



TUESDAY
NOVEMBER 30, 2021

Congressional Caucus
Page 6

Army Training Panel
Page 8

Innovation Match Game
Page 12

Chief Data Officer Roundtable
Page 16

Conference Chair Welcome
Page 17

Cyber Pavilion
Page 20



Like us at facebook.com/IITSEC



Live tweet now with #IITSEC



instagram.com/IITSEC



youtube.com/NTSAToday

Published by **NTSA**

Marine Corps Looks to Next LVC-TE Milestone

Within three weeks of I/ITSEC 2021, representatives from United States Marine Corps Training and Education Command (TECOM) and Marine Corps Systems Command are hoping to reach the next programmatic milestone on that service's Live Virtual Constructive - Training Environment (LVC-TE).

"LVC-TE will be the foundational program for the Marine Corps' future simulation-supported training to improve our ability to fight and win our nation's battles," explained BGen Matthew Reid, Deputy Commanding General, TECOM. "The intent is to create a live, virtual and constructive all-domain combat training environment, fully integrated across the Marine Air Ground Task Force (MAGTF).

"Once complete, units will be able to integrate all elements of the MAGTF from geographically disparate locations to improve and sustain the combat readiness of the entire Fleet Marine Force," he said, adding, "The LVC-TE program is a key component of TECOM's modernization efforts for the Marine Corps and conforms to the tenets of the Commandant's Planning Guidance and Force Design 2030."

"The LVC-TE live, virtual constructive training environment has been a vision for the Marine Corps for the past decade," offered Carol Byers-Bendle, LVC-TE Project Team Lead at the Marine Corps System Command's Program Manager for Training Systems (PM

TRASYS). "There was an Initial Capabilities Document (ICD) developed in 2010, with a subsequent Concept of Operations (CONOPS) developed by TECOM - at the time it was TECD [Training and Education Capabilities Division] - in 2015. Meanwhile, the Fleet continued to experiment with various LVC-TE training events, including multiple live, large-scale exercises (LSEs). As a result of those LSEs, the Fleet determined that it needed a consistent, persistent training environment that allowed live, virtual and constructive training to happen in a training continuum."

All of those lessons learned helped to support an Analysis of Alternatives (AoA), which was completed in 2018, and concluded that the best way forward was to focus on connecting legacy training systems as opposed to starting over from scratch.

"We have the vision," Byers-Bendle stated. "We know what we need. We also have a Capabilities Development Document (CDD), which was completed in August of 2020. And that CDD supported the AoA and aligned the fact that the Marine Corps will be executing LVC-TE by connecting legacy training systems that have brought huge amounts of value to their training audiences."

The CDD also defined the initial legacy systems that will provide baseline capabilities for LVC-TE: Combined Arms Command and Control Training Upgrade System (CACCTUS), a constructive system for collective

Continued on p4



INTRODUCING: FSI DEFENSE

A FLIGHTSAFETY INTERNATIONAL COMPANY

As a FlightSafety International company, we are proud to provide mission-critical training programs and equipment to military and governments all over the world—including every branch of the U.S. armed forces. This elevated level of training and innovation can only be provided by the best in the industry. One with an incredible reputation earned from 70+ years of incomparable experience.

Visit [FlightSafety.com](https://www.flight-safety.com)

FSI DEFENSE
A FLIGHTSAFETY INTERNATIONAL COMPANY

TUESDAY, NOVEMBER 30

CONFERENCE HIGHLIGHTS

REGISTRATION HOURS

0700-1800 (*South Concourse*)

0730-1800 (*Satellite Registration, Hyatt Regency Main Lobby*)

OPENING CEREMONIES

0815-1000 (*Hyatt Regency Windermere Ballroom*)

EXHIBIT HALL HOURS

1200-1830

SIGNATURE EVENTS

1030-1200 Senior Leader Panel (*Hyatt Regency Windermere Ballroom*)

1400-1530 U.S. Navy Flag Officer Panel (*Room 330BCD*)

1600-1730 Modernizing Army Training Mission and Operations Panel
(*Room 330BCD*)

1600-1730 Chief Data Officer Executive Roundtable (*Room 330EF*)

FOCUS EVENTS

1400-1530 DoD Modeling & Simulation and Digital Engineering Relationship
(*Room 320GH*)

1600-1730 The Innovation Match Game (*Room 310AB*)

1600-1730 Navy Vision from the Training Systems' Program Managers
(*Room 320GH*)

COMMUNITY OF INTEREST EVENTS

1000-1600 xTechBOLT Demos (*Room 319*)

1200-1830 Air Force Gaming & Esports Across the Military (*Booth 1084*)

PROGRAM BRIEFS

1400-1530 U.S. Air Force Acquisition Update (*Room 310AB*)

1600-1730 U.S. Marine Corps Acquisition Update (*Room 310C*)

PROFESSIONAL DEVELOPMENT (See Program Guide for Title/Author List)

1400-1530 Paper Sessions (*Rooms 320A-F*)

1600-1730 Paper Sessions (*Rooms 320A-F*)

SHOWDAILY

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

Publisher

James A. Robb, RADM, USN (Ret)
jrobb@ntsa.org

Editors

Dino Pignotti
dpignotti@ntsa.org
Scott Gourley
scott_r_gourley@yahoo.com

Associate Editors

Gail Gourley, RN, BSN
gail.gourley@gmail.com

Photography

Scott Rekdal
srekda@ndia.org
Douglas DeFelice
Prime360Photo@gmail.com

Advertising

Kathleen Kenney
kkenney@ndia.org
Alexander Mitchell
amitchell@ndia.org

Print Production Management

Tradeshow Media Partners
www.tsmpartners.com



EXHIBIT HALL OPENS

Monday afternoon witnessed the opening of the I/ITSEC 2021 Exhibit Hall, where more than 400 exhibitors welcomed I/ITSEC attendees to view the latest in M&S technologies and programs displayed across nearly 180,000 square feet of exhibition space.

Marine Corps ... *continued from p1*

training environments; Supporting Arms Virtual Trainer (SAVT); Virtual Battle Space (VBS) out of the Deployable Virtual Training Environment (DVTE); and Marine Corps flight simulators on a network called Aviation Distributed Virtual Training Environment (ADVTE).

LVC-TE is a software intensive system running on commercial off-the-shelf hardware with a set of tools that will provide the desired consistent, persistent training environment. The acquisition strategy for LVC-TE is following the Software Acquisition Pathway (SWAP), one of eight DoD acquisition pathways that was created specifically for software intensive programs. As defined in the DoDI [Department of Defense Instruction] 5000.87, which was signed in October of 2020, SWAP includes two milestone phases: planning and execution.

"We are in the planning stage," Byers-Bendle said. "We were given that authority in July 2021.

"This stage is where we are developing all of our strategy. We're developing our product roadmap, which, at the high level, allows us to define our feature set as to what we want to have built. And we are not doing this in a vacuum. We're starting with the requirements that were in the CDD, but we're refining and prioritizing those requirements with the Fleet. Keep in mind that LVC-TE is a suite of tools. LVC-TE itself does not provide training. The training is still being done at those constituent-level training systems. We're just tying it together. We are the glue."

She noted that the defined suite of tools, called Exercise Design Tools, supports exercise and scenario planning with multiple abilities, ranging from meeting training objectives to producing archives. Specific tool elements include an Exercise Control Tool, Common Repository and After-Action Report (AAR) tool.

The current expectation is that the program will request access to the execution phase on December 20th of this year. Once transition to the execution phase is approved, and funding is obligated, the program will begin fielding at Twentynine Palms.

"This is a great news story for Marine Corps Systems Command (MARCORSYSCOM), since the LVC-TE team was the first one to ask for official designation to enter that phase," Byers-Bendle said.

According to Eric Jarabak, Chief Engi-

neer of Synthetic Training Systems at PM TRASYS, two of the most important aspects of pursuing SWAP for LVC-TE are timeliness of changes and responsiveness to the Fleet.

"SWAP gives us the necessary tools we need to be responsive to the Fleet and their needs and address changes on the fly that LVC-TE needs to do," he observed, emphasizing how the team has worked with the Fleet throughout the process to ensure that they are a partner and not just a receiver of an end-state capability.

As an example of what the program linkages in LVC-TE will bring to the Fleet, he offered, "SAVT is our Call For Fire / CAS [Close Air Support] trainer, where we have a JTAC [Joint Tactical Air Controller] that is actually going through the motions of being a JTAC. In the former silo training environment, within SAVT they're working with an instructor / operator, normally a contracted person who is playing the role of a pilot or someone that they're talking to. What LVC-TE will enable them to do is connect up to the real flight sims that a real Marine pilot is utilizing. So, instead of talking back to that SAVT instructor / operator, they're now speaking to a pilot, like they would have to if they were in a real operational environment."

Another perspective came from Carlos Cuevas, a former Marine infantry officer and current LVC-TE Project Manager at PM TRASYS.

