THURSDAY, NOVEMBER 30, 2017

Marine Initiative Expedites Unit LVC Training

“We continue to pursue Commandant of the Marine Corps General Robert Neller’s vision of increasing the availability of training so that Marines can get more sets and repetitions before they go to the field and before they deploy. That has elements of increased fidelity but also affordability, as well as making it easy to use,” Colonel Walter Yates, Program Manager for Training Systems (PM TRASYS) within the Marine Corps Systems Command, explained to the Show Daily.

“Those are the attributes that we are focusing on. Something that is affordable to use, easy to learn, and close to the training audience, rather than having to go to a ‘special’ place to use it. It’s something that a unit owns or something that can be easily drawn from the warehouse and taken to the field.”

As an example of ‘unit-owned’ equipment, Yates highlighted the newly fielded Tactical Decision Kit (TDK). “The TDK is an Office of Naval Research (ONR) initiative that builds on existing ONR research and development initiatives - the Accelerating Development of Small Unit Decision Making (ADSUDM) and the Digital Integrated Representation of Tactical Environment (DIRTE).

“The commander of 2nd Battalion, 6th Marine Regiment, Lieutenant Colonel Marcus Mainz, wanted to push the envelope of what he could do with unit organic simulation training, beginning with planning and war gaming, progressing into virtual force-on-force (FOF), and culminating with live FOF training. So he volunteered to be a test bed for ONR and developed a very impressive and effective training program at that battalion.”

Assistant Commandant of the Marine Corps General Glenn Walters was so impressed, that in February 2017 he directed the Rapid Capabilities Office, within the Marine Corps Warfighting Laboratory, to replicate the TDK capability across all 24 infantry battalions. The TDKs were issued to divisions from May to October, while battalions receive their TDKs upon return from their ongoing deployment.

“What makes this significantly different from how we’ve employed systems at the battle simulation centers, is that these are organic to the company level. Every infantry company has their own TDK suite. They’ve converted the barracks recreation rooms into tactical decision rooms.”

“The combination of live and virtual training through the TDKs will sharpen leaders at every level by increasing repetitions, providing immediate feedback, facilitating after action reviews (AAR), and promoting FOF competition.”

The TDK will enable units “to rehearse and train very effectively in garrison before going to the field and doing it live, which comes full circle back to the premise by which we design our training: learn in increasing levels of complexity from classroom instruction to low fidelity practical application, immersive, and then go into the live environment.

“It’s not about replacing live training with virtual training. It’s about preparing to operate at a higher level in the live environment.”

Continued on p6
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I/ITSEC 2017 features a new App Challenge!
During the conference, use your app to find hidden QR codes. The more you find, the higher you will rank on the I/ITSEC leaderboard! The top three winners will receive a free full conference registration to I/ITSEC 2018. Search your app store for “I/ITSEC 2017.”

I/ITSEC: An Example of Government-Military-Industry Partnership

“While there are occasional things that we deliver that are government led activities, for the most part the systems we provide are the result of our collaboration with industry. Industry has been doing a fantastic job of meeting the needs of the services and doing innovative things to utilize their own research dollars to invest in the right technology mix to create future opportunities that might not be available otherwise,” Captain Erik ‘Rock’ Etz, Commanding Officer of the Naval Air Warfare Center Training Systems Division (NAWCTSD) told the Show Daily.

“There is no finer example of that partnership than to walk the show floor at I/ITSEC and see the collaboration and the communication occurring among government, military and industry, and to see the products that they are developing together to meet the needs of the US services and our international partners as well.”

Today’s Conference Highlights
Thursday, November 30

Registration Hours
0700-1500

Exhibit Hall Hours
0930-1500

Signature/Focus Events
0830-1000 Agents from the Future (Room S320GH)
1000-1130 Operation Blended Warrior: Gaming Solutions and Interoperability (Booth 449)
1030-1500 Big Data & M&S (Room S320GH)
1800 Hosted Reception sponsored by Lockheed Martin (Hyatt Regency, Ballroom Foyer)
1900 Conference Awards Banquet (Hyatt Regency, Ballroom Foyer)

Professional Development: (see program guide for synopses)
0830-1000 Paper Sessions (Rooms S320A-F)
1030-1200 Paper Sessions (Rooms S320A-F)
1330-1500 Paper Sessions (Rooms S320A-F)

Program Brief: Navy Vision from the Training System’s Program Managers (Room S330EF)
0830-1000 Captain Erik Etz, Commanding Officer, Naval Air Warfare Center (NAWCTSD)
Captain Jason Lopez, Program Manager, Naval Aviation Training Systems (PMA-205)
Captain Samuel Pennington, Program Manager, Naval Surface Training Systems (PMS-339)
Jimmy Lee Program Manager, Undersea Training Systems (07TR)

Community of Interest
0830-1000 Research Challenges in M&S in the Era of Big Data and the Internet of Things (Room S329)

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

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IITSEC.ORG • NOVEMBER 30 SHOW DAILY
I/ITSEC 2018 Theme: Launching Innovation In Learning

As I/ITSEC 2017 enters the final day of a very successful conference, plans are already well underway for next year’s event, for which the US Navy and Marine Corps will serve as the lead services.

“On behalf of the Navy, I want to congratulate our US Army teammates for leading us to another successful I/ITSEC,” said Captain Erik Etz, Commanding Officer of the Naval Air Warfare Center Training Systems Division (NAWCTSD). The Navy and Marine Corps Team looks forward to continuing I/ITSEC’s long tradition of excellence as the Sea Services take the lead for the 52nd I/ITSEC.

Together NAWCTSD and the Marine Corps Program Manager for Training Systems (PM TRASYS) will jointly represent the Sea Services in their lead role. Next year’s theme, “Launching Innovation in Learning” represents the importance of the most important military system – the human system. Just like any other warfighting system, Sailors and Marines need to be maintained at top performance to keep their critical advantage over potential adversaries. Unlike machines however, humans need to practice complex skills regularly to maintain maximum proficiency.

“Today, more than ever training remains one of the most critical components of military readiness. As our potential adversaries continue to develop their skills, it is imperative that we continue to seek new and innovative learning methods to allow our forces to maintain the asymmetrical advantage provided by the world’s most capable warfighters,” Etz said.

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The real-time screen capture from MetaVR's visualization system of Greater Denver, CO, virtual terrain is unedited except as required for printing. The real-time rendering of the 3D virtual world is generated by MetaVR Virtual Reality Scene Generator™ (VRSG™). The F-16C model is from MetaVR's 3D content libraries. Greater Denver models were generated with Esri CityEngine from OpenStreetMap data. © 2017 MetaVR, Inc. All rights reserved. MetaVR, Virtual Reality Scene Generator, VRSG, the phrase “Geospecific simulation with game quality graphics,” and the MetaVR logo are trademarks of MetaVR, Inc. CityEngine is a registered trademark of Procedural AG and is distributed under license by Esri. OpenStreetMap © OpenStreetMap contributors.
The USMC is moving toward an overarching Capabilities Development Document (CDD) for its future Live Virtual Constructive Training Environment (LVC-TE). "The LVC-TE is not developing new simulations and training systems. It is the strategy for how we connect our existing systems to train one community or one element of the Marine Air-Ground Task Force (MAGTF) in a distributed fashion concurrently."

"LVC-TE will be the enabling infrastructure to connect virtual training to live forces in the field to virtual and constructive back at the training simulation centers and other locations. It’s how we get more training concurrently across more echelons. So we’re having relevant training at the company level but we’re also training a battle staff at the Combined Arms Staff Trainer or at a battle simulation center,” Yates said.

