

#### TUESDAY, NOVEMBER 29, 2016

## Tactical Decision Training Hones USMC Leaders

"I'm confident that we have some very good tools for small unit leaders and for higher level staff to train," Commandant of the Marine Corps General Robert Neller said during a special event at last year's I/ITSEC. "I'm more concerned that my company commanders and those middle level commanders do not get an opportunity to exercise their tactical decision making repetitively. Because the live fire company in the attack events and the big live fire events are too expensive, too time-consuming, you can't do those over and over again."

Colonel Walter Yates, Program Manager Training Systems (PM TRASYS) within the Marine Corps Systems Command described to the Show Daily what his team is doing to address training at this level. "One of the initiatives that we're working on is something called the Leader-Focused Tactical Decision Game (LFTDG). What we're trying to deliver is a practical application – you could call it a gaming environment - something that would run on a Marine's personallyowned computer or tablet that will allow them to load and run scenarios that exercise tactical decision making. Instead of having, as we do in the battle simulation centers, a professional contractor opposition force or you're training force-on-force, the LFTDG is going to use artificial intelligence (AI) - 'good enough' game AI - to stimulate the decision making process."

"The idea is not that this is going to be a realistic portrayal of exactly how a battle or skirmish would unfold, but it's going to be

plausibly correct. You're going to have an enemy that responds and reacts to the plans laid out by the trainee who's using it. Then we'll be able to gather some performance metrics, not to tell you whether you were right or wrong, whether your plan was the best or not, but to say, 'Did you meet the metrics of success for the mission? At what cost? How long did it take? What was the amount of damage or destroyed equipment?' Marines can take scenarios that would be either something that they or other Marines designed, or come from one of our formal schoolhouses – Expeditionary Warfare School, Command and Staff College, Marine Corps Tactics and Operations Group, Tactical Training Exercise Control Group or one of the many other schoolhouses in the Marine Corps - a scenario developed by them to address certain decision making problems. They would get to propose their solution and see how it plays out in a lightweight simulation. I think this would become, if we're successful in developing this, the practical application tool that would be adopted across Marine Corps formal schools."

"Our belief is that this technology already exists. It's not a significant departure from what many commercial wargames in the entertainment industry provide. We want to focus on the realism rather than the entertainment value. This past June we published a sources sought RFI to industry. We received several very strong proposals and in September at the Modern Day Marine Expo, we invited six companies to demonstrate their concepts. The subject Continued on p6

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**INDUSTRY KEYNOTE PAGE 16** 

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#### TODAY'S CONFERENCE HIGHLIGHTS TUESDAY, NOVEMBER 29

0830-1000 Opening Ceremonies (Hyatt Regency Hotel, Windermere Ballroom)

#### SIGNATURE/FOCUS EVENTS

1030-1200	General/Flag Officer Panel (Hyatt Regency Hotel, Windermere Ballroom)
1400-1530	USAF's Live, Virtual, Constructive Operational Training General Officer Steering Group ( <i>Room W304CD</i> )
1430-1600	Operation Blended Warrior: The Opposition Strikes (Booth 349)
1400-1530	Paper Sessions (Room W304ABEFGH)
1600-1700	Paper Sessions (Room W304ABEFGH)
1600-1730	IGNITE! (Room W304CD)
1600-1730	Warfighters Corner (Booth 2081)
PROGRAM	1 BRIEF
1400-1530	US Army PEO STRI TSIS UPDATE (Booth 2081)

1600-1730 USAF Acquisition Update (Room W306AB)

#### **COMMUNITY OF INTEREST**

- 1400-1530
   Modeling and Simulation Common Research Agenda (Room W306AB)

   1400-1530
   Defense Procurement: The European Approach to Engagement with SMEs in the Simulation and Training Industry (Room W306AB)
- 1600-1730 Building the Business Case for NAICS (Room W311A)

#### **INNOVATION SHOWCASE** BOOTH 2949

1230	Challenges and Solutions for Untethering Virtual Reality Displays:					
	Serious Simulations, LLC					

- 1315 Streamline Training Analysis and Drive Efficiency with ADVISOR Enterprise: BNH Expert Software Inc.
- 1400 Integration of Active Controls in Simulators: Stirling Dynamics
- 1445 Economically Developing VR-Based Industrial Training Simulators: ForgeFX Simulations
- 1530 Vortex Studio 2017 Beyond the Game, Extending Immersive Experiences for Land and Sea: CM Labs Simulations
- 1615 Mixed Reality: Training Evolved: AAADA Presented by Modest Tree

#### **EXHIBIT HALL HOURS**

1200-1830

#### **REGISTRATION HOURS**

0700-1800

## 5HOWDAILY

The I/ITSEC *Show Daily* is published by the National Training and Simulation Association.

#### Publisher James A. Robb, RADM, USN (Ret) jrobb@ndia.org

Editors

John S. Williams jwilliams@ndia.org

Scott Gourley scott\_r\_gourley@yahoo.com

Photography Scott Rekdal srekdal@ndia.org

#### Associate Editors lan Kemp

iandavidkemp@gmail.com Tony Skinner tonymarkskinner@gmail.com

Advertising Kathleen Kenney kkenney@ndia.org

Print Production Management Tradeshow Media Partners www.tsmpartners.com



## First Signature Event

Monday's first Signature Event at I/ITSEC 2016 focused on the Congressional Modeling and Simulation Caucus. Event attendees learned about NTSA support to Caucus activities from NTSA President RADM James Robb (Ret) and received a Congressional perspective from Congressman Bobby Scott. The Caucus is focused on promoting the use of modeling and simulation in training systems as well as across the entire span of applications.



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## **Exhibitor Networking Event**

#### Tuesday 29 November 1700-1830

Be sure to kick off I/ITSEC 2016 by stopping by one of the participating booths at the I/ITSEC Exhibitor Networking Event. This is a great way to view the latest technology while networking with exhibitors and your fellow attendees.

#### **Participating Booths**

- 601 **Soar Technology, Inc:** Bell's Oberon Beer, assorted wine, cheese platter and crudite with dip
- 701 Aptima, Inc.: beer, wine, finger food and appetizers
- 762 Animaticmedia VR: Wild Turkey and finger food
- 819 **RUAG :** Nathan's Hot Dogs, imported and domestic beer, cheese display, cake, Southern sweet tea and soft drinks
- 1012 Krauss-Maffei Wegmann: Bavarian food and drinks
- 1048 VT MAK: coffee and cupcakes
- 1101 Kratos: iced cold beer and freshly popped hot popcorn

- 1321 JVC Visual Systems: flavors of Japan beer, sake and tasty snacks
- 1515 Alion Science and Technology: keg beer and popcorn
- **1563 Barco:** Belgian beer and Norwegian delicacies
- 1620 Transas Americas Inc.: beer, wine, soft drinks and finger food
- 1621 E2M Technologies BV: Dutch beer and snacks
- 1663 BAE Systems: local beer, wine and soft drinks
- 1700 The AEgis Technologies Group: beer, wine and popcorn
- 2113 SAIC: beer, wine and appetizers
- 2348 Bohemia Interactive: beer, wine and snack foods
- 2380 The DiSTI Corporation: Yuengling draft in its specialty pint glasses
- 2671 NTSA: beer and wine
- 2681 ETSA: bar snacks
- 2637 LuxCarta: beer, wine and snack foods
- 2748 Camber Corporation: hot pretzels and cold beer

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#### Tactical Decision Training from page 1

matter experts that viewed these demonstrations were impressed."

