



# SHOWDAILY



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NOVEMBER 29, 2022

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Published by **NTSA**

## Navy North Star in Command Vision Statement

The U.S. Navy's Naval Air Warfare Center Training Systems