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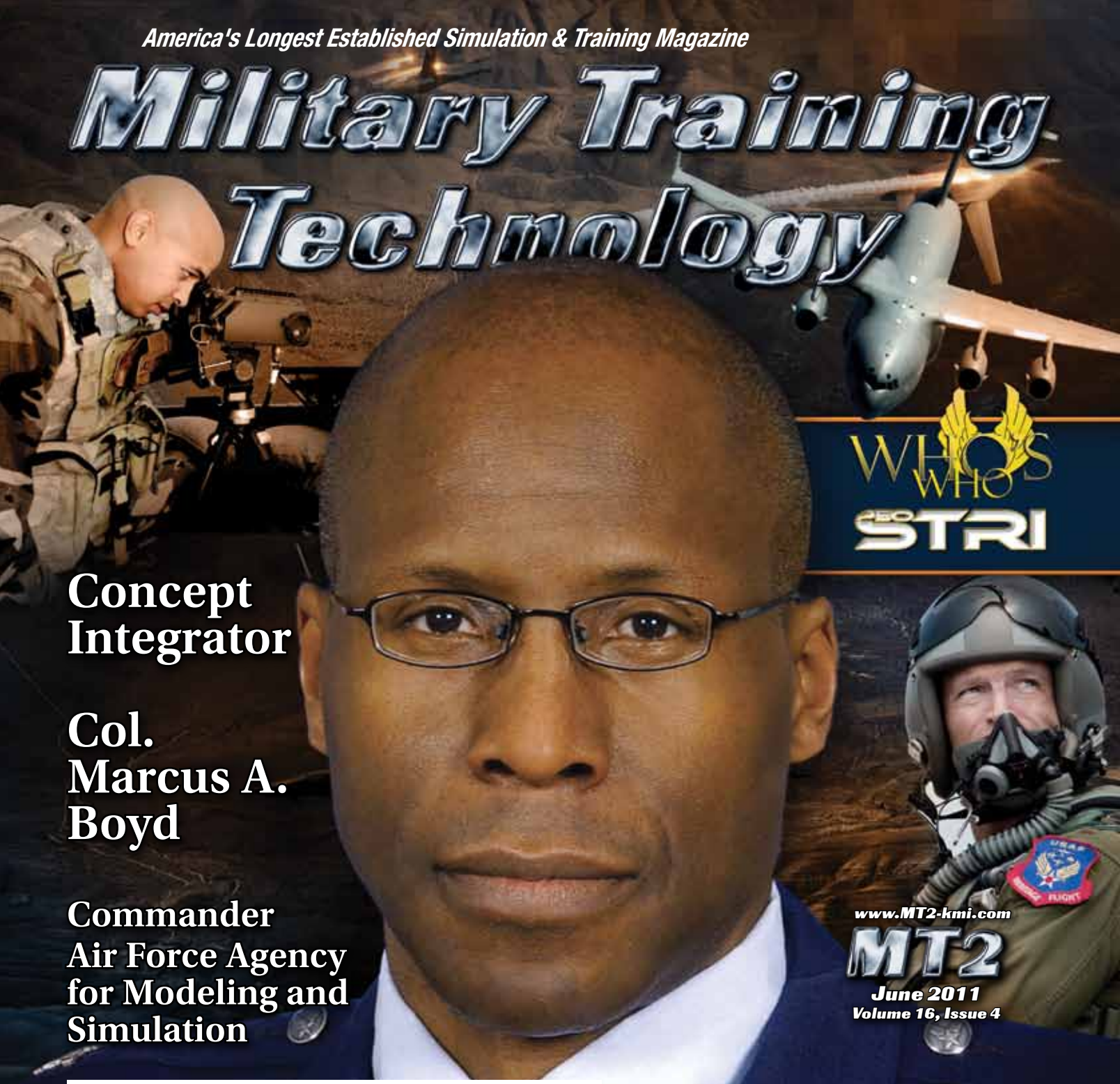
Military Training Technology



WHO'S WHO CEO STRI

Concept Integrator

Col. Marcus A. Boyd

Commander Air Force Agency for Modeling and Simulation

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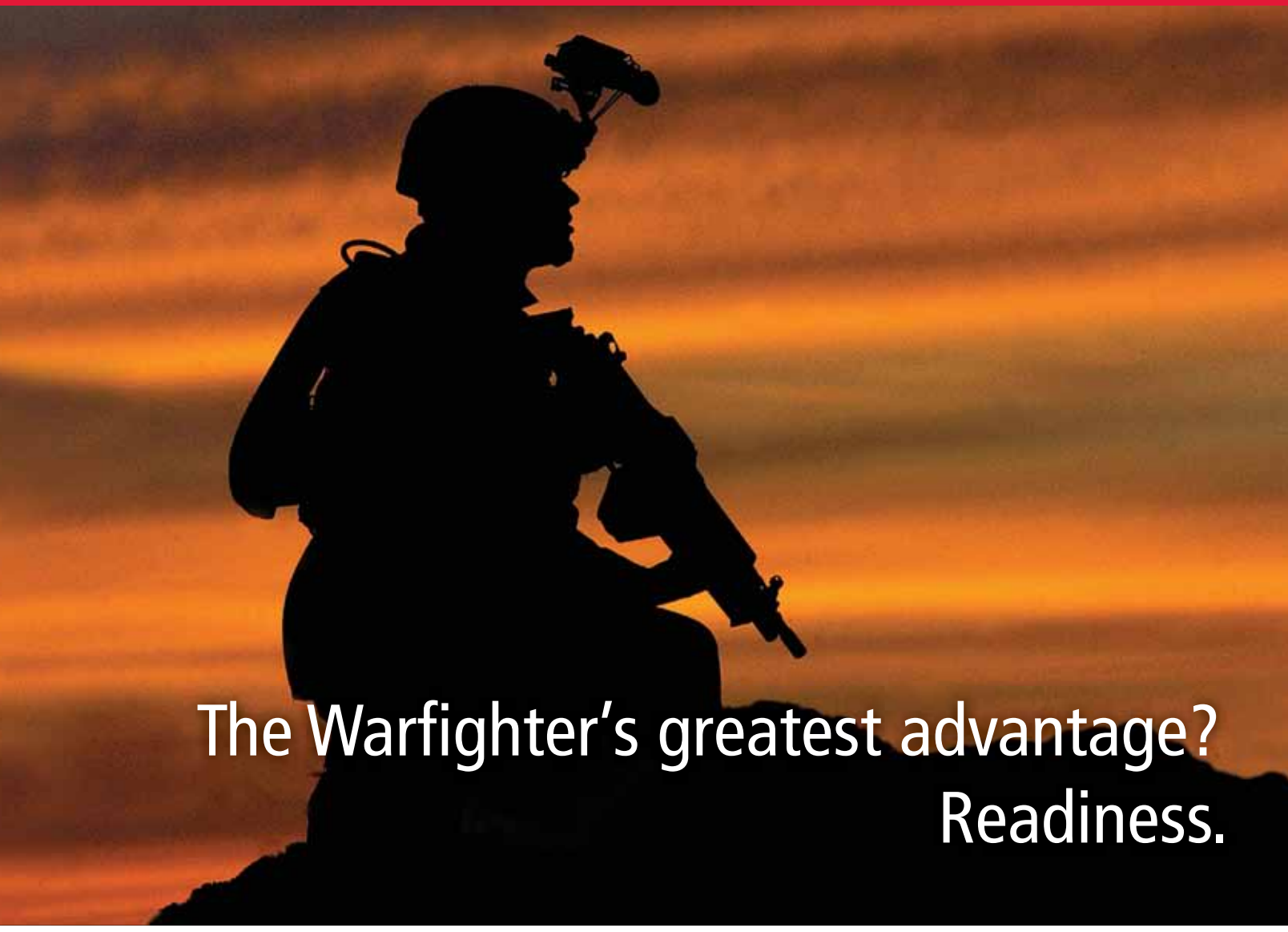
MT2

June 2011

Volume 16, Issue 4

Modeling the Details ⋆ Maintaining Ranges ⋆ Maritime Simulation

Warfighter Support Services



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JUNE 2011
VOLUME 16 • ISSUE 4

FEATURES

Who's Who PEO STRI
This special section provides an in-depth overview and an exclusive program update from each of PEO STRI's project managers. This section also includes a pictorial who's who of the organization and a list of the top critical contracts.

Naval Simulation Training
Driving a multi-billion dollar naval vessel for the first time may not be such a good idea without previous training. The U.S. Navy is looking to incorporate simulators for training purposes, from generic to specific areas, in order to maintain operational readiness.
By Peter Buxbaum

The Devil in the Details
The advancement of video game technology has military trainers utilizing these improvements in a multitude of training products. However, trainers must keep in mind that the goals of the gaming industry are far different than those of the military.
By Kenya McCullum

Keeping Training Ranges in Shape
Private firms and contractors play an important role in military training on both firing and driving ranges, not only maintaining the ranges, but doing so in an environmentally friendly way.
By Henry Canaday

COVER / Q&A

Colonel Marcus A. Boyd
Commander
Air Force Agency for
Modeling and Simulation

DEPARTMENTS

INDUSTRY INTERVIEW

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Chief Operating Officer
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MILITARY TRAINING TECHNOLOGY

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Recognized Leader Covering All Aspects of Military Training Readiness

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EDITOR'S PERSPECTIVE

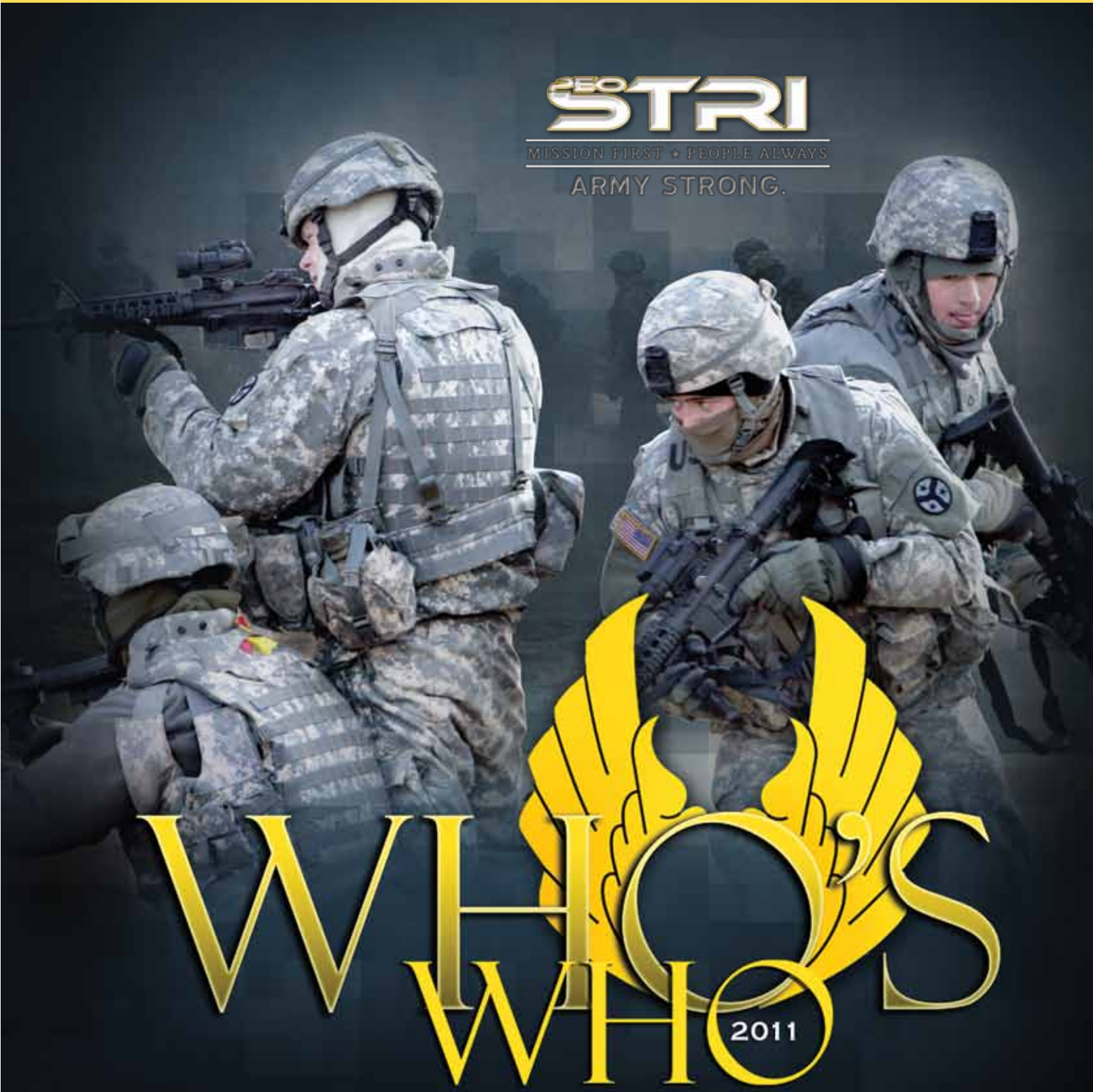
Brian O'Shea
EDITOR

As an avid gamer of the first person shooter genre, I have played a wide variety of military video games. While the gaming industry and military simulator industry have different goals, the value of simulated environments used for training purposes is obvious to me. For example, in a video game, if a frag grenade is thrown at my feet, my first instinct is to dive behind cover and get low to the ground; or if I'm using a M249 SAW light machine gun, I know it will be heavier, resulting in slower movement and a longer reload time than if I were carrying an M-16. I know that a weapon with a silencer attached does not have the same range or accuracy as a weapon that does not have such an attachment. All of these things are common knowledge to me now from years of playing these types of video games. These are concepts I do not have to think about; they are second nature. If military simulated training can ingrain that type of thinking in our warfighters, it has my complete support.

With over 10 years of experience as a journalist, I have interviewed hundreds of veterans from conflicts ranging from World War II and Vietnam to Iraq and Afghanistan. I have heard veterans of later conflicts emphasize the benefits of simulator training, both in strategic approaches to mission assignments as well as preparation for rarely predicted scenarios. Those veterans from WWII said they would have appreciated the opportunity to utilize current simulation training as a way to better prepare them for their overseas deployment.

With the Obama administration tightening its budget belt across the board, the value of simulated training is clear, both from an operational readiness standpoint as well as cost. I am thrilled to be the newly appointed Editor of *Military Training Technology*, as the advances in this industry are constantly evolving and the increased relevance of such products offers our military endless potential in training our warfighters.