"I've worked with some of these legacy systems in the past, in the capacity of an end user and planner," he said. "And the value I see, now being on this end and working at PM TRASYS, is the continued improvement and fidelity of bringing these systems together to operate, plan, execute and practice tactics, techniques and procedures in a virtual environment. In the past, we were a little 'siloed' in the individual systems. But now we will be able to train in an interoperable training environment, allowing units and Marines to face some of these tactical dilemmas on a simulated battlefield before they experience it on the actual battlefield. So that gives me a



great deal of enthusiasm and excitement for the capabilities that we're working toward to help the warfighters."

Looking toward the future, Cuevas identified ongoing outreach to sister service representatives also working in the LVC realm.

As one example, he cited cooperation with the Office of Naval Research's (ONR) effort on what is termed Fiteware - Future Integrated Training Environment Software, describing it as "a project that ONR has been working on for some years and has socialized and circulated within the operating forces at various Marine Corps locations for use with things like exercise control.

"But the value in that strategic communication and technical interchange with ONR is that it has allowed us to explore existing and future solutions to some of those tools that we're looking for to be part of LVC-TE," he continued. "We also have conversations with the Program Executive Office for Simulation, Training and Instrumentation (PEO STRI), the Army's component of acquisitions for simulation systems here, as well as with the Navy, as we try to leverage new LVC capabilities."

MARCORSYSCOM's PM TRASYS, Col Luis "Lou" Lara, summarized his program perspective by offering, "I am beyond proud of the work our team is doing to bring LVC-TE to the Fleet Marine Force! By leveraging the investments of our sister service, the Army, we have been able to make significant progress to bring it to fruition. Not only will its modularity allow for the subsequent integration of future training systems, it also postures us to fulfill the Commandant's divestment guidance as we continually assess and modernize our portfolio of training systems. Additionally, this persistent capability will provide organizations the opportunity to get multiple 'reps and sets' in combat decision-making, enabling leaders to engage scenarios from multiple perspectives."



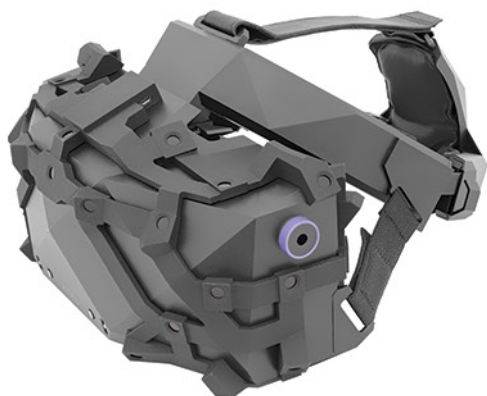
vrgineers

D-BOX
RYAN AEROSPACE

EXPERIENCE AWESOME VIRTUAL FLIGHT SIMULATION

BOOTH #2026

EMBRACING THE SPIRIT OF INNOVATION, WE
OFFER VR FLIGHT SIMULATION WITH MOTION!



(916) 414-1310

CHECKOUT THE FUTURE OF VIRTUAL FLIGHT TRAINING

Congressional Caucus Members Share Perspectives

In the opening Signature Event at I/ITSEC 2021, members of the Congressional Modeling and Simulation Caucus shared their unique individual perspectives on the value and potential of modeling and simulation throughout U.S. Government operations and planning.

RADM James Robb, USN (Ret.), President of the National Simulation and Training Association, opened what he characterized as “a very popular session” with a warm welcome back to in-person I/ITSEC, which drew an enthusiastic audience applause.

“I think this year shows the tenacity, the willpower, the agility and the passion that you all have for getting together, networking and talking about requirements,” Robb said. “And when you look at the program, you are going to have a hard time selecting between great events, like this wonderful Congressional group we have with us here today.”

Congressional Modeling and Simulation Caucus Co-Chair Bobby Scott (Virginia 3rd District), highlighted key M&S infrastructure in his area, ranging from the Virginia Modeling Analysis and Simulation Center to universities like Eastern Virginia Medical School’s National Center for Collaboration in Medical Modeling and Simulation. Across these examples, Scott identified critical symbiotic funding relationships between M&S and higher education.

Shifting attention to both recent and pending Congressional actions, he identified efforts to leverage M&S in support of the National Oceanic and Atmospheric Administration’s climate and weather modeling as well as throughout President Joe Biden’s “Build Back Better” plan.

“Advanced modeling and simulation technology can be leveraged in the fields of science, national defense, health care, disaster planning, education and so much more,” he said, adding that the audience will “play an important role in making our country better.”

Caucus Co-Chair Stephanie Murphy (Florida 7th District) began her presentation with recognition of Team Orlando as “the lifeblood of the MS&T community in Central Florida.”

“I have attended this conference every

year that I’ve served in Congress, and I’m always amazed at how great a gathering it is,” she said. “It’s simply the nation’s premier event for the M&S community, providing an opportunity to showcase the cutting-edge advances that are being made by the industry while serving as a venue to create new professional connections and to rekindle old ones.”

Murphy shared “a few thoughts about working with MS&T,” highlighting potential contributions in emerging technologies like



From left: U.S. Reps Scott, Murphy and Bergman

“digital twins” to applications across a range of climate-change issues.

“I don’t have to tell you, but leading technology companies are working on what they call the metaverse, which is an immersive virtual environment capable of replicating the physical world,” she summarized. “Gaming, exercising, modeling and simulation are all the foundations for the commercial applications of this metaverse. And I think our community is well positioned to be the future. Immersive technologies have broad application in everything from warfighter training, to improving physical infrastructure, to responding to climate change, to expanding the metaverse. So what you are doing is critically important to every part of American life, American security. And I’m excited to champion these efforts to work with all of you, shoulder to shoulder, to advance those efforts and to represent this industry on Capitol Hill.”

In his remarks, Caucus Co-Chair LtGen

Jack Bergman, USMC, (Ret.) (Michigan 1st District) pointed to a changed attitude surrounding simulation in the military, asserting that success in conducting simulation training should be tied to career success.

“In my time as an airline pilot, if we didn’t perform our simulator checks correctly, we didn’t have a job,” he said. “During your career, your job is on the line. And that’s the way it has to be in the future warfighter environment that you’re going to face.”

He added, “Readiness touches everything, whether it’s sea power, tactical, air, land, whatever it happens to be. Training is readiness.”

He continued, “Here we are in the middle of football season. Think about how these

teams practice and practice and practice, and they fail every day in practice. But when the game is on the line, and they’re on the field, they’re ready to go, because they gave it all on the practice field all week long. That’s what training gives you. And the only way you provide it is to ensure that the products that you develop get into the minds of those men and women who are going through that training.”

In addition to the three Members of Congress attending I/ITSEC, the panel included a video presentation by Caucus Member Robert Wittman (Virginia 1st District).

Wittman observed that I/ITSEC served to “bring folks together to talk about how incredibly important modeling and simulation is, not just in the defense sector but in all aspects of technology development.”

He added, “Make no mistake about it, we must use modeling and simulation to advance these innovative and creative ideas, because our adversaries are doing that. We know that China uses that to advance its efforts; we must do the same. In fact, I argue we must outpace China in the things that it’s doing. Our ability in modeling and simulation gives us that opportunity to indeed move ahead of the Chinese. And I think that’s incredibly important from a strategic standpoint. It helps us in our military systems, but it also helps us economically.”



VBS[®]4

Bohemia[®]
Interactive
SIMULATIONS

The U.S. Army's Next-Gen Virtual Collective Training Software

With VBS4, any soldier can create high-fidelity virtual training. No experts needed.

VBS4 is a whole-earth virtual and constructive simulation that allows military units to create and run any imaginable military training scenario. VBS4 and BISim's other main products (VBS Blue IG and VBS World Server) have been selected for significant parts of the U.S. Army's overall Synthetic Training Environment, the next generation of collective training technology.

- **Train Anywhere** - VBS4 includes global terrain, enhanced with real-world metadata. Use as-is, enhance or import your own data.
- **Easier to Use & Faster** - Non-engineers can build missions 10-30x faster & edit terrains 10x faster in VBS4 vs. VBS3.
- **Train at Scale** - Simulate more dynamic & complex environments with thousands of friendly, OPFOR & civilian entities.
- **Improved Classroom Efficiency** - Start up VBS4 in seconds. Store and manage data centrally with VBS World Server.
- **Simplified Content Import** - Use industry-standard 3D tools to simplify the process & cut time for adding new VBS4 content.

See VBS4 @ I/ITSEC Booth 1071

Contact sales@bisimulations.com to learn more.

bisimulations.com

Signature Event Panel Explores U.S. Army Training

I/ITSEC Signature Events later this afternoon will include “Modernizing Army Training Mission and Operations Panel: Army’s Future Training Capability Is the Synthetic Training Environment” [Tuesday, 30 November 2021, 1600-1730, Room 330BCD].

Moderator Joe B. Parson Jr., a Highly Qualified Expert on the Army’s Synthetic Training Environment (STE) Cross Functional Team (CFT), highlighted the panel as “comprised of general officers from across the community, from initial requirements all the way through to acquisition execution.”

Panel members will include: Major General David J. Francis, Commanding General, U.S. Army Aviation Center of Excellence; Directors of three Army CFTs: Brigadier General Jeth B. Rey, USA, Director, Network Cross Functional Team; Brigadier General Larry Burris, USA, Chief of Infantry and Director, Soldier Lethality CFT; and Brigadier General William R. Glaser, USA, Director, STE CFT; and Brigadier General Charles Lombardo, USA, Deputy Commanding General, U.S. Army Combined Arms Center – Training.

