z. Der** has been promoted to principal scientist in the division's Geo-Intelligence Systems directorate. Der was senior project leader in the directorate's Sensor Integration Department.

■ **Lawrence B. Prior, III**, has been named chief operating officer of Science Applications International Corporation. He was promoted from president of the company's intelligence, security and technology group.

■ **Rear Adm. Bruce W. Clingan** has been appointed director of the Warfare Integration and Assessment Division in the Office of the Chief of Naval Operations in Washington. He has been director of the office's Air Warfare Division. **Rear Adm. Walter M. Skinner** has been named program executive officer for tactical aircraft programs in the Office of the Assistant Secretary of the Navy (research, development and acquisition), NAS Patuxent River, Maryland. He has been serving as commander of the Weapons Division of the Naval Air Warfare Center, China Lake, California. Skinner will be succeeded by **Rear Adm. David A. Dunaway**, who has been deputy program executive officer for air anti-submarine warfare, assault and special mission programs at NAS Patuxent River, Maryland.

■ **David G. Miller**, a technical fellow at the Boeing Rotorcraft division in Philadelphia, has received the AIAA's 2007 de Florez Award for Flight Simulation. He was cited for achievements and approaches to modeling and simulation of complex rotorcraft aeromechanical systems that have led to advancements in rotorcraft flying qualities and flight control technologies.

■ **Capt. Donald Gaddis**, formerly the F/A-18 program manager, will now head up the Navy's presidential helicopter program, VH-71. Gaddis left the F/A 18-E/F program in July. He will succeed **Doug Isleib**. "The change in leadership comes after the completion of two and a half years of service for Isleib and at a point in the program to allow the next program manager the best opportunity to shepherd the Increment Two program from its inception," the Navy says. Isleib will be moving to an enterprise program management position, the Navy adds.

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Defense had budgeted \$200 million in FY07 funding for the Army to procure the first set of castings. Each foundry producing the castings will have to be qualified for its ballistic and production schedule capabilities.

National Energy Technology Laboratory and U.S. Army TACOM personnel contacted a number of foundries throughout the United States that were capable of producing the armor. Once these foundries are deemed qualified, the Army plans to proceed with the full-scale production of 100,000-plus castings at a rate of 100 to 600 castings per day at each foundry.

Air Force Establishes Provisional Command for Cyberspace

Reprinted from Defense Daily

The Air Force took another step toward establishing an operational command for cyberspace by announcing the creation of a provisional major command for the domain that will be located at Barksdale AFB, Louisiana. Secretary of the Air Force Michael Wynne made the declaration on September 18 during a ceremony in the Pentagon marking the 60th anniversary of the Air Force.

The provisional command is designated AFCYBER (P) and will be headed by a two-star general. It will oversee the service's cyberspace activities in the interim until the Air Force's leadership determines the size and location of the objective major command, which is expected to be on a par with Air Combat Command and Air Force Space Command.

"The commander of AFCYBER (P) will prepare the way for the eventual standup of a full major command that will train and equip forces to conduct sustained global operations in and through cyberspace, fully integrated with air and space operations," Maj. Gen. Charles Ickes, special assistant to the Deputy Chief of Staff for Operations, Plans and Requirements on the Air Staff, said in a statement that the Air Force issued.

"While a number of basing locations for a permanent command staff are being considered and evaluated, no final decisions have been made," Ickes continued. "In many aspects, the Air Force is already executing the day-to-day cyber mission. The standup of this command will align these functions under one commander."

Calendar of Upcoming *events*

Mark your calendars for these upcoming events focused on training and modeling & simulation:

NOVEMBER 26-29, 2007

I/ITSEC 2007 Conference

Orange County Convention Center
Orlando, Florida

Please visit www.trainingsystems.org/events
for complete details or contact Patrick Rowe at
(703) 247-9471 or prowe@ndia.org for more information.

Training & Simulation *report*

Pentagon Takes Aims at Simulator Interoperability

Reprinted from *Defense News*

Backed by the Office of the U.S. Secretary of Defense, a collection of military, scientific and industry officials are undertaking a 15-month effort to solve the befuddling problem of integrating the myriad architectures used in live, virtual and constructive environments.

U.S. Joint Forces Command is overseeing the Live, Virtual Constructive Architecture Roadmap (LVCAR) working group, which held its first formal meeting in April and has a January deadline to file an interim report on the problems and proposed solutions. If a panel of high-level civilian Pentagon officials approves the recommendations, a final report would be released next July.