Feel free to contact me with any questions you have regarding *Military Training Technology.*



WHO'S WHO 2011

PROGRAM EXECUTIVE OFFICE FOR SIMULATION, TRAINING, AND INSTRUMENTATION

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Joe Giunta

PM ITTS:
Col. Mike Zarbo

PM Field OPS:
Russ McBride

PM ConSim:
Rick Copeland
(acting PM)

PM TRADE:
Col. Mike Flanagan

PM CATT:
Col. Francisco Espaillat

Top 10 Contracts

Program Name: STOC II- Multiple Award IDIQ
Award PIN: W900KK-09-D-0300 to W900KK-09-D-0585
Contractor: Multiple
Estimated Value: $17.5 billion

Program Name: Warfighter FOCUS
Award PIN: W900KK-07-D-0001
Contractor: Raytheon Technical Services Company LLC
Estimated Value: $11.2 billion

Program Name: Flight School XXI
Award PIN: N61339-03-D-0014
Contractor: Computer Sciences Corporation
Estimated Value: $1,307,555,441

Program Name: AVCATT
Award PIN: N61339-00-C-0002
Contractor: L-3 Communications Corporation
Estimated Value: $804,633,454

Program Name: Common Army Ranges and Target Systems (CARTS)- Multiple Award IDIQ
Award PIN: W900KK-10-D-0050 to W900KK-10-D-0089
Contractor: Multiple
Estimated Value: $400 million

Program Name: Urban Operations Training Systems (UOTS)
Award PIN: W900KK-11-D-0001
Contractor: Lockheed Martin Corporation
Estimated Value: $287 million

Program Name: SETA
Award PIN: W900KK-09-D-0006
Contractor: Electronic Consulting Services Inc.
Estimated Value: $270,560,046

Program Name: OT-TES
Award PIN: N61339-04-D-0039
Contractor: Argon ST Inc.
Estimated Value: $251 million

Program Name: CIO DOIM
Award PIN: W91QUZ-07-D-0004-BF0134
Contractor: NCI Information Systems Inc.
Estimated Value: $247,420,571

Program Name: LT2 Consolidated Product Line Management
Award PIN: W900KK-10-D-0001
Contractor: General Dynamics C4 Systems Inc.
Estimated Value: $200 million

PM CATT

Q&A with Project Manager for Combined Arms Tactical Trainers
Col. Francisco Espaillat

Col. Francisco Espaillat

Q: What are the major highlights this year for CATT?

A: While the Project Manager for Combined Arms Tactical Trainers [PM CATT] successfully achieved multiple development and fielding milestones over the past year, perhaps our most significant accomplishment has been the expansion of our virtual training device footprint in Afghanistan from six to eight training sites. This has truly put PM CATT at the tip of the spear with regards to in-country training of our soldiers as they prepare for combat.

Secondly, we awarded the Dismounted Soldier (DS) contract, which culminated years of requirements development and refinement focused on our Army's most critical asset, the individual soldier. The DS project is the first virtual simulation capability focused on training dismounted soldier tasks, both at an individual and collective level, rather than training soldiers exclusively as a crewman for a ground tactical vehicle or an aviation platform.

And lastly, we supported the Army's number one priority tactical system by awarding the Route Clearance Training Systems contract, which is designed to train our soldiers to execute one of the highest risk missions in Iraq and Afghanistan-the clearing of roads and avenues of improvised explosive devices.

Q: How does your office adapt to meet ever changing realities in theater?

A: Through the process of continuous communication with our deployed soldiers who use our fielded training systems in Afghanistan and Iraq, PM CATT stays connected with their lessons learned so that we can subsequently modify and adapt our virtual training devices to meet emerging requirements.

In a recent example, I traveled to Afghanistan and Kuwait April 2011 to visit numerous training sites. The purpose of this visit was to garner direct feedback from our soldiers who train on PM CATT systems and also to gain insight from the supported commands on how PM CATT can improve the virtual training capabilities that we provide them. PM CATT has a variety of virtual training devices fielded in the area of operations including the Engagement Skills Trainer 2000, the Call For Fire Trainer, the MRAP Egress Trainer, the Medical Simulation Trainer Center, the HMMWV Egress Assistance Trainer and precision gunnery trainers for the Abrams and the Bradley combat vehicles.

Q: How can industry help PM CATT keep up with those needs?

A: PM CATT actively works to keep our industry stakeholders engaged by conducting industry days and through direct dialogue, be it in the form of office calls or site visits to our current and potential industry members. PM CATT supported a major industry day focused on full spectrum operations in April 2011 where more than 170 industry personnel met with their government counterparts to discuss current and future simulation capabilities. PM CATT also recently held a smaller scale industry day focused on medical simulation, where 46 industry members participated.

Upcoming venues for continued dialogue will be at the Training and Simulation Industry Symposium in June 2011, National Guard Association of the U.S. General Conference in August 2011, Association of the U.S. Army Annual Meeting and Exposition in October 2011, and the major simulation conference of the year, Interservice/Industry Training, Simulation and Education Conference, in November 2011.

Q: What are the major challenges facing your office this year and what are you doing to meet them?

A: Perhaps the largest challenge PM CATT is facing as we move into FY12 is the uncertainty of the Department of Defense budget, specifically as it relates to the funding levels for training and training devices. This is certainly not unique to PM CATT, as we continually seek to execute our projects more efficiently without sacrificing requirements or quality.

The budget challenge becomes increasingly complicated as we strive to realize the chief of staff of the Army's direction to focus on full spectrum operations, especially as units begin to return from the area of operations. We believe this will result in increased dependence on virtual training devices as units seek to re-establish proficiency on mission essential tasks, such as tank gunnery that may not have been as critical when they were conducting counterinsurgency operations in theater.

To address these challenges, PM CATT will continue to strive to maintain open and frequent communications with our supported units, combat developers and industry stakeholders, and pursue supporting the common operating environment that seeks to establish a cohesive training venue at homestation to enable unit commanders to maximize their limited training time.

Q: How do the training programs provided by PM CATT benefit soldiers dealing with high ops tempos and the need for adaptability in the field?

A: The virtual training aids, devices, simulations and simulators [TADSS] that PM CATT supplies to our soldiers improve their battle skills by providing training capabilities when the actual tactical platforms are not available. The training aids are flexible to meet changing tactical training requirements, inexpensive to operate due to significantly reduced fuel and ammunition needs, limit environmental impacts, and allow units to maximize live training events. The bottom line is that virtual TADSS are cost and time efficient, realistic, safe, and most importantly, help to save our soldiers' lives.

PM TRADE

Q&A with Project Manager for Training Devices Col. Mike Flanagan

Col. Mike Flanagan

Q: What are the major highlights this year for TRADE?

A: At I/ITSEC 2010, PM TRADE and TRADOC Capabilities Manager-Live jointly launched the Army Live Training Campaign Plan to more than 200 industry stakeholders.

The Army Live Training Campaign Plan consists of two main thrusts—Force-on-Force and Force-on-Target—and highlights the evolution of live training programs and concepts out to 2017, including roadmaps and objectives.

The Army Live Training Campaign Plan supports the Army's Training Concept 2012-2020 with emphasis toward enabling training across all domains [Combat Training Centers, homestation and deployed] to prepare the force for full spectrum operations. As the Army draws down troop levels in theaters of operation and units return to home installations, FSO becomes the training norm. PM TRADE, in its evolution of training devices, continues to look at ways to increase training effectiveness and opportunity; examples include embedding real-time casualty assessment into our training devices and providing CTC-like capabilities for homestation training.

In terms of homestation training, PM TRADE recently awarded three contracts that will have a major impact on the modernization of the Army's training ranges across the world at multiple installations. The contract awards include Urban Operations Training Systems, Common Army Ranges and Targets Systems, and Digital Range Training Systems. The three contracts have a combined contract ceiling value of more than $1.1 billion.

Q: How comprehensive and realistic can live training be? How does that mesh with simulations and other training systems?

A: Training in urban environments is one example of the effectiveness of live training. The evolution of training devices and concepts has allowed us to inject elements such as sounds, smells and cultural role players that closely replicate theaters of operations and conditions in which units will operate.

The newest evolution of digital ranges also employ more realistic battlefield effects that simulate a variety of conditions and provide real-time video and tracking that enable instructive after action reviews to enhance live training effectiveness.

But the most comprehensive, realistic and effective utilization of live training happens when live training is meshed with virtual and constructive training devices in a Live, Virtual, Constructive Integrated Training Environment [LVC-ITE]. This is where training is most effective for commanders and soldiers, and where training provides the most flexibility to train soldiers in multiple scenarios with varying echelons of units.

Q: How does your office adapt training programs to realities on the ground in theater?

A: First, urban operations training comes to mind. By injecting explosive sounds, olfactory effects, role players, cultural training, and running soldiers through these effects multiple times and then following each iteration with an after action review, the end result is moving closer to creating that déjà vu effect for soldiers when they see it firsthand in the theater of operations.

An example of a training device born out of the current counterinsurgency fight we have been involved with for the last decade is the Improvised Explosive Device Effects Simulator [IEDES]. The IEDES is scalable to settings of small to large explosions to replicate what soldiers will encounter in theaters of operation.

Another example is our Multiple Integrated Laser Engagement System [MILES] gear. We update our MILES laser codes to stay current with friendly and enemy forces' weapon systems effects.

Q: What are the major challenges facing your office this year?

A: Limited spectrum availability for training is a clear challenge.

Another hurdle we need to overcome is bringing Combat Training Center capabilities to homestation where training our soldiers will see a tremendous ramp-up.

Replicating indirect fires effect in our live training weapons systems is also a challenge.

Q: How can industry help TRADE meet those challenges and accomplish its mission?

A: Our industry stakeholders are the lifeblood to our success in training soldiers for the global challenges we face as a nation.

My office, like many across the Army, has limited research and development dollars to stay current with technology evolutions. Through continual relations with industry, our aim is to work closely with them to steer their respective individual research and development initiatives toward efforts that can ultimately inject current technology gains into programs of record. To that end, we have, and will continue to host at every opportunity, industry days—particularly at every launch of a new program of record or program contract re-compete.

In addition, PM TRADE is the gatekeeper for Live Training Standards development. We have in the past, and will continue to do so into the future, hosted Live Training Standards workshops where we invite industry to work closely with us to develop these standards that ultimately get us away from stove-piped solutions, but rather to solutions that are more affordable, adaptable and applicable across a wide range of training devices.

Finally, industry is encouraged to be active participants with all emerging acquisition programs. During market research, we expect industry to take advantage of one-on-one visits to help develop the critical issues in training device design. During request for proposal development, we encourage industry to communicate issues and ensure that the final RFP encourages innovation and facilitates competition.

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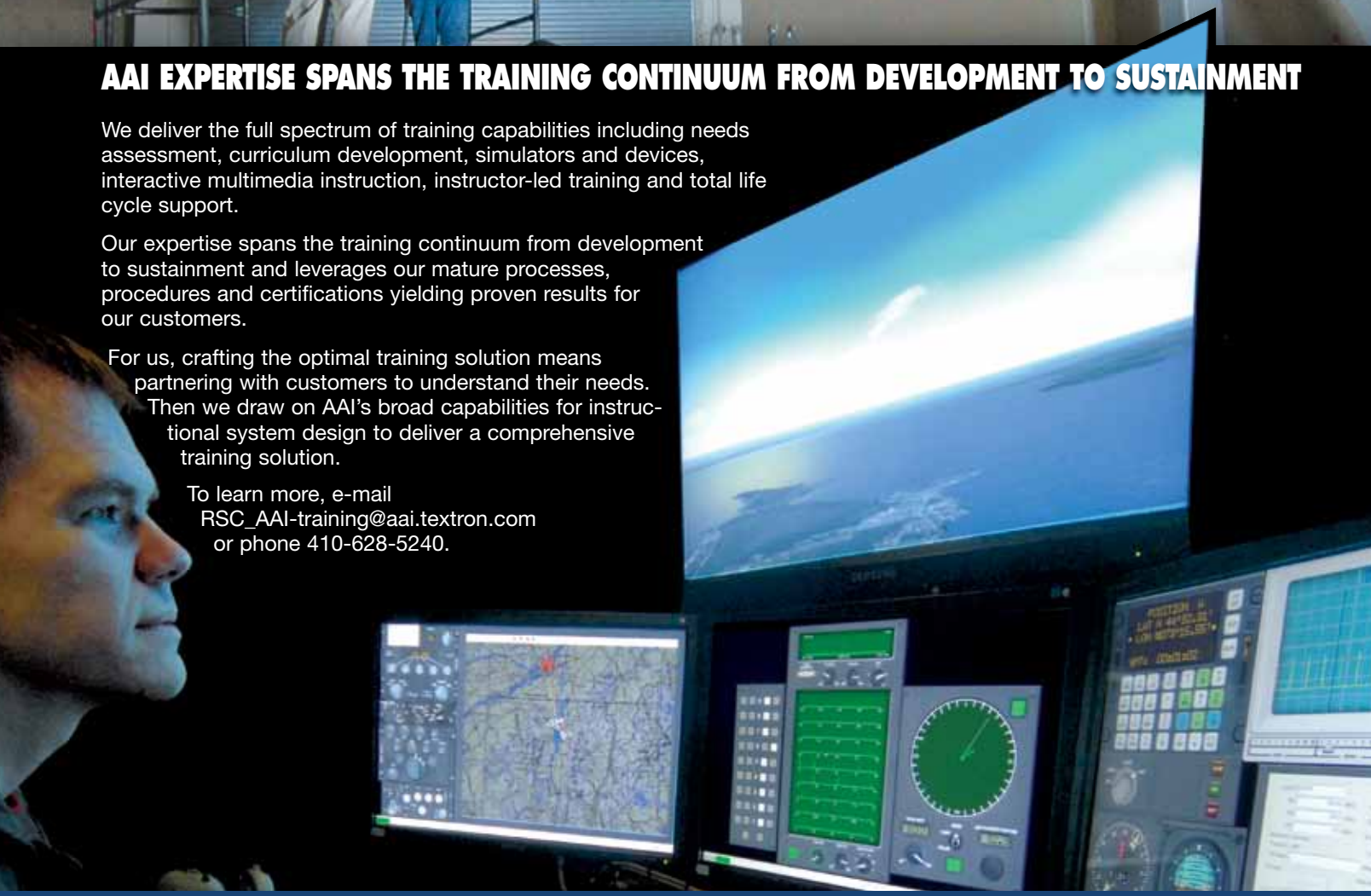

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PM ComSim

Q&A with Project Manager for Constructive Simulation (PM ConSim) Mr. Rick Copeland (acting PM)

Rick Copeland (acting PM)

Q: What are the major highlights this year for ConSim?