Parson said that the panel will likely open

with a discussion of STE, how it will better enable the CFTs to do their jobs and how it will facilitate Soldier collective training.

“And there are a couple of other topics that are likely to come up,” he said. “One of them is in relation to the challenges we’ve had with legacy aviation systems and how the STE is going to address those. The other one would be the classification levels. Now we’re going to operate across multiple classification levels. And if you think about it, we’re both a consumer and a producer of training data. So we’re going to have to make sure that data is protected. But as it gets aggregated, more importantly, how is it going to be tied into Army systems, such as the Army Training Information System, so that can be used and capitalized on later?”

He noted that another area likely to be explored would involve “data fabrics,” an ap-

proach exploring how “data threads” work together and how those fabrics need to be pulled into the STE early in system prototype phases.

“We are keeping the dialogue going with industry, so that we can find the most creative



Everything we do is for the Soldier. And it truly does take industry, academia and government working together to be able to make that happen.”

and innovative solutions,” he said. “And panels like this are a great way for us to be able to communicate with industry and academia all at once, and to make sure our messaging is still going out.”

“Everything we do is for the Soldier,” he added. “And it truly does take industry, academia and government working together to be able to make that happen.”

IT²EC

26-28 April 2022
ExCeL, London

Advancing
training
through
technology

FREE-TO-ATTEND
MILITARY TRAINING
TECHNOLOGY EXHIBITION

For more information, please contact:

👤 James Condley, Event Manager
✉️ james.condley@clarionevents.com



We are implementing a robust programme of enhanced safety measures to reduce the risks associated with COVID-19, and ensure the training and simulation community can reunite safely.



PHYSICAL DISTANCING

Organised by

NTSA



CLEANING & HYGIENE

Organised by

CLARION
EVENTS



PROTECT & DETECT

DisTec sponsor

IMPROBABLE



COMMUNICATION

Technology partner

RiVR

Learn more
at itec.co.uk

READINESS ACCELERATED



Tactical Combat Training System (TCTS) Increment II

Flexible, immersive and realistic training across domains

Collins Aerospace removes boundaries, enabling your forces to train effectively, efficiently, securely and concurrently – in collaborative live, virtual and blended environments. For optimal readiness, immerse your operators and support personnel in our highly scalable and seamless training environments.

collinsaerospace.com/simulation

RELEVANT, FLEXIBLE TRAINING

- Immersive, highly realistic environments provide live, virtual and blended training
- Secure, interoperable, open architecture solutions are available now

xTechBOLT Competition Will Announce Winner at I/ITSEC

One I/ITSEC 2021 Community of Interest event will reveal the results of five finalists who are collectively competing for a total of \$1 million in prizes in the xTech Brain Operant Learning Technology (xTechBOLT) competition.

Dr. Darrin Frye, Portfolio Manager for the Sustainment of Expeditionary Medical Skills, Combat Casualty Care Research Program, explained the purpose of the competition. "We have this complex battlespace that we're responsible for, from a medical perspective," he said. "And as weapons get more intense, and injuries get more severe, it is getting imperative that we provide our medical teams the best training possible."

"The problem is there's finite time and finite resources to train, but our expectations are going higher in trying to save more and more people," Frye continued. "So we have to become more efficient with our training; that's the only option."



We have this complex battlespace that we're responsible for, from a medical perspective. And as weapons get more intense, and injuries get more severe, it is getting imperative that we provide our medical teams the best training possible."

Frye said to become more efficient with training, "we have to try to find new ways to teach people. The old ways are pretty much a 'one size fits all' training. What we're trying to do is individualize training, and not teach people what they already know, but teach them things that they need to know."

"And so in order to do that, the BOLT prize is looking at the brain," he said, "actually looking into the mind of the Soldier, getting 'under the helmet,' so to speak, and looking at the way people learn. If we don't understand how a person can learn, we can't teach. And that's what the BOLT prize is - looking at the brain and trying to find new ways to determine how an experience becomes a memory, and then

how that memory is turned into performance. So we're looking at novel ways to make the whole process work better."

Frye went on to say that once we understand how a person learns, we can adapt our training to accelerate learning. He added that it's not just about learning, but also what a person can remember, and specifically, remember under stress. "Because once you're under the gun, and you're dealing with your best friend on the ground, you could forget all that you've learned. If it is not well learned, if it was learned rapidly or quickly, you might forget it all, and just freeze."

And we're trying to prepare for that just completely unacceptable eventuality. So that's what we're trying to do - not only accelerate learning, but slowing forgetting."

"That's the purpose of the BOLT - we're looking at all those processes that make that happen."

The competition was announced in August 2020. "The first phase was a white paper challenge, where we invited people to just tell us their approach. We asked them to just throw out risk, just tell us the craziest ideas they had, and give us something really innovative," said Frye.

Of those white papers, 10 were selected to move on to the second phase, presenting a demonstration of their concept at the 2020 virtual I/ITSEC.

Five finalists were selected at that time to move on to phase three. "We gave them one year to develop and do the research and to give us a pitch that shows their proof of concept. We're expecting a prototype of whatever they're trying to demonstrate, of how they would attack those problems I've already mentioned," Frye said. Of today's demonstrations, he added, "I think attendees will be blown away by the level of the research, and really in the state of the possible," Frye said. Each presentation will be approximately 30 minutes, with time for questions following.

The five finalists will present their phase

three results at a Community of Interest event at I/ITSEC today [Tuesday, November 30, 2021 from 1000-1200 and 1300-1600 in Room 319].

The five finalists presenting today are Drexel University, SkillPower, SPARK Neuro, University of California at Berkeley and Vanderbilt University.

On Wednesday December 1, 2021, the winner will be announced at 1000 at the Innovation Showcase [Booth 2588]. Frye said each of the five finalists will win money, "but everybody's vying for that top prize, which is \$500,000."

Even after the prizes are awarded, Frye said he expects that they will continue the relationships they've established with the fi-



nalists, inviting them into the process where they could "compete for our critical capability gaps that we have already identified in our portfolio."

"I think the most valuable thing is the relationships that we've achieved," Frye asserted.

Summarizing his message about the value of this competition, he said, "We have the finest Soldiers and Warfighters in the world, physically and mentally. But we're competing in a future battlespace arena that is almost unimaginable, and we're going to be asking the impossible. This will be to prepare those medical Warfighters for the future."

Frye continued, "We've got to give them a competitive advantage to maintain that lead that we've had, and we're not going to do it physically. The future of research has to be 'under the helmet.' You're going to see five approaches of how we can do that, and it's just amazing what we can do, what we can see, and then what we can expect in the future. So, we've expected these competitors to show us these critical paths in the brain, as I mentioned. But also we're going to see critical future research paths. This is just the beginning of what we can expect. But I think the technology that will be demonstrated will literally be eye opening and amazing and exciting, to see what is possible and where the future is going."

Echo Healthcare Redefines Medical Simulation

First-time I/ITSEC exhibitor Echo Healthcare [Booth 2268] was founded in 2018 with the goal of redefining what innovation meant to the healthcare simulation industry.

"What you'll see with the body simulation manikins that we have downstairs in the Exhibit Hall is that these manikins are casted off real life humans," offered Zoriana Kaluzny, Vice President of Global Sales. "And the range you'll see spans from 'micro prem,' to babies, to toddlers, to children, to teenagers, to adults and all the way into the geriatric population."

Noting that approximately 95% of traditional medical simulators reflect Caucasian males, she said, "Our goal was to bring diversity, not just in terms of race but also with sex and age, in order to be able to train on the real population that we're serving."

Using the example of women's breasts, she pointed to differences in installing leads for medical sensors, adding, "There are actual studies of CPR compressions that show that they have a little less response time in treatment, because training traditionally in-

volves a plastic simulator that is male. So Echo Healthcare manikins have all the proper anatomy. They're anatomically correct. They have a real airway. So you can intubate them and do needle decompression or CPR."

She said that the company's current product line reflects the fact that the company "really listens to the needs of the market that we are serving. What are they training on? What are their training objectives? What does the patient profile look like? And from there, we're able to then create the manikin to help with those training objectives, versus having a manikin where I can tell you all the bells and whistles of what it does, while you only needed it to do two or three things."

Kaluzny said that the adult female manikin on display in the company's booth was carefully chosen to highlight the female interventions.

"The fact that we're even tackling things like



unconscious bias in healthcare, or in medical simulation, has never been talked about previously," she said. "When you see it's a female, male, a different ethnicity, or a different age, is there any bias that is going on that needs to be addressed in simulation prior to treating them? We have something called Echomask, which goes over the top of existing high fidelity plastic simulators. And immediately what we see with that is that there is higher level of engagement, because it is real looking. There is more empathy, more compassion and they are reacting as if it were a human being versus a plastic simulator."