It's a challenging assignment for the panel, said Warren Bizub, project engineer for the LVCAR and director of advanced concepts and studies at the command's Joint Warfighting Center in Suffolk, Virginia. Earlier efforts by other groups to tie together the mishmash of LVC architectures and protocols have fallen short. Those attempts "were supported by one community or another," Bizub said, but not by all groups. "Here we have the entire community supporting this effort."

Industry, academic, military and governmental participants taking part in the LVCAR had to sign nondisclosure agreements—effectively leaving Bizub as the voice for the review—and have access to an exclusive web portal open only to participating members. Interest from the modeling and simulation communities has been excellent, Bizub said. "Everybody recognizes that there are efficiencies to be gained there in reaching an agreement that benefits the Defense Department, industry and our coalition partners."

Live, Virtual Training Combine to Create 3-D World

Reprinted from *Defense News*

The days when U.S. Marines trained for battle with combat video games may be over, now that advanced technologies are propelling military simulators into the three-dimensional realm of "immersive training." In September, the Marine Corps and the Office of Naval Research unveiled a \$1.3 million prototype infantry immersive trainer at Camp Pendleton, California. A second simulator is planned for the Marine Expeditionary Rifle Integration Facility at Quantico, Virginia.

"We show what the art of the possible is," said Navy Cmdr. Dylan Schmorrow, a program officer who is helping lead the project for the Office of Naval Research. "You're able to operate temporally through three-dimensional space."

Immersive training, a relatively new term, means a combination of live and virtual training, and eventually constructive, or networked, aspects as well.

Announced in April, the project incorporates several technolo-

gies developed by the Office of Naval Research, which has spent nearly \$75 million and plans to spend another \$50 million in the next five years in human performance, training and education programs. The Institute for Creative Technologies at the University of Southern California, meanwhile, has developed FlatWorld, which combines sounds and high-resolution imagery projected on digital flat-screen displays with real physical objects, movable props and reconfigurable rooms and buildings.

It's a far cry from a decade ago, when the Marine Corps turned to "Marine Doom," a military version of the popular two-dimensional personal-computer-based game, to help sharpen the battlefield tactics of its troops and fire teams.

Fire teams or squads will participate within a 3-D video game of urban-battlefield streets in life-size combat driven by video-game simulations and interactive technologies that are more realistic and adaptable and easily incorporated into training facilities. A rifle squad could practice closer to home base while operating virtually in simulated play through a key firefight during the 2004 battle of Fallujah, for example.

U.S. Marines Define Simulation Objectives Through 2017

Reprinted from *Defense News*

The U.S. Marine Corps' new training modeling and simulation master plan lays out objectives for the Corps through 2017, with specific goals for 2009, 2014 and beyond. "The objective is a robust, agile and scalable [modeling and simulation] infrastructure and family of systems that increases efficiency by providing increased opportunities to make decisions from the procedural level to the [Marine Air Ground Task Force] level that satisfies conditions and standards associated with training and readiness standards," the document says.

Marine Corps Maj. James McDonough develops modeling and simulation requirements at the service's Training and Education Command in Quantico, Virginia, which is spearheading the master plan. He said the Corps has developed a training master plan in 1994. "Obviously, a lot has happened in the past 13 years," McDonough said.

Rather than write a document hundreds of pages long that nobody would read, he said, the Test & Evaluation Command drew up a 15-page plan with appendices that lays out major milestones. "It's not prescriptive; it provides flexibility for changes in the future," he said.

The plan says the use of today's batch of training tools and simulators is "ad hoc and problematic as the operating forces and training commands struggle with operational commitments and other training commitments."

The plan cites a number of modeling and simulation capabilities

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that are anticipated to aid in live, virtual and constructive training within two years, including the combined arms C2 training upgrade system, acquisition of Virtual Battlespace 2 software, fielding of the deployable virtual training environment to the regimental level and persistent access to the joint training and experimentation network simulation centers. It says a validation of those systems is necessary to ensure they are supported properly and fielded at the appropriate time to meet near and midterm requirements.

Experimental Training Architecture Survives Exercise

Reprinted from *Defense News*

Australian and U.S. forces put a two-year-old joint training concept to a 27,500-person test recently—and declared the idea ready for further development. The second U.S.-Australian Talisman Saber exercise recently concluded in Australia saw the first use of the Joint Combined Training Center concept that is designed to better measure operational capabilities and improve joint training between the two countries.