A: Since October, the 75th Battle Command Training Division of the Army Reserve has used One Semi-Automated Forces (OneSAF) in conjunction with the joint deployment logistics model to provide onsite mobilization training to units deploying to Afghanistan and Iraq.

We just completed a validation event and operational readiness event for the Joint Land Component Constructive Training Capability (JLCCTC) with WARSIM as the ground model simulation. This particular version of the JLCCTC completes the development of a fully operational capable federation to be used for all future division and larger Army full spectrum constructive exercises.

PM ConSim continues to work with Project Manager for Combined Arms Tactical Trainers [PM CATT] to integrate Synthetic Environment Core (SE Core) and OneSAF into the Close Combat Tactical Trainer and the Aviation Combined Arms Tactical Trainer, moving towards an August assessment and late fall roll out of an integrated capability.

Q: How does constructive simulation mesh with live and other training programs? How do they work together to fully prepare soldiers?

A: Through the SE Core program, our team is working to integrate terrain databases, computer generated forces and other common models into PEO STRI's virtual portfolio.

One goal is to use common authoritative source data to create a level playing field among the family of virtual simulators with PM ConSim's constructive tools.

The Product Manager Warrior Training Integration executes the Live, Virtual and Constructive Integrated Architecture [LVC-IA] with the goal of creating a persistent capability that gives the brigade combat team commander flexibility and choice of training enablers based on the unit's training objectives for any number of use cases. The current LVC-IA program is the first step towards meeting the homestation leg of the Army's vision for an integrated training environment.

Q: What are the challenges involved with providing training systems that keep up with rapidly changing capabilities and the Army's needs in theater?

A: The key challenge is relevancy. Our tools allow the commander to be trained with operations occurring simultaneously. Two-way interfacing between the training audience's mission command systems and the simulation is essential. Our environments provide realistic combat training for battalion, brigade, division and corps commanders and staffs, and allow their actions to be replicated. WARSIM and OneSAF were originally conceived for primarily offensive and defensive major combat operations. They each have evolved, based on an annual version release cycle, and remain relevant for both the high intensity conflict environment and for full spectrum operations.

Q: How important is it to have training systems that commanders can tailor to suit the training needs of their unit?

A: It is very important to provide relevant and flexible training enablers to the commanders, Mission Command Training Centers and Battle Simulation Centers across the Army. An example of this is the Mission Command Training Center at Fort Lewis adapting the Human Intelligence Control Cell from the Intelligence Electronic Warfare Tactical Proficiency Trainer alongside PM CATT's Games for Training program to provide a blended solution that literally multiplies the training effect for company intelligence support teams. The inherent flexibility of both tools allowed the Fort Lewis Battle Command Training Center to innovate a more relevant environment—using a single scenario—that was more effective than using either tool by itself.

Q: How can industry help PM ConSim keep up with those demands?

A: PM ConSim has always enjoyed an excellent relationship with our industry stakeholders and that continues as we embark on the LVC-IA program. I think the current budget realities and the move towards full spectrum operations will place a premium on relevant constructive simulations and integrated solutions. The Army will continue to move towards blended solutions that blur the traditional lines of live, virtual and constructive domains as long as they better replicate the full-spectrum environment and provide quality after actions reviews to the unit.

PM Field Ops

Q&A with Project Manager for Field Operations (PM Field OPS) Mr. Russ McBride

Russ McBride

Q: What are the major highlights this year for Field OPS?

A: PM Field OPS has been highly responsive to the evolving mission in Southwest Asia. We provide uninterrupted training support to meet the requirements of the U.S. Army, other U.S. armed services and our coalition forces worldwide.

In one year, our workforce and our service contractors provided training worldwide at more than 600 locations, supported approximately 28 Combat Training Center rotations, trained almost 550,000 U.S. and coalition forces in theater, and provided 80,000 hours of Army and Air Force pilot training through the Flight School XXI program.

We continue to maximize efficiencies through integrated training support.

Q: How does your office stay current to maintain and train troops on training systems that have to adapt to meet ever-changing realities in theater?

A: We have a constant interface with the warfighter to responsively support changing requirements and changing priorities. This is especially critical for lifesaving skills mastered in counter improvised explosive device training and in medical simulation training.

We are closely involved with the Army's Training Systems Support Enterprise in support of homestation, institutional, Combat Training Center and deployed training.

Furthermore, training full spectrum operations—that includes offensive, defensive and stability/civil support large scale operations simultaneously—is a prime example of adapting to changing realities in theater.

Q: How can industry help PM Field OPS with its mission?

A: Industry can maximize awareness and provide innovative solutions to provide effective and efficient support of training for full spectrum operations and integrated live, virtual and constructive training solutions.

We need development contractors to continuously seek ways to reduce life cycle costs, through processes like Lean Six Sigma, for example.

Q: What are the major challenges facing your office this year and what are you doing to meet them?

A: We are experiencing funding constraints and the need to constantly adjust spending plans and budgets.

Another challenge is responsively meeting challenges of the warfighter while maintaining required acquisition rigor. We have an extensive contract oversight and surveillance methods supplemented with continuous feedback from the field on contract performance.

Also, the acquisition workforce has been experiencing an extremely high operational tempo. We work hard to ensure PM Field OPS attracts a highly qualified and trained workforce by providing training, education and career development opportunities for our employees, coupled with various morale building events.

Q: How do you deal with training systems that may become obsolete quickly as training needs change rapidly?

A: Our product PMs are using commercial off-the-shelf items and programming technology refresh updates into the life cycle so that systems in the field are kept maintainable.

Today, tactics more than systems become quickly obsolete. Warfighters adapt the trainers to new tactics and we adapt the systems to support their dynamic requirements.

PM ITTS

Q&A with Project Manager for Instrumentation, Targets and Threat Simulators (PM ITTS) Col. Mike Zarbo

Q: What are the major highlights this year for ITTS?

Col. Mike Zarbo

A: The Digital Network Migration [DNM] program delivered a critical capability to White Sands Missile Range [WSMR]. DNM was executed within cost and schedule, and exceeded its technical performance requirements. DNM was the enabler for WSMR to comply with U.S. Army transformation directives to provide a net-centric environment. DNM provides secure, reliable connectivity to range customers and complies with the Department of Defense Global Information Grid architecture.

A niche that PM ITTS has grown over the past few years is the Test and Evaluation/Science and Technology broad agency announcement efforts that we are executing for the DoD Test Resource Management Agency under the Consolidated Contracting Activity. PM ITTS is administering the contract execution for all seven test technology areas at the Test Resource Management Agency. The Consolidated Contracting Activity was authorized $45 million in FY11, and has a planned growth of up to $80 million annually. PM ITTS is the executing agent for Directed Energy Test and Evaluation/Science and Technology, and have recently gained the responsibility to execute and manage another contract for electronic warfare.

The Aerial Weapon Scoring System [AWSS] program recently incorporated the full Smart On-Board Data Interface Module, including aircraft position and heading, and all the trigger pulls. The current effort to provide radar scoring for rockets is ongoing and we are also evaluating rocket flechette scoring by leveraging the already round indication location system sub-system. The AWSS operations team supported 22 missions in FY10 and currently has 30 missions scheduled to be supported in FY11. AWSS continues to receive great reviews from the Army aviation gunners, specifically the AH-64 Apache Longbow and OH-58 Kiowa crewman.

PM ITTS is making its mark on the threat cyber warfare front in many ways. A highlight is the Integrated Threat Force [ITF] initial operational capability that occurred February 2011.

Additionally, PM ITTS received the Army Modeling and Simulation Team Testing Award for Intelligence Modeling and Simulation for Evaluation [IMASE]. IMASE is designed to support multiple tests by creating a threat-based environment. The IMASE team won the award for the evolution of counterterrorism and counterinsurgency modeling and simulation within a distributed live, virtual and constructive environment. Their system is cited by the Army Modeling and Simulation Office for having "laid the foundation for the future of intelligence, surveillance and reconnaissance testing and will continue to be a major benefit to maintaining balance for the Army."

Q: What are the benefits of testing programs like the Integrated Threat Force or the Multi-Spectral Sea and Land Target Simulator (MSALTS)?

A: The Integrated Threat Force addresses the need for an integrated threat test and evaluation environment. It is a system-of-systems linking current and future threat live, virtual and constructive systems to perform in an integrated threat test and evaluation environment. The ITF provides the U.S. Army Test and Evaluation Command a scaled threat force against which Blue Force systems and systems-of-systems—like the Army's Brigade Combat Team Modernization—are able to test survivability and countermeasures against thinking, adaptive threat forces during Blue Systems Operational Test and Evaluation events. The ITF supports the full range of planning, preparation, execution and analysis activities comprising a test event. Its collaborative environment permits information sharing between white and red cells throughout all phases of test events. This allows the white cell to not only view red cell plans and operations, but also allows for interaction and interdiction as deemed necessary to achieve test safety.

MSALTS is a simulator that supports the operational test and evaluation of installed countermeasure and missile warning systems for both on-land and at-sea operations. With MSALTS, an aircraft's countermeasure and missile warning systems can be tested and evaluated by firing a simulated target/missile signature that represents the actual threat during operational testing. MSALTS will therefore increase aircraft survivability by providing both testers and weapon system PMs the results on how the countermeasure and missile warning systems perform.

Q: How does your office adapt to the rapidly changing realities on the ground in theater?

A: Cyber warfare is rapidly changing the realities not only in theater, but also closer to home. PM ITTS is at the forefront of threat cyber warfare. With our Network Exploitation Test Tool and Threat Computer Network Operations, we provide threat validated test tools and environments that can assist weapon system platform PMs discover, assess, address or mitigate their system's vulnerabilities.

Additionally, we support the Department of Defense Resource Enhancement Program that addresses an immediate operational test need resulting from weaknesses seen in theater or during testing. This is normally a short one- to two-year effort to address a particular capability gap in operational testing.

We are also committed to serve alongside our customers, stakeholders, Navy and Air Force as leaders and members of the test and evaluation reliance panels to evaluate test capability areas and make recommendations to the test and evaluation board of directors executive secretariat to shape future test and evaluation infrastructure investments.

Q: How can industry help PM ITTS with its mission?

A: Industry can help PM ITTS' mission by maintaining its competitive edge in addressing our requirements, responding to our requests for information, providing feedback to draft request for proposals and attending industry days to develop strong partnerships and learn about potential future business opportunities. They can also assist PM ITTS in performing our mission better by providing feedback and lessons learned to better our processes.

Q: What are the major challenges for ITTS currently and what are you doing to meet them?

A: As with other PMs, one of the major challenges PM ITTS is facing deals with the fiscal constraint being felt across the entire DoD and the many budget drills and data calls that come with it. We have to continue to be well-prepared to defend our budget and resources to ensure our customers' needs are ultimately met. We always strive to look for efficiencies and to make the most of our dollars.

Another challenge is providing capabilities to support full spectrum operations by defining PEO STRI's future role in the threat cyber warfare landscape. PM ITTS has been very proactive in partnering with our stakeholders and developing program level agreements with organizations to eliminate any duplication of efforts. At the same time, we are also meeting with industry, attending conferences to market our capabilities and pursue business opportunities to continue our future role in the threat cyber warfare mission area.

Senior Enlisted Advisor

Q&A with the Senior Enlisted Advisor to the Program Executive Office
Sgt. Maj. Patrick Ogden

Q: What are the major highlights in your office this year?

A: Learning the job is the biggest highlight for this year. The expanse of PEO STRI is vast and complicated. For me, this is all new. I will be spending this year and a good portion of next year doing the same thing. Every time I travel with Dr. Blake, the program executive officer, or one of the PMs, I learn more about PEO STRI and this helps me provide inject points for my expertise in training soldiers.

Sgt. Maj. Patrick Ogden

Q: What are the challenges in developing and maintaining training programs/systems since capabilities and needs are evolving so rapidly?

A: The process to bring the technology to the soldier as a program of record is slow, complicated and seems a bit antiquated given the technology for information transfer between people we have today. It seems we should have a simpler system.

Q: How do simulations and other forms of training benefit soldiers dealing with high ops tempos and changing realities in theater?

A: PEO STRI provides training in a low threat environment to practice high risk mission tasks. A leader can put the soldier into a virtual trainer and give them options to learn from their mistakes and to overcome the initial shock of some environments they will encounter during their deployment.

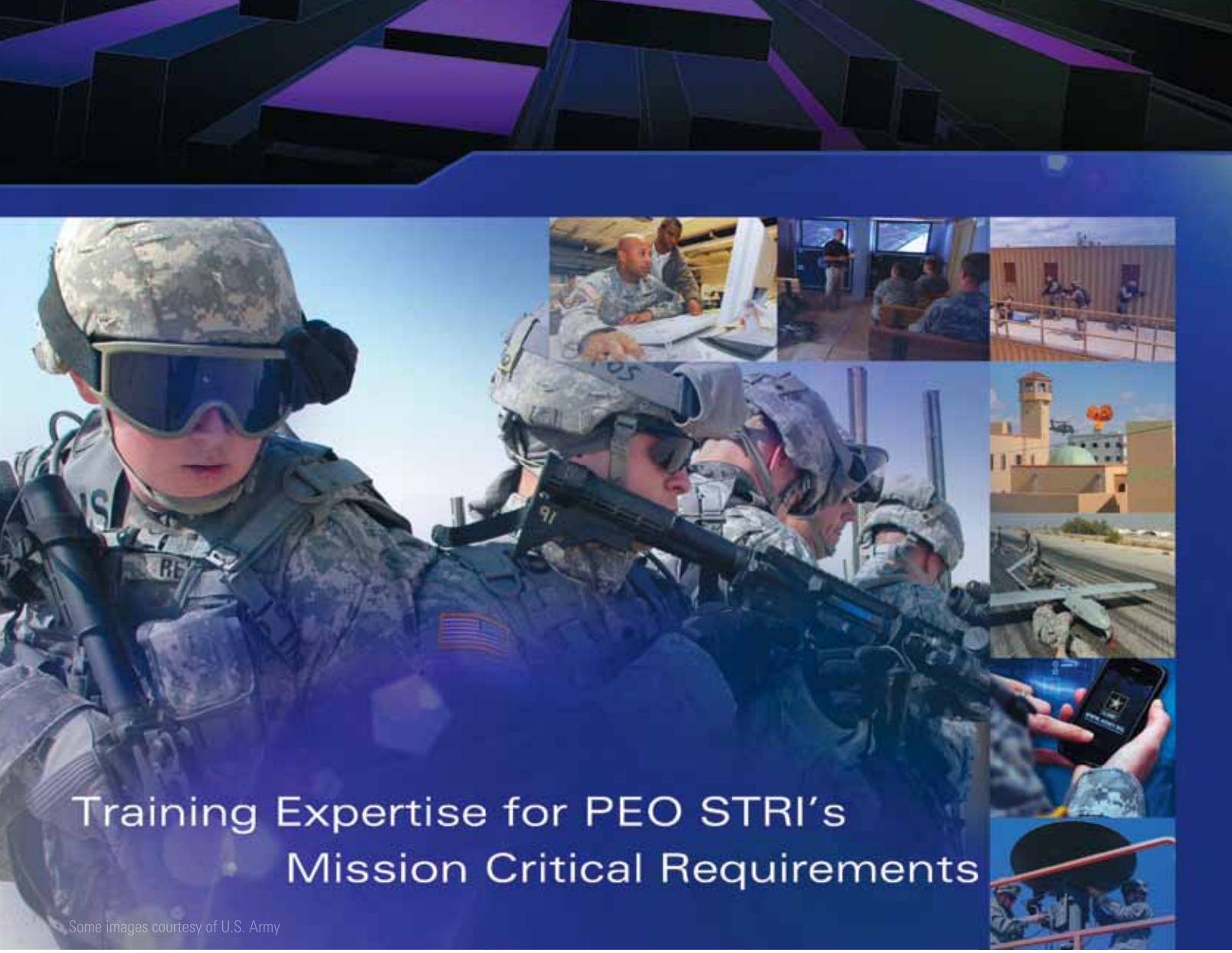
Q: What kinds of live, virtual and constructive training are most useful to the operational Army?