Train Like You Maintain

Discover our Fully Immersive
Virtual Maintenance Trainers
Booth #1218

US Navy STAVE Solutions Provider

Match Game Puts Technology Innovation in the Spotlight

Later this afternoon, I/ITSEC attendees will have the opportunity to attend “a showing” of The Innovation Match Game [Tuesday, 30 November 2021, 1600-1730, Room 310AB]. Modeled after the TV show “House Hunters,” the Focus Event builds on previous I/ITSEC events and activities to move beyond experimental uses for technology toward applications to meet real world training needs.

“In the past, we’ve had Air Force Pitch Days at I/ITSEC, along the lines of the TV Show “Shark Tank,” where people came in with ideas to pitch to the Air Force,” explained Margaret Merkle, PMP Innovation Technology Chief, Simulators Division, Agile Combat Support Directorate, Air Force Life Cycle Management Center. “But at I/ITSEC 2021 we wanted to do an event that looked at what happened the year after, or the next year after those companies received their initial investment. We wanted to focus on not the prototyping stage, but the transition stage of these innovation technologies, taking the things that the Air Force has invested in and trying to propagate them out for other Air Force customers that might have a similar need.”

She said that the idea for the “House Hunters” approach, in which people select between three houses, came from a recent intern in a program manager training program who identified it as a potential framework to explore the wider application of innovative technologies.



All of the finalists and other participants have placards that they can put up in their booth that identifies whether they are an Innovation Match Game finalist or participant.”

For the I/ITSEC Innovation Match Game, Merkle said that her team recruited three different training units from across the Air Force. Representatives from those units are at I/ITSEC to request a solution or guidance on a training problem that they currently have. And, like the television inspiration, each unit

will be matched with three potential vendors who will present prototype work they have already done for another organization in the Air Force.

The nine vendors selected to make presentations are the result of an open application process that was outlined at National Training and Simulation Association events like the Training & Simulation Industry Symposium in June 2021 and Simulation & Training Community Forum in August 2021.

“We accepted applications from vendors that have previously had an Air Force contract where they’ve done a prototype that was funded by the government,” Merkle said. “And we had 35 companies apply with a short brief about their technology and who they had done the work for. Then we grouped them by technology – because if you’re looking at three-bedroom houses, you’re always looking at three-bedroom houses, right?”

The problem sets identified by the training units were then matched with the best technologies to help select finalists with the best technology fit for the match.

Merkle outlined Tuesday afternoon’s presentation phase, offering, “Each problem has three vendors that are going to show the Air Force training unit representatives the prototype work that they’ve already done for somebody else in the Air Force that is along the same lines of the thing that the unit is asking for. Each one of them will give a short pitch and we will have a very short question and answer period. And then we’re going to use Slido, the audience interaction app on your phone, to do a poll of the audience for who they think is the best match. Then later, the units themselves can choose to work out a contract transition over the next year or so if there is one available. So it’s a little bit of a longer play game for the units and the awards than some of the past events at I/ITSEC.”



For people who might not be able to catch this afternoon’s event due to other special event conflicts, Merkle identified several other ways to learn from the experience.

“All of the finalists and other participants have placards that they can put up in their booth that identifies whether they are an Innovation Match Game finalist or participant. Then also at the Air Force booth itself we’ll have a banner that lists all of the companies, with a QR code where you can link to their web page about their technologies. And their booth numbers will be on that banner too, so that you can easily find them.”

Additionally, a schedule in the Air Force booth identifies companies that signed up for 30-minute demonstration windows of their technologies.



I think that one of the biggest outcomes from this event will be to generate conversations between small technology companies and our big vendors. In this country we have so many really innovative people that are out there building fantastic things.”

“I think that one of the biggest outcomes from this event will be to generate conversations between small technology companies and our big vendors,” Merkle concluded. “In this country we have so many really innovative people that are out there building fantastic things. And they’re just not big enough to get noticed sometimes, or not big enough to deal with the bureaucracy of working for the government. So I think one of the most exciting things about pitch days in general, and about these transitions, is the opportunity that some of our big prime contractors have to see these things and potentially partner with these small businesses to continue this work and to continue to build the American economy.”

MASS VIRTUAL

TM



massvirtual.com

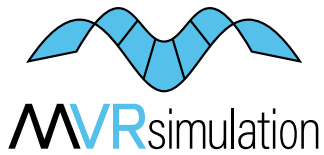


MASS VIRTUAL[®]

Enterprise XR Training For The Masses

Visit Us At Booth 3100





Fixed-wing Part Task Mission Trainer × Varjo XR-3

Suspension of disbelief | Mission tactics & coordination training | Networked environment

Introducing real-time, pilot eye gaze tracking visualization for users of the Varjo XR-3 mixed-reality headset and Virtual Reality Scene Generator (VRSG) on MVRsimulation's fixed-wing Part Task Mission Trainer (PTMT).



Above left: The MVRsimulation PTMT with Varjo XR-3.

Top right: The Varjo XR-3 headset (courtesy of Varjo).

Bottom right and opposite: Pilot gaze visualized as a color-coded, 3D cone by VRSG.

MetaVR has changed its name to MVRsimulation to align more closely with its growing suite of simulation products.



Turning a subjective process into data

PTMT pilot pupil movement captured by the Varjo XR-3 mixed-reality headset's built-in eye-tracking capability is exported by VRSG and depicted as a color-coded, 3D cone.

Pilot gaze visualized | Informed after-action review | Improved training progression

See the PTMT in the Varjo (#3010) and Battlespace Simulations (#1049) booths at I/ITSEC 2021.

www.mvrsimulation.com

I/ITSEC 2021 Expands Data Management Focus

One of the notable Signature Events at I/ITSEC 2021 is this afternoon's Chief Data Officer Roundtable [Tuesday, 30 November, 1600-1730, Room 330EF], which will focus on the critical aspects of data management and its integral role in the DoD's digital modernization strategy.

"This is a significant event because DoD is focused on data and digital modernization writ large," explained Sae Schatz, Ph.D., Director of the Advanced Distributed Learning (ADL) Initiative [Booth 3154] and moderator of today's roundtable. "And I would argue that is one of our most essential focus areas in order to maintain technological parity with competitors, let alone overmatch. And that's not just within the training and education space, or even the broader modeling and simulation space. That is across the board at the Department of Defense."

As an example, Schatz referenced a recently released [2021] final report by the Congressionally-mandated National Security Commission on Artificial Intelligence, which explored the relationship between Artificial Intelligence and National Security.

"They produced an almost 800-page report that actually is pretty daunting," she observed.

"And there are some real challenges for DoD to be able to stay competitive, let alone if we want to maintain overmatch. And it all comes down to data. Data is the supply chain, so to speak, of AI and other advanced technologies. And if we don't get our supply chain - our data supply chain - correct, then those competitors who do are going to exponentially outpace us to the point where it will be challenging to catch up. And this is true for modeling and simulation. It's true for training. It is true for personnel readiness. Pick the functional area that you think is important and it is true there as well."

Fortunately, according to Schatz, leadership in this area has been growing across the DoD and is reflected by the fairly recent establishment of the official position of Chief Data Officers (CDOs). And participation of these officers or their representatives in today's I/ITSEC panel is yet another reflection of that significance.

"Data has been a hot topic of conversation, probably since its inception of I/ITSEC," Schatz continued. "But to date, I don't think that the CDOs have been greatly integrated into I/ITSEC. And I mean that in both directions. First, we need the CDOs to provide their guidance to this community. We want that 'top down' information coming in. But also vice versa. I think it's really important that this community share our knowledge and our capabilities with the CDOs, because I think that we have a lot to offer to them, for example, in terms of best practices for modeling, or lots of experience with diverse interoperable systems. And I think that going forward, if we can make a really good impression on each other, this will be a win / win / win, with that third win being for the Department of Defense overall, which is something I think is really critical."

Asked for her takeaway messages about the roundtable event, Schatz offered, "For the government side, I hope and expect that DoD personnel, military and civilian, will have specific data policies that they are now aware of, that they can start to implement, whether that be within their programs or acquisition pipeline. I'd also like those folks

to know that they have a community where they can go to find information on data standards, or the latest DevSecOps guidance, or the other kinds of modernization pieces. That's because none of us can do it alone. And from the vendor side, I hope that you'll bring your questions. I also hope that you'll identify areas of modernization to meet DoD needs. For example, what particular interface standards do we need? Or how are we approaching new software acquisition? So I hope that you'll bring that and see that not only as a benefit to the DoD, but also potentially a competitive advantage."



I think it's really important that this community share our knowledge and our capabilities with the CDOs, because I think that we have a lot to offer to them ... I think that going forward, if we can make a really good impression on each other, this will be a win / win / win, with that third win being for the Department of Defense overall, which is something I think is really critical."

For those unable to attend due to possible event conflicts across a packed I/ITSEC 2021 schedule, she added, "First, the Pentagon is releasing some excellent guidance related to data and digital modernization. You can look up many references and other guidance on modernizing the use of data. Second, don't go it alone. There are a lot of people across the DoD that are trying to solve these problems. We are at risk of duplicating each other's efforts, and then not being interoperable. So, reach out, find the larger community, whether that be the Chief Data Officer Council, or for people who are within the Digital Learning Space, it could be our own team at the Advanced Distributed Learning Initiative, or your own group. But make sure you're not going it alone."