"The ACE (air combat element) has had, for almost 10 years, the Aviation Distributed Virtual Training Environment (ADVTE), which allows Marine Corps aviation to connect from any of its installations around the world to train with other ACE forces across the network in their simulations."

"The LVC-TE will link the ADVTE with the other three elements – CE, GCE, and LCE – of the MAGTF. All elements of the MAGTF, all echelons of the MAGTF, training concurrently with everybody getting good training at the same time, minimizing the movement of people and equipment to combat training centers. We’ll still send units to Marine Corps Air Ground Combat Center Twentynine Palms but we can get more training by including the remaining elements on the east coast, Okinawa, Hawaii, etc. We can connect training in real time in a single scenario."

"The performance specification for ITESS II was 1,000 simultaneously instrumented entities and we’ve increased that to up to 1,600 dismounts. ITESS II was very heavily weighted towards the dismounts. We did not have a lot of the Combat Vehicle-Engagement Simulation Systems Increment II (ITESS II). Over the past year we’ve seen a rapid increase in the demand for ITESS, mainly due to the fact that the Tactical Training Exercise Control Group (TTECG) at Twentynine Palms, which runs the service-level Integrated Training Exercise (ITX), began using FOF instrumentation for the first time.

"Traditionally, when units went to Twentynine Palms it was live fire focused. We had done a lot of FOF training but it was not instrumented. We didn’t have the use of ITESS and the after action review capability that ITESS brings."

"The recent commander of the TTECG at Twentynine Palms said, ‘I want to use that’ and after some initial growing pains it’s been very successful. When TTECG started using it at the ITX, the demand from the Marine Expeditionary Forces on the east coast, west coast, and Pacific suddenly increased because if you’re going to be evaluated on ITESS at the ITX, you want to practice and prepare for it back at home station. So that’s a happy development from my perspective in that we’re seeing a lot more use of ITESS."

"The system is already five years into its service life and approaching the point where we need to replace it because it takes a beating. We’re now finalizing the requirements for the third increment of ITESS. Some of the things that we’re seeking to do with the ITESS III is to allow larger sized forces to exercise together.

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"The Analysis of Alternatives for LVC-TE is in progress and will be completed in FY18. The CDD will then be finalized and we’ll know what our budget request is going to look like."

"We will probably be doing demonstrations of LVC technology between now and full fielding. We’ve done limited LVC exercises in the past, such as Large Scale Exercise 2014 (LSE 2014), to prove the concepts. We’re trying to design something that is affordable and flexible enough that it supports day to day training without the heavy investment of manpower that was required for LSE 2014 and other proof of concept exercises."

"Yates described the ongoing efforts of the Marine Corps to field "the live component, the L in the LVC-TE, our FOF training in the field. The POR is the Instrumented-Tactical Engagement Tactical Simulation Systems Increment II (ITESS II). Over the past year we’ve seen a rapid increase in the demand for ITESS, mainly due to the fact that the Tactical Training Exercise Control Group (TTECG) at Twentynine Palms, which runs the service-level Integrated Training Exercise (ITX), began using FOF instrumentation for the first time.

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"The performance specification for ITESS II was 1,000 simultaneously instrumented entities and we’ve increased that to up to 1,600 dismounts. ITESS II was very heavily weighted towards the dismounts. We did not have a lot of the Combat Vehicle-Engagement Simulation Systems. We’re going to balance that with ITESS III."

"We’re also going to have to spread out more because you can’t realistically deploy two battalions in the small area. So ITESS III will probably have much greater mobile wireless infrastructure capability so that we have the coverage that we need without putting permanent improvements on the ground."

"We also want to make the player units that are worn by the dismounts much lighter. We want much smaller batteries, similar to how your cell phone has gotten smaller over the years."

The USMC plans to field sufficient ITESS III units to equip “a one battalion training audience and up to another battalion of opposition forces and non-combatants. The objective is to train one ‘full-up’ battalion.” The full two-battalion ITESS sets will be available at Camp Pendleton, Camp Lejeune, MCAGCC Twentynine Palms, MCB Hawaii, and aboard MCB Okinawa.

"We have funding in the budget to release a Request for Proposal, and award a contract in FY19. We expect to begin delivering ITESS III in FY20."
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It Takes a Community

Tuesday morning’s opening ceremonies included comments by David Hutchings, I/ITSEC 2017 Conference Chair, in which he highlighted the myriad cooperative efforts required to produce an event of this scope.

Welcoming attendees to the 51st anniversary of the world’s largest modeling, training, simulation and education event, he offered an opening video that he said not only illustrates this year’s I/ITSEC theme, but also “emphasizes the need to step back and look at the many new technologies and strategies that we have to address wide-ranging challenges that we face throughout the world.

“This week provides the perfect opportunity for the best and the brightest in our industry to come together and exchange ideas on how we can continue to harness new technologies in areas that include big data, big data analytics, virtual and augmented reality, the next generation synthetic training environment, human performance measurement, cyber, and integrating LVC systems in even more complex and realistic ways,” he said.

Noting his own service in the US Navy submarine branch, he offered, “I know first hand that the training I received was paramount to my survival. Your life, and everyone else’s on-board, depends on everyone knowing exactly what to do, no matter where you are in the boat and no matter what the situation is.

“After the Navy, I began my 34 year career in the field as a training analyst at the beginning of the Trident submarine program,” he related. “Throughout my career, no matter what my role or position was, I learned the true value and meaning of effective training solutions – and that is saving the lives of our Soldiers, Sailors, Airmen and Marines.

“While I/ITSEC has a distinctly military heritage, what we do applies to a much larger audience, including healthcare, transportation, energy and manufacturing, as you will see represented here this week,” Hutchings said. “But what sets this conference apart from others is the unique blend of high quality peer-reviewed papers and presentations, coupled with over 450 exhibitors demonstrating the most relevant and cutting edge technologies. The strength of our program is due to the efforts of over 350 volunteers from government, industry and academia who worked tirelessly this past year to bring you this program.”

He added, “Under the leadership of my trusted partner and this year’s program chair, Mr. Brian Holmes, this group created a program of 129 technical papers, 21 tutorials and 21 special events as well as other programs, including our third annual Operation Blended Warrior. This year Operation Blended Warrior is expanding to include foreign entities from Sweden and NATO in our program managers benefit by interacting with the people and the technologies behind the latest advances in M&S; industry members get to interact with government officials during our numerous networking events and to forge partnerships with industry and academic partners.

“We are thrilled with our new location in downtown Norfolk; the conference will be at the Marriott Waterside, which is a great venue for two reasons. First, the space is a much better fit for MODSIM’s scale than a convention center - so the atmosphere will be more vibrant. Second, the Waterside district is a newly- revitalized and fun area with lots of restaurants, bars and cafes; and our popular off-site networking event will be taking advantage of our location in the Waterside district.”

In addition to some of MODSIM’s most popular events returning, like the Simulation Century panel and the Virtual & Augmented Reality Innovation Corner, the 2018 event will feature expanded technical sessions to include poster presentations that will be shown during an onsite networking event.

Abstracts may be submitted through December 8 and more information can be found at www.modsimworld.org.
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Robb Reflects On I/ITSEC Success

With dozens of amazing professional papers, overflow signature events, and countless government and industry discussions across the show floor already completed, RADM James Robb, USN (Ret), President, National Training and Simulation Association (NTSA), sat down with the Show Daily to offer some early observations on I/ITSEC 2017.