Not just a single center, the Joint Combined Training Center is an architecture that links Australian and U.S. headquarters, units, training areas and training management systems, along with virtual and constructive simulations worldwide, into a single high-quality training experience. The center, whose development started in 2005, was put to its first big test in Talisman Sabre 07, which ran June 10-July 2 in northern Australia.

The war game involved 7,500 personnel, 20 ships and 25 aircraft from the Australian Defense Force and 10 ships, 100 aircraft and 20,000 personnel from the United States. The biennial exercise began in 2005 after two previous exercises—Tandem Thrust and Crocodile—were merged.

Among the Joint Combined Training Center's top goals was integrating Australian and U.S. training and simulation equipment and facilities. But they also featured improving live training facilities at Shoalwater Bay, including development of a new exercise control building and an urban operations training facility.

The urban operations facility is reconfigurable and features a fixed town center with permanent buildings and mobile buildings based on modified shipping containers. The town has different precincts and is designed to replicate common urban landscapes, including industrial areas and low, medium and high-density residential zones.

U.S. Air Force Lab Simulates Feel of Operations Centers

Reprinted from *Defense News*

A secure phone rings inside a U.S. Air Operations Center. Officers scurry to coordinate the unmanned aerial vehicles, reconnaissance planes and satellites that are used behind the scenes in the war in Iraq. CNN is on one screen. On the phone, a commander says he suspects insurgents have installed improvised explosive devices along a critical roadway. A sandstorm is complicating the collection of airborne imaging. Can a space sensor see what's going on?

A space specialist snaps into action. Looking at a display, he sees that the best satellite sensor for that job is not available for some reason. Maybe it's broken. Maybe someone is jamming communications. Or maybe it has a bead on Osama bin Laden. The specialist doesn't have time to care. He begins analyzing the improvised explosive device problem for the commander using other options he's been trained to understand.

This hypothetical drill captures one of the thrusts of Air Force Space Command's \$1.2 million Space Power Laboratory in Colorado Springs, Colorado, an Air Force contractor said. A reality of war, obviously, is that not everything goes right. Sensors break, or they're busy with higher-priority tasks. "How do you deal with a degraded environment and still get the job done?" Dennis Murphy, a retired Air Force colonel, asked. "We're focused on that more and more."

Murphy is manager of the modeling and simulation services division of Alion Science and Technology, McLean, Virginia, which built the Space Power Laboratory for the Air Force Space Command. The highly classified room was set up in 2005 in Colorado Springs to simulate the space elements of an actual Air Operations Center. Its computers and work stations are modular, so they can be assembled to simulate other non-Air Operations Command configurations as well.

3Dsolve Develops Final Stage of DPM-3D Software

Reprinted from 3Dsolve Press Release

3Dsolve Inc., has announced that it has completed the final development stage of its unique DPM-3D (dynamic plant model in 3D) simulation training software, which was created to provide a cost-effective training platform for environments where the timely operation of complex machinery is critical. DPM-3D supports thousands of dynamic and interactive objects, including switches, gauges, valves, and indicator lights, as well as special effects such as steam, smoke and fire.

Each implementation of DPM-3D can be tailored to reduce costs and to maximize training outcomes. As one example, a sample power plant training module might involve one team member turning on a series of pumps, while another opens and closes a series of simulated valves to direct the water flow of the cooling system to the appropriate power equipment. A third team member can watch the pressure and temperature gauges dynamically update as changes are made and the system responds. By working together, the team is able to achieve the desired outcome of preventing the system from overheating. While this is taking place, the instructor is able to walk around the team in the virtual environment, observing their actions and interactions, seen and unseen.

"DPM-3D has the potential to significantly alter how many companies manage their high-end training processes in the future," said Richard Boyd, chief executive officer of 3Dsolve. "What state-of-the-art flight simulators are to the airline industry today, DPM-3D will become to engineers in naval vessels, power plants, or any environment where the optimal use of complex machinery is critical."