A: The training has to be easy to use, realistic and make the soldier's heartbeat rise. We have to get them to feel the adrenaline rush and want to repeat the training because it challenges them and improves their skills as a fighter.

Q: How can industry help PEO STRI keep up with those demands?

A: Industry needs to be agile and seek information from us. Us pairing with them as soon as a new problem set shows itself and getting frequent updates to them in the form of industry days is crucial.

It's part of my role to take them to see soldiers doing what we do in preparation for deployment and answer their questions on the spot.



Backed by a long record of success, General Dynamics Information Technology's life-cycle training solutions encompass the capabilities and expertise needed to meet the challenges of Full Spectrum Operations.

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- Leading supplier of Battle Command Training Center support
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Compiled by KMI Media Group staff

Link Between Game Technologies and Real-World Geospatial Data

Havok, a provider of interactive software solutions for simulation and characters in the games industry, is announcing its collaboration with TerraSim Inc., a developer of advanced software solutions for geospatial technologies. The alliance will enable the research and development of new capabilities which will link Havok's industry-leading simulation technologies to TerraSim's rapid generation of correlated virtual, constructive and serious game environments from geospatial source data.

"We are pleased with the initial results of our collaboration with TerraSim. We are very excited and already seeing compelling results that allow us to connect games technologies to real-world data," said Cory Kumm, director of military & simulation at Havok. "We look forward to continued research and development with TerraSim to provide enhanced technologies for the military and simulation industries."

Havok brings its expertise of games technology to its recently-launched Military & Simulation division, offering a complete portfolio of simulation technologies including real-time simulation of physics and destruction, tools for character animation, and navigation and scenario scripting. TerraSim's products are a natural complement to Havok's suite, and are widely used to support customers in diverse markets, including defense modeling and simulation, site modeling for intelligence preparation and civil applications for 3-D visualization.

"Our early results are promising as further evidence of the robustness and adaptability of our geospatial technologies," said David M. McKeown Jr., president at TerraSim. "It's been a pleasure to work with Havok and we look forward to continuing our joint efforts."

Optimized for high performance and scalability, Havok technologies have a proven capability of supporting complex, large-scale simulation environments, while TerraSim continues to support a number of industry standard formats allowing customers to integrate real-world GIS (Geospatial Information System) data with mission rehearsal and training.

Cory Kumm; cory.kumm@havok.com

Next Generation Modeling Tool

Concurrent, a provider of real-time Linux solutions for mission-critical applications, introduced the next generation of its SIMulation Workbench modeling environment for real-time hardware-in-the-loop and man-in-the-loop simulations. This modeling tool provides a new, easy-to-use interface with Simulink that eliminates manual intervention, ultimately enhancing product quality and reducing development costs.

In the new release of SIMulation Workbench, models can be easily imported from Simulink using a new SimWB Configuration Tool, eliminating a need for inserting hardware specific S-function blocks. Model parameters are automatically extracted from MATLAB/Simulink Coder C/C++ and mapped into SIMulation Workbench's Real Time Database, allowing them to be modified at run-time.

SIMulation Workbench now has support for 64-bit versions of MATLAB/Simulink as well as I/O devices based on Ethernet for Control Automation Technology (EtherCAT). Near-term product development plans also include support for the ASAM Automotive Electronics (AE) Hardware-in-the-Loop API.

"SIMulation Workbench is the industry's foremost modeling tool designed to meet the most demanding simulation needs," said Ken Jackson, vice president, real-time for Concurrent. "This new release not only delivers a whole new level of ease-of-use and productivity for our customers, it also makes us one of the first to provide support for 64-bit versions of MATLAB/Simulink."

With SIMulation Workbench, developers can configure, control, log and play back simulation runs via easy-to-use GUI interfaces. It is available as a fully-integrated test platform on Concurrent iHawk COTS multiprocessing platforms featuring the latest Intel and AMD multicore CPUs and running the popular RedHawk Linux operating system. It also supports a wide range of COTS data acquisition I/O boards and industry protocols including ARINC 429, MIL-STD-1553, FlexRay, CANbus and EtherCAT.

Bill Kahn; bill.kahn@ccur.com

Innovative iPad Training with GL Studio

The Disti Corporation, a provider of advanced graphical user interface technology, has been supporting AgustaWestland, a Finmeccanica company, in the development of an innovative mobile application for aviation training, using the GL Studio iDevices Toolkit.

Beginning with the iPad, AgustaWestland is developing a range of mobile applications to improve the flexibility and effectiveness of training media within its courses. By leveraging this next generation of hardware and software technologies, AgustaWestland is able to provide more immersive and flexible training for students, while removing physical barriers to learning.

AgustaWestland is developing multimedia learning content on the iPad for a number of key customers in 2011, consisting of both controllable courseware as well as more complex emulations of aircraft systems. An initial proof of concept was developed for the Apache Tactical Situation Display, which provides a visually compelling, tactile and interactive emulation of the main mission computer for the aircraft.

John Ponsonby, senior vice president of training, AgustaWestland, said, "We are constantly looking to improve the quality of the learning experience we provide to our customers. I am particularly excited by our latest developments in mobile learning with Disti tools, which provides a step change in the way our students absorb knowledge."

Disti's GL Studio iDevice tool kit was used to develop these state-of-the-art iPad applications. Interactive 3-D models and graphical emulations created in GL Studio can be deployed on devices such as the iPhone, iPod Touch and iPad. The sophisticated embedded code generation ability of GL Studio, coupled with its high fidelity visual display and secure capabilities, gives developers the ability to rapidly create content without compromise.

Joe Swinski, CEO, Disti Corporation, added, "Because Disti and AgustaWestland share a common vision for the future of training, we are honored to provide AgustaWestland with quality tools to support their development of this highly innovative mobile training application."

Chris Giordano; cgiordano@disti.com

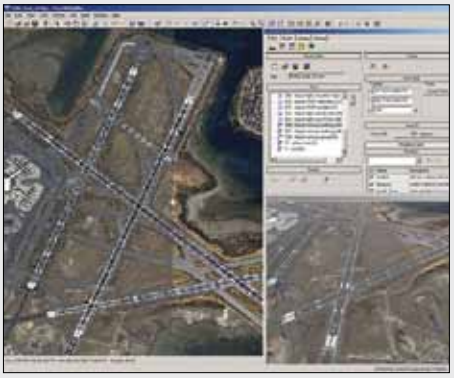
Correlated 3-D Terrain Software Unveiled

TrianGraphics GmbH announced the release of Trian3D Builder 4.0—a database generation system for detailed correlated 3-D terrains of arbitrary size. The new software version was showcased at ITEC 2011.

Trian3D Builder is offering a modern user-driven approach to terrain generation and is now entering the driving simulation market. The application's general philosophy to use any kind of real-world data for a fully automated terrain generation was expanded by complex road networks from navigation data (e.g., OpenStreetMap, NavTeq). With minimal preprocessing steps the visual database is generated with profiled roads, crossings, markings, signals, tunnels and lane transitions.

Roads can also be generated from arcs and clothoids and thus correspond to road construction rules. The database can be exported to OpenDRIVE format, which provides the logical description for driving and traffic simulations.

Besides the new roads functionalities Trian3D Builder 4.0 also offers various other new features. The technology partnership with Gamr7 and the integration of their procedural building generation allows the generation of detailed urban scenarios, a feature that compliments well with the advanced road networks. Another new partnership with Edgedsign Inc. led to a library of high quality environment real-time models with over 500 entries, including buildings, vehicles, vegetation, etc. An additional library from TrianGraphics offers multiple high detailed geotypical textures with object definition, various facade textures and also a multitude of low-poly models.



Considerably optimized terrain generation performance, new measure capabilities and vector processing tools, and building interiors with various types of floor plans add to the comprehensive feature set that Trian3D Builder is offering.

With the new Steel Beasts Pro exporter Trian3D Builder covers another serious games platform. Steel Beasts Pro's diversified ground types integrate perfectly into Trian3D Builder's generic and geotypical terrain generation algorithms.

"High-detail content creation is becoming a more and more important aspect of real-time simulation projects." said Stephan Kussmaul, managing director, TrianGraphics GmbH.

"With the rising demands and expectations to database quality, the creation effort essentially rises. We address this issue by offering highly automated tools that can be handled easily. With the new roads features, the Gamr7 building integration and also the new libraries offered, urban scenarios can now be generated even more quickly.

Stephan Kussmaul;
stephan.kussmaul@triangraphics.de

Major New Open Source Initiative for Collaboration

The OpenQwaq project is based on the commercial software that Teleplace has been delivering to the market over the past four years. It is a highly-secure, enterprise-class virtual collaboration platform that has been used by large commercial enterprises and federal agencies. The OpenQwaq project enables organizations—large and small, profit and not-for-profit—to implement virtual workspaces for their specific needs.

OpenQwaq is released under the GPL v2 license and is available for download immediately at code .google.com/p/openqwaq

Leaders Share Vision & Set Expectations

Creating a workplace that reflects a leader's vision is known as "climate shaping"—and it's increasingly important as organizations face pressures that can lead to employee shortcuts and other undesired actions.

To help leaders build a workplace that guides and reinforces the right choices and behaviors, Aptima, the R&D company which applies expertise in how people think, learn and behave, has created Climate, a new leadership development training suite.

Built on the latest academic research and business practices, Climate will teach leaders how to actively share and propagate their vision, shaping the actions and decisions of workgroups throughout the organization. Launching at the 2011 ASTD International Conference & Exposition May 22-25, Climate is designed to help leaders to assess their workplace climate, to role-model and articulate standards, and keep them in place through reinforcement.

The Climate suite includes the Climate Workshop, a facilitator-led, story-based discussion with simulation exercises; the ClimateCard, a pocket reference guide with quick tips for practical daily use; and the ClimateApp, the mobile application for AppleT, Android and BlackBerry smart devices.

"The common wisdom that 'people make the place' recognizes the fact that values drive the organization, and leaders need to imprint their vision if they want those values mirrored throughout the workplace, particularly if they're inheriting an adverse climate," said Zachary Horn, Ph.D., manager of Aptima's leadership solutions. "Leaders can't be present to directly manage all people all the time, but they can create a workgroup mentality where employees clearly understand and do the right thing in alignment with their expectations."

In 2008, The United States Army Research Institute for the Behavioral and Social Sciences contracted with Aptima to explore better ways to train Army leaders to build and maintain ethical climates in their units. A finalized version of the workshop materials will be available to the Army in January 2012.

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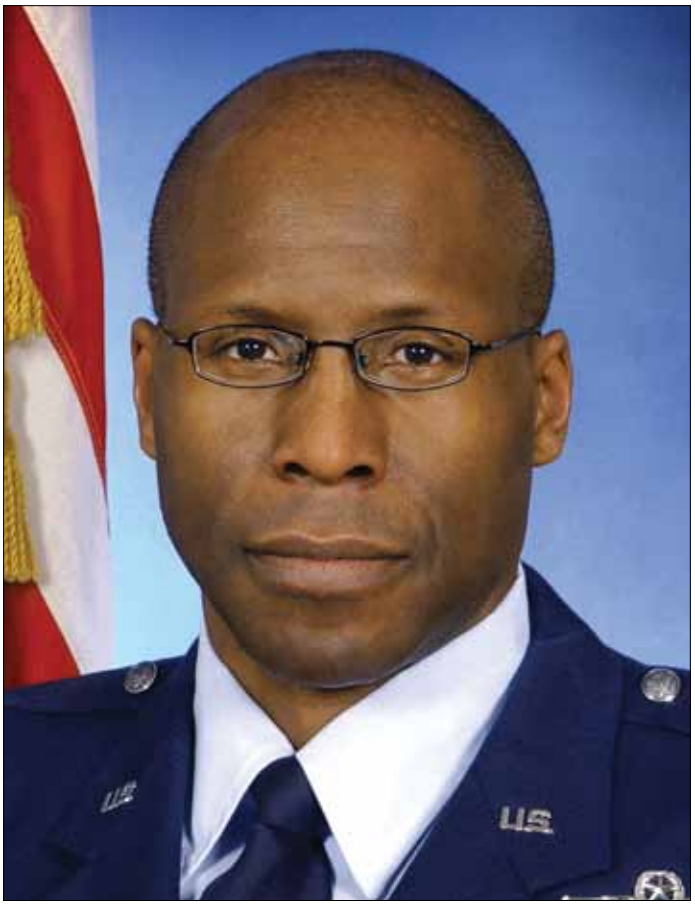
Concept Integrator

Q&A

Supporting High Level Simulation Concepts

Colonel Marcus A. Boyd
Commander
Air Force Agency for Modeling and Simulation



Colonel Marcus "Shaka" Boyd is commander, Air Force Agency for Modeling and Simulation (AFAMS), Orlando, Fla. AFAMS is the Air Force's top-level modeling and simulation policy implementation, integration and support agency. Boyd is responsible for the implementation, integration, support and transition of high-level M&S concepts and capabilities covering the full-spectrum of the AF mission.