“Early attendance figures are very similar to last year, actually up by a small amount at this point in the show,” Robb said. “That’s not the final numbers because we still have walk-ins. Additionally, the show floor is almost the same size and very near to being sold out.”

Looking back over the first few days of the show, Robb expressed surprise “that everything has gone so well.”

“That’s only a surprise because we have packed the I/ITSEC 2017 program more densely,” he said. “Since there are more moving parts, there is more potential for some sort of conflict. But the team has really pulled it off magnificently; the ops team and all the people that are managing the events have really been exceptional.”

Speaking of exceptional, Robb highlighted the opening ceremonies on Tuesday morning, noting, “That singing of the National Anthem and the two excellent keynote addresses were a trifecta in my mind. It made for a great start that flowed directly into an outstanding and the two excellent keynote addresses were a trifecta in my mind. It made for a great start that flowed directly into an outstanding general officer/flag officer panel.”

With over 100 general/flag officers and senior executive service members visiting I/ITSEC, Robb said that he has heard “nothing but wonderful comments from all of the senior officers and accolades for the depth of the program and what’s happening on the show floor.”

Robb turned the discussion toward his Wednesday afternoon meeting with representatives from multiple universities present at I/ITSEC, stating, “Our university event here at I/ITSEC is an effort for NTSA and DoD’s ADL [Advanced Distributed Learning initiative] to further engage the academic community. ADL works on the science of learning and the elements that would transform education and training for the workforce. They work that on the DoD side. And we have a similar track that we work on the industry side. We’re all trying to do the same thing, which is to get highly qualified technical people into the right job positions.

“Since we are working in parallel on the same kind of thing, NTSA teamed together with ADL on some events throughout the year. And we have engaged them to have educational content here as well, which is really great. The university connection to all of this is designed to take the ADL approach to the science of learning and the transformation of education, in parallel with our efforts to do the same thing in industry, and then to align that with the university curriculum. That way, all three elements – academia, government and industry - are working off the same page. And if we could drive it down into high schools we would do the same thing.

“We had a significant number of distinguished visitors here, with some of them attending for several days,” he observed. “That’s very encouraging to me, not just as a reflection of show success but also because so many of them have come back, having recognized that I/ITSEC provides an amazing opportunity to collaborate within their own organizations as well as across the entire modeling and simulation community.”

Asked about his message for I/ITSEC 2017 attendees, Robb was quick to offer; “Come back next year. We will be here and we will be even better. There is no better gathering place for anyone from government, industry or academia who is involved in the modeling and simulation community.”

I/ITSEC Offers Professional Development Workshops on Friday

The National Training and Simulation Association is sponsoring eight Professional Development Workshops on Friday. A detailed description of each workshop can be found in the I/ITSEC 2017 Program Guide. The sessions are coordinated by the University of Central Florida Division of Continuing Education.

Six workshops will be held during the morning session from 0800-1200, a seventh workshop will be held in the morning and repeated in the afternoon session from 1300-1700, and the eighth workshop will run over both sessions. All registrants of I/ITSEC are welcome to attend without paying a fee. Paid I/ITSEC Conference registrants are eligible to receive CEU/CLP credits. If not a paid attendee, a $45 fee will be charged only to those who wish to receive the CEU credits. Registrations are accepted on-site during I/ITSEC registration hours.

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<th>WORKSHOP SCHEDULE</th>
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<tr>
<td><strong>PDW1:</strong> Modeling &amp; Simulation for Acquisition (0800-1200 in Room S330H)</td>
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<td><strong>PDW2:</strong> Live-Virtual-Constructive (LVC) Interoperability Techniques (0800-1200 in Room S330G)</td>
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<td><strong>PDW3:</strong> Managing Innovations in Simulation: Incorporating Mobile, 3D, Gaming, Augmented Reality, AI and More Into Your Programs (0800-1200 in Room S331D)</td>
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<td><strong>PDW4:</strong> Certified Modeling &amp; Simulation Professional (CMSP) (0800-1200 in Room S331C)</td>
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<td><strong>PDW5:</strong> Big Data: Harnessing the Power of Data Analytics to Optimize Training (0800-1200 in Room S331B)</td>
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<td><strong>PDW6:</strong> Export Controls on the Technology and Software Transfers (0800-1200 in Room S330F)</td>
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<td><strong>PDW7A:</strong> Measuring the ROI of Training, Simulation, and Education Programs (0800-1200 in Room S331A)</td>
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<td><strong>PDW7B:</strong> Measuring the ROI of Training, Simulation, and Education Programs (1300-1700 in Room S331A)</td>
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<td><strong>PDW8:</strong> Serious Game Development Workshop (0800-1700 in S330F)</td>
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**Big Data & M&S: Help Our Community Launch!**

I/ITSEC attendees are invited to join with military and industry thought leaders and ‘Big Data’ practitioners to create a two-year implementation vision at a Focus Event at 1030 – 1500 in Room S320GH.

The event begins with a ‘traditional’ panel discussion followed by an open-microphone Q&A session. Attendees will be invited to join one of two working groups where the panelists will come with the audience and raconteurs for 30 minutes to brainstorm and create a high-level, two-year implementation plan.

Participants learn about Big Data from people who are actually implementing it and then get to add their voice to how the M&S community can get going. The organizers will also be looking for volunteers who are willing to ‘own’ a piece of the vision and add some elbow grease to its initiation.

The present plan is to then continue the coordination during MODSIM World 2018 in April with a status report at next year’s I/ITSEC.

“Don’t let the last piece scare you off; it’s a volunteer thing. If you know a lot about Big Data – come. Lend a hand. If you know nothing about Big Data other than the buzz – come. Learn. Lend a hand,” the organizers said.

At the end of the plenary session, there will be an awards presentation to the winners of the Data Science Futures Hackathon conducted during the week at I/ITSEC.

The moderator for this Focus Event will be Tony Cerri, Director, Data Science, Models, Simulations, TRADOC G2. The panelists are US Army Major General James Mingus, Director, Mission Command Center of Excellence; Kristen Summers, Technical Delivery Lead, IBM; Chris Balick, Vice President, Samsung; and, Young Bang, Senior Vice President, Booz Allen Hamilton.

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**Cubic Supports US Army’s Joint Readiness Training Center**

Cubic Global Defense (Booth 1748) was awarded a contract worth more than $61 million to support rotational and pre-deployment training exercises at the US Army’s Joint Readiness Training Center (JRTC), the company announced on 29 November.

“Cubic will continue to assist the JRTC with integrating US and allied forces into rotational training exercises through scenarios focused on decisive action and theater-specific operational environments,” the company said in a statement.

These types of exercises are conducted for units targeted for deployment in support of ongoing military operations overseas and include situational training, live fire, force-on-force and integrated live, virtual constructive (LVC) training.

Cubic also provides expanded role play, technical support for combat training instrumentation, battlefield effects, video and cultural role players for added realism.

The company will perform the work in Fort Polk, LA with an estimated completion date of November 24, 2022.

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**MetaVR Showcases Latest Technology**

MetaVR (Booth 1249) is using I/ITSEC to showcase its terrain and visualization products and technologies, including two new 3D terrain datasets.

All terrain demonstrations are rendered in the latest version of MetaVR’s core product, Virtual Reality Scene Generator (VRSG).

MetaVR is demonstrating VRSG’s newest visual fidelity features, including shadows cast from static culture models, screen space ambient occlusion (SSAO), and several enhancements to 3D ocean simulation.

In addition, the company will demonstrate two new 3D terrain datasets, built in Metadesic round-earth format with the latest version of MetaVR Terrain Tools for Esri ArcGIS.