Major Program *report*

F-22 Lessons Obviate Need for Two JSF Test Vehicles

Reprinted from *Aviation Week & Space Technology*

Halfway through its \$24 billion development contract, funding pressure on the Joint Strike Fighter is driving managers to propose eliminating two test aircraft from the flight-test program. Fiscal stability is of paramount concern for Lockheed Martin and government officials. The program was sold to customers on the promise of affordability, gained through economies of scale. Nine partner nations are buying at least 3,000 of three variants of the F-35, with the U.S. portion at slightly more than 2,400 aircraft. The U.S. expects to spend about \$299 billion on the program through its life cycle.

Fiscal concerns are a key reason for a recent review conducted halfway through development. Nearly two-thirds of the contract dollars have been spent, with about \$9 billion remaining. What raised a red flag is a dip in the available program management reserve funds, which are used by officials to sort out developmental issues quickly while keeping the effort on track. One government official says the program is short as much as \$600 million in this account.

Trimming two test aircraft would save hundreds of millions of dollars, says Dan Crowley, Lockheed Martin Joint Strike Fighter vice president. The company proposed cutting three aircraft from the program, but Gen. C.R. Davis, USAF, the Pentagon's Joint Strike Fighter manager, settled on two for fear that dropping three would not be acceptable to the Defense Department and Congress.

Senate Appropriations Cut LCS, But Express Support

Reprinted from *Defense Daily*

Despite handing down a \$910 million cut to the Navy's littoral combat ship, members of the Senate Appropriations Committee voice their support for the program as they voted unanimously to approve a defense spending bill for FY08. The committee's recommendation would fund the construction and development of the first two littoral combat ships but cut FY07 money for the LCS-4 and funding for three ships in FY08. The mark also pledges \$75 million in advance funding for a ship in FY09.

During the committee's discussion of the bill, Sen. Richard Shelby, (R-Alabama) acknowledged the cost overruns and schedule delays leading up to the committee's decision to slash funding for the program, but he said he is concerned about the potential loss to the Navy. "I believe this is a vital capability for our future Navy Force, and I believe we must have it in our fleet," Shelby said.

Sen. Daniel Inouye (D-Hawaii), chairman of the defense subcommittee, said he and ranking member Sen. Ted Stevens (R-Alaska) strongly support the program and have urged the Navy in the "strongest way possible" to form a workable plan.

After the mark, Shelby told reporters that he is also concerned

about losing jobs in Mobile, Alabama, and will continue to work with Inouye and Stevens on a possible compromise. The bill still must work its way through debate in the Senate and then a conference with the version of the bill passed by the House, which funded just one ship in FY08, but left funding for the LCS-4 alone.

F-22 Deployments Show Advances, Undeveloped Capabilities

Reprinted from *Aviation Week & Space Technology*

Analysis of the F-22's combat potential reveals significant development of its advanced capabilities for surveillance from high-altitude, cruise missile defense, and speed and dispersion across the battlefield. Capabilities still to come include the addition of advanced air-to-air missile capabilities (with the AIM-120C-6, C-7 and D model and AIM-9X); next-generation information operations, such as communications network attack, and development of electronic attack for non-kinetic warfare.

What's not clear is how far along operational units are in developing the ability to direct false targets and other misleading information into enemy radar emitters. Much of the potential for information and electronic attack capabilities remains embedded in the F-22 but undeveloped, or will be available in software upgrades. The capabilities, however, are being considered.

"Electronic attack and information operations do have synergies: with advanced radars and new aircraft like the F-22 and F-35, said Brig. Gen. Punch Moulton, commander of the 18th Wing in Kadena. "But my guess is that most of the benefits of computer network attack will fall serendipitously on the next [generation] of air-to-air engagement. It may be what takes down command and control effectiveness of the adversary's system in the immediate advance of a pair of fighters, but [the pilots won't know it]. We will find that these synergies happen at the operational and strategic level and that the people at the tactical level are the beneficiaries. [The advantages] are in the combination of having electronic combat combined with F-22 stealth and speed, the ability to scoot past double-digit surface-to-air-missiles."

STOVL Variant of JSF Nears Completion

Reprinted from *Jane's Defense Weekly*

Lockheed Martin, the prime contractor for the F-35 Lightning Joint Strike Fighter, is expected to finish final assembly of the first short take-off vertical landing variant in December. The first flight is expected to take place in the second quarter of 2008.

The first short take-off vertical landing test aircraft, known as the BF-1, is one of 14 aircraft currently being produced at Lockheed Martin's final assembly plant in Fort Worth, Texas, for use in the system development and demonstration phase of the

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that the Australian-U.S. Treaty on Defense Trade Cooperation is a “significant step forward in the defense relationship” between the two countries and noted that only the UK currently offers similar export terms under a deal signed in June 2007.