Chief Data Officer Executive Roundtable

Tuesday, 30 November, 1600-1730

MODERATOR

- Dr. Sae Schatz, Ph.D.
Director, ADL Initiative

PANELISTS

- Tom Sasala, SES
Chief Data Officer, Department of the Navy
- Col Ryan Kehoe, USAF
Deputy Chief Data Officer, Department of the Air Force
- Erica L. Dretzka
Director of Data Management and Analytic Infrastructure, Chief Data Office, Strategic Integration, Department of Defense
- Portia Crowe, Ph.D.
Chief Data Strategist, Accenture Federal Services

Conference Chair Welcome

With over 25 years of experience in the simulation and training industry, I/ITSEC 2021 Conference Chair Jennifer Arnold views this week with a mixture of gratitude and great excitement.

"First off, I want to express a sincere thank you to our more than 250 volunteers who have taken time from their families, who have traveled and who have worked with us throughout the last 12 months to create an incredible program," she began. "I/ITSEC simply would not happen without them. Additionally, I want to extend my personal thanks to Admiral Robb and Debbie Langelier at NTSA for their support, guidance and mentorship over many years."

Turning to this week's conference program, Arnold enthused, "It has an amazing amount of rich content. There are more than three dozen special events and community of interest events. We have more flag officers coming to I/ITSEC this year than we've had in years past. Our numbers are where they need to be. And I truly credit all of this to the volunteers who have made this happen. They are passionate. They give their time. In helping to create the

conference program they have looked across the whole community to ascertain community needs. They have looked at three-to-five-year opportunity horizons. They have recruited thought leaders in industry, government and academia. They have brought solutions to bear that really serve to answer many of the challenges that we face ahead."

She added, "Our I/ITSEC theme, which calls for adapting to an unexpected future, is addressed in so many ways this year. We don't necessarily know what the future holds for us. We have some anticipated ideas. However, what we do know is that the technologies we are creating and refining today will,

in essence, help us answer those challenges."

On a professional note, Arnold referenced her recent business move to NVIDIA, where she has joined the Professional Visualization Team.

"I'm thrilled to be joining NVIDIA," she said. "It is an incredible organization that is bringing solutions and capabilities across the board; not only in the commercial space, but within the Department of Defense and Federal Agencies as well. Significantly, many of these solutions and capabilities are directly applicable to addressing many of the challenges that you will see throughout the week here at I/ITSEC."

She concluded, "Again, I would like to extend my deepest thanks to all involved in preparing for I/ITSEC 2021 and my warmest welcome to exhibitors and attendees. Enjoy the conference!"



GL Studio®

The Developer's Choice for Performance, Fidelity, and Reliability.

The world's leading HMI development tool. Ideal for integrating moving maps, symbology, repeater panels, and ISOs

Visit Booth #800 for live demonstrations.



DiSTI www.dist.com

InVeris Debuts new Augmented Reality Experience

InVeris Training Solutions [Booth 1421] is utilizing the I/ITSEC 2021 venue to unveil its new augmented reality (AR) training system – SRCE (See, Rehearse, Collectively Experience, or “Source”) at I/ITSEC 2021.

“SRCE is the only preferred untethered augmented reality (AR) training solution on the market with real-time location, movement, orientation and bio signal sensing in a live and virtual environment,” said Darren Shavers, Director of Business Development and Foreign Military Sales at InVeris. “SRCE allows participants and trainers the oppor-

to the needs of the user, providing real-time monitoring and immersive multi-viewpoint After-Action Review to definitively identify trainee performance and actions.”

InVeris Training Solutions reflects a re-branding of Meggitt Training, which was acquired by Pine Island Capital Partners in 2020. As InVeris, the company previously launched

goes through a SRCE demonstration, they are blown away. It’s an amazing product and its growth path is very exciting.

“InVeris Training Solutions continues to grow, evolve and innovate training for defense forces and law enforcement agencies around the world,” he concluded. “Building upon the legacy of our FATS [Firearms Training System] virtual systems, the move to VR and AR training technology through VR-DT and SRCE is a new growth path, forging the way for a heightened level of readiness.”



tunity to gather and review performance data both in real time and for immediate and interactive after-action review (AAR) with more details than currently available in shoot house training.”

He added, “Our customers have been asking for the ability to train in multiple locations at once, with a variety of users and locations, room sizes, etc. With SRCE, operators and trainees are able to see, rehearse and collectively experience future missions at the objective location or virtually with a new level of realism and performance assessment to aid in perfecting critical engagement techniques. SRCE offers revolutionary training that is scalable

a new virtual reality product in 2021, the VR-DT (Virtual Reality – Decisions & Tactics), designed for judgmental and de-escalation of force training.

Asked about his thoughts on returning to an in-person I/ITSEC setting for 2021, Shaver said, “We’re looking forward to meeting with our customers in person, discussing their objectives and finding solutions to provide successful training capabilities. Moreover, demonstrating our new SRCE AR training system in a live environment will allow InVeris to put the training in the customers’ hands where they can see, use and review this innovative AR training in real time. Once a user

CONCURRENT REAL-TIME SPOTLIGHTS REDHAWK

Concurrent Real-Time [Booth 2620] is using its I/ITSEC 2021 exhibit to showcase its RedHawk Linux portfolio of real-time solutions that enable customers to accelerate innovation, reduce time-to-market and improve their competitive advantage.

"We're looking forward to demonstrating live at I/ITSEC this year," said Ken Jackson, President of Concurrent Real-Time. "This event gives us the opportunity to showcase our hard real-time solutions to aerospace and defense customers who demand guaranteed real-time performance for the most sophisticated applications," he added.

Concurrent Real-Time's exhibit will feature its latest real-time solutions, including: RedHawk Linux RTOS and NightStar debugging and analysis tools and RedHawk KVM-RT hypervisor providing guaranteed real-time performance in virtual machines and other solutions.

The company will also showcase its driving simulator, incorporating a hardware-in-the-loop setup with FPGA I/O connecting the simulated vehicle model to an ECU and ensures seamless operation of major 3rd party applications working natively.

Attendees can test their skills on the driving simulator, and the attendee with the best lap of the day on Tuesday and Wednesday may win a prize.

GBvi Offers New Projector Solutions

GBvi Ltd. [Booth 2415], an industry leader in the development of high performance projector optical blending solutions for out-the-window simulation and training, will be demonstrating a four-channel blended display with Norxe P2 laser projectors, GBvi Atlas-4 Projector Mounts, a GBvi Chronos Rewind blend mask actuation system and the latest generation of GBvi Chronos Glass: Greyscale blend plate technology this week at I/ITSEC.

GBvi's Chronos range of optical blending solutions enable display system integrators to achieve an even black level across multi-channel projection displays, realizing the maximum dynamic range and enhancing the perception of life-like imagery.

Chronos Glass: Greyscale is the specialist GBvi optical blend technology that addresses the 4K and 8K class of projection systems where some optical trade-offs are most challenging, particularly with laser-phosphor illumination.

Qualified for use with LED and laser phosphor projectors, GBvi's new greyscale technology has been developed in-house to provide blend masks that have genuine "variable density", opening up new options and combinations of projector and display types. Artifact-free projected throughput is achieved to result in perfect blends and even hot-spot correction in rear-projected display environments.

Extensive accelerated life-testing has also shown no degradation of the optical behavior after 20,000 hours of operation. Use of Auto-Alignment (AA) systems for projection display calibration is becoming universal. While these systems produce excellent results, some benefit from removal of the optical blend masks from the light paths so that unrestricted projected coverage can be sensed.

MAK TECHNOLOGIES

Celebrate with us!

Join us for cupcakes and coffee to celebrate 30+ years of MAK!

Tuesday, November 30 | 4:30 - 6:30 | Booth #1413

ST Engineering North America

BOOTH 1413

Celebrating 30 Years

MODULARITY AGILITY FLEXIBILITY INTEROPERABILITY SCALABILITY EXTENSIBILITY

© MAK Technologies 2021

The graphic features a central circular emblem with 'Celebrating 30 Years' and a ring of company values. Radiating lines connect this center to various military and aerospace assets: a large transport plane, a fighter jet, a helicopter, a naval ship, a submarine, and ground troops. The background is a composite of these elements over a landscape and sea.

Inaugural Appearance for NTSA Cyber Pavilion at I/ITSEC 2021

Several of the most rapidly changing and potentially damaging environments faced by both military and civilian organizations fall under the general category of “cyber” activities. Reflective of this dynamic setting, I/ITSEC 2021 marks the inaugural appearance of the National Training and Simulation Association (NTSA) Cyber Pavilion [Booth 2870].

This is the inaugural meeting place for cyber, electromagnetic operations and information warfare professionals to collaborate on the needs and capabilities of the commercial community, as well as the needs of the services,” explained Colonel Chad Bates, Ph.D., Director of the Strategic Simulations Division within the Strategic Wargaming Department at the U.S. Army War College. “It serves as a novel meeting place where we cover not only cyber but electromagnetic operations and information warfare as well.”