Boyd was commissioned in 1988 after earning a Bachelor of Science in space physics from the United States Air Force Academy (USAFA). He is an experienced airman and warrior in multiple aircraft weapon systems, is a master navigator with more than 2,500 flying hours and has combat experience in the B-52. His various flying assignments include being a B-52 electronic warfare officer (EWO) crewmember, instructor and evaluator, USAFA T-43/T-41 navigation instructor, B-52 Combat Flight Instructor Course flight commander and a numbered Air Force evaluator where he evaluated B-2, B-52, E-3, E-4, E-8, EC-130, RC-135, T-38, U-2, ground air control crewmembers and Joint Terminal Attack Controllers. Staff assignments have included positions at the USAFA as an associate professor of physics, Headquarters 8th Air Force Standardization and Evaluation Division's Bomber Branch chief and Secretary of the Air Force's Warfighting and Command & Control Deputy Division chief. Most recently, he was assigned to the USCENTCOM Combined Forces Air Component Commander's (CFACC's) staff, where he was chief of the Combined Theater Electronic Warfare Coordination Cell, responsible for executing the CFACC's EW coordination authority to ensure electromagnetic spectrum superiority for the USCENTCOM Theater for air, space, sea, ground and cyberspace operations.

Q: What's new in AF Modeling and Simulation this year?

A: Modeling and Simulation, taken as a whole, is constantly evolving. One could even make the argument it is constantly transforming.

One of the major steps the Air Force took to transform Air Force M&S was the transfer of the chain of command of the Air Force Agency for Modeling and Simulation from Air Force Chief Information Officer, SAF/CIO A6, Office of Warfighting Integration to the Deputy Chief of the Air Force for Operations, Plans and Requirements, AF/A3/5. This significant organizational change reflects senior leadership recognition of the value M&S has to operations across the mission spectrum. That move recently occurred, which provides us with the challenges of new vectors and guidance but also with the opportunity to improve processes and provide greater service to the men and women at the tip of the spear.

In addition to the AFAMS transfer, the Air Force has also started some transformational initiatives to get stronger arms around Air Force M&S, given its increasing and critical role as a warfighter enabler. One initiative involves revamping Air Force M&S governance and oversight construct to broaden visibility on M&S capabilities and initiatives, to know the breadth of the M&S enterprise, and to sustain its long-term health through design of appropriate roles, authorities, resources and business rules. Another initiative will address the size and value of the Air Force's investment in M&S by examining the various programs containing aspects of M&S to determine the dollar value of all resources [military and civilian manpower, hardware, networks/facilities, contracts and other] required for the research, development, acquisition, operations and sustainment of M&S activities and efforts throughout the Air Force. Finally, in concert with these initiatives, the Air Force is determining a better sight picture on the requirements, acquisition, distribution, management, and upgrade of flight simulators and related live, virtual and constructive [LVC] capabilities.

Q: Any new initiatives or projects on the horizon?

A: Yes! There are many initiatives or projects on the horizon. I would like to focus on an initiative that will have a significant impact on all of them. The Air Force is moving forward with an initiative for the seamless integration of its LVC capabilities. Approved as an official Air Force requirement, currently this initiative is going through the Joint Capabilities Integration and Development System [JCIDS]. For those of your audience that may be unfamiliar, JCIDS is the formal Department of Defense process in which the department defines acquisition

requirements and evaluates criteria for procurement or development of future defense programs. The initiative is known as Enterprise Architecture–Live Virtual Constructive Environments or EA-LVCE. This initiative, in full coordination and collaboration with our sister services and OSD, will assist in integrating the disparate modeling and simulation efforts across the services as well as across functional domains—training, test and evaluation, acquisition, analysis, planning, experimentation, etc.—that will help reduce redundancies, establish standards and protocols, and enable 'plug and play, work and fight' to become a reality. I should emphasize that this not an overnight resolution to our challenges but rather a concerted step-by-step approach to reconcile gaps and shortfalls through an overarching architectural framework for everyone—Air Force, sister services and interagency—to use and benefit from if they choose.

Q: Why is modeling and simulation beneficial to the Air Force and the military in general?

A: I believe the best way to address that question is to provide some visibility into the recently published Air Force Modeling and Simulation Vision for the 21st Century. It states that "modeling and simulation [M&S] is a critical and vital enabler across the range of Air Force operations, underpinning the operations of key weapon systems, enhancing command and control, and supporting the preparation and employment of our Airmen. The Post Cold War era and challenging politico-military environment we face today provide new opportunities for M&S to support critical transformation activities, ensuring the Air Force remains in the forefront in defense of our nation, allies and friends." In fact, Lieutenant General Lord, the Air Force's Chief of Warfighting Integration and Chief Information Officer, provides the following insights and states that DoD "identifies M&S as an essential subarea that supports advances in the development, production and use of military capabilities…M&S will play an increasingly vital role in the Air Force's ability to train our warfighters, develop new systems and assess the complexities of a changing battlespace. M&S will also be key to achieving the capabilities and synergies that Joint and Coalition partners add to the full spectrum of military operations." We at the Air Force Agency for Modeling and Simulation fully embrace the Air Force vision for M&S as we strive to maximize the warfighters' performance and decision making through seamless integration of live, virtual and constructive environments.

Q: How does being located in Orlando, near so many other modeling and simulation organizations, help the agency's work?

A: Simply put, there are synergies available working within the global 'center of excellence for modeling and simulation.' All of our sister services have a presence here, and it is growing markedly, which makes collaboration, cooperation and communication within the realm of M&S a real advantage. Furthermore, industry with its presence and diversity of M&S products allows AFAMS' personnel to assess the best of breed, the state of the art and the art of the possible. Lastly, being

co-located with academia at the University of Central Florida and its state of the art modeling and simulation programs ensures we have access to the leading edge of modeling and simulation technologies. There is really no other single location that could leverage all of efforts of the services, industry, academia and government within the sphere of modeling and simulation and leverage the synergies of those efforts to achieve improved results.

Q: How does modeling and simulation help training? Does it replace live training or complement it? How so?

A: I can't take credit for the authorship of the following phraseology, "M&S molds the mind, not hones the hands," however it does capture the capabilities of M&S very succinctly. Admittedly, however, I have seen some extremely exciting technologies that may soon render the previous statement 'overcome-by-events.' In its perfect form M&S is scalable, repeatable, composable and persistent. In essence I can, conceivably, use the strengths of M&S across all levels of the Air Force mission; vertically, from the tactical [JTAC, pilot, sensor operators, security forces and counter-IED training]; to operational [air operations centers, command and control training]; to strategic in the form of training of future Joint Forces Air Component Commanders. Horizontally it engages and impacts all functional domains, as I mentioned earlier [training, T&E, acquisition, etc.].

To your second question, I must answer with a qualified "Yes." In this case I'll answer with two core mission examples and then a quick caveat. The Air Force has already replaced 'live' training in several significant instances. As an example, the Air Force has fully embraced the airline methodology of training within the mobility air forces to take the crews from first engine start to first 'flight' to the flight evaluation sortie using high fidelity simulators. In many instances, a C-17 aircrew's first 'live' is the flight before the individual crew's formal training check-flight. This saves considerable amounts of our country's treasure as the Air Force conducts its training of the world's best aviators without incurring—or at least limiting—aircraft life cycle, wear and tear, fuel and maintenance costs. It only makes sense!

In another case, I think it best to use the opinion of an active flyer [and former chief of training] in the world's only operational 5th generation aircraft, the F-22 Raptor, to emphasize my point. He says, simply, "The only 'real' I get is in the sim!" The constraints of modern ranges in terms of airspace, altitude, electromagnetic spectrum, proximity to population, aggressor aircraft and weapon footprint do not permit full scale training of our most capable fighters. The only place aircrews can exercise the full capability of their weapon system and train to the highest levels of tactical and operational combat conditions is in the simulator.

Having said that, we understand the value of operating under actual flight/combat/medical emergency conditions and stressors—heat/cold, noise, work load/G-induced fatigue, varying weather conditions, smells, inventory/weapon/fuel states, the possibility of emergencies and the consequences thereof and an actual threat—the physical 'fog of war.' We need to come to terms with where we can use M&S to its advantage in lieu of live and where we can be more aggressive leveraging its value to improve warfighter capabilities across the entire mission spectrum.

We have recently adopted a new mantra for AF M&S that summarizes live, virtual and constructive environments, "LVC – The core of ops. Permeating the entire mission." I think that says it in a nutshell.

Q: What are the major challenges for the agency and how do you and your staff meet and overcome those challenges?

A: AFAMS, as well as the rest of the Department of Defense, has had to deal with several issues tied to reduced resources. Like others, our operating funds, resources, manpower and contractor support have all been cut; however, my staff has remained focused on our number one priority; supporting the warfighter. We still support training events all over the world which use M&S, ensuring our models and simulations continue to accurately portray airpower capabilities for the training audience. Though we have felt the sting of a resource constrained environment and have adapted, this challenge has also help us by highlighting the need for M&S. It's no longer just a nice to have and is quickly becoming a must have.

Q: How does the agency keep up with the rapidly changing realities on the ground and integrate those into modeling and simulation programs?

A: To give some context to the answer to this question, let me start off by describing what AFAMS does best. As the Air Force's execution arm for modeling and simulation [M&S], AFAMS sets the stage for seamless integration of live, virtual and constructive capabilities to maximize warfighter performance and decision making. This is accomplished by being the Air Force's lead integrator and implementer for M&S policy, resources and capabilities. This effort directly supports the Air Force's functional and cross-cutting communities and more importantly, the users of AF M&S capabilities; allowing each to effectively and efficiently plug 'n' play, work and fight within a joint LVC environment to support their M&S enabled efforts.

One of the ways AFAMS integrates and deals with the rapidly changing realities for such an effort is identification and avocation of LVC capabilities requirements for Air Force training and rehearsal to mitigate shortfalls due to various issues such as weather, reduced budgets, increasing fuel costs, lack of training range capacity and availability and other issues. Specifically, AFAMS developed a resource to capture these requirements called the M&S Operational Warfighter Requirements Database—or M-SWORD for short. By identifying, vetting and capturing the prioritization of various requirements with this tool, we can aid with the best match of capability and capacity to requirements across the Air Force. Additionally, AFAMS hosts and attends working groups and engages with Air Force and joint warfighters around the world to ensure the identification of those rapidly changing realities and integrate them into Air Force programs.

Q: How does the agency work with industry to capitalize on the innovations in technology and also offer the best programs and products for the Air Force?

A: AFAMS regularly participates in premiere M&S conferences like the Interservice/Industry, Training, Simulation and Education Conference [I/ITSEC] and workshops like those sponsored by the Simulation Interoperability Standards Organization. These conferences and workshops provide an effective venue to interact with our industry partners and see the latest advancements in technology from many companies in the M&S business. Technical interchange meetings are also regularly hosted by our organization, providing industry with a unique opportunity to meet with our staff on an individual basis. The information gathered from these industry interactions is then shared with the greater Air Force community through various integerated project teams, working groups and other activities that we support. Dissemination of this information ensures that we are taking advantage of the best industry has to offer in meeting warfighter requirements in all of our program development efforts. ★

Naval Simulator Training

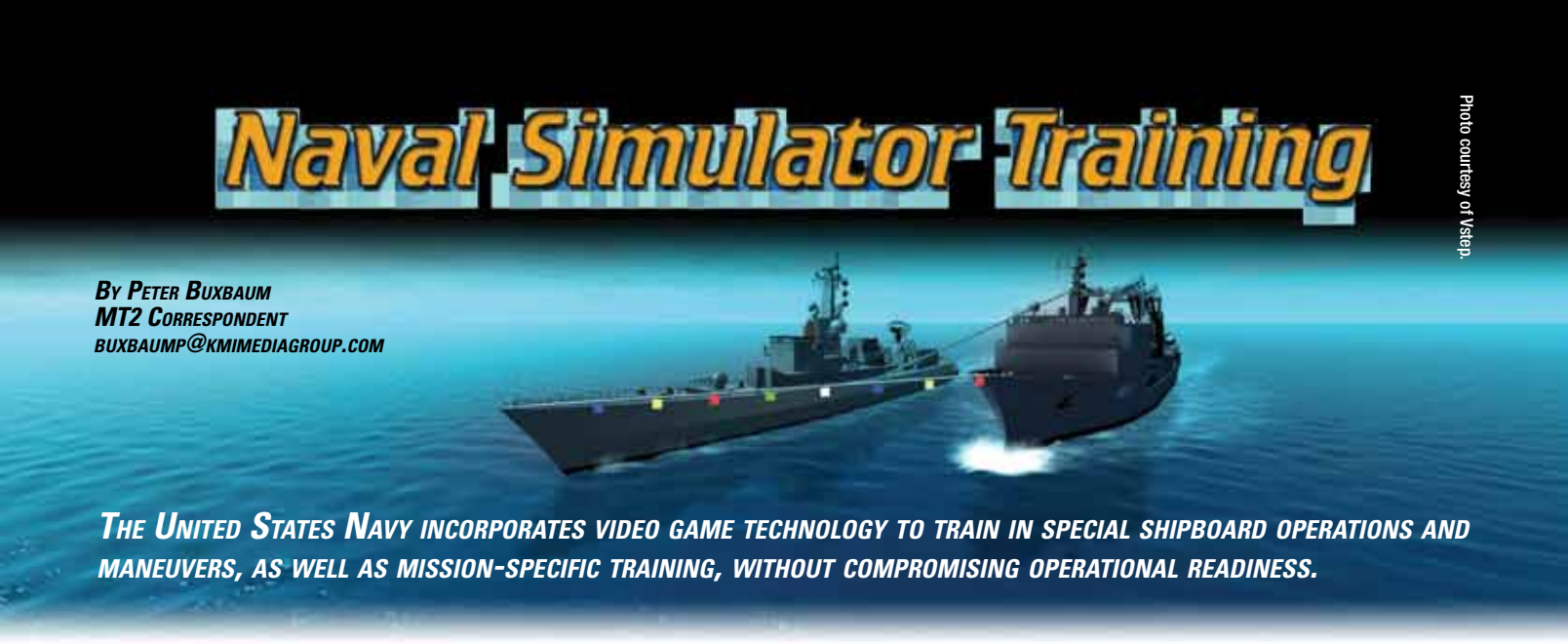


Photo courtesy of Vstep.

By Peter Buxbaum
MT2 Correspondent
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The United States Navy incorporates video game technology to train in special shipboard operations and maneuvers, as well as mission-specific training, without compromising operational readiness.