"Right now, we're waiting for the formal validation of this as a requirement. Once we get the requirement validated, and the funding lined up, and the exact concept of employment finalized, then we're going to probably try to deliver this as part of an augmentation of the Deployable Virtual Training Environment (DVTE). It probably won't be its own program of record, but it would be an addendum to the DVTE program that we already have."

Yates noted that alongside military simulation companies, successful companies in the commercial gaming industry also demonstrated their systems. "A big part of the capability we're seeking is what I will refer to as 'good enough' AI. Good enough AI means that it exercises path planning and awareness of its surroundings. It understands that when I see the enemy, I don't always immediately shoot at the enemy. I have an instinct of selfpreservation so that when you're watching this scenario play out, you're not fighting a mindless enemy who's going to march into the jaws of death and fight you to the last individual. They're going to have awareness that I may observe you and report rather than engage, based on the commander's guidance. I'm going to walk on the military crest of a hill rather than the topographical crest because it will reduce my observability."

"Al is also going to generate the blue forces which will be executing the orders of the trainee who's using the LFTDG. It'll be blue Al against red Al to an extent. There won't be an unnatural advantage. The idea is that your subordinates will execute your intent rather than you having to tell every element in this rifle company, for instance, what it has to do."

"The trainee will give this team checkpoints: 'Once you reach this point, wait until these conditions are set, and then advance further. Do not become decisively engaged'. We'll have to figure out things. What does the software code look like that carries out the intent of 'Do not become decisively engaged'. That's the heart of how we make the software resemble real life."

The LFTDG is intended for all command levels within a rifle company. "We can do the fire team or the squad level, but when you get to being the platoon commander and especially the company commander, the LFTDG will provide 'subordinates' that don't get tired and you can say, 'Well, that didn't work. Let's change this and do it again'."

"We'll have something that Marines can take home and do homework problems and come up with what they believe is an optimal solution. Then you would go back to your class at Expeditionary Warfare School, the Advanced NCO Academy, or Command and Staff, where you could play it on the big screen so the whole class could see and critique the scenario. What I'd really like to have is the ability to export that plan into initialization files that we could run in a higher fidelity simulation like our Combined Arms Command and Control Training Upgrade System (CACCTUS) OneSAF simulation or Marine Air-Ground Task Force Tactical Warfare Simulation (MTWS). So when you want to say, 'Okay, let's replace the Al with an actual thinking enemy', then you can learn even more. The LFTDG is a sandbox in which you can do some experimentation and understand the variables of the tactical situation, but then it would also be a tool so you could export the plan that you've come up with and explore it in higher detail."

Yates noted that during the early discussions of the LFTDG

concept there was a case made that 'We want it to do the full range of military operations', and I said, 'Let's think about this. I think the Commandant would be absolutely tickled if we had a simulation that could handle the kinetic 'blocking and tackling'. When we start talking about non-kinetics and counterinsurgency and so forth, that's probably 'a bridge too far' for a COTS simulation that runs on a laptop or tablet, at least too far for our budgets and the amount of people we've got to train. Let's look at something that would be useful and good at the small unit attack, withdraw, delay, defend type missions that we really have a hard time training company commanders on right now in terms of repetitive experience. If we can provide that, some brilliance in the basics, then we'll have some breathing room to do even more and improve it. Let's have a small success in a specific area and then see what we can do in later versions. Success breeds more success."

"At the other end of the spectrum we are pursuing the Live Virtual Constructive Training Environment (LVC-TE). We're moving towards finalizing the Capabilities Development Document (CDD) for



how the Marine Corps is going to federate and conduct training that links ground simulations and aviation to enable the four elements of the Marine Air-Ground Task Force - command, ground combat, logistics combat, and aviation combat - to train together. We've found that when we can connect the various specialty communities to train together, the quality of the training is better and you get more training by doing it concurrently."

"What are the training and readiness tasks that are most expensive and most difficult to train without live resources? That's supporting arms integration with maneuver. We're looking at the first increment of the LVC-TE focusing on linking Joint Fires Observers and Terminal Attack Controllers with aviation and artillery, and supporting arms fire. If we can do that in a distributed LVC context that will be a great enhancement."

"Then you put in the command and control on top of that, our Direct Air Support Control Center and our Fire Support Coordination Center, that are clearing and approving the fires, and deconflicting air space and maneuver. That makes it even more realistic. It gets all of the people thinking at the same time. Instead of doing training and readiness tasks at the pilot and observer level, you're exercising the command and control elements at the same time, so it's better training, it's more realistic training."

Yates noted that, as the LVC-TE initiative matures into a Capabilities Development Document, the project is likely to be renamed the Marine Corps Synthetic Training Environment (MCSTE).

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Engility Holdings, Inc. (Booth 1020) is showcasing a broad range of training capabilities at I/ITSEC 2016.

According to Mike Finnern, Director of Training and Learning Solutions for Engility's Technical Solutions Group, the company was established in summer 2012 as a spinoff of service divisions within L-3 Communications

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companies under L-3 that had been doing this for 20 years," he said, noting that the subsequent acquisition of DRC and TASC served to further bolster Engility training expertise and capabilities.

At this year's I/ITSEC, the company is highlighting a capability set that includes immersive training, cyber defense training, Survival, Evasion, Resistance and Escape (SERE) training, mobile training

and a virtual training environment for bridge and tunnel inspections.

"We have been involved in LVC gaming for some time and we have brought pieces of those to I/ITSEC," he explained. "As an example, in strictly live training we have our SERE program out of Fort Rucker, AL. They bring Soldiers into the field and it is very much a one-on-one training environment."

"Another thing we brought is our cyber security training," he added.

Although not new for the company, Finnern said that the company's expertise in this arena is not well known in some circles.

"We brought with us our team from San Antonio," he said. "That group is supporting the 92nd Cyber Ops Squadron there in 24th Air Force. And those folks in the cyber arena touch every vital system the Air Force has. They do test and evaluation for it as well as maintenance, but they also do cyber security training. So we really want people to get the word that we are experts in this area of cyber security training."

He added that Engility's virtual 3D immersive training environment capabilities are highlighted at I/ITSEC 2016 in a US Marine Corps program "where we modeled an entire operations center with all the equipment. So, when that young Marine is learning about new equipment they will be working on, he can go into that environment - there's an avatar in there to help walk through - and they can pull a particular piece of equipment apart to study it. And they can go through that over and over again - as much as they need to."