Bates, who was quick to clarify that he is a volunteer supporting the “NTSA Cyber Pavilion,” added, “This is really the first time NTSA did this type of pavilion at I/ITSEC because each one of those different areas have been maturing over the last several years. A lot of people want to put it all under ‘cyber,’ but as

when you start looking at Joint All-Domain Command and Control and Multi-Domain Operations that the services are moving toward in the future, all those are going to be heavily reliant upon the information environment. And we have to be prepared for the enemy to attack us there in the future.”

Asked about specific trends or technologies being highlighted in this year’s Cyber Pavilion, he referenced aspects ranging from recent activities from commercial partners to the joint service Persistent Cyber Training Environment, where the U.S. Army is the Executive Agent.

He noted that some of the government activities will also focus on the social media environment, offering, “You really have to include that, because now it is a question of how we look on social media and how that

affects us. How can we counter false messages, not only here in the United States but also as we deploy? That’s going to be another vector that the enemy will attack us on to try to sow discontent within the local population, so that’s a skill set that we have to build.”

Bates acknowledged that there would not be any international participation in this year’s

Cyber Pavilion but pointed to the likelihood of expanded participation in the future.

“I’m sure that next year there will be international participation, because, as the services are moving forward, those are growing partnerships that we are developing. And those are discussions we’re having right now, moving forward and how we will better partner with our allies,” he said.

The NTSA Cyber Pavilion will also host a

milestone event at 1000 on Wednesday, with a visit by the principal cyber advisors or deputies for each of the service secretaries.

“Just like the Chief Information Operations Officer in a company, these are the primary advisors to each one of the service secretaries on cyber, not only with what does the cyber posture look like with each one of their services and what needs to be improved, but also how they are going to do it, looking at the budget and everything else.”

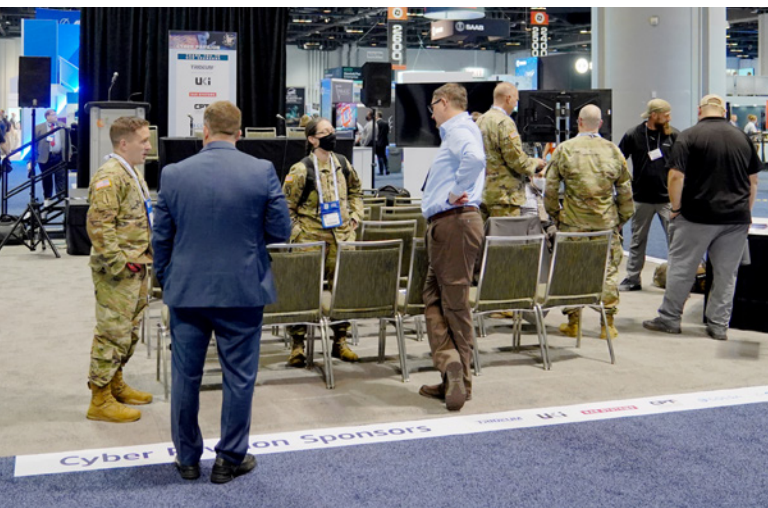


We want to be able to communicate and discuss opportunities, not only with our commercial partners are developing but also with what the government is working on. That way we can better collaborate and provide examples of current capabilities and ongoing work moving forward.”

The remainder of the day will feature presentations on different commercial and government programs to the cyber advisors with a better understanding of the level of cybersecurity training that currently exists within the services, as well as what’s available in the commercial environment and how that might be leveraged in the future.

“The big thing about the NTSA Cyber Pavilion is that we want to have the ability to learn and hear from everybody about what’s going on in these areas,” Bates concluded. “We want to be able to communicate and discuss opportunities, not only with our commercial partners on what they are developing but also with what the government is working on. That way we can better collaborate and provide examples of current capabilities and ongoing work moving forward.”

He concluded, “This is a very complex and very neophyte type of environment that nobody quite understands. But there are a lot of really smart people working on it behind the curtains. So this is an opportunity to show the larger community all the great work that these different companies and organizations have been developing.”



we start digging into it, we discovered that each one has their own separate arena, but they are all heavily interconnected.”

Bates pointed to a growing appreciation in the general population for the cyber threat as a result of the recent Colonial Pipeline attack or other ransomware attacks, observing, “It’s a huge thing both for commercial and the government side as to how we protect ourselves against those kinds of attacks. And then,

Healthcare Pavilion and Beyond

Medical simulation technologies continue to comprise a significant presence in the Exhibit Hall at I/ITSEC 2021. Many of the companies are exhibiting their technology in the Healthcare Pavilion, while many other companies are highlighting their medical M&S capabilities throughout the Exhibit Hall.

A representative sample of companies in the Healthcare Pavilion includes TacMed Simulation [Booth 2480], which provides training solutions to first responders and military medics, supporting improved survivability in prehospital crisis situations. The company, new to I/ITSEC this year, is highlighting three products: the Advanced Canine Medical Trainer (K9 Diesel), a full-body simulator for operational canine first responders, military working dog handlers, veterinarians and veterinary technicians; the Clinical Response Upper-Resuscitate (CRU-R), delivering high-fidelity training capabilities to treat traumatic upper-body injuries and advanced clinical features for cardiac life support and resuscitation; and the Vital Signs Monitor (VSM), providing accurate, real-time visual wave-form displays of vital-sign data for compatible simulators.

According to the company, both the K9

Diesel and the CRU-R offer the most advanced simulation technology designed for implementation from point-of-injury care through the continuum of care and emphasize realism, ruggedness and responsiveness.

Anatomage [Booth 2482], also in the Healthcare Pavilion and a first-time I/ITSEC exhibitor, features the Anatomage Table, a virtual dissection table that allows students and medical practitioners to visualize anatomy by uncovering skin, bone and muscle tissue on cadavers.

The Anatomage Table is the first virtual dissection table to utilize real, life-size digital cadavers to accurately represent the human body, according to the company. Users are able to upload CT and MRI scans, and over 1200 case studies are available for review to aid in medical education.

Additionally, Anatomage provides re-



TacMed Simulation's K9 Diesel

sources for simulated cadaver dissection and hospital operations, detailed and interactive curriculum for anatomy and physiology courses and an expansive case library with high-quality 3D MRI/CT scans.

Other exhibitors in the Healthcare Pavilion are Laerdal Medical [Booth 2181], ArchieMD [Booth 2281], AIBODY.AO [Booth 2283] and Safeguard Medical [Booth 2381].

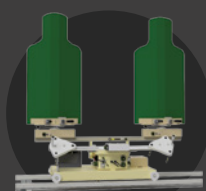
Additionally, the Defense Health Agency, Program Manager for Medical Simulation and Training (PM MST) and PEO STRI's Product Manager for Medical Simulation (PdM MedSim) [Booth 2285] are positioned in the Healthcare Pavilion.



LIVE FIRE – TRAIN AS YOU FIGHT

Visit us at I/ITSEC booth #820

- Stationary Infantry Targets
- Moving Infantry Targets
- LOMAH Systems
- Turning Targets
- Stationary Armor Targets
- Moving Armor Targets
- Marksmanship Targets
- Overhead Retrieval Targets
- Simulators and Range Control



Theissen Training Systems, Inc.
3705 Sw 42nd Ave.
Gainesville, FL 32608, United States
Phone: +1 (352) 490-8020
Email: info@theissentraining.com

SIMETRI Evolves, Demonstrates Multi-Modal Medical Training System

Since its inception in 2009, SIMETRI, Inc. [Booth 1229] has primarily delivered products and services in the realm of medical training. The company has recently expanded its offerings into a broad range of innovative technologies and services, utilizing I/ITSEC 2021 to spotlight some of those capabilities.

The technologies demonstrated at its booth were selected, according to Angela Alban, SIMETRI's founder and CEO, primarily because they're new and they're relevant to military medicine. "And they're also transferable to the civilian sector," she added. "At I/ITSEC, we're seeing not only a DoD presence, but a lot of civilians as well, interested in incorporating some of those technologies into their training environments."

Alban continued, "We thought it was time for us to show our capabilities, not just in the medical domain but to create these types of training technologies. What goes into doing that is very transferable into some of the work that we're now starting to pursue in tactical or combat simulation environments."

One of the company's highlighted I/ITSEC demonstrations is the Multi-Modal Medical Training System (M3TS), an advanced training system that combines physical human patient simulators, augmented reality and haptics to provide lower-cost, more accurate training for

when combined together, could provide the most ideal form of training."

In the product's recently completed proof-of-concept Phase I, SIMETRI designed a synthetic training environment in which the trainee must care for a wounded Soldier while engaged in active combat, needing to apply a tourniquet while returning fire when the situation calls for it. Augmented Reality (AR) plays the role of an overturned Humvee, the pool of blood underneath the Soldier and the enemy combatant. The trainee's weapon and tourniquet are haptic, the wounded Soldier is a physical low-fidelity manikin and the M3TS system includes an integrated physiology engine.

The resulting multi-modal system prioritizes the realistic transfer of proper technique and fills a significant gap in combat medical care training – care under fire.

Emphasizing the functionality and affordability of the M3TS, Alban said, "Cost-effective systems are more likely to find their way

into the hands of the warfighters who need them, and anyone administering care in these life-threatening environments deserves all of the training support we can give them."