The company provided high-resolution geospecific terrain datasets for the Operation Blended Warrior (OBW) Exercise at I/ITSEC, including a model of Seattle with 83,025 buildings generated with Esri CityEngine.

The models were extruded and textured from OpenStreetMap (OSM) data, exported from CityEngine in FBX format, and then converted to MetaVR’s model format.

MetaVR will also demonstrate VRSG’s 3D ocean simulation, in scenarios featuring many naval models from the company’s military model library of 135 naval vessels on geospecific terrain/ocean body of the Strait of Hormuz. Many of the vessels have deck details modeled to first-person level.

Other demonstrations in the booth include unmanned air system (UAS) operator and joint terminal attack control (JTAC) training as well as high-resolution geospecific 3D terrain of the Somalia port city of Kismayo, a mountainous region in Kabul province, Afghanistan, and airfields in the continental US.
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Simthetiq Launches Immersive Display System

Simthetiq (Booth 1917) has partnered with fellow Montreal-based company Station IX to present the former’s comprehensive libraries of mission-ready 3D simulation models and terrains in Station IX, an immersive display system, at I/ITSEC 2017.

“At I/ITSEC we are using this station to showcase our models and the combination is the most immersive technology that exists on the market,” Helene Coulombe, Simthetiq Marketing Director, told the Show Daily.

Visitors are transported into a virtual hangar to inspect a complex industrial vehicle before being dropped into the middle of a real-time Joint Terminal Attack Controller environment rendered in Unity. With an extended field of view and true depth perception, Station IX is a visual system that allows Simthetiq to showcase tomorrow’s simulation solutions in an immersive and collaborative environment, said Coulombe.

Vincent Cloutier, Chief Executive Officer of Simthetiq, said that presenting Simthetiq’s high quality visual content in Station IX provides “a powerful visual experience that brings realism to a whole new level.”

Station IX is available in two configurations – an Immersive Theater, as displayed at I/ITSEC, and an Immersive Workstation.

The Immersive Theater is just over 20ft wide and approximately 10ft tall. It is equipped with five 4ft tall large glass mirrors from Displays and Optical Technologies (Booth 1909) and five F35 projectors from Barco (Booth 848), each with 2560x1600 resolution, for a total resolution of 12,800x1600.

“Station IX does its own image generation, as well as image warping and blending of its projectors,” Jason Radel, of Station IX told the Show Daily.

“All the digital content shown at I/ITSEC is run off the Unity engine using a single computer. Station IX does not create its own digital content, but instead incorporates customer content or partners with established industry-leading companies that create high quality digital content, such as Simthetiq.”

Besides its own booth Simthetiq’s 3D models and/or synthetic terrain can be found on 10 other company booths at I/ITSEC 2017.

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General Dynamics IT Immerses Visitors in Virtual Training

The Virtual Engine Room Environment uses game engine technology for immersive training of mission-essential tools. The company has tailored 3D fully interactive scenarios using a variety of 3D CAD, photogrammetry, 4K video and LIDAR sources, permitting interaction for training, both in a classroom setting or aboard a ship, for maintenance, operations, overhaul planning or shipboard fire-fighting.

General Dynamics IT Solutions Architect Mark Nesselrode, himself a former US Navy captain, said as well as for training, the 3D environment can be used to preview a task or to work through an unfamiliar procedure.

“The purpose is to create a real, high fidelity model for; in the example we are showing here, maintenance technicians,” Nesselrode said.

“Last year we had a tablet-enabled maintenance trainer, where there would be a series of requirements for any particular rating of a Sailor – what do they need to know, from a power control system, for an electrical system, to do that corrective maintenance. Now we are taking that immersive environment and they can validate that skill in their actual ship, based on that rendering.”

The 3D environment on display represents the USS WASP (LHD-1) multipurpose amphibious assault ship after the company was able to source LIDAR scans of its interior.

“The idea for this tool was for it to be a prototype for a Sailor working in a tablet environment with assigned tasks. For example, I need you to go and do corrective maintenance on this hatch, I need you to go to troubleshooting on this pump and if you find a problem I want you to fix the pump. You can set the tablet up, which allows you to have the proper tech manual you would need, the list of all the tools you will need, and a list of actions you would take,” Nesselrode explained.

“It allows you to preview the maintenance procedure so that when you get there, you do it right. This is set up so they could use it during the actual performance of the maintenance because it is tagged directly to the maintenance of that ship - because another ship might have a slightly different hatch or they might have it in a slightly different place.”

Over the past two and a half years, General Dynamics IT (Booth 639) has been working on prototype development in this virtual reality technology area. Several prototypes have been developed and delivered to the USN, and these are being used to evaluate potential uses for shipboard personnel and for shore-based training.

As well as providing an accurate representation of each ship, showing any and all unique adaptations, the system could be used for training on new ship systems before a new class is commissioned.

“So, all of that ‘idle time’ is no longer idle because you will be able to use that synthetic environment for that familiarization to occur, the training to occur, ahead of the commissioning of that ship. For example, for the Virginia class submarines being built right now. We can get the 3D computer aided drawing of a particular ship in the class. We can have a model already built to the baseline of the class. We modified that new 3D CAD with the pretextured model and before the crew is certified, they can prove that they are ready - you can have that training done well in advance.”

Meanwhile, General Dynamics Mission Systems is promoting its Training as a Service (TaaS) offering throughout I/ITSEC.

The company has developed an upgrade to the Multiple Integrated Laser Engagement System (MILES) through the use of a Universal TESS Adaptor (UTA) which replaces the harness control unit and converts MILES Individual Weapons System (IWS) into a Bluetooth sensor.

This allows General Dynamics Mission Systems to offer an app-based training capability that can be easily delivered and evolved. Soldiers can be networked over a 4G LTE or satellite connection and the app-based approach provides trainers with greater control over exercises.

The internally funded development aims to take advantage of the 200,000 MILES kits in service.

The system builds on the work General Dynamics Mission Systems has carried out with the US Army on the Integration and Development Environment – Forward (IDEF) program.

This persistent training environment enables concepts and emerging capabilities to be utilized during Force-on-Force training events for Soldier feedback prior to full implementation into Army “live” system programs of record.
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Army Outlines Industry Training Opportunities

In addition to an impressive array of technical papers, presentations and special events, I/ITSEC 2017 provides attendees with opportunities to learn more about a number of planned service procurement actions throughout the modeling and simulation arena.

One example occurred on Wednesday morning, when representatives for the US Army's Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) provided updates and procurement projections across several program management portfolios.

The Army's Project Manager for Training Devices (PM TRADE) provided a representative example. Mr. Scott Pulford, Acting Program Manager for Training Devices, began his briefing to an overflow audience by introducing a number of subordinate project area leaders in attendance, as well as representatives from the Army's related Training and Doctrine Command (TRADOC) Capability Manager (TCM) offices.

“So you have the requirements community in here as well, with an opportunity to engage them as needed,” Pulford said.

Offering what he called “a scorecard” of 16 upcoming competitive market opportunities, he stated “We pay a tremendous amount of attention to how well we hit some of these targets in terms of when we think an RfP [request for proposals] or contract award is going to go out.”

He noted a number of changes to a briefing delivered earlier in 2017. An example was the OPFOR [Opposing Force] Surrogate Wheeled Vehicle (OSWV).

“I’m not going to talk to that program,” he said. “We have made a decision to move to an organic Army solution set for that material development effort. I appreciate everybody’s interest and engagement on that, but we have made that decision and vetted it with the PEO. So we are moving out.”