The Defense Department said: “For Australia, the treaty will significantly reduce delays in acquiring in-service support for U.S. defense equipment by eliminating lengthy licensing processes, reducing lead times before Australian and U.S. companies can discuss potential business opportunities and allowing early access to U.S. technical data and technology.

It added that a total of 2,361 licenses and 312 agreements were approved by the U.S. for Australia in 2006. “The removal of the requirement for the approval of licenses or agreements will create significant cost and time savings for government and industry,” said the Defense Department.

“The treaty creates a comprehensive framework for two-way trade between Australia and the U.S. in defense articles—including equipment, spare parts, services and related technical data—within an approved community of government facilities and private companies

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Joint Strike Fighter program. Those 14 aircraft include five short take-off vertical landing variants, five conventional take-off and landing variants and four carrier variants, according to Lockheed Martin spokesman John Smith.

Low-rate initial production of the first two production aircraft—both conventional variants—has already been approved and production is expected to start before the end of the year, Smith said.

U.S. Delays Humvee Replacement

Reprinted by *Defense News*

The Pentagon may be pushing production of its joint light tactical vehicle program back to 2012, but industry is moving ahead quickly. At least seven industry teams are working on prototypes, technologies and designs to anticipate the Pentagon’s wish for a utility vehicle with combat abilities: AM General and General Dynamics Land Systems, BAE Systems, Cadillac Gage, Force Protection, Lockheed Martin, Oshkosh and Protected Vehicles.

In August, the joint program’s lead agency, the Army’s TACOM Life Cycle Management office, unveiled a schedule that discarded the idea of beginning production in 2010. Military leaders who once envisioned the joint light tactical vehicle as an updated Humvee now want a tactical mobile vehicle with traditional combat capabilities, said Dennis Haag, the deputy manager for Assured Mobility Systems with the Army’s TACOCM branch.

“How we are fighting the war has changed,” Haag said. “In warfare, there is not a front and a rear anymore. You can have a bad guy pop up anywhere.” However, issues other than changing requirements are slowing the joint light tactical vehicle program, Army officials said.

in the U.S. and Australia without the need for licenses,” it added.

France Moves to Relax “Arcane” Arms Export Laws

Reprinted from *Jane’s Defense Weekly*

French Defense Minister Hervé Morin has called for an easing of France’s heavy-handed controls on arms exports to help military suppliers sell their goods abroad. “Our regulations are proving a handicap to the industry,” he said in August at an informal meeting with the press. “Some of the rules are so arcane that even a surrealist would have trouble inventing them.”

A recent report drafted for the French parliament proposed that the government simplify controls for the least sensitive and most frequent exports to concentrate efforts on exports that deserve scrutiny.

Jacques de Lajugie, an official in charge of promoting French arms exports, said in an interview in the *Délégation Générale pour l’Armement’s* in-house publication *Vision* that Paris was hoping to land “export contracts that are worth as much as domestic orders to suppliers (in other words EUR8 billion to EUR10 billion annually)” in the next few years.

2007 NTSA M&S AWARDS – NOW OPEN FOR NOMINATIONS!

Each year, NTSA M&S awards are presented to government and non-government individuals or teams for outstanding achievements in the development or application of models and simulations. Awards are given for outstanding achievement in the specific M&S functional areas of Training, Analysis, and Acquisition and for outstanding achievements in support of the overall M & S effort (Cross-Function).

Nominations are now being accepted for the 2007 NTSA M&S Awards. Please note that nominations entered here must be for Non-DoD employees or teams (doing work in support of DoD is fine). The nomination deadline is January 15, 2008.

For more details, and to submit a nomination, please visit: <http://www.trainingsystems.org/nomform.cfm>

Please contact Patrick Rowe at (703)247-9471 or prowe@ndia.org with any questions about the awards.

The Modeling and Simulation Coordination Office manages a corresponding awards program for DoD employees and teams. For more information, please visit <http://www.msco.mil>.

2006 NTSA M&S Award Winners

NTSA once again recognizes the winners of the 2006 Awards for Outstanding Achievement in Modeling & Simulation. For more details on their achievements, please visit: <http://www.trainingsystems.org/nomform.cfm>.