SIMETRI will continue optimizing the existing scenario throughout the Phase II effort, starting with a focus on the incoming rate of enemy fire and response factor.

The company is also demonstrating its SIMCPR, an integrated

sensor and mobile app that modifies older-model medical manikins to comply with the American Heart Association's (AHA) newest CPR training requirements.

SIMETRI created SIMCPR after being approached in late 2020 by a major medical

provider in need of instrumented manikins to provide the necessary data. The SIMCPR sensor is placed inside a medical manikin, underneath the rib cage, and data is transmitted to the accompanying app. The device measures the number and depth of chest compressions administered during CPR training – important information to have, as the AHA announced in 2020 that instructors are only allowed to count compressions that reach a required minimum depth.

SIMETRI delivered 16 SIMCPR systems to that medical provider in mid-2021, resulting in significant savings in comparison to the cost of new manikins.

"In engineering an affordable solution, SIMETRI created a device that will help countless other medical centers comply with AHA requirements and, more importantly, really perfect their CPR capabilities," Alban said.

Additionally, SIMETRI is exhibiting Smart Surrogates, a line of low-cost, self-paced medical training devices designed for the needs of the Tactical Combat Casualty Care (TCCC) program.

Smart Surrogates is intended to be a complete set of inexpensive, reusable and refurbishable haptic training devices that can be used on human or medical manikins, allowing for training anywhere, anytime, without supervision. The system will include accompanying courseware for training and assessing procedures. SIMETRI has already produced a device for tourniquet application, and upcoming phases may see additions for securing a nasopharyngeal airway, securing intravenous access and other tasks critical for TCCC.

SIMETRI completed Phase I and developed a prototype for Smart Surrogates in November 2021.

Phases II and III will see large strides in the Smart Surrogates development process, with emphasis on software interfaces, integration and cost reduction.

Alban summarized, "Over the years we've been primarily known for the anatomical models that we develop and manufacture. But this year, we're taking it a notch further in that we've continued to evolve, and we are focusing on adjacent markets as well. As part of that, this is our year to show other technologies that are applicable across different domains."



combat medics to administer medical care while taking enemy fire.

According to Alban, the project was funded under an Army Small Business Innovation Research award, "and our focus was to explore the different modalities that exist and that,

Cubic Highlights NextAdvantage Training Portfolio

Cubic Corporation's [Booth 1948] Cubic Mission and Performance Solutions business division is showcasing its NextAdvantage portfolio of LVC Training solutions at I/ITSEC 2021.

"Tomorrow's fight will be different, requiring a new advantage," asserted Mike Knowles, president of Cubic Mission and Performance Solutions. "Our LVC Training solutions accelerate the NextAdvantage with a complementary portfolio of solutions that deliver unprecedented realism, superior readiness and economic efficiency, preparing warfighters to face an advanced and near-peer capable enemy anywhere, anytime."

Cubic is highlighting the following solutions during I/ITSEC:

Synthetic Inject to Live (SITL) - LVC Training

The Secure Live Virtual and Constructive Advanced Training Environment (SLATE) injects synthetic entities from human-operated simulators (Virtual) and computer-generated-forces (Constructive) into live cockpits. The architecture is built for 4th and 5th Gen platforms leveraging existing ACTS [Air Com-

bat Training System] infrastructure. The USN has demonstrated SITL-LVC with live fighter aircraft, virtual simulators, F-35 Effects-Based Simulators (EBS), and hundreds of constructive injects by maturing the SLATE technology to TRL [Technical Readiness Level]-8.

Simplified, Planning, Execution, Analysis, Reconstruction (SPEAR) Software Suite

SPEAR is a modern, DoD-approved tech stack that reduces cognitive burdens through optimized displays and analytics of kinetic and non-kinetic data, with weapons effects, in multi-domain operations and LVC environments. SPEAR melds objective and subjective data with a time-synched mission log in real-time and for after-action reporting. SPEAR gets you to "What Happened?" quickly, leaving more time to figure out "Why it Happened?"

Synthetic Training Environment (STE) Live Training System (LTS)

Cubic is accelerating live training realism as it

helps the U.S. Army realize its Synthetic Training Environment goals. Cubic delivers simulation realism with its small-form factor Manworm, a TRL-9 Personal Area Network (PAN), and Enhanced Player Interface Module (EPIM).

ULTRA Direct Fire System

Cubic's Universal Laser-less Training Architecture (ULTRA) is a revolutionary approach for solving technical and training limitations of the U.S. Army's I-MILES family of trainers, providing the ability to replicate the ballistic trajectory of munitions with realistic simulation of a munition's effect upon impact.

STE Soldier Virtual Trainer (SVT)

Cubic will demonstrate a holistic solution to address Weapons Skills Development (WSD), Use of Force (UoF), and Joint Fires Trainer (JFT) requirements for the U.S. Army. Cubic's solution provides organic weapons, freedom of movement for individual and collective training at the Point of Need (PoN).

Tactical Live Virtual and Constructive Indirect Fires Ecosystem

Cubic will demonstrate a synthetic training environment in action as it live streams a demonstration of live gunnery training.

{ SOARTECH

Zero data? Zero connectivity? Zero Problems.

SoarTech's **SpeechZero™** is our AI capability for automatic speech recognition, natural language understanding, and conversational dialogue. Designed for constrained environments, SpeechZero™ can be used without access to the cloud.

**VISIT OUR BOOTH #239
TO EXPERIENCE IT.**

SoarTech.
AI you can trust.

WWW.SOARTECH.COM



I/ITSEC 2021 EXHIBITOR NETWORKING EVENT

Tuesday 30 November
1700-1830

Be sure to stop by the Exhibit Hall during tonight's Exhibitor Networking Event. Join these companies at their booths to view the latest technology and enjoy refreshments while networking with the exhibitors and fellow attendees.

BOOTH	COMPANY NAME	OFFERING
239	Soar Technology	Michigan beer
365	MAK Technologies	Join us to celebrate MAK's belated 30th birthday with cupcakes and coffee!
520	JANUS	Appetizers, cocktails, beer and wine
558	MSBAI	Hosting a networking event featuring live demos of GURU, our cognitive AI assistant that enables untrained users to run specialized simulation software. Come join us for beer, wine and cocktails
607	BlueHalo	Beer and wine
700	Yorktown Systems	Light snacks, beer and wine
771	Valiant	Beer, wine and hors d'oeuvres
840	LSI	Beer
1071	Bohemia Interactive Simulations	Beers from around the world
1201	TRU Simulation + Training	Hard seltzer, beer, wine and assorted non-alcoholic beverages
1338	Barco	Belgian beer
1348	Meta Aerospace	Drinks and snacks
1748	Lockheed Martin	Bars and passed hors d'oeuvres
1782	Tangram Flex	Craft beer
1809	Engineering Support Personnel, Inc.	Sliders, Cuban spring rolls, beef empanadas, chicken cordon bleu, hosted full-service bar
1829	Hadean Supercomputing, Ltd.	Beer, wine and finger food
1948	Cubic Mission & Performance Solutions	Bottled beer, wine and soft drinks
2334	Presagis	Hamburger sliders, chips, beer, wine and soda
2560	Hapttech Defense Systems	Light snacks and beverages
2673	Humanlink/Symposit	Beer, wine and small appetizers



I/ITSEC 2021 and NTSA Welcome New Exhibitors!

A warm welcome to the exhibitors who are either new to I/ITSEC this year or are returning after a hiatus.

2 Circle Consulting [627]

A Square Games & Simulation,
LLC [2240]

Ad hoc Research [521]

Advanced Technology Leaders [287]

Ahtna Global, LLC [3063]

AI4K12.org [3085]

AIBODY.IO LTD [2283]

Air Force Gaming [1084]

AIVA [3137]

Allen & Company Inc. [2681]

Anatome [2482]

Association of Old Crows Central
Florida Chapter [3034]

Astronaut Scholarship Foundation [3092]

Athena Technologies LLC [531]

ATS Targets [618]

AUFIRE- ACCURACY UNDER
FIRE [1781]

Avalon Holographics [856]

BadVR [2437]

BILT [3119]

BMK Ventures [2082]

Britannica Knowledge Systems [3033]

BUNDLAR, LLC [461]

Central Florida Tech Grove [3181]

Consortium for Mathematics and Its
Applications (COMAP) [3091]

Cyber Bytes Foundation [2441]

Cyber Command Pavilion [2870]

CyberFlorida Operation K12 [3087]

Deep-Tech Group [550]

DOD Starbase [3086]

Dynepic, Inc. [720]

Echo Healthcare Inc. [2268]

Edasim, llc [1823]

Engenium Staffing Inc. [3173]

Ergoneers of North America [459]

ESGR [3031]

Extreme Simulations Ltd. [1926]

Fortress Information Security [595]

Guaranteed Rate [560]

Gulf Stream Steel [634]

Hadean Supercomputing Ltd. [1829]

Continued on p26



MODSIM WORLD 2022

Building a Better Tomorrow | May 9 – 11, Norfolk, VA

SAVE THE DATE

May 9 – 11, 2022

Norfolk, VA

ModsimWorld.com

NTSA

I/ITSEC 2021 and NTSA Welcome New Exhibitors!