Pulford then went on to present summary descriptions, status and projected acquisition milestones for a number of upcoming acquisition opportunities, including: I-MILES Relevancy Contract – Competitive; Abrams Maintenance Training System (MTS) System Enhancement Package version 3 (SEPv3) Upgrade; Armored Multi-Purpose Vehicle (AMPV) MTS; Common Driver Trainer; Construction Equipment Virtual Trainer (CEVT); M109A7 Howitzer Crew Trainer (HCT) Fire Support Combined Arms Tactical Trainer; Wideband Training and Certification System Version 2 (WTCS V2); Joint Readiness Training Center Instrumentation System – Land Expansion NEPA [National Environmental Protection Act] and Joint Readiness Training Center Instrumentation System – Land Expansion; and Consolidated Product Line Management Plus (CPM Plus).

Pulford also highlighted a number of key stakeholder engagements that have occurred over the past several months. As with the presence of TCM representatives in the briefing audience, the examples served to illustrate cooperation across the Army training enterprise.
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ECS Integrates Mixed and Augmented Reality

Engineering and Computer Simulations, Inc (ECS), an Orlando-based company, is demonstrating the integration of mixed and augmented reality in one application in Booth 1563. Waymon Armstrong, Founder and CEO of ECS, said his company is one of the few in the country currently experimenting with blending mixed and augmented reality.

The integration enables two users to interact with the same training scenario in different ways. While a trainee engages with holograms, another observes the scene in its entirety. The result is a fully immersive training experience – delivered through augmented reality – that also provides real-time feedback from a participant instructor wearing a mixed reality headset. The unique aspect of the integration is that it enables the instructor to see and experience the scene exactly as the trainee does, while also viewing the trainee live.

The training simulation uses the Microsoft HoloLens, the world's first fully untethered, self-contained hologram computer. With this integration, ECS has elevated today's leading-edge, mixed-reality technology to its next level, said Armstrong.

"What we are showing at I/ITSEC is a proof of concept prototype," Armstrong told the Show Daily. "It is the result of our funding and work we're doing for the Army Research Lab. We've now got the green light to finish development and get into production.

"We have a grander vision for the next level and that's why we have some other folks who are also interested to take it further. The power of simulation is the power of 'what if' and people are seeing that 'what if' right now when they look at this project."

ECS is also demonstrating its Clinical Skills simulation, which brings the doctor-patient visit into the virtual world, enabling medical staff to complete tests, including blood pressure, blood work, and heart and pulse checks. Using an app and a virtual patient, medical staff conduct an examination, view results and make a diagnosis. The virtual reality tool is currently used only for training, but could be adapted to perform virtual exams of real patients.

Saab Unveils Tactical Exercise Control Tool

A new tool to assist observers, controllers and commanders during instrumented tactical training exercises has been launched by Saab (Booth 2149) at I/ITSEC 2017.

Designed for use on smart phones and tablets, the new WE:Are uses augmented reality to provide users with a 360° overview of the exercise area to provide a real time visualization of force movement, engagements and casualties. With a click, the user can switch views between the real world and a map over the exercise area. The app is based on Google Maps, although users can easily add their own maps. WE:Are makes it possible for the observer/controller/commander to introduce new threats to the exercise, such as minefields and artillery.

"I/ITSEC is a great place for us to introduce this new tool to the training market. WE:Are has been designed with simplicity and smoothness in mind. With the device the exercise leader can focus on what is important, which is to keep track of the individuals and evaluate entire troops in the field", says Asa Thegström, Head of Business Training & Simulation at Saab's Business Area Dynamics.

The WE:Are is fully compatible with Saab's widely deployed instrumented training systems.
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Theissen Develops Laser Target System for Army

Theissen Training Systems (TTS) is displaying for the first time its new Laser Target Interface Device (LTID), which enables the company’s live fire targets to be used with the US Army’s Multiple Integrated Laser Engagement System (MILES).

TTS (Booth 1973) is one of the leading manufacturers of live fire training products and accessories including: stationary and moving infantry targets; stationary and moving armor targets; the Location of Miss and Hit (LOMAH) system, which provides immediate feedback on where the shooter has hit the target as well as near misses; range control systems; and complete range services. The company’s largest customer is the US Army, although from its production sites in Belgium, Germany and the US it has supplied targets and range equipment to about 25 countries throughout Europe, the Middle East, Central and South America, and the Asia-Pacific region.

The LTID system has been developed specifically to meet the Army’s needs at the Joint Readiness Training Center (JRTC) at Fort Polk, LA, and the National Training Center (NTC) at Fort Irwin, CA. The company has begun production on an anticipated order for 815 systems, with deliveries expected to begin next April.

The LTID consists of a string of several ruggedized, weather-resistant sensors which connect directly into the Hit Sensor interfaces on the Future Army System of Integrated Targets (FASIT), which the company supplies to the US Army. The sensors are capable of detecting MILES hits, and the detection sensitivity of the sensors is adjustable to allow engagements at short and long ranges. As well as infantry targets, the LTID can be mounted on armor targets and will then only react to hit and kill MILES codes from weapons, such as 120mm tank guns and anti-armor missiles, which are capable of destroying the target. Individual sensors can be replaced when damaged, and the sensor string can easily be mounted and removed from a target using a Velcro attachment in 10 minutes or less.

Tilman Rumpf, Senior Vice President with TTS, told the Show Daily that the expected order for 815 systems “will probably be the first of many deliveries just like our targets which are being delivered to the Army in three different phases with the second phase underway now”.

Along with the LTID, the company will be delivering a first of batch of 815 LTE WiFi radio modems for installation on targets. “The Army requested this for two reasons,” explained Andrea Blank-Ziegler, Vice President with TTS. “One is that it fulfills the standards of having cellular communication in the Combat Training Centers, because the NTC and JRTC have large range areas and they don’t have the capacity to use other means of wireless communication other than cell towers. Second, we have made it better than other products so that it also has the capability to do short range communication via WiFi. Completely FASIT compliant, the radio is able to communicate ‘up’ and ‘down’ commands and muzzle flash commands. It is able to control other targets linked wirelessly to one another so you could have a cluster of targets controlled by one radio. It is a versatile system providing multiple ways for range control to communicate with the targets.”
Lockheed Martin Is ‘Prepared’ for Tomorrow

Lockheed Martin (Booth 2248) is using the I/ITSEC 2017 venue to highlight its current capabilities and their direct applicability to emerging program requirements.

"Obviously there is a lot of focus in the industry now on Distributed Mission Training (DMT)," observed Victor Torla, Business Development Director for Training Solutions at Lockheed Martin Mission Systems and Training. "And from a DMT perspective we see that as a lot of enabling capabilities that need to come into play."

Torla pointed to requirements similarities across multiple emerging programs, asserting, "You will see these things align with a lot of independent customer programs that are evolving, but they are not that independent or unique. For example, you have the Synthetic Training Environment (STE) for the US Army; you look at Simulation Common Architecture Requirements and Standards (SCARS) for the US Air Force; a lot of the capabilities they are looking for within these programs are going to be common.

"As examples, they all are looking for cloud-distributed environments. It all needs to be bundled by appropriately cyber-secured systems. So it’s about being able to support these services on the cloud; being able to provide services on demand as opposed to having customers buy hardware for every simulator at the point of need. And a lot of what you are seeing around the Lockheed Martin booth is really showcasing where we are already distributing cloud-based services to a lot of different customers."