Training—Simulation Development Team, Moog FCS / FlightSafety International and Air Traffic Simulation Training Team, Federal Aviation Administration

Acquisition—Flight School XXI Simulation Services Team, Computer Sciences Corporation (CSC), L-3 Communications, Link Simulation & Training, and FlightSafety International (FSI)

Cross-Function—Mr. John Noss, General Dynamics Information Technology

Contracts

Romanian Army Selects Quantum Training Platform

Reprinted Quantum3D Press Release dated September 10, 2007

Quantum3D has announced that the Romanian Army has selected the company's ExpeditionDI untethered man-wearable immersive training platform and Quantum3D's LightSpeed image generator software to assist the Romanian Army in its research and development of future soldier systems.

Purchased by Romania's Military Equipment and Technologies Research Agency, the ExpeditionDI system will be employed by the Romanian Army to evaluate different equipment solutions to improve training for its soldiers. ExpeditionDI allows researchers and training system providers to integrate solutions with various software, databases and toolsets in order to evaluate training effectiveness. ExpeditionDI and Quantum3D LightSpeed image generator software for realtime scene-management, along with other selected game-based training tools, will provide the Romanian Army with state-of-the-art simulation capabilities with which they can identify new training technologies and test new training and operational systems prior to fielding.

EDO to Make Aircraft Test Units

Reprinted from *Defense News*

EDO, New York, won a \$44 million U.S. Air Force contract for AN/PLM-4 radar-signal simulators used to test the electronic defenses of military aircraft. The indefinite delivery/indefinite quantity contract enables the Air Force to purchase about 491 AN/PLM-4 systems over the next five years. Initial funding has been provided for 279 units valued at \$22 million.

The AN/PLM-4 radar-signal simulator generates signals used by anti-aircraft weapons. By simulating these signals, the aircraft's defensive electronics can be tested on the flight line before takeoff.

Since the AN/PLM-4 was introduced in 1998, EDO said it has received orders for more than 1,250 systems from foreign and domestic customers. To date, more than 975 have been delivered.

UCAS Operations Details Emerge Following Northrop Win

Reprinted from *Aerospace Daily & Defense Report*

Details about stealth, unmanned concepts of operation and new missions like air-to-air refueling are emerging following

the award of the U.S. Navy's unmanned combat air system demonstration contract to Northrop Grumman. Building off the company's X-47B prototype, the \$635.8 million, six-year contract includes landing an unmanned combat aircraft on a carrier deck by late 2011.

According to company officials, the X-47B flying wing design will offer stealth protection against both high frequency (anti-aircraft radars and ground-to-air or air-to-air missiles) and low frequency (long-range search radars) emitters, a capability that earlier stealth designs didn't have.

The unmanned aircraft also will offer the ability to take off and land on aircraft carriers and operate in weather too poor for manned flight. Because there is no pilot in the cockpit, mission endurance is expected to reach 50-100 hours.

Since the unmanned combat air system is going to be aloft for so long, the company is adapting the two weapons bays to carry 12 precision-guided, 250-pound small diameter bombs instead of two 2,000-pound joint direct attack munitions. That way the aircraft can strike more targets during a mission and take advantage of its long-loiter capability.

ITT to Purchase EDO for \$1.7 Billion

Reprinted from *Defense Daily*

ITT Corporation said it has agreed to acquire military contractor EDO Corporation for \$1.7 billion in cash and acquired debt, in a deal that significantly broadens ITT's defense product and customer portfolio. EDO's stock price this year has been red hot, more than doubling from just under \$25 per share to over \$50 in September. ITT said it would pay \$56 for each of EDO's shares and assume \$120 million in net debt.

A big reason why EDO has soared this year is because it has been the sole winner for the United States military's purchases of radio controlled counter-improvised explosive device systems under the CREW 2.1 program. Just last week the company received another order for its counter-improvised explosive device systems valued at over \$170 million. EDO's backlog for the systems is over \$500 million. ITT believes the EDO's counter-improvised explosive device work has staying power, and foresees strong sales for the current Pentagon program through at least 2009. "This is a multi-million dollar market and EDO has the key program of record," Steve Gaffney, president of ITT's Defense segment, said.

NTSA would like to recognize the following company members for their support throughout the year.

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For membership information, see page 4 of this newsletter, visit <http://www.trainingsystems.org>, or call (703) 247-9471.
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