Peter van Schothorst

peter@vstepsimulation.com

Two years ago, U.S. Navy Captain Mark Woolley, writing in a U.S. Naval Institute magazine, complained, "The Army is using high-quality video games to attract recruits and train soldiers. Why can't the Navy do the same for its sailors?"

In 2002, Woolley noted, the U.S. Army released *America's Army*, a recruitment and training video game. In 2008 the Army announced plans to invest $50 million to develop video games for use in training soldiers for combat. "So where is the maritime version of America's Army?" Woolley asked. "And why isn't the Navy embracing off-the-shelf gaming technology to train its sailors? Certainly this concept could be applied to a multitude of Navy systems, ranging from basic damage-control equipment to shipboard engineering and combat systems either in a multiplayer or individual game role."

Much has changed since Woolley wrote those words. For one thing, Woolley himself has since retired from the Navy and took a position heading the North American office of Vstep, a simulation company based in Rotterdam, The Netherlands. For another, the U.S. Navy just recently released a fleet training strategy which incorporated simulation in a big way.

Training on simulators can acclimate young officers in advance of their first ship handling experiences.

"Officers can show up to their first command seamanship skill under their belt," said Bill Schmidt, chief executive officer of Angle Inc. "They can step onto the bridge and know how the team functions and function as member of that team in a productive manner."

"Simulations are a viable alternative for a good part of maritime training," said Peter van Schothorst, Vstep's chief technology officer. "Forty percent of maritime training can now be done on simulators. It used to be only 5 or 10 percent."

The Navy's Fleet Training Continuum Instruction, released on March 31, 2011, noted that a sound training strategy "dictates that an innovative and cost effective fleet-wide strategy for procurement and utilization of training simulators be adopted. This strategy must ensure training readiness levels are effectively maintained while capitalizing on technical advances in modeling and simulation."

The document also noted that "a multitude of variables influence the ratio of live versus synthetic training for a specific training function" and that "each training requirement needs to be evaluated individually." The instruction set forth a series of guiding principles to provide a framework for decision making. Two of the guiding principles represent an unambiguous endorsement of the use of simulation training where appropriate:

- "Training simulators should be used to replace live training to the maximum extent possible where training effectiveness and operational readiness are not compromised."
- "If a skill/talent can be developed/refined or proficiency can effectively and efficiently be maintained in a simulator, do it in a simulator."

"Simulators are used by many of the world's major navies," noted Clayton Burry, the area sales manager in Canada and Latin America for the Norway-based Kongsberg Maritime Simulation. The demand for maritime simulators "continues to grow as shipboard technologies advance, crew size diminishes, and turnover rates require a rapid ramp up in training new personnel."

Navies are interested in high-performance simulation that supports special shipboard operations and maneuvers as well as mission-specific training, according to Burry. "Navies require training systems that are robust, reliable, easy to operate and support, and provide close to 100 percent availability to support the very demanding ship and crew training schedules," he added. "Naval vessels are in port for very short times and the simulator systems must be available at all scheduled times."

"The expectation of our customers is that a simulator is as good as real life," said Ted Morley, chief operations officer at Maritime Professional Training in Fort Lauderdale, Fla. "To fulfill that expectation we need to provide simulators with real equipment such as controls and radios and less generic equipment. We have to provide the simulator with data so that it performs like a real ship. Today's simulators achieve a level of realism that you didn't see five or 10 years ago, much less 20."

"The U.S. Navy has a saying, 'Train in port and validate at sea,'" said Woolley, in an interview with *Military Training Technology*. "It makes a lot of sense not to spend all that money at sea doing basic training. Simulation helps navies train in port."

Maritime simulators available today run the gamut from the generic to the very specific, noted Stephen Cross, the chairman of the International Marine Simulator Forum (IMSF), an organization of manufacturers and users who meet to exchange ideas. "The choice usually depends on the budget," he said. "Bigger navies with a certain number of ships of a specific class could have a specific ship simulator developed. In the case of more generic simulators, the hardware might not be identical to real life but the vessel will be behaving in the same general way."

Simulator systems are often modular, Cross noted, so that customers can build on levels of sophistication and realism depending on their requirements and budgets. "It is like a Lego type of configuration with a base kit that can be built on," he said. "Instrumentation can be emulated or simulated depending on the budget. Radars can appear on a screen or they can have the real radar form the ship. Ship handling and bridge operations can be specific to a ship or off-the-shelf. Off-the-shelf products bring down the price and some navies nowadays are feeling some economic limitations."

There are a number of international classification societies which have developed standards for maritime simulators, most notably Det Norske Vertitas (DNV), a private organization based in Novik, Norway. DNV issues specifications for maritime simulators in a series of classifications, designated A through F, with Class A being the most sophisticated, realistic and specific, and Class F being more desktop-based and generic.

"The specifications laid down by DNV for simulator design and performance help guide Kongsberg's R&D program," said Burry. "All Kongsberg simulators also have DNV certification."

"The DNV classification is useful," added van Schothorst, "so that customers know what to expect from each class of simulator."

Clayton Burry

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Simulators can teach teamwork, as exemplified by a system developed by TRANSAS USA that simulates responses to piracy and other threats and is used by the Canadian Coast Guard as well as law enforcement organizations in the U.S. The system uses commercial off-the-shelf (COTS) personal computers to simulate vessel controls on the desktop but can also be adapted to use actual vessel controls.

"Four computers are set up in a pod with three students and an instructor," said Timothy Park, the company's sales manager for marine technologies. "The instructor mimics the threat and the students act as force protection boats. They maneuver against the perceived threat and drive the boat away from a high-value target. All of the boat models are hydrodynamically correct so that when one boat moves against the other it will push the other one out of the way."

Angle's simulation system, WaveLore, which was developed for the Navy ROTC unit at Ohio State University, also emphasizes team skills. "It was not designed to for a single person to practice ship handling skills in an isolated environment," said Schmidt.

WaveLore is based on commercial PC and off-the-shelf graphics card technology and employs large LCD and LED screens to emulate the bridge environment with a 180-degree view. Separate smaller screens allow trainees to practice compass, radar, and other skills. The system also interfaces with voyage management systems and digital charts.

There is also a separate screen which allows the instructor to set up various scenarios, such as conducting the exercise at certain places, at different times of day, and with different weather and current conditions, as well as with different other vessels in the area.

"The instructor can also record and playback the exercise for purposes of critique," said Schmidt. "If the students placed themselves in a position of no recovery, he can rewind and redirect them so they don't do things quite so poorly the second time. The exercise can also set be up as one of several ships. There is a networking capability so that three or four of these simulations can be run all at same time locally over a local area network or across the web so that it can be a very wide-area network."

MPT operates a Class A facility as certified by DNV, which includes three full mission bridge simulators—with a fourth to be added later this year—as well as others that train on radars and other controls and operations. "The bridge simulators allow for unrestricted service for any vessel size or type," said Morley. "They can be switched out and used for anything from single engine tanker to a twin engine tugboat. We do a lot of integrative bridge system trainings on navy models, coast guard models, and merchant models."

The simulations for the main bridges are projected directly to a curvilinear screen measuring 120 feet long by 14 feet tall. For smaller bridges LED panels are used for projections. MPT simulators range from 110-foot Coast Guard cutters to the Arleigh Burke class of naval destroyers. MPT's customers include the U.S. Navy and Coast Guard, the Army Corps of Engineers, as well as other Western Hemisphere navies and coast guards.

Vstep offers the NAUTIS range of maritime training simulators, which is used to polish skills such as basic ship handling and maneuvering, fleet maneuvering, and mission rehearsals for vessels ranging from small RHIBS to larger frigates. "Vstep offers a full range of

simulators, from desktop trainer to full mission bridge simulator," said van Schothorst.

Maritime simulation training often takes a crawl-walk-run type of approach, in Woolley's experience.

"In a ship handling exercise, the first step might be to get the ship away from the pier in perfect weather," he explained. "The next would be to move the ship away with the weather pushing the ship back onto the pier. Next might be a scenario where the weather is pulling the ship away from the pier. In a channel navigation exercise, the training might start with navigating a channel without much traffic, then a smaller channel with more traffic, and later nighttime maneuvering with lots of traffic."

Nautic has been used to train for refueling at sea, Woolley said. "Two ships must come within a few feet of each other and hook up fueling hoses while maintaining a steady course," he said. "The nice thing about it is that it can be done on a PC or full-scale land-based simulator. Often, a new officer will sit with a seasoned officer and practice two or three times before having to do it at sea."

Kongsberg has a full range of simulators with various applications, related Burry. Ship handling simulators range from desktop versions to full mission bridge simulators and applications range from basic navigation and blind pilotage to radar training, naval officer training, and search and rescue, emergency response, and anti-terror operations.

"On the hardware side, all simulators are PC-based, operating on a range of Windows-based software platforms," said Burry. "Our main simulation software products are Polaris, for the ship's bridge simulator, and Neptune, for engine room and cargo handling operations. These are proprietary programs that have evolved over several generations since our first simulator delivery in the early 1970s."

On the visual side, Kongsberg uses COTS plasma and LCD monitors, in addition to a range of projection technologies. "We are moving increasingly to software applications with touch-screen technology interfaces which offer incredible flexibility and space-saving benefits," said Burry.

While Kongsberg has standard hardware and software available, "every system is a custom solution," Burry emphasized. "Whether we are responding to a tender specification or meeting with a customer to listen to their needs," said Burry, "we work with customers to understand their requirements and to build a tailored solution that meets the functional requirements and desired training outcome from the ground up. Once a customer's requirements are determined, we take a look at the customer's facilities and often work in new or renovated spaces to custom-fit our simulators in the available footprint."

Kongsberg's simulators are modular in design, meaning that customers can add, enhance and connect new functionality at any time. "On the bridge side, the same software used to run a Polaris desktop simulator is also used to run a full mission simulator," said Burry. "Kongsberg has also adapted its Polaris and Neptune simulators to interface to and work with learning management systems to deliver simulator-based training customized to stated learning objectives and performance criteria."

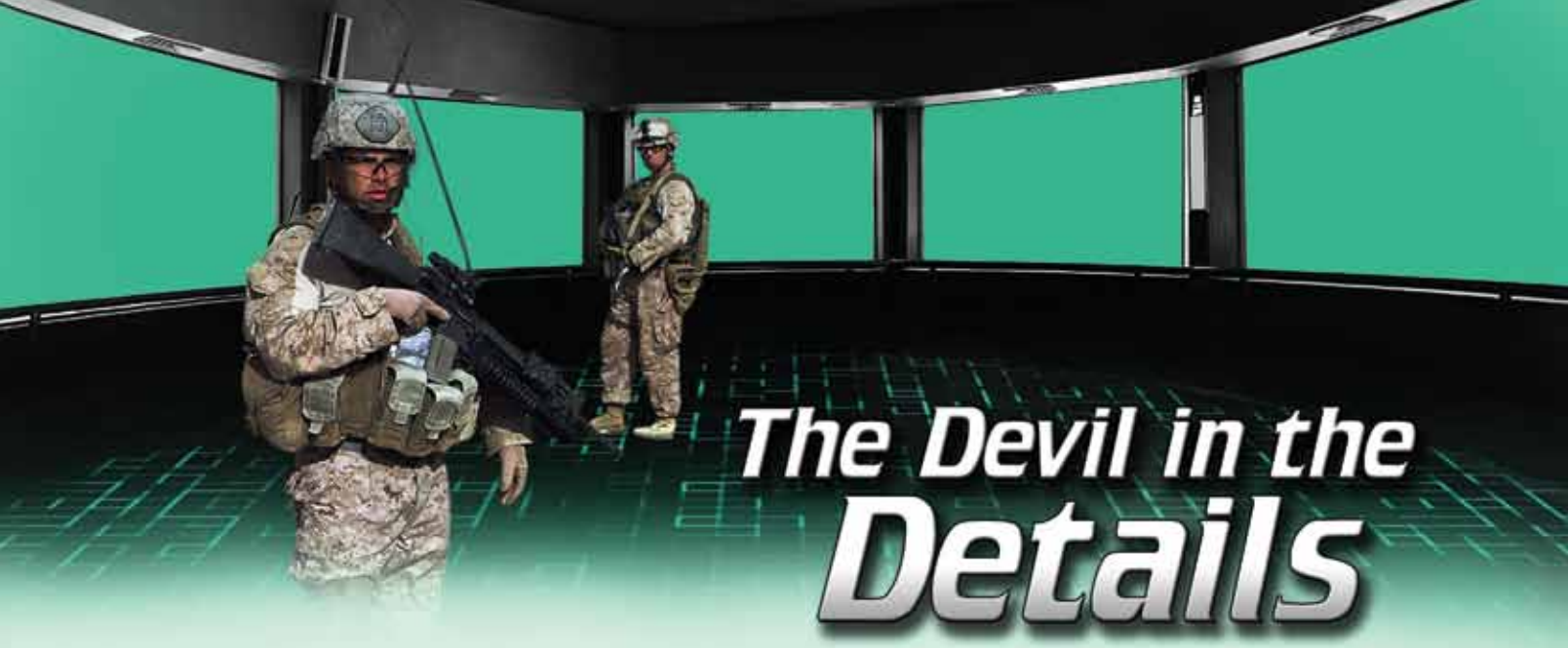
Kongsberg has developed the eCoach electronic mentoring exercises for rules of the road and other course topics for instructorless simulator exercises that track, guide, correct and assess the student's performance in pre-programmed exercises that can be run in a classroom setting, aboard ship, or remotely via an intranet or internet connection.

The future of maritime simulation will likely involve greater levels of integrative training among different aspects of vessel operations as well as coordination between naval and other aspects of military operations. "Practicing team skills will always be in demand," said Schmidt.

"The bridge and engine have to work together to make the ship run as effectively as possible," said Park. "An integration of engine and bridge training capabilities would foster cooperation between the two departments which traditionally have been separate. There is growing interest in bringing different types of simulations in one exercise."

Along the same lines, van Schothorst sees the possibility of joint simulated training exercises between land and naval forces. "We are involved in a combined project with the makers of Virtual Battle Space," or VBS, a leading simulation for ground troops, "to practice landing operations. The troops would be controlled by VBS and our simulation would control the naval forces." ✯

For more information, contact *MT2* Editor Brian O'Shea at briano@kmimediagroup.com or search our online archives for related stories at www.mt2-kmi.com.



The Devil in the Details

When it comes to creating military simulators, it's the little things that mean a lot.

By Kenya McCullum, MT2 Correspondent
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The relationship between the gaming industry and military simulation is coming full circle, said Cliff Ingari, the chief operating officer at AVT Simulation. And the way this worm has turned is electrifying the simulation industry and providing the fuel for innovation that benefits military training.

"It's wonderful to see. There has been this reversal—previously, the gaming industry was leveraging the technology that was being developed in the world of military simulation and training," he said. "Now, it's come full circle because of the prominence and amount of dollars being pumped into the gaming industry. We're now leveraging that technology to increase our products' fidelity."

While members of the simulation industry have been able to leverage gaming technology to create products that train current and future soldiers for the battlefield, these companies are also keenly aware that the goals of these two industries are completely different. Whereas in the gaming industry a great looking game that people enjoy playing is the ultimate goal, military simulation manufacturers must also keep realism in mind when making their visually appealing products. In games, players can have multiple lives, a huge stockpile of weapons, and unlimited ammunition that protects them against the bad guys they are fighting. In military simulation, any unrealistic scenario will not effectively prepare soldiers for the realities of their missions—and this negative training value could ultimately put them in harm's way.

Cliff Ingari

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"A lot of training is cognitive to put the warfighters in the mindset that what they're doing in the training and simulation device is actually how they're going to respond in the real world," Ingari said. "We're conditioning them on how to respond in the real world so, in a sense, they're rehearsing and trying to learn in the simulated environment so that they don't make mistakes in the real world."

Achieving High Fidelity

While all industry partners that supply training tools to the military share a common goal—a product with a high level of realism at an affordable price—these companies have different strategies for achieving this goal.

AVT Simulation

AVT Simulation creates training and simulation solutions that are powered by the underlying technology used in video games. One way that the company has been able to effectively leverage gaming technology for military training is by applying it to the military's legacy systems—that is, the older training systems that have been used by the military that, while not antiquated or teetering on the verge of obsolescence, can benefit from the enhancements that gaming technology provides. With military training budgets decreasing, completely replacing these systems can be prohibitively expensive, so AVT's solutions give these trainers a much needed facelift—thus still keeping their basic infrastructure in place—while not breaking the bank.

"It's like putting a fresh coat of paint on your house," Ingari said. "It's the same old house, but in our world of training simulation that visual appeal, based on what we see with our native eyes, is really what immerses the individual being trained into that environment."

Examples of how AVT is able to accomplish this can be seen in products like the recurring skills trainer, which is used to train military personnel such as Apache aircraft pilots.

Disti

Disti provides interface design tools that are used to create three-dimensional training exercises. For example, the company's GL Studio is a commercial tool that is used for developing aerospace maintenance trainers that include intricate details of an aircraft, such the instrumentation found in the plane's cockpit. In order to give this product the level of fidelity that the military needs, Disti works with the manufacturers of the original equipment, taking photographs of the aircraft to capture all of the details of the plane—from the controls to the wires to the wear and tear on a specific aircraft.

"We took the tactic of taking high resolution photographs of cockpits and instrument

panels because it actually retained a lot of the fidelity that existed in the actual aircraft—so that you could actually see the nicks and scratches that happen when using an aircraft, and all those nicks and scratches would translate into the training device," said Scott Ariotti, the company's director of sales and marketing. "Sometimes the users would sit in the cockpit and they would know what aircraft we took those pictures from because they recognized a chip taken out of the faceplate. Our artists don't clean any of that up when the content is produced because it gives the product a certain level of believability to the environment."

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The result of this work is that users can hardly tell the difference between the trainer and the real aircraft. In fact, Ariotti said, when a client was reviewing Disti's product by looking at a picture of the maintenance trainer against a picture of the actual aircraft, at one point, the client forgot which screen was which.

Presagis

Presagis, which is a subsidiary of CAE Inc., makes high-fidelity simulation technology that can be used to create training scenarios and immersive environments. These products focus not only on what real-world systems look like, but also how they behave.

"When you're firing a missile, it can't just fly out there and hit a target, you have to know that the missile is going at the right speed, and has all of the equations and physics behind the way that missile flies. It has to be accurate. That's what gives it that fidelity so that a trainee isn't given the impression that this missile can hit something 10 miles away, when, in fact, its real range is five miles. That's really what fidelity is all about—making a product as real as you can, but also as real as required," said Nick Giannias, VP of Research and Technology at Presagis. "If trainees learn to do something in a product that's been simulated using our tools, it has to translate into something that they can do in the real world and the results should be the same or as close as possible."

Some of the products that Presagis makes include Creator—which is a 3-D modeling software tool that allows the user to create a model of objects in the real world—and Stage, a product that provides high-level behavior that lets users build realistic battle scenarios.

QinetiQ North America

QinetiQ North America creates a training tool for the Tomahawk missile system that allows operators to practice in a robust environment that will replicate what soldiers will experience in the real aircraft. To create this realism at an affordable price, the company leverages existing technology engines—including some public domain tools, like the Delta3D tool that is produced by the Naval Postgraduate School. As a result, QinetiQ's systems allow users to suspend disbelief when using the products, which helps create an immersive experience for trainees.

"When you're sitting in that ship's combat information center and you're practicing a launch, it's no different than if you're in a simulator and in fact, many people come out of the simulations after four hours and they then realize they were sitting by the pier," said Mark Nesselrode of QinetiQ. "The military wants to get the shock and awe over while trainees are still here at home station. They want them to get used to the very different sounds, sights and cultural immersion—that's where the military wants to go and that's really what we're going to have to do just because of the very high cost for training these days." ✯

For more information, contact *MT2* Editor Brian O'Shea at briano@kmimediagroup.com or search our online archives for related stories at www.mt2-kmi.com.

Keeping Training Ranges in Shape

PRIVATE FIRMS ENSURE OPERATIONAL READINESS OF FIRING AND DRIVING RANGES IN AN ENVIRONMENTALLY FRIENDLY WAY.

BY HENRY CANADAY
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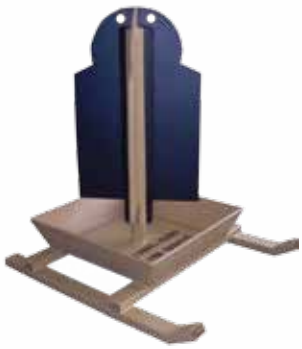
Private firms play an important role in the operation of military training ranges. In some cases, especially where training is highly specialized, contractors conduct all of the training duties while also maintaining their own training ranges. In other cases, contractors play a vital role in efficiently sustaining the hundreds of ranges that are used by the services for their regular training programs.

For both private and government ranges, managers must pay increasing attention to the significant environmental effects of military training. International Training Inc. provides firearms training for Department of Defense civilians, mostly intelligence staff, and for Special Operations Command soldiers at three of its own ranges near West Point, Va., and five near Dilly, Texas. ITI trains mostly on pistols and M4 carbines, but there is also familiarization training for AK47s. The Texas ranges train on the M240 machine gun and the M249 light machine gun.

Lamar Tooke, vice president of operations, said special ranges are ideal for defense civilians and special operations soldiers who also get other, non-firearms training at one location. "There is no easy forum where they can get weapons training like the average soldier," Tooke noted.

Courses last from one day to a week. Basic classes can be for familiarization or for requalification on a weapon. Longer courses go to advanced levels like sniper shooting or use of optical sights, laser pointing and night-vision goggles. Students can also be trained on how to fire when exiting vehicles and on ballistic effects on vehicles.



EODT's patented Spinning-Man GreenTargets are 3-D stationary infantry targets (SIT) ideal for combined arms training and use on multipurpose ranges. [Photo courtesy of EODT]

Tooke sees increasing need for this special form of firearms training. The company currently trains 2,000 shooters a year in Virginia and 500 to 700 a year in Texas.

For the future, ITI is considering doing training in suppressed firing through use of silencers with weapons. It may also expand machine-gun training in Texas. That is not possible at Virginia ranges due to noise restriction issues. ITI is considering expanding sniper training as well.

"We are very, very environmentally conscious," Tooke emphasized. "We do lead mitigation almost every year and we do testing for any lead leaching that might occur in the ranges. If we find any possible leaching, we do higher-level tests to see if there is a problem.

I don't know many companies that do that." ITI is also enhancing its noise abatement programs.

Overland Experts primarily trains all branches of the Special Operations Command in how to drive non-standard, four-wheel-drive vehicles off road, explained CEO Bruce Elfstrom. "We use Toyota Land Cruisers, Hiluxes, anything but Humvees," Elfstrom said. Overland has about 25 types of civilian vehicles, some of which are not legal for road driving in the U.S. It does not train on combat vehicles like MRAPs yet, but will probably do so in the future.

Matt Hughs

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Overland focuses on driving, recovering from accidents and navigation of rough terrain. "It does not do any good if you can drive, but cannot fix it and get out," Elfstrom emphasized. The company uses a step-by-step approach, teaching students about different gears, vehicle momentum and tire capabilities. Typically a dozen drivers are trained over five to seven days. Elfstrom looks for solid teaching ability in his assistants, who work under him for an 18-month apprenticeship.

Regular courses are taught at two Overland facilities, a 9,000-acre range in Virginia and a 2,000-acre range in Connecticut. Both are closed to the public. Special courses may be taught in remote locations, for example the desert or Iceland, to wean students from reliance on nearby support.

Students train on a variety of vehicles. "It is important they learn in different vehicles," Elfstrom explained. "So if they get on something at night they can tell in five seconds, by the sound and the pedal feel, what it is and how they will have to drive it."

EOD Technology provides RangeXchange, a unique program for sustaining and enhancing the military's weapon-training ranges, said Matt Hughs, program manager for range sustainment. The program supports the Defense Department's goals of maximizing the use of firing ranges to ensure operational readiness in an environmentally friendly way.

RangeXchange has three basic elements. First, GreenRange removes unexploded ordnance and recovers old targets, often tanks or other vehicles taken from the field that have potential environmental hazards such as antifreeze fluids, batteries or asbestos. These legacy targets are salvaged and recycled to render both the range and the expended targets free of explosive hazards.

The recycling is done through the second element of RangeXchange, EODT's GreenScrap program. The company uses a network of recycling firms to remove hazardous materials from legacy targets and obtain the best value for the remaining scrap, recovering this value for the government. EODT inspects the targets initially and estimates the value of precious and non-precious metals that can be recovered, so it can offer this value as part of a firm fixed-price contract with the range. For example, a GreenScrap program for a range at Fort A.P. Hill in 2006 recovered $1.4 million in scrap value for the Army, essentially funding the project's entire cost.

The final element of RangeXchange is EOD's patented GreenTargets product. These are three-dimensional representations of targets such as tanks and enemy vehicles that can be used in place of the actual equipment. Made of one-inch steel plates, these replicas contain no environmental hazards and can be quickly inspected to ensure no unexploded ordnance is trapped in them, a risk with real target vehicles. They can be removed inexpensively, unlike real vehicles that incur expensive salvage costs.

EODT has served and sold nearly 1,000 targets to 35 Army, Navy, Marine and Air Force ranges so far, a small portion of the facilities in use. About 15 million pounds of debris have been removed from ranges, saving installations $2.3 million. Other firms can do one or two pieces of the sustainment job, like removal and scrapping, Hughs acknowledged. But EODT provides a turn-key solution for the whole sustainment process, including its unique GreenTargets program. Hughs said his firm has never had a cost overrun and has always met its commitments on time. ✯

For more information, contact *MT2* Editor Brian O'Shea at briano@kmimediagroup.com or search our online archives for related stories at www.mt2-kmi.com.

Compiled by KMI Media Group staff

JTRS Network Emulator Contract Awarded

Scalable Network Technologies Inc., a vendor of simulation technology for mobile networks, announced that the company was awarded an independent SBIR Phase III Basic indefinite delivery/indefinite quantity contract to support the acquisition and enhancement of JNE (JTRS Network Emulator) for use by numerous DoD programs/agencies. The contract from the Joint Program Executive Office for the Joint Tactical Radio System (JPEO JTRS) is follow-on to previous Army and Navy SBIR efforts with SNT, with an estimated value of $11 million.

Developed by Scalable Network Technologies and based on the company's EXata emulation engine, JNE is a virtual laboratory that supports real-time emulation of large-scale communication networks of current and future force radios and associated waveforms. These include, but are not limited to, the Wideband Network Waveform, the Soldier Radio Waveform, the Warfighter Information Network-Tactical, Link-16, Single Channel Ground and Airborne Radio System, Enhanced Position Location and Reporting System, Internet Controller and similar components.

JNE has been developed for use in live, virtual and constructive environments that connect units that exist in a constructive simulation model with live and virtual lab-based units to form a "hybrid" large-scale network. These hybrid networks created with JNE emulate the intensity and distribution of traffic typical of battlefield deployments, and perform with all the complexity and realism of an actual large-scale network. This high degree of fidelity makes it possible to integrate a JNE network into live exercises using real hardware, real users and real applications connected to operational networks. Thus, JNE can enable testing exercises of large-scale (hundreds to thousands of radios) networks with a few—and in some cases no—live JTRS radios, accelerating development cycle time and reducing costs.

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Eye Tracking Capability in UAV Simulation Tests

Design Interactive Inc. (DI) recently delivered eye tracking and after action review (AAR) capability to Defence Research and Development Canada. Augmenting an existing UAV simulation test bed, DI integrated eye tracking hardware and customized software into the updated PC-based simulator, providing the ability to track pilots' eye movements across multiple monitors while operating a simulated UAV.

This integration allows for detailed data to be provided to researchers for review of gaze patterns, fixations, response to system events and fault identifications for each phase of flight. In addition, a video of the simulated flight, with custom overlays that contain foci of visual attention and DI custom HeatMap visualization tools, can be generated with the AAR package.

DI is a research-oriented small business providing a broad range of services to government and commercial clients worldwide. Core competencies include performance analysis, human factors research, task evaluations and bio-physical device integration to traditional training environments.

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Stinger Dome Training System Receives Upgrade

High-performance projector and image processing manufacturer, projectiondesign announced the supply of 26 F32 projectors and Multiple Image Processors to Cassidian. Cassidian is an EADS company that has offices in Friedrichshafen, Ulm, Germany, and is headquartered in Unterschleissheim, Germany. The upgrade and retrofit to the Stinger dome training system comprises a 20-meter wide dome projection system with a 340-degree field to create a realistic simulation and training environment and will be completed in November 2011.

The Stinger missile is an extremely effective personal portable infrared homing surface-to-air missile, shoulder-fired by a single operator, classified as a Man-Portable Air-Defense System.

In this system, projectiondesign's F32 projectors will be integrated with Multiple Image Processors for display on to the 20-meter wide dome projection surface. The processors will be automatically calibrated to align images on screen during soldier training.

"We're delighted that Cassidian will now join our growing customer base who enjoy the benefits of using our projection and display technologies," explained Susanne Taxis, business development manager, Germany, Austria and Switzerland, at projectiondesign. "What's also tremendous about this installation is the combination of our infinitely scalable and near to zero latency Multiple Image Processors to perfectly and quickly align the projected images on screen according to tactical training exercises."

Hans-Juergen Rau, director, customer support sales export, simulation & training at Cassidian, said: "After a thorough selection process involving demonstration of the proposed solution from multiple parties, projectiondesign was technically superior in all respects, and we look forward to such a tremendous improvement for visual acuity and ease of use. In addition to the high performance of the new projectiondesign display system, the Stinger Dome Trainers will show the potential for dual use and facilitate numerous training such as Joint-Fire Support Teams, Forward-Air-Controllers and Forward Observers."

Mike Raines;
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PEOPLE

Brigadier General John M. Murray, director, Joint Center for Operational Analysis-Lessons Learned, U.S Joint Forces Command, Suffolk, Va., has been assigned as assistant deputy director for joint training, J-7, The Joint Staff, Suffolk, Va.

Colonel Mark S. Inch, who has been selected to rank of brigadier general, deputy provost marshal general/commander, Army Corrections Command, Office of the Provost Marshal General, Washington, D.C., has been assigned as commandant, U.S. Army Military Police School/ deputy commanding general, joint training and leader development, U.S. Army Maneuver Support Center of Excellence, Fort Leonard Wood, Miss.

Major General Walter M. Golden Jr., director, J-1, The Joint Staff, Washington, D.C., has been assigned as deputy commander for police, North Atlantic Treaty Organization, Training Mission - Afghanistan.

Advertisers Index

Calendar

June 15-16, 2011
Training & Simulation Industry Symposium (TSIS) 2011
Orlando, Fla.
www.trainingsystems.org/events

June 27-30, 2011
AUSA's ILW Army Medical Symposium and Expo
San Antonio, Texas
www.ausa.org

August 2-4, 2011
ADL ImplementationFest 2011
Orlando, Fla.
www.trainingsystems.org/events

August 15-19, 2011
U.S. Army Training Support System (TSS) Workshop
Dallas, Texas
www.ncsi.com/tss11/index.html

August 16-19, 2011
AUVSI's Unmanned Systems N. America 2011
Washington, D.C.
http://symposium.auvsi.org/

Gabe Batstone
Chief Operating Officer
Ngrain

Gabe Batstone is the chief operating officer at Ngrain. With extensive experience working for organizations in the aerospace and defense, automotive and intelligent transportation systems markets, Batstone has more than 15 years of product management, business development and sales and marketing experience. He has worked for world-class organizations including NAVTEQ, CAE Flightscape and Ngrain.

Q: Gabe, you've recently returned to Ngrain after more than a year at CAE's Flightscape. From your perspective, how has Ngrain evolved?

A: From the start at Ngrain, we have been dedicated to developing break-through 3-D solutions that solve critical equipment maintenance challenges. And, as the result of a lot of time spent listening and responding to our customers, we defined the market we are in today.

When I joined the CAE community in 2009, I was thrilled to see firsthand the strong impression Ngrain has made as a thought leader and innovator on some of the largest defense and aerospace companies in the world. They see our passion for what we do and our ability to deliver on our promises.

Now that I'm back at Ngrain as the COO, I'm excited to see that our passion is still going strong and we continue to be the trailblazing company we have always been—leading the industry by developing solutions that solve critical training challenges. It's a new era; one that we're all incredibly excited about.

Q: What are some of your key products in the DoD training and simulation industry?

A: Of our solutions, three I'm really excited about: the Virtual Task Trainer, Virtual Task Refresher, and Virtual Damage Assessment and Repair Tracking software.

The Virtual Task Trainer is our flagship training solution that leverages our award-winning 3-D technology to convey procedural information related to equipment in a highly detailed yet accessible way. The Virtual Task Trainer is always evolving and as a result our customers will see advanced Instructional Systems Design expertise baked right in so that the job of instructors becomes easier and results are significantly improved.

For customers training on rapidly fielded equipment, the Virtual Task Refresher is perfect. This highly deployable solution allows personnel to review and practice procedures on the job. For people working on equipment they've never seen before or have not maintained in months, this solution is a game changer.

And let's not forget the Virtual Damage Repair and Tracking software. Already on the Lockheed Martin F-35 program, the software is now going to be deployed on the F-22. Maintainers track maintenance information on a 3-D model of the aircraft, which is input directly into the aircraft's systems. Talk about innovation—this is a revolution in aircraft maintenance.

Q: What are some of the new training/simulation technologies Ngrain is developing?

A: We recently released Producer 4.2, which further reduces the time it takes to create and update 3-D simulations for training and maintenance support. We are also extending the capabilities of our Virtual Task Trainer solutions, and offering new joint products, such as our Advanced Virtual Maintenance Trainer solution with EADS' Cassidian.

Q: How are you positioned for the future within the military?

A: The training needs of our industry are changing. As our troops return home and budgets are cut, we are seeing two things happen.

The first is that the military must do more with less—fewer people, less money and longer sustainment cycles. Overcoming this challenge is what we're good at. By integrating interactive 3-D solutions into the schoolhouse or to those deployed, you effectively reduce the need to acquire new equipment for training, you lighten the burden on instructors, and you can increase the number of people who have access to the training—all while improving proficiency.

The second major change happening is that manufacturers are now being asked to deliver training for their equipment. Interactive 3-D is a great way to approach this demand. Converting their own 3-D design files to Ngrain's format—which protects the manufacturer's IP—we can easily create training solutions together. These can then be shipped with the platform, further adding value for our customers.

Q: What is an example of your success in the military, and what are some of your goals [specific to the training/simulation industry] over the next year?

A: Over the last 10 years we've become entrenched in all branches of the militaries in North America. We are also gaining traction in Europe and recently won two contracts with the U.K. MoD. At the same time we've built strong partnerships with leading government prime contractors, including Lockheed Martin, EADS, CAE and SAIC. Over the next year our goals include having a material impact in supporting the 'reset' efforts of the DoD and DND and driving forward with significant penetration of aerospace and defense manufacturers around the world.

Q: How do customers benefit from Ngrain's varied resources and expertise?

A: Ngrain is uniquely positioned to solve the business problems facing the world's military forces today. We have a portfolio of solutions that has proven to successfully support schoolhouse-level training, can be easily integrated into learning management systems, and that helps manufacturers capitalize on the training related to their platform.

At the same time, our solutions don't have a shelf-life. We offer COTS software tools and support so that even if a procedure or part changes, the training can be easily modified and updated to reflect the needs of our customer. ✶

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NEXT ISSUE

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America's Longest Established Simulation & Training Magazine

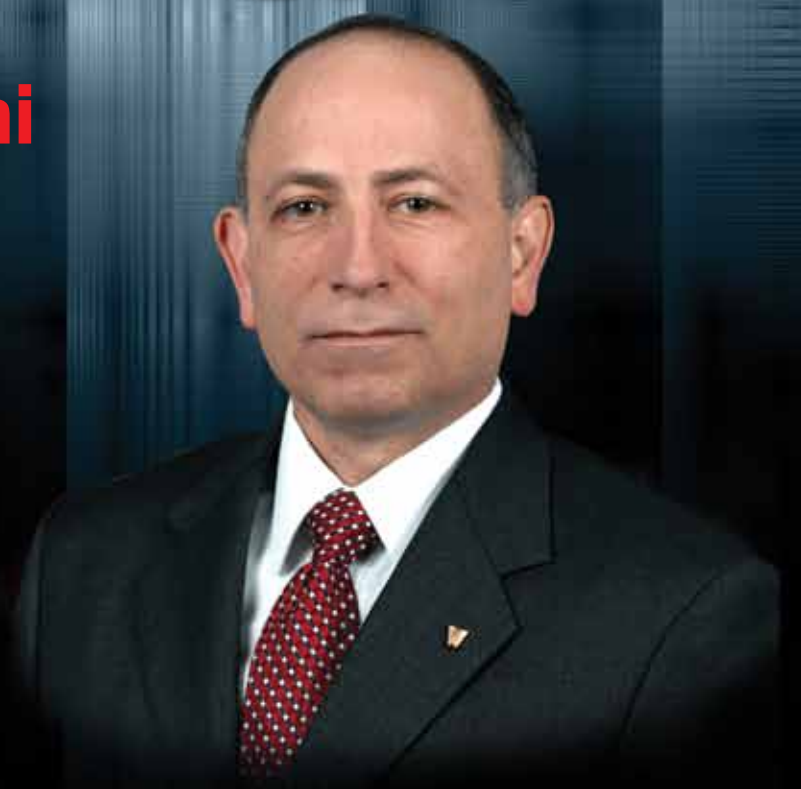
Military Training Technology

Cover and In-Depth Interview with:

Frank C. DiGiovanni

Acting Director

OSD Readiness and Training Policy and Programs



FEATURES

Advanced Distributive Learning
The vision of the ADL Initiative is to provide access to the highest-quality learning and performance training that can be tailored to individual needs and delivered cost-effectively, at the right time and in the right place. We take a look at how the military, academia, industry and other agencies are working to develop the learning standards, tools and content.

Helicopter Gunnery Simulations
Simulation systems improve helicopter gunnery training using advanced technology, resulting in reduced costs compared to more traditional methods.

Military Police Training
Military police are being asked to do more and more. They deal with base security, patrols, internal crime and other more serious problems. How their training has evolved to keep up with current realities on the ground and how industry is helping them meet those challenges.

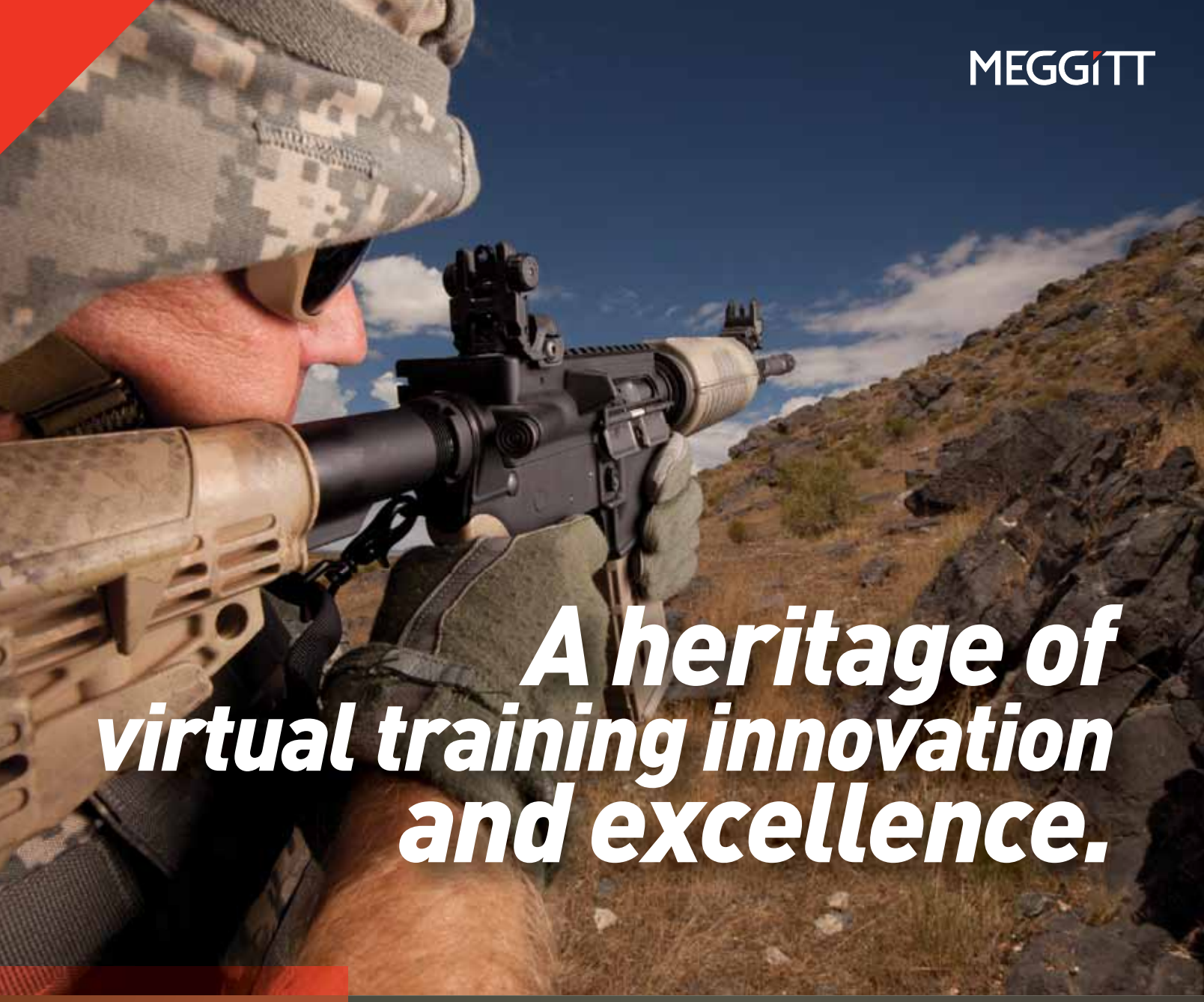
Unmanned Aircraft Systems
UASs help keep the warfighter out of harm's way. Learn about innovations aimed at improving the training technology used to reach this goal.

SPECIAL SECTION

Serious Gaming
How industry provides military agencies options to maximize potential value in simulations for warfighter training.

Organization Profile:
Air Education and Training Command

Insertion Order Deadline: 7/22/2011 • Ad Materials Deadline: 7/29/2011



MEGGITT

A heritage of virtual training innovation and excellence.

Meggitt Training Systems, makers of FATS® and Caswell technologies, understands that today's ground forces rely on real-world training. Virtual training systems must provide comprehensive marksmanship tools with the ability to train in the combined arms environment utilizing support weapons and indirect fire assets.

These requirements have driven the design, mobility, flexibility and effectiveness of Meggitt's Small Arms Training system. Meggitt's simulation trainers include marksmanship, tactical, mortar, call for fire and armored fighting vehicle systems. Networking capabilities enable small-unit training to full-spectrum, multi-service exercises—all within a classroom environment.

It's a system ideally suited for the U.S. Armed Forces, including the emerging EST II program and its focus on combat marksmanship, ballistic accuracy, and warrior skills tasks. Most importantly, Meggitt's simulation system brings with it the immeasurable value of decades of virtual and live fire training innovation and experience.

Meggitt Training Systems, makers of FATS® and Caswell technologies

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