He offered the company’s United Kingdom programs as "the best examples" of this, pointing to anticipated SCARS and STE requirements that are already a requirement on the UK Ajax reconnaissance vehicle program.

"We have a vision of extending that into the Warrior program in the UK," Torla said. "And of course we see a tremendous application from Ajax and Warrior back into the US with the Synthetic Training Environment."

Another feature of the Lockheed Martin I/ITSEC 2017 exhibit highlights the company’s “Prepar3d” package. Torla said that Lockheed Martin bought the rights for the Microsoft Flight Simulator in 2013, “And we basically ‘missionized’ that package. So right now Prepar3d is the core architecture for the Pilot Training Aids on the F-35 program and we have expanded that to at least another half dozen programs formally – F-16, C-130J and others – and there is an entire ecosystem of Prepar3d developers that provide environments and aircraft simulations for hundreds of different platforms."

He concluded with two takeaway messages: "Come and talk with Lockheed Martin about our cloud-based technologies, how we are distributing to the point of need today for our international customers. And learn about Prepar3d, which will enable customers to benefit from an ecosystem of developers as opposed to having to go back to one company to do all of your development for database generation," he said.

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Membership Milestone for SSH

One of the areas experiencing explosive simulation is healthcare. Attendees at I/ITSEC 2017 can learn more about this dynamic and growing field in the healthcare pavilion, where industry exhibits are highlighted by the Society for Simulation in Healthcare (SSH).

According to Kathryn Pullins, Director of Membership for SSH, the relationship between that organization and the National Training and Simulation Association is “pure partnership.”

“SSH is the professional association for people who use simulation in healthcare,” Pullins explained. “That includes educators and practitioners. So our membership includes people who teach simulation at the college level, in sim centers, and in medical schools. For practitioners, our membership covers anywhere from EMTs to surgeons to nurses to anesthesiologists. We are multi-disciplinary in healthcare so we span the spectrum of practitioners."

“When I started working with SSH, which was about four years ago, we had 2,700 members,” she added. “And last month we crossed the threshold with 4,000 members. We currently have a little bit over that number so we are growing and retaining membership like never before.”

She noted that SSH currently has membership representing 57 countries adding that most of those countries are represented as attendees at the annual SSH International Meeting on Simulation in Healthcare (IMSH). The next IMSH gathering will occur in Los Angeles, CA, on January 13-17, 2018.

Featured programs slated for IMSH 2018 range from the 8th Annual Serious Games and Virtual Environments Showcase Arcade to the 4th Annual Spectrum of Ideas, a demonstration of the latest ideas, inventions, and brainstorm in healthcare simulation.

“We are trending ahead of last year’s attendance numbers at this time so we will have over 3,000 people in attendance in Los Angeles,” Pullins said.

Asked if she had a message for I/ITSEC exhibitors, she offered, “I think that as simulation continues to grow, that the people who are using simulation in government activities are moving to the healthcare arena to expand their markets and also that’s just where simulation seems to be going right now. So if they are here as an exhibitor they might want to come to IMSH as an exhibitor to reach out to our healthcare professionals. And if they are getting any kind of certification they can get CEUs [continuing education units] at IMSH and continue their education.

“I would just like everyone to know that simulation is an amazing field,” she concluded. “It is growing all over the world and it is just an honor to work with everyone involved in simulation and to watch it continue to grow.”
BISim and TRU Team Up for AR Training

Bohemia Interactive Simulations (BISim) (Booth 2235) has developed an Augmented Reality (AR) Visual System for the TRU Simulation + Training (Booth 1700) V-280 Valor simulator on display at I/ITSEC 2017.

Incorporating AR into functional cockpits to provide a 360° visual training environment that combines real and virtual training elements creates an experience that “goes beyond virtual reality”, according to TRU Simulation.

“Pilot trainees will stay connected with actual devices and reduce their visual system footprint with TRU’s augmented reality experience. This is a cost-effective, portable package with potential to support a new class of training and simulation,” TRU told the Show Daily.

Leveraging emerging AR/VR technologies, the system enables the trainee to see and interact with the physical aircraft controls, equipment, and crew members using video which is digitally composited with a realistic, synthetically generated virtual environment.

The combined real and virtual scene is displayed in a helmet-mounted display worn by the trainee.

At the heart of the AR Visual System is BISim’s VBS Blue IG, a blended procedural and imagery-based whole Earth visualization solution designed to simulate the air, land, maritime and space domains.

Optimized for AR/VR applications, VBS Blue IG provides the high frame rates needed to combat “cyber sickness” and supports integration with a variety of HMDs and peripherals.

“The Augmented Reality Visual System dramatically saves costs over traditional visual systems that rely on a matrix of projectors and image generator channels,” said John Burwell, BISim’s Vice President Business Development.

“The major benefit of the AR solution is its ability to provide a full field-of-view visual scene using a single IG channel, resulting in a solution that is typically an order of magnitude less cost than traditional visual systems.”

Using a system of simple markers applied to the physical crew station and a custom masking system that controls the mix of video and synthetic imagery, the solution supports most physical devices without the need for greenscreen compositing or special lighting, including devices with physical heads-up displays.

According to the two companies, the AR Visual System is “designed to support a new class of simulator devices that are offered as part of a continuum of training or as an upgrade to any existing simulator that can benefit from the addition of a high-fidelity, full field-of-view image generation system”.

“TRU is exploring the potential created by emerging AR/VR technologies to offer enhanced, cost-effective training for our customers,” said Troy Fey, VP Technology.

“Augmented reality technology presents the opportunity to develop low-cost, highly immersive, portable systems able to provide training at the point of need.”

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The National Training and Simulation Association (NTSA) presented its annual Modeling & Simulation Awards, as well as the 2017 Governor’s Award for Lifetime Achievement in Modeling & Simulation, at the NTSA M&S Awards Dinner at the Hyatt Regency Orlando on Tuesday, November 28. NTSA President RADM James Robb, USN (Ret), presented awards to a diverse group of teams from US Pacific Command, US Southern Command, Wright-Patterson Air Force Base and Systems Technology, Inc. The 2017 Governor’s Award for Lifetime Achievement in M&S was presented to Mr. John Illgen, Senior Director, Northrop Grumman Mission Systems.

2017 Governor’s Award for Lifetime Achievement in Modeling & Simulation

Mr. John D. Illgen
Senior Director, Modeling & Simulation
Northrop Grumman Mission Systems

John Illgen is recognized for his achievement as a pioneer in the development and application of M&S methods and technologies. After working for several companies, Mr. Illgen founded Illgen Simulation Technologies, Inc. (ISTI) in 1988. He subsequently led the development of an Open Ended Architecture using web-based technologies to integrate and interoperable distributed systems and simulations. Northrop Grumman acquired ISTI in 2003. Mr. Illgen enjoys a national and international reputation for his experience and leadership in a broad spectrum of technical domains, and has held numerous leadership positions with organizations such as NDIA, ITEA, IEEE and SCS. Mr. Illgen has chaired and served on innumerable technical panels and committees, and has published and presented scores of technical papers on M&S. He has received numerous commendations, medals and awards for his technical, management, and policy contributions for defense, civil, and commercial applications. Mr. Illgen’s leadership and expertise have had a significant and lasting impact on the M&S community of practice and beyond. His contributions have been vital to the effectiveness of our armed forces and to our national security in general.

2017 NTSA Modeling & Simulation Award Winners – Analysis

LD2 ISR M&S Concept Team:
US SOUTHCOM, XSITE LLC & Analytical Graphics, Inc.