Continued from p25

Haptch Defense Systems [2560]
 HaptX [1555]
 Hard Hat VR [518]
 Healthe Inc. [1230]
 HealthMed [758]
 Hidow International Inc. DBA SuperX [2958]
 Holos, Inc. [551]
 HumanLink, LLC [2673]
 Huthchinson Stop-choc [307]
 Immersive Labs [309]
 Infinitas Engineering Inc. [3170]
 Inowize [1223]
 Intel Corporation [392]
 Interactive Tactical Group, Inc. [659]
 International Collegiate Programming Contest [3093]
 IronNet [3059]
 ISL [425]
 Kent State University [408]
 King Crow Studios [3071]

Longshot Target Cameras [1723]
 Meta Aerospace [1348]
 Metastage [3065]
 Moth + Flame Virtual Reality [2566]
 MSBAI [558]
 Mursion [418]
 National Security Innovation Network (NSIN) [3089]
 Pacific Aerospace Consulting [2337]
 PEO STRI MedSim/Defense Health Agency [2285]
 PeopleTec, Inc. [756]
 PEZT Co. TRAINING Inc. [663]
 Reaction Simulation LLC [1783]
 Red 6 [1922]
 Roy Operating Co., LLC DBA 3D Media [3171]
 Safeguard Medical [2381]
 Shiny Box Interactive [2339]
 SIMETRI, Inc. [1229]
 Spectrum Displays [3037]
 Street Smarts VR [2226]

Summit 7 [3036]
 SummitET [3032]
 Symbolic Displays Inc. [2080]
 Systecon North America [1981]
 TacMed Simulation [2480]
 Tangram Flex, Inc. [1782]
 Technology Associates and Products, LLC [3175]
 TITENN Inc. [3174]
 Tyto Athene [1725]
 Ultimate Knowledge Institute (UKI) [689]
 Ultra Engine [2341]
 University of Iowa Technology Institute [1825]
 Unknot.id Inc. [3172]
 Valkyrie Enterprises [1969]
 Vermeer [406]
 ViewPoint Systems [1964]
 VRAR Association [3192]
 Wrap Technologies [1238]
 Xencelabs Technologies Ltd. [657]

NTSA | NATIONAL TRAINING & SIMULATION ASSOCIATION

Discover the many benefits of NTSA corporate membership

Corporate members of NTSA receive early space selection and discounts on exhibits space at I/ITSEC. Whether you are a large or small company, there is an NTSA membership option for you.

Corporate Membership Options

Sustaining

- \$5,000 in dues
- First choice of booth space (during I/ITSEC)
- 10% discount on booth space for I/ITSEC (Maximum discount = \$5,000)
- Seat on Executive Committee and Invitation to M&S Awards Dinner
- Additional exposure at I/ITSEC

Regular

- \$1,250 to \$2,500 in dues (depending on # of employees involved in training and/or M&S)
- Second round of booth space selection (in early to mid-February)
- 5% discount on booth space for I/ITSEC (Maximum discount = dues amount paid)

Associate

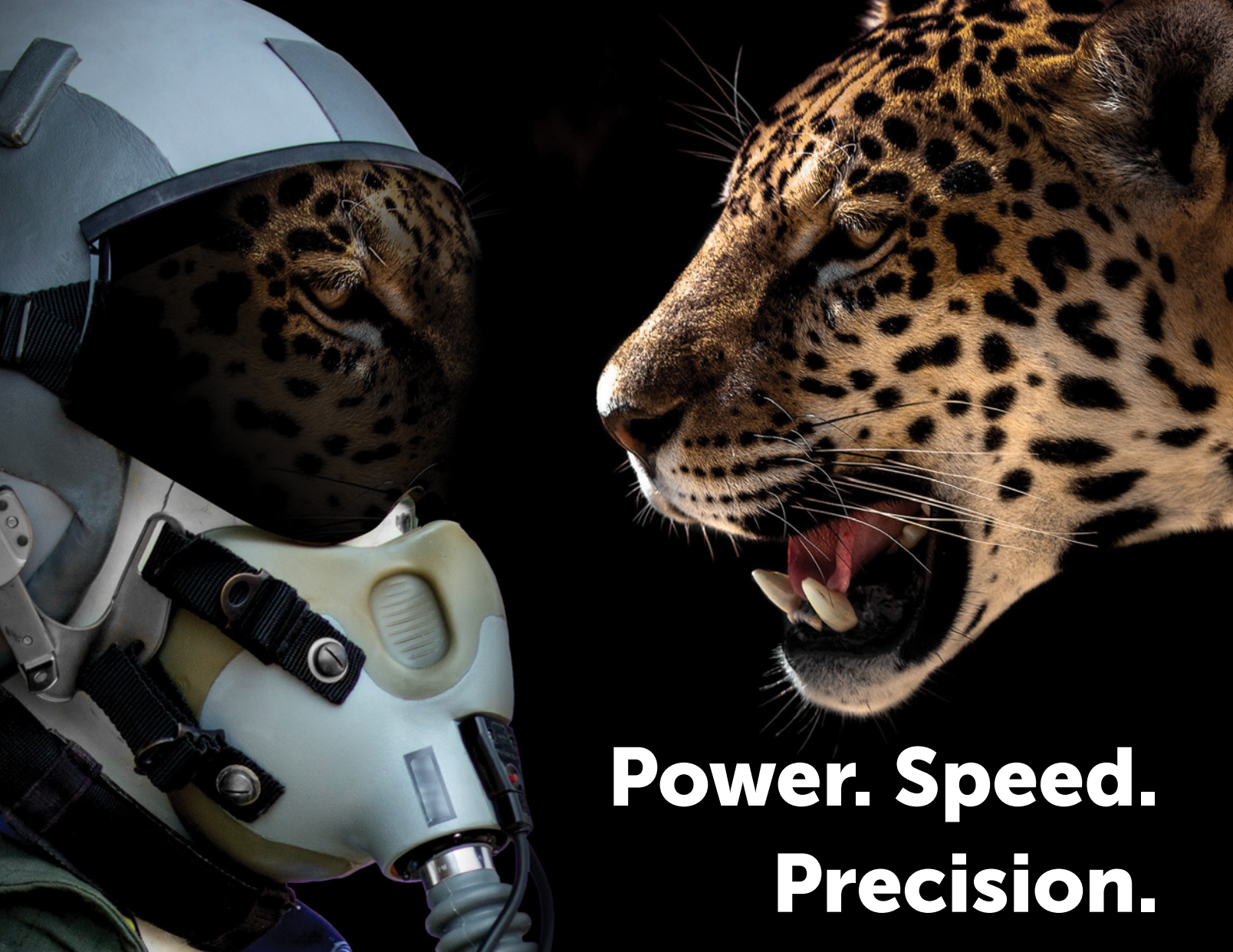
- \$500 in dues; designed for smaller companies
- Third round of booth space selection (in late February)
- No discount on booth space for I/ITSEC

All corporate members of NTSA receive these core benefits:

- Reduced registration fees for all employees for all NTSA & NDIA events
- Member listing with hyperlink on the NTSA website
- NTSA's monthly e-newsletters
- National Defense, NDIA's award-winning magazine
- Opportunity to participate in various NTSA and I/ITSEC initiatives

VISIT [NTSA.ORG/MEMBERSHIP](https://www.ntsasim.org/membership), CONTACT CAROL DWYER AT CDWYER@NTSA.ORG

A Proud Affiliate of
NDIA



Power. Speed. Precision.

Transform training into instincts

Extreme situations bring out your instincts. And your instincts are only as good as your training.

The new **Barco F400-HR projector** brings power, speed and precision to high-end training systems with native 4K resolution up to 240Hz processing speed, powered by the unique Barco Pulse electronics system. Designed specifically for the demands of the training and simulation customer, the F400-HR breathes the needed sense of realism into every simulation system.



A vision to trust.



CAE eSeries MR Prodigy Visual System

Unmatched realism for immersive fighter and fast-jet training

Realism and accuracy is paramount when training for high-gain tasks that are difficult or unsafe to reproduce in live flight. CAE's ongoing technological development in visual immersion helps address training challenges such as Controlled Flight into Terrain (CFIT), Air-to-Air Refueling and close formation flying.

CAE's e-Series MR Prodigy Visual System is a 360° visual display (also available in 225° configuration) that meets the specific needs of fast-jet and fighter training. The e-Series MR Prodigy Visual System leverages gaming engine image generation to provide the highest-fidelity and most immersive training experience possible.

The new CAE Prodigy image generator enhances the high brightness, high resolution and electronic collimation of the e-Series display system. The integrated CAE e-Series MR Prodigy Visual System delivers gaming engine visual cueing for safe, cost-effective fighter and fast-jet training.

Book your visit and experience the new CAE e-Series MR Prodigy Visual System at CAE's booth (#1734) during I/ITSEC in Orlando, Florida from November 29 – December 3, 2021.

 @CAE_Defence
milsim@cae.com

 CAE USA  @CAE_Defence
cae.com/defense-security