"One of the key things about Engility is the engineering mindset that we bring to training," he said. "It's not a pickup game for us. It's a very deliberate systems process that we apply for all of our customers."

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## **McMurry Predicts Stronger LVC Future**

Major General Robert D. McMurry Jr., who will provide the military keynote address later this morning at I/ITSEC 2016, recently spoke with the *Show Daily* on Air Force simulation applications and other related technologies.

Currently Commander, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH, McMurry was recently nominated for his third star with a follow on assignment as Commander of the Air Force Life Cycle Management Center, where the portfolio of responsibilities includes: information technology

systems and networks; command, control, communications, intelligence, surveillance and reconnaissance systems; armaments; strategic systems; aerial platforms; and various specialized or supporting systems, including simulators and personal equipment.

When asked about the introduction of revolutionary technologies on the training environment, McMurry said that the first step involved the introduction of more gaming simulation.

"We understand best what the operational impact is of systems and new technologies as we start to experiment and execute war games and simulations of those capabilities," he began. "And then, when we start to get that understanding of the impact on the operational environment, that's when we can start to understand the training requirements. And then I think it becomes pretty clear what you're going to be able to train by just education,



what you're going to be able to train by adjustments to current training techniques and procedures (TTP) and then what you're going to really need to develop new capability for. The thing that we're really trying to do to make sure that we're positioned to be able to bring that new capability regardless of the demands in an actual real world environment is really the set up for the 'SimMod' capabilities and the LVC capabilities to be able to build simulations that bring that real world environment into the training regime with the highest fidelity possible."

Although he is comfortable at the pace of the new technology introductions, he acknowledged, "You always like to see things faster."

"But I think given the resources that we've got, we're moving out at a pretty decent pace and that we're executing with some energy toward developing realistic LVC capabilities that will help across the spectrum," he said.

Translating this training environment to a world of increasingly competitive "near peer" competitors, McMurry pointed to a concept called "credible readiness."

"To develop that readiness you have to have systems, you have to have doctrine and you have to have trained, ready personnel," he said. "So, if our systems are ops capable, and we have doctrine that executes, then the key from a training perspective is making sure your people can execute, given the systems and doctrine that they have."

"What we have found is that the best way to keep people going in the face of challenges in a real world environment is clearly in the LVC and simulation environment," he added. "We actually find that those environments often exceed the complexity that you get in a real world training environment and so, I think we're bringing those capabilities on in a strong manner to make sure our people are ready."

> Turning toward the future of LVC in Air Force training, McMurry offered what he called a "soup to nuts" observation, where LVC is involved not only early in the training cycle but also in the actual process of "certifying" combat capabilities.

McMurry shifted to some key takeaway messages likely to be included in his keynote address today, starting with the assertion that "the LVC environment and the technologies that support the simulation function that is necessary to make LVC work are absolutely essential to the capability of our Air Force in the future."

"I think I would even extend that argument beyond the Air Force to all of our Department of Defense capabilities," he said. "We're going to talk about that. We're going to talk about the technologies that are enabling there and some of the specific programs the AFRL has. And we're also

going to have a pretty dynamic floor demonstration that will show a mission understanding with some diversity of how LVC works and how distributed mission operations work to bring that realism into a training environment."

"As we go forward, we're really looking at this capability...and understanding the impact of this technology. And when you add in operational tests and readiness, I think that's a core of a ready and capable modern force."

"I think that's the message that we're trying to convey in our presentations," he added. "We hope that it will be an integrated message that this stuff is absolutely essential to our future defense capabilities and we appreciate what we can do, hand in hand with our industry partners, to make this stuff real."

Reiterating, "We don't do this alone," he summarized, "When we work with bringing these technologies on, it is a government and industry activity. And the government part is a whole of government activity in the sense that, from a defense focus, we are really inclined to view everything through a joint lens. We want multiservice, multi-domain capabilities. We are thinking as a whole of government solution. I think as we grow simulation capabilities we'll be looking at even more complex environments than just DoD only."

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## **Congressional Caucus Draws Packed Crowd**

As in past years, the I/ITSEC Congressional Caucus drew an attentive overflow audience on Monday morning.

NTSA President RADM James Robb (Ret) welcomed attendees to the first Signature Event of I/ITSEC 2016, noting that the crowd contained a great blend of familiar and new faces.

Robb explained that the Congressional perspective reflected the members of the Congressional Modeling and Simulation Caucus.

"This is a Caucus that was created some years ago, headed up by Congressmen



Randy Forbes and Bobby Scott as co-founders," Robb said. "The Caucus has since grown to over 30 members on the House side and it is really focused on promoting the use of modeling and simulation, and training systems as well, across a broad span of uses."

In addition to the I/ITSEC opportunity, Robb noted that NTSA supports Caucus initiatives throughout the year "to promote modeling and simulation and the use thereof."

Congressman John Mica, who recently lost the local Orlando Congressional seat to redistricting, addressed the audience by video, reflecting on the growth that he has witnessed in modeling and simulation during his own caucus membership, challenging the audience to educate new members of Congress on the importance of simulation across multiple fields of endeavor.

Congressman Bobby Scott (3rd District, VA), who has been in Congress since 1992,

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has attended every I/ITSEC event since 2007.

Scott echoed Mica on the need for attendees and businesses to contact their members of Congress "to express the importance of modeling and simulation."

"Members of Congress respond better when they hear from their constituents," he said, pointing to the fact that the underlying technologies shown at I/ITSEC are applicable across a spectrum of military and civilian applications.

"President-elect Trump has called for the passage of a large scale infrastructure project [during] his first 100 days in office," Scott said. "We don't know the specifics of the plan but I hope and expect the administration will continue to use modeling and simulation to ensure that we are getting the most out of any new federal investments improving our infrastructure."

"We will always have limited resources to improve that infrastructure," he added. "So it is critical that we know that the federal dollars are going as far as possible. And modeling and simulation is the best tool to ensure that we are getting that best deal."

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## Short and Sharp Presentations to Ignite! Audience Interest

During this afternoon's Ignite! special event, in Room W3O4CD from 1600-1730, industry experts will provide targeted, compelling, and even provocative five minute presentations which embody this year's theme of 'Pushing the Training Envelope'. Ten presenters have been selected from over 30 nominations, and each talk is jam-packed with inspiration and information using 20 slides that auto-advance every 15 seconds, creating a fun and dynamic event.



Enlighten Us, But Make It Quick Commander Geir Isaksen, Norwegian Defense University College: E-Learning Instructor Development

Amy Heaton, Ph.D., Linchpin International: Solving Complex Language Training Challenges Through Technology

Jonathan Poltrack, ADL Initiative: Experience API (xAPI) - What is it and What Can it Do for Me?

Mike Freed, SRI International: Personal Assistance for Self-Learning

JT Folsom-Kovarik, Ph.D., Soar Technology: Total Learning Architecture

**Robby Robson, Eduworks:** What are Competencies and Why Should You Care?

**Brandt Dargue, The Boeing Company:** Training, Where the Learner is King, Not Fidelity

#### **Speakers**

Brian Stensrud, Ph.D., Soar Technology: Behavior Modeling in the Age of Deep Learning

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Captain Wes Naylor, USN (Ret.), Coe & Naylor Group: Revolutionary vs. Evolutionary Change

**John Fairchild, SAIC:** Why "Gamification" is a Horribly Abused Buzzword

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## Industry Urged to Leverage Big Data

Industry keynote at 0830 on Tuesday in the Windermere Ballroom at the Hyatt Regency

Maintaining a ready force is critical for what has become known as the Third Offset, the strategy of keeping a clear advantage for the US and its allies in any future conflict.

However, the role that human performance plays within that ready force is currently underdeveloped and little understood, with too much emphasis placed instead on technology as a panacea, this year's I/ITSEC industry keynote will argue.

Daniel Serfaty, Founder and CEO of Aptima, Inc (Booth 701), will outline strategies to better harness individual learning, team learning, and organizational learning at all levels.

"This is about the human side, not the technology, not all the simulations, not all this virtual reality, but the human aspect. In order for us to maximize human performance, we need also to optimize the way humans learn," Serfaty said.

"I'm going to talk about a few components of how we look at learning as an asset that needs to be optimized. How do we use technology as a means, not as an end, to achieve those learning objectives?"

One key element of this is identifying better ways for the military to measure "big data", that while each service gathers a raft of data about individual and team performance throughout their systems, little is being done to measure this data and change processes accordingly.

"That data needs to be used, science needs to be applied to make sense of it together with powerful analytics so that we understand the state of the sailor or the soldier or the commander. From there we can tailor, we can personalize, the training for that particular person at that particular time.

"That sounds like common sense, but it is a pretty revolutionary idea, right now, that is being implemented in a limited fashion. But it's certainly not part of the standard. Mostly we know how to handle that data, and we know how to apply the science of learning to make sense of that data."

A second notion that Serfaty believes needs to be challenged is the idea that training should occur as a separate activity from an individual's day-to-day working life.

Studies have established what is known as the 70-20-10 rule: 10% of skills or knowledge is learned in a formal classroom at college or university; 20% is learned in a specific training course; and 70% is learned on the job.

"Basically, the pace of knowledge is accelerating so much in the field that whatever you learn becomes obsolete within 18 months. Therefore, the only way you can keep up is, fundamentally, to learn while you work, which is that experiential learning we're talking about.

"The question is, how do we capitalize on that? How do we capture the data, the signature that we leave electronically as we work on our computer, on our simulation, etcetera, to use that to improve learning, so that people maximize their learning while they're working? Working and learning are becoming indistinguishable."

Serfaty's arguments are more than just theoretical, with Aptima playing a key role during Operation Blended Warrior (OBW) throughout I/ITSEC through the application of four products. These include the Performance Evaluation and Tracking System (PETS), a suite of data mining, performance analysis, and storage tools developed in conjunction with the Air Force Research Laboratory; PM Engine, which enables collection of data from many different types of data sources, including: neurological, physiological, simulator data, built-in instructor operator station control, communications, and audio; and SPOTLITE, which allows observers to subjectively rate and understand student and instructor performance in real time.

In addition, the company's Performance Dashboard is being employed, featuring web-based displays and filtering tools that enable analysis of performance data captured by PM Engine and SPOTLITE.

"Our tools during Blended Warrior... are going to be done in conjunction with all the other 35 or so players to capture data in real time of what's coming up from the live and virtual simulation and display that in real time on big screens so that the commanders can track how the different actors in the simulation are performing."



At the US Navy's booth (1239), the company has a demonstration of the performance measurement dashboard for the new P-8A Weapons Tactics Trainer (WTT) simulation platform developed by Boeing Defense, Space & Security.

The company's role during OBW supports the concept that better processes need to be introduced to provide the supporting evidence that useful learning is taking place – something the services have not always done well in their pursuit of new technologies.

"Whether it's a universal simulation and virtual world, or augmented and virtual reality – people should ask of whatever technology, if I introduce a new technology: 'Show me evidence that people using this technology are learning something. Tell me what they are learning.'

"Without that evidence, the simulation remains a game if there is no evidence that learning is taking place, and that human performance is being optimized, and that the force is becoming more ready to do the missions of tomorrow."



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## **Presagis Shows Off Its Craft**

Montreal-based company Presagis (Booth 1057) has launched a new customizable simulation platform at I/ITSEC 2016, which it claims will reduce the barrier of entry to high-fidelity simulation.

Comprising Heli Craft and UAV Craft, turnkey helicopter and UAV simulation platforms, the new Craft product line is designed for the R&D communities as well as for task and procedures training.

Heli Craft includes high-fidelity flight and avionics simulation with motion and vibration feedback, physics-based sensors and weapons, and built-in computer



The new Heli Craft was unveiled on the first day of I/ITSEC 2016.

generated forces (CGF).

Highlighting the customizable, costeffective nature of the product, Stéphane Blondin, Presagis' Head of Product Management and Marketing, said: "This novel approach allows pilots and payload operators to train for complex tasks and procedures as well as researchers to evaluate and experiment without the usual costs and accessibility constraints of high-end certified simulators."

During I/ITSEC, the company will be running demonstrations of the system in a manned/unmanned teaming (MUM-T) scenario where the pilot of a generic attack helicopter is able to control the payload of the UAV.

Stéphane Roy, Simulation Product Manager at Presagis, noted that the company had taken care that the flight characteristics of Heli Craft were as realistic as possible.

"One market we are looking at for this is the R&D community. We have fully accommodated the rotor model so the characteristics of the rotor blades are extremely realistic, especially in the hover. For anyone doing that kind of research, that realism in the rotor blade tracking is extremely useful," Roy explained.

He noted that the modular openarchitecture system allows for "test bench" applications for a wide range of applications.

In order to include realistic motion cues as part of the experience, Presagis has worked with D-BOX Technologies (Booth 2457) to fine-tune the integration between the company's motion systems and Heli Craft.

"For example, when manipulating RPM Control, the user will immediately feel the engine acceleration due to the motion of the seat rather than just seeing the results on their instruments display. This small nuance makes a huge difference in the overall experience."

At I/ITSEC 2016, Presagis will also debut the company's new line of non-ITAR sensors, including Ondulus IR, which promises to deliver "high-quality materials-based real-time infrared sensor simulation" as well as the new 64-bit version of Ondulus Radar now featuring a new Weather Radar option.



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## Lockheed Martin Unveils New Product Line Strategy

Lockheed Martin (Booth 849) has announced a new product line strategy at I/ITSEC 2016 that will leverage some of the company's current innovative technologies while creating a core baseline infrastructure for future solutions that aim to reduce development costs, streamline the bid process and reduce risk to provide continuity, affordability and security in its training and logistics products.

"Here at Training and Logistics Solutions, we provide a full range of training devices, of logistics, information technology systems as well as logistic services, test equipment, support equipment, across air, ground, and naval systems: comprehensive activities supporting the warfighters as they operate and providing the infrastructure needed," said Dave Scott, Vice President of Business Development for Lockheed Martin's Training and Logistics Solutions.

For I/ITSEC 2016, Scott said that the company will be unveiling a new product line branded around the prefix "Scios."

"It's derived from the Latin terminology for 'knowledge," he said. "And it's really that knowledge, that information technology, that underpins everything we do."

The new product line includes:

SciosView –Integrated suite of proven logistics products providing full mission data support for air, land, and sea platforms.

SciosTrain – Platform-based virtual training systems that employ advanced technologies to accelerate operational proficiency.

SciosTest – A comprehensive set of world class test and support solutions to ensure mission success and warfighter safety.

SciosLive - Live, virtual and constructive

training environments using augmented/ virtual reality to deliver state-of-the-art training.

SciosReady – Turn-key solutions for performance-based training programs that meet evolving demands for customers around the globe and provide the shortest path to learning.

"For example, we have a series of logistics systems that we work with under what we call the SciosView area," Scott explained. "That area includes logistics information technology systems that provide knowledge of the weapons systems, spare parts, technical orders and linking repairs, system status, etcetera.

He continued, "And in the training devices, we have a SciosTrain. As you may be aware, we build training devices for F-35s, C-13Os, F-15s, F-16s – a full range of training devices from tablets all the way through full mission dome simulators. And SciosTrain is a flexible solution where we provide the training for all of these devices, desktop, full mission SIMs, part task trainers, using a common architecture and integrating all of the pieces of the system around a science of learning, a student centric focus.

"So we are taking advantage of investments we make on the research and development side to feed into multiple uses of the SciosTrain products."

In addition to unveiling the new product line branding, Scott said that the Lockheed Martin exhibit is featuring a variety of the company's training devices.

"We have an F-16 simulator that we're going to connect into the Operation Blended Warrior event," he said. "We also have our Prepar3D (pronounced "prepared") commer-



cial flight training engine, which provides the training and operational environments for various devices."

The visual simulation platform allows users to create training scenarios across aviation, maritime and ground domains. Prepar3D engages users in immersive training through realistic environments.

"It's quite a robust platform and we are showing it at I/ITSEC built around our F-16 training device," Scott said.

"We currently have devices and systems within various areas, but we have adopted a commonality approach where we can modularize the underlying technology and architectures," he summarized. "Then, within these product lines, we are able to provide customized solutions faster and more affordably for customers.

"Everything in the marketplace these days is about speed to market or affordable operations," he said. "So, by linking together the systems and the capabilities that we have into common architectures, we are able to then produce the customized products very quickly for customers."

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## **TRU Simulation + Training Inc. Expands Brand Awareness**

"At I/ITSEC 2016 we are excited

to show the progress we

international footprint."

have made across all of our

programs, the new V-280, our

development activities and our

TRU Simulation + Training Inc. (Booth 1301) is using the I/ITSEC 2016 venue to highlight a growing product portfolio while continuing to expand awareness of its corporate brand.

"The word is still spreading, but I think that our primary messages that started last year at I/ITSEC 2015 is 'Who is TRU?' and 'What is TRU all about?'" offered Ian Walsh, President and Chief Executive Officer of TRU Simulation + Training Inc. "That's because we are a newly formed organization as a function of several strong legacy businesses. But we've effectively branded ourselves as TRU Simulation + Training."

Walsh characterized the company as "a global provider of training solutions," pointing to expertise in both civilian and military markets for pilot training and maintenance training.

"That's both commercial and military," he repeated. "And it's also on the fixed wing

side and the rotary wing side, which I think is important, because we've had some very strong success stories and we've been making a fairly large investment in developing new platforms."

"For example, our Odyssey H is our new modular helicopter design, where we've landed a couple of contracts," he said. "And we know that it's a growing market."



TRU propeller maintenance training

He continued, "On the military side, the other kind of 'second message' is that TRU does have a very strong past performance, a good track record with a bunch of programs and, certainly, in different services. Again, for example, on the Air Force side, we've been very strong, whether it's C-17 or F-22 or F-35. The C-27J is a big program that we are in the running for, and for which we are very excited about hearing the results. We've also got B-1 and J-STARS training activities, as well as some 'special mission stuff' for King Airs."

In addition to the current company portfolio, Walsh said that the Bell V-280 technology demonstrator would be another highlight of I/ITSEC 2016.

"That's a technology demonstrator that we had at I/ITSEC last year," he explained. "We used it with last year's Operation Blended Warrior, where it was presented in a live, virtual, constructive environment. It did very, very well, and we'll have that again this year at I/ITSEC to promote and demonstrate what vertical lift tiltrotor technology is all about."

"That's also very exciting for our sister company, Bell Helicopter, which is developing that platform," he added. "Again, we've got the first technology demonstrator with that."

Pointing to US Army interest in tiltrotor technology, Walsh characterized it as an excellent future market for TRU simulators. "I'm not sure of the exact timing of that, but that's another big program we know is coming down the pipe," he said.

Walsh shifted to the topic of corporate innovation, noting,

"We just did a little reorganization where we announced that Troy Fey, who ran one of our businesses, is now our head of technology and responsible for a new innovation center that we're standing up in our Tampa facility. He's got a primary mission of effectively working internally with how we deploy new technologies in all of our simulators, not just on the commercial side,

but also the military side; looking at kind of a common technology roadmap that will allow us to differentiate ourselves."

"But he's got a lot of expertise and passion around the live, virtual, constructive environment," he added. And that's not just on the public training side, but the maintenance training side as well. So we're excited to be talking about what we're doing in that domain and where the customers are trying to go in that space. Again, we've already been talking to some of them, and we'll be sharing some of that."

Other company activities that will be highlighted at I/ITSEC 2016 include recent program announcements for avionics training systems with Bell Helicopter for the 407GX and the 412EPI platforms.

Walsh said that another key part of TRU's strategy focuses on growing the company's international footprint.

"I was just on the phone this morning with one of our corporate strategy folks and there is a lot of interest and demand on the military side in places like the UAE, Saudi Arabia, - the Middle East in general - and India. It's a growing market and a place we're concentrating. In fact, we have reorganized our internal business development and sales force or salespeople to cover some of those regions. We're still building that out."

He summarized, "At I/ITSEC 2016 we are excited to show the progress we have made across all of our programs, the new V-280, our development activities and our international footprint.

"I think what people are starting to recognize is that TRU is a very strong company," he said. "We are an up-and-comer. We are proud of the level of expertise that we have and the way that we engineer, design and customize solutions to affordably meet customer needs. And then, quite frankly, another part of what we're doing is building a stronger aftermarket service and support organization."

"The legacy companies are now under one brand," he concluded. "People know some of the legacy companies and they have had good experiences with them. But, I think, what we're trying to do is to say all the current and new experiences people are going to have with TRU are going to be even better."



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## **Rafael Brings Battlefield Simulation to the Fore**

As militaries look for better ways to train brigade-sized units and above, the use of simulation provides some obvious advantages.

systems provide a costeffective alternative to large scale live exercises and can be tailored to specific training on the wide range of expertise required of headquarters staff.

Battlefield simulation

To this end, at this year's I/ITSEC, Israeli company Rafael will be showcasing its ABS 4 Army Battle Simulation system that is designed for such large-scale headquarters training.

A company spokesperson said the system provides full simulation of the battlefield. enabling trainees to face re-

alistic operational challenges and fully testing commanders' decision-making, procedural skills and tactical knowledge.

"We virtually build a world, a real world around the trainee. When he's training, he doesn't know that he's actually in training. This is unique because we let him work in his own environment. If he has a tent, he will pick his own tent. If he has it in an office, he will be sitting in his office," the spokesperson explained.

"We're speaking about training large bodies, beyond brigade. Battalion is the last one that we train. Getting such an operation underway, usually is very costly, but you want to have those people trained on decision making and more than that, on the procedures.

"For instance, you want to run an opera-





tion on the brigade level, but if you didn't pay attention to your doctor, for example, and half of your drivers are now sick, they will not move. This happens in real life. You plan something and it doesn't work. That is a valuable lesson but to get everything in place to do that in real life will be very costly."

ABS 4 incorporates a doctrine engine which allows virtual units to behave according to predefined doctrines by simulating logical combat behavior.

The system comprises advanced models that represents all aspects of the modern battlefield, such as Movement, Logistics, and Direct and Indirect Fire Engagements.

In addition, the system incorporates a Mode Of Action (MOA) engine, which allows virtual units to behave according to predefined MOA by simulating logical behavior.

> The MOA engine allows a user to edit, modify or introduce new MOA.

"We have developed and evolved the algorithms that resemble real life-like movements, calls to fire, the logistics and weather. We integrate into our machine all those parameters to give you almost real life results. And we deal with 100s and 1.000s of operators at the same time. Doing that is a thin line where you know only the good systems can work. Since we've been doing this for the

> last 25 years, we have a system that we can say is mature."

In service with the Israeli Defence Force for the past 25 years, ABS 4 will be showcased at I/ITSEC for civil crisis management applications.

"We're going to expose another iteration of the system, which is actually a small diversion. We still call it ABS 4, but we'll set up an application that you can train not only military units but also, for instance, we can run a crisis management team.

"We can train crisis man-

agement teams at the national level. From a system point of view, we can deliver it blank to the customer and then we tailor within the application, actually the application level, those specific civil training requirements. We will be showing this at I/ITSEC."

A further feature of the system is its ability to combine real and simulated forces.

The spokesperson said this was enabled by the TRACER force management system, which provides commanders real-time information about the position and status of training forces.

The system's control application includes information on unit structure, a forces location display overlaid on maps or imagery view, restricted and activities area definitions, an alarms mechanism, and debriefing tools.

"This complimentary system is called TRACER. Let's speak about a division that has three battalions: we can run two battalions constructive. meaning that the people will train in their own environment, but the world around them will be simulated by a constructive simulator, and one battalion will be actually training on his own tanks but not shooting.

"We transmit the data through our system so they'll be running live and we now have hybrid training - one battalion is live, two battalions are constructive. We know how to do that, we are doing that day-by-day. TRACER enables you to do that, to plug that live information into the simulation."

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## **NEWS IN BRIEF**

#### Swiss Air Force to Receive Upgraded Simulators

Swiss procurement agency Armasuisse plans to upgrade Swiss Air Force helicopter simulators by September 2017, contractor Thales has announced.

Revealing the news during I/ITSEC 2016, Thales said updates were being made to the full flight mission simulator (FFMS) for the AS532 Super Puma transport helicopter. Functional upgrades will also be made to the EC635 multirole twin-engine helicopter.

According to Thales, the standardization of the AS532 FFMS includes the upgrading of the primary flight avionics, radio communications, the digital map, the forward-looking infrared imagery and the helmet-mounted display. Functional improvements will also be made to both simulators, in particular on the instructor station.

"These Thales flight simulators, used by the Swiss Air Force since 2012, meet the Swiss Air Force's specific pilot



instruction and training requirements, improve operational effectiveness, raise levels of crew and operator safety and reduce environmental impacts. The interconnection between these two simulators provides pilots with unlimited scope for training exercises involving formation flying and tactical operations," Thales said in a statement.

#### ECS Applies Modeling and Simulation for Improved Patient Outcomes

Engineering & Computer Simulations (ECS) (Booth 1632) is showcasing a series of medical simulations at I/ITSEC 2016. The virtual training applications are focused on increasing health care access while also containing costs, enhancing medical practitioners' skills, and improving patient-doctor communications.

The three virtual medical simulations selected to be featured from the many ECS has developed for the Department of Veterans Affairs are:

• Clinical Skills: medical professionals who have recently returned from theaters of war practice their skills with patients in an immersive home station clinical environment.

• Crash Cart Countdown: a fast-paced simulation in which health care professionals quickly find emergency medication and equipment in mobile carts, called crash carts. Since crash carts differ at medical facilities, training to locate their contents ensures familiarity and improves response times in real medical emergencies.

• Goals of Care Conversations: an interactive and personal simulation where health care professionals talk with seriously

ill patients about their conditions during scenarios. The goal is to improve health care workers' soft skills and foster proper communication.

"Virtual medical simulations give health care professionals an advantage by allowing them 24/7 access to training opportunities," said Joe O'Connell, ECS vice president of business development. "There is no need to wait for a situation to arise in a clinical setting or bring a team together and tie up resources. Health care workers select the situation they want to practice and can do it over and over again until the desired outcome is achieved. It's convenient and available when they are."

ECS will also be demonstrating the Virtual Medical Center, the first online virtual medical center designed to meet the health needs of both veterans and healthcare professionals.

#### TerraSim Announces Terrain Database Generation Software

TerraSim, Inc. (Booth 2348) has announced the release of TerraTools 5.3, the latest version of its terrain database generation software. The new release contains a collection of new features, maintenance updates and bug fixes, as well as targeted enhancements for JCATS and VBS terrain export.

Highlights of TerraTools 5.3 include: new TerraTools OmniWizard data processing options for point, linear, and areal model reference data; new processing nodes to automatically process and place vegetation, building, wall, and powerline models in the environment; new combined imagery nodes to simplify processing of multiple satellite images; new and improved Batch Mode Manager analysis tools to monitor and assess production times more efficiently and troubleshoot issues on larger data sets; support for VBS3 3.9.2 and VBS IG 2.3; ability to import P3D models up to 2x faster; and, the ability to export JCATS improvements.

#### Elbit Systems Completes Delivery of Israeli Air Forces' Ground Based Training System Center

Elbit Systems (Booth 1901) has announced delivery completion of the Ground Based Training System (GBTS) center for the M-346 Lavi trainer aircraft.

Company representatives note that the training solution was selected by the Israeli Air Force (IAF) and the Directorate of Production and Procurement (DoPP), "to effectively and affordably qualify its pilots and Weapon Systems Operators (WSOs) to progress directly to fourth and fifth generation fighter aircraft (F-16, F-15 and F-35)."

A fully networked solution for operational combat training, the GBTS consists of multiple simulators that are connected to each other, creating a joint network, which provides a nearly identical flight environment, obtainable without the time and expense of real flight. This advanced virtual-constructive training solution introduces cutting-edge technology that enables the IAF pilots to conduct effective and safe flight training, while ensuring their full-readiness in operating next-generation platforms. It delivers highly realistic and immersive conditions in a ground-based setting, further enhancing the IAF's training capacity, by allowing its aircrew to better plan and perform full mission exercises – in much less time and using fewer resources.



## ETSA Delivers European MS&T Event for I/ITSEC

This year the European Training and Simulation Association (ETSA) is proud to deliver a Community of Interest Event for the 50th Anniversary of I/ITSEC.

#### Today at 1400-1530 in Room W305AB, ETSA will host 'The

European approach to engagement with Small to Medium Enterprises (SMEs) in Military Simulation and Training – Perspective from NATO and European Nations.'

The event will be Chaired by Tess Butler, CEO Ruddy Nice and ETSA Communications Director. There will be a series of three presentations from: Lieutenant Colonel Oliver Schmidt, Head Air Force Simulation Control Centre, Köln, Germany; Lieutenant Colonel Marco Biagini, CD&E Branch Chief at the NATO Modelling and Simulation Centre of Excellence, Italy; and, Major Tom Mouat, SO2 Simulation and Modelling, Defence Capability Centre, Defence Academy of the United Kingdom. The presenters and Chair will then form a panel to discuss, from a military user perspective, how militaries capture and define requirements.

The team will discuss the current procurement policies and practices from defense departments and ministries globally, especially the engagement with SMEs across Europe. How do defense



procurement agencies procure directly from SMEs while mitigating the perceived 'risk' of doing so? How can the customer exploit the inherent innovation of SMEs even when contracting through primes, which attract a large overhead and possibility suppress the flexibility innate in such businesses? Finally, how do defense agencies attract SMEs from other

industries with technologies or services that would meet the need of the military user or offer an answer to a capability gap without it being built from scratch by existing industry.

The subject was chosen through a series of ongoing discussions with the ETSA membership. "ETSA is presenting this event to highlight the importance of modeling and simulation across Europe. Defense budget constraints continue to make reusability and interoperability in simulation and training essential," Graham McIntyre, Chair, ETSA, told the *Show Daily*.

ETSA looks forward to an open and engaging debate with both the panellists and the audience. The ETSA membership continues to grow and is providing a voice and opportunity for companies, individuals and the military to engage directly to discuss and resolve issues facing military simulation and training in a European context.

All serving military and government employees can become members of ETSA for free at Booth 2681.







As combat operations in the Middle East diminish, America's warfighters are still expected to perform around the globe without hesitation. In recognition of their service, Warfighters Corner (Booth 2081) provides an opportunity to meet and hear from warfighters across the services about their personal experiences on recent deployments to better understand the impact that training systems and education have had on their recent job performance.

Both Warfighters Corner sessions will include representatives from each of the services. The presenters will discuss operations and also provide insights into the role of allies, international organizations and private organizations in theater. These Soldiers, Sailors, Airmen, and Marines derive great benefit from I/ITSEC and the organizations and industries that support the conference. Many of the speakers have served multiple tours and will be sharing their stories; their personal experiences; and their views of what was or was not effective in terms of the training they received prior to deployment

The stories told during these 90-minute panels help bring realism to the fascinating and innovative training products highlighted on the I/ITSEC floor and highlight this year's theme, "Pushing the Training Envelope".

#### The speakers at today's session from 1600-1730 are:

**US Army Command Sergeant Major David Lanham** is the CSM for the 83rd Troop Command, Florida Army National Guard. He graduated from the American Military University with a Master's Degree in Military History. His primary assignments include Special Forces Communications Sergeant, Operations/ Intelligence Sergeant, Detachment Senior Sergeant, Company Sergeant Major and CSM for 3rd Battalion 20th Special Forces Group (Airborne), SEA for PEO STRI and the CSM, Task Force Caiman Regionally Aligned Forces for Central America. He has multiple deployments to Iraq and Afghanistan in support of Operations Iraqi and Enduring Freedom.

CSM Lanham's military education includes Special Forces Communications Sergeants Course, SERE (Survival, Evasion, Resistance and Escape), Jumpmaster, Anti-Terrorism Instructor Qualification Course, Military Mountaineering (Summer Phase) courses and all phases of the Noncommissioned Officers Education System, among others.

**US Marine Corps Sergeant Major Gary Smith** is the command senior enlisted leader of Marine Corps Systems Command (MARCORSYSCOM), Quantico, VA. He serves as the principal advisor to the MARCORSYSCOM Commander on all issues affecting health, morale, welfare and professional development for Marines within the command.

A native of Walterboro, SC, he enlisted in the Marines after graduating from high school and attended recruit training at Parris Island, SC and was meritoriously promoted to PFC upon completion of recruit training. He subsequently attended the Field Radio Operator Course and was assigned the MOS 2531.

Upon completion of MOS training, Sgt Maj Smith received

orders to 2nd Marine Division, Camp Lejeune, NC and was assigned to Headquarters Battalion, Communications Company Radio Platoon. During this tour of duty he was deployed in support of Operations Desert Shield and Desert Storm.

After his successful tour of duty on the Drill Field, Sgt Maj Smith was transferred in November 1998 and reported to The Basic School, Quantico, VA as the Communications Chief. During this tour he was promoted to Gunnery Sergeant and was subsequently assigned to Officer Candidate School Permanent Personnel where he served as Sergeant Instructor, Platoon Sergeant, Company Gunnery Sergeant, and General Military Subjects Chief.

In July 2012, Sgt Maj Smith was selected as the Combined Joint Task Force Horn of Africa Command Senior Enlisted Leader, serving as the principal advisor to the Commander of CJTF-HOA on all issues affecting the health, morale, welfare and professional development for more than 1,800 Army, Navy, Air Force, and Marine Corps joint service personnel in 14 African countries.

**US Navy Captain Scott M. Smith** serves as the commander of Pre-Commissioning Unit *Michael Monsoor* (DDG 1001). Capt Smith's operational assignments include deployments from the east and west coast in USS *Donald B. Beary* (FF 1085), USS *Cole* (DDG 67), USS *Stethem* (DDG 63), USS *Ramage* (DDG 61), and, as Chief Staff Officer for the Commander, Destroyer Squadron 28 embarked in USS *Eisenhower* (CVN 69) and USS *Boxer* (LHD 4). Ashore, Capt Smith served as a Combat Systems Instructor at Surface Warfare Officers School; as a member of the Commander's Action Group and Speechwriter to the Commander, US Fleet Forces Command; as a member of the Chairman's Action Group and Speechwriter to the 18th Chairman of the Joint Chiefs of Staff, General Martin Dempsey; and, as the Deputy to the Secretary of Defense's Senior Advisor for Military Professionalism.

He holds a Bachelor's Degree in Economics from the Virginia Military Institute and master's degrees from the University of Massachusetts (Professional Writing) and the National War College (National Security Strategy).

US Air Force Lieutenant Colonel Douglas A. Nocera entered the Air Force as a 1998 distinguished graduate of the Air Force Reserve Officer Training Corps program at Rensselaer Polytechnic Institute. He started his flying career as a T-38A instructor pilot immediately following Specialized Undergraduate Pilot Training. His three operational F-15E assignments encompassed all three of the current F-15E bases in Idaho, England, and North Carolina. From those assignments he deployed in support of three Aerospace Exeditionary Force rotations, two of which supported Operation Enduring Freedom. From RAF Lakenheath, he also deployed to Aviano Air Base, Italy in support of Operation Odyssey Dawn. Between F-15E assignments, Lt Col Nocera completed two joint billet short tours and attended Air Command and Staff College. Lt Col Nocera is currently Chief of F-15E Aircrew Training Devices and F-15E Fighter Training Unit Instructor Pilot, Seymour Johnson AFB. NC.



BOOTH

2270

## Canon USA Introduces New 4K Resolution Laser Projector

Canon USA (Booth 2101) is demonstrating its new REALIS 4K600STZ Pro AV Laser LCOS Projector.

At only 57.3 pounds, the REALIS 4K600STZ is among the world's smallest and lightest native 4K laser projectors, making it ideal for simulation and training applications. It follows on from the REALIS 4K500ST Pro AV LCOS projector unveiled at I/ITSEC 2015.

According to Canon the REALIS 4K600STZ projector "reproduces exceptionally detailed images with outstanding color accuracy". Features include:

• Native 4K Resolution of 4096 x 2400 which is larger than both QFHD and DCI-resolution, the 4K standards for TV and digital cinema respectively. The expanded vertical resolution is useful for applications, such as simulation and training, and design/ engineering, which may require larger vertical display areas.

• A Laser Phosphor Light Source which offers an extended operation time up to 20,000 hours and a wide range of colors.

• 6000 lumens with up to 10,000:1 Dynamic Contrast Ratio3 helps ensure content appears bright with deep black and brilliant white levels, as well as excellent gradation.

 Canon's LCOS Technology with AISYS-enhancement and advanced Color Management System for producing content with exceptional detail and color accuracy.

• A Canon 4K Lens for consistent clarity and color throughout entire projected area; the lens also includes a special Marginal Focus function which can be used to help ensure content projected on the peripheral portions of domed surfaces remains in focus.

• Dual Image Processing Engines for uncompressed 4K 6Op playback, and optimal upscaling of 2K video and other nonnative 4K resolution content.

"The impressive benefits of 4K laser projection, combined with Canon's optical and image processing technologies and compact engineering define the many advantages of the REALIS 4K60OSTZ Pro AV Laser LCOS Projector," said Yuichi Ishizuka, President and Chief Operating Officer, Canon USA.



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cm-labs.com/gobeyondgames





## CM Labs Frees Up Simulation Engine

As it showcases a range of collaborative simulators at I/ITSEC 2016, CM Labs Simulations (Booth 2270) has announced a free and open license edition of its Vortex Studio platform.

Vortex Studio Essentials provides access to the system's core simulation/visualization engine, desktop applications and software development kit.

Aimed at simulation-based training development, virtual prototyping and academic research, this new 'freemium' edition is expected to widen the use of Vortex Studio for land and sea simulation applications.

Marc-Alexandre Vézina, Product Manager at CM Labs, said Vortex Studio was already used by a wide range of manufacturers across the vehicle, earth moving, lifting, maritime and robotics industries.

"With Vortex Studio Essentials, we're providing access to professional-grade tools and multibody dynamics simulation to everyone looking to build their own training simulators and virtual prototypes," said Vézina.

Vortex Studio is on display across the show floor at I/ITSEC. At the CM Labs booth, the company is displaying the Doron Precision Systems (Booth 630) 550Truckplus simulator, featuring an MRAP All-Terrain Vehicle (M-ATV) simulated by Vortex Studio, and a maritime simulator developed by MARIN.

The M-ATV simulator features individually-simulated powertrain components, new advanced tire modeling technology, and the D-BOX

(Booth 2457) motioncueing system.

Vézina noted that the package realistically simulated conditions in soft and hard ground to provide valuable training to the driver. CM Labs also

announced that Doron



has selected Vortex Studio as the development tool powering its next generation operator training simulators and as it extends its product portfolio into the mining sector.

The Vortex-powered 700MV Mining Simulation System is being demonstrated at the Doron booth.

VT MÄK (Booth 1048) has also selected Vortex Studio Essentials to power high-fidelity vehicle simulation in that company's new VR-Engage multi-role virtual simulator.

Rounding off collaboration efforts, on the D-BOX stand is CM Labs' new Vortex Advantage, the first simulation hardware platform that incorporates D-BOX Gen II actuators into its design.

Vortex Studio Essentials will be available for free download in the first quarter of 2017, alongside a new website featuring video training materials, documentation and sample mechanisms and environments.



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<image>

See for yourself on the QuantaDyn booth #1281

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At I/ITSEC 2016 we will showcase the "Z-Box" capability for the first time alongside the Air National Guard booth #1080 with a connection to the Distributed Training Operations Centre in Des Moines, IA, for a long haul networked exercise



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# Who is a leading training systems integrator offering comprehensive naval training solutions?

## We are.

CAE is leveraging its global experience and expertise as a training systems integrator to offer naval forces turnkey training solutions. We were recently awarded a major contract to develop a comprehensive, distributed Naval Training Center (NTC) for the United Arab Emirates. The purpose-built facility will feature a range of integrated and reconfigurable whole ship simulation-based training suites as well as maritime aircraft sensor stations that will be used to deliver individual, team, whole ship and joint/collective mission training. This program follows our recent delivery of a comprehensive Naval Warfare Training System to the Swedish Navy to train sailors and officers in naval tactics, procedures and doctrine. You can trust CAE's focus, experience and expertise to deliver advanced naval training systems.

Visit CAE (Booth #1533) at I/ITSEC in Orlando, Florida November 28 – December 1, 2016 to learn more.

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milsim@cae.com Sigma @CAE\_Defence cae.com