US Southern Command, XSITE LLC and Analytical Graphics, Inc. are recognized for outstanding achievement in developing the first-ever long dwell, long duration persistent intelligence, surveillance and reconnaissance (ISR) model that incorporates stratospheric balloons, unmanned surface vehicles, and unmanned aerial vehicles in a representative maritime environment. The Systems Toolkit model gives SOUTHCOM unprecedented insight into the optimal employment of these commercially available ISR assets for detecting, monitoring and interdicting the flow of illicit drugs through the SOUTHCOM Area of Operations.

2017 NTSA Modeling & Simulation Award Winners – Training

MQ-9 Special Projects MJAT Team, Medium Altitude UAS Division (AFL-CMC/WII)
The MQ-9 Special Projects MJAT Team at Wright-Patterson Air Force Base delivered a networked, deployable, Multi-Level Security Reaper Unmanned Aircraft System aircrew trainer for Air Force Special Operations Command. They fielded two trainer software releases 30 days ahead of actual aircraft software, resulting in early certification of more than 200 aircrew. They were the first ever MQ-9 trainer in Exercises VIRTUAL FLAG and COALITION VIRTUAL FLAG, completing more than 2,000 currency events for 70 US and coalition partners.

2017 NTSA Modeling & Simulation Award Winners - Training

PARASIM Development Team, Systems Technology, Inc.
PARASIM simulation systems are highly-integrated virtual reality interactive
parachute flight simulation devices for operational airborne troop and aircrew emergency procedures training. PARASIM training features include altitude awareness, ripcord operation, malfunctions recognition and correction, canopy control, and collision avoidance. The Freefall Maneuvering Module combines body tracking technology, Computational Fluid Dynamics analysis of parachutists in freefall, anthropomorphic human modeling, and the PARASIM 3D wind model to create a real-time freefall maneuvering simulation. The innovative simulation enables freefall navigation, safe separation from other jumpers in group operations, and avoiding canopy entanglement upon opening.

2017 NTSA Modeling & Simulation Award Winners – Training

US Pacific Command, Cyber War Innovation Center

The Cyber War Innovation Center (CWIC) is a world-class cyber testing, training, and experimentation environment, developing and incorporating innovative modeling and simulation capabilities, to meet the rigorous demands of the cyber workforce in the Pacific theater. CWIC products and technologies allow both cyber and non-cyber operators to safely and securely develop and experience realistic cyberspace capabilities necessary to ensure mission success. The CWIC is committed to improving cyber training and simulation and sharing its expertise with others.

Special Recognition for Excellence in Training – International/Non-Defense

Dubai Police Virtual Technology Center

The Dubai Police employ cutting-edge video game technologies to create virtual environments – ranging from crime scenes to traffic accidents to hostage scenarios – that allow trainees to learn-by-doing in a safe and practical environment. Training effectiveness has been greatly increased, while the costs associated with training have been significantly reduced. Within the Virtual Technology Center, the first specialized in-house games development center in a police organization in the region, a team of experts in virtual environments and serious games has created a large portfolio of virtual products, which are being used both nationally and regionally. They have secured multiple copyrights for virtual environments, and are now selling existing products to – and building custom-made applications for – other organizations.

2017 NTSA Modeling & Simulation Award Winners – Training

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Operation Blended Warrior Looks Ahead

As Operation Blended Warrior (OBW) organizers start to look towards next year’s exercise, participants are already mulling the lessons of some unexpected successes at I/ITSEC 2017.

As well as the initially unforeseen achievement of creating a true coalition network for the exchange of voice and data communications, the addition of a cyber component had provided some valuable lessons, according to Gary Fraas, OBW lead for National Training and Simulation Association.

The event provides both a unique opportunity for units across the Department of Defense to survey the technical solutions available from industry and companies to find unexpected new applications for their products.

“There have been a lot of self-discovered benefits and the companies involved have been able to look at how they can expand their product sets,” Fraas explained.

“Developers don’t always get the opportunity to see how their products are being used. During OBW they get to see their products through the eyes of their military customers. In some cases, things don’t work as they should, in others they have been saying ‘gee, I wish our product could do this’ and finding new applications for things.”

While OBW planning and demonstration efforts are broken down along traditional warfare areas of land, air and maritime, the potential impact of cyber across the spectrum of operations led to cyber-attack/defense forming a key part of the exercise.

Metova Federal (Booth 1963) provided its CyberCENTS cyber range, which exposes operators to real cyber threats, allowing them to advance their technical skills within a risk-free environment.

Also working together to deliver cyber training is the Network Effects Emulation System (NE2S), currently maintained by Naval Air Warfare Command Training Systems Division, and the Cyber Operational Architecture Training System (COATS) developed by the US Pacific Command Cyber War Innovation Center (CWIC).

The COATS architecture enabled the passing of effects of a cyberattack from the Metova range to a workstation on the OBW network for interpretation by NE2S, providing safe cyber degraded training at the OBW Distributed Training Center (DTC).

The CWIC was recognised for its efforts in improving cyber training, being named a 2017 NTSA Modeling & Simulation Award Recipient for Training during I/ITSEC (see page 26-27).

Larry Flint, Senior Cyber Analyst at Ingenia Services, which provides support to the CWIC, said OBW was a great venue to further understand the importance of cyber as an objective during all forms of training.

“In the current state of training, operating in a cyber degraded environment typically takes a backseat to normal training objectives. But cyber needs to be elevated to a primary training objective. For our opponents, the barriers to entry in cyber are far lower than in the air domain, for example. It only takes a few good hackers,” Flint said.

He noted that with less emphasis on the OBW scenario itself, presenters had more freedom to outline the technical aspects to the audience, explaining, for example, that an effect was an intentional cyber event, rather than an exercise glitch.

For the first time, OBW enabled the exchange of simulation data and radio voice communications with international partners over a “long haul” simulation network.

As Cathy Matthews, OBW technical advisor, explained to the Show Daily, the week before the event the creation of such a network was not part of the planning.

“But, discussions on the floor allowed a kernel of an idea to grow. OBW had done all the homework to approve this connectivity, since Viking `18 team was bringing a team of coalition partners to the showroom floor this year,” Matthews said.

“This was done by using two of these extensive ‘guards’, providing a bridge between US and coalition systems. This is impressive, since even though data has been exchanged between US and coalition partners in the past, the ‘guards’ of today have become more stringent with the growing regulations.”

Rockwell Collins employed its SecureOne cross domain solution for simulation data, while the US Navy used its Enterprise Network Guard for voice communications.

Björn Löfstrand, Services and Training Manager at Pitch Technologies (Booth 2026), said the international network is entirely HLA (IEEE 1516-2010 and NATO STANAG 4603) compliant and connects Pitch’s booth in I/ITSEC’s exhibit hall with simulators in Sweden and France.

Pitch’s COTS software products provided the HLA runtime infrastructure, long-haul voice communications and transatlantic WAN connectivity, as well as interchange locally with OBW’s DIS-based systems.

“The connections and tests are a huge step forward in connecting coalition partner simulation networks in OBW. Pitch provided key infrastructure software and engineering support to ensure the successful test and verification of the capability,” Löfstrand said.

Matthews explained that the existence of the coalition network caused issues with some of the US participants, however, although Rockwell Collins was able to change filters within their guard to manage the data on the different networks.

“This trouble shooting, quick response, and uncovering of issues allowed insight into requirements for participating in a live, virtual and constructive network exercise. Networking many disparate systems to generate that larger virtual battlespace requires developers not to just think about their system capabilities, but also the self-protection of their systems for unexpected network traffic.”
DoD Seeks Training Collaboration

Mr. Charles (Fred) Drummond was one of the participants in Tuesday’s General Officer/Flag Officer panel. Drummond, who serves as the Deputy Assistant Secretary of Defense for Force Education and Training in the Office of the Assistant Secretary of Defense for Readiness, oversees the development of policies and plans for military training and education. His responsibilities include service and joint training policy, cyber training policy, joint professional military education, training capability modernization, and enabling access to the land, air, and sea live training domains.

Speaking with the Show Daily, Drummond outlined a range of specific activities that stem from those responsibilities, summarizing: “Our role involves OSD policy for education and training issues, requirements and policies across all the services. We’re the focal point for the whole department on behalf of the Secretary of Defense.”

Referring to some of his earlier panel comments, Drummond reiterated: “Policy can be your friend. Policy can hinder you. So from our standpoint, especially under the mandate with Sec Def and his three points of lethality and readiness - strengthening alliances, attracting new partners and bringing business reforms - our mandate is: What do we need to do in our world and our environment to see that policy helps support all those things directly?

“We need to update policy to enable and to empower the services to focus on military readiness and lethality,” he said. “We are taking a look at policy and asking: Do we need a policy for this? Is there an existing policy? Is it good? Does it need to be updated? Or is it in the way of how we’re doing business today and the way we’re planning on doing business tomorrow?”

In emphasizing the need for policy review, Drummond noted that the earliest policy document he could find that is still being followed to some degree dates back to 1983. “Is that appropriate?” he asked. “And this is not untrue for all of the services, where little has really been updated. Or perhaps it’s been renewed or kind of revalidated or reissued over the years, but the underlying guiding document may go back several decades. Is that appropriate for what we’re doing today or not?”

“I have gotten rid of some stuff already in our larger domains,” he continued. “And we are currently reviewing every instruction and Department of Defense directive that falls under our purview, because we can’t sit back and just accept the status quo. We always have to re-evaluate and relook and make sure that they’re up to date.”

Again citing earlier panel comments, Drummond said that this is especially true for training, where the services need to apply rapidly changing hardware and software technologies to increase military readiness and lethality.

“We can’t wait,” he said. “We can’t wait for the acquisition process. We can’t wait for the turnaround cycle. Certainly we are limited by law and the way the budget process works. Those are constraints. But our challenge is, within the areas that we control, let’s do it. Let’s not wait. That’s why we need to keep constantly taking a look at the programs that we own or the policies that we oversee to assure they are right.”

He added, “We do not want to be the roadblock. I don’t ever want anyone to come into our office and say, ‘Well, we couldn’t do this because of your policy or you didn’t look at this in a timely manner or the policy is outdated.’ No. I will change it. As you bring that to my attention we will do something about it. We do not want to be the roadblock.”

Asked about his attendance at I/ITSEC 2017, Drummond said that the primary goal was collaboration but that he also wanted the modeling and simulation community to understand that the office had now achieved stability in positions. “We had some vacuums that none of us could do anything about,” he acknowledged. “But we have the people coming…So they need to know that we have the team in place. We have extremely competent folks; expert teams. I’m really, really happy about the offices and the people I’ve inherited. And we’re ready to go. Without the middle management leadership, an organization really can’t go fast very far. Well, we’re in place now. And I am all about collaboration. I’m all about transparency. I’m all about ideas.”

Expanding on his desire for collaboration, Drummond cited “many, many exciting things going on” around I/ITSEC, stating, “I want to know how we can capture that. I want to know more about it. How can we do the practical applications of that? How quickly can we do those applications? So I really believe all of us – the services, DoD and industry – are aligned right now and, under Secretary Mattis, we have a mandate to satisfy his three priorities. I think we’re ready to go collectively for that.

“I think we’re in an exciting, opportune time,” he concluded. “Technology is knocking on the door. In some cases it’s already here. We’re looking for the combined team approach. Let’s make it happen.”
Rheinmetall Unveils New Command Trainer

At I/ITSEC 2017, Rheinmetall (Booth 2213) is displaying its new Osiris command and staff training system for the first time.

Rheinmetall describes Osiris as one of “the world’s leading software products in the field of constructive simulation. “Thanks to Osiris, commanders and staff officers of military formations and units can conduct exercises at the tactical, operational and strategic level in a realistic operating environment. In the process, the unfolding situation is depicted at platoon, company, battalion, and brigade levels as well as at higher echelons.”

An unspecified customer in the Middle East/North Africa (MENA) region awarded Rheinmetall a multi-million-dollar contract for Osiris in the first quarter of 2016.

A Rheinmetall spokesperson told the Show Daily the system was delivered in Q3 2016 and will be operational by the end of the year. Rheinmetall’s Bremen, Germany-based Simulation and Training business unit will provide a full range of support services, including role players as well as instructors with a military background.

Rheinmetall’s command and staff training systems provide customers with unparalleled possibilities for training high-level personnel, encouraging a mission-oriented, flexible style of command and decision making. The systems enable joint and combined computer-assisted exercises (CAXs) for mission-oriented, pre-deployment training.

They can also be used to support certification of multinational headquarters and to conduct capability checks of headquarters for determining operational effectiveness for all types of missions prior to deployment.

Rheinmetall is also highlighting the latest enhancement to its modular Legatus live simulation system. These include further miniaturization of critical components, the reduction of installation times and software updates. Simpler, faster adjustment of weapons and quick, error-free installation of MOUT components in buildings reduce the time that users need to spend preparing for training operations. In addition, the use of widespread standards leads to greater compatibility with the products of other manufacturers.

Rheinmetall has recently supplied 2,000 new Legatus laser transmitter units for small arms and 1,500 accompanying soldier target sets with corresponding laser sensors to the German Army for use at the Combat Training Centre, or GUZ, located in a major training area in the Altmark district of Saxony Anhalt. In 2016, Rheinmetall was awarded a contract to upgrade the GUZ to enable the army to conduct and evaluate training for military operations in built-up terrain.

In September and November 2016, Rheinmetall received two contracts from unspecified customers in the Middle-East/North Africa region to supply the Legatus system.

In addition, Rheinmetall is demonstrating its Asterion simulation system developed to provide extremely realistic maintenance training for aircraft mechanics. Asterion can be used on various training devices from a full replica cockpit to a tablet PC, and can be customized to the customers’ training needs.

Germany’s BAAINBw defense procurement agency in March 2015 awarded the company a contract to upgrade all of the German Army’s NH90 TTH Cockpit Trainers to IOC+ configuration with additional software modules from Rheinmetall’s Asterion product line, and in December 2016, Rheinmetall Electronics delivered the world’s first Asterion Cockpit Trainer for the NH90 TTH to the International Helicopter Training Centre in Fassberg.

Fassberg is one of three training centers operated by the HFTS (Helicopter Flight Training Services) consortium, comprising Airbus Helicopters, CAE Elektronik, Rheinmetall Electronics, and Thales Deutschland, which provide NH90 training for the German Army and Navy.

In August 2017, BAAINBw awarded Rheinmetall a contract to develop an enhanced version of the Asterion training software for use with the Reiser Simulation and Training company’s NH90 Sea Lion maintenance trainer. The upgrade will enable German Navy technicians to be trained on all relevant maintenance functions of the Sea Lion which is scheduled to enter service in 2019.

Rheinmetall is also presenting high-performance, made-to-measure solutions like the simulation technology for the new Embraer KC390 transport aircraft, the cargo loader simulator part task trainer for the Airbus Military A400M transport aircraft, and state-of-the-art simulation applications for submarines and surface vessels.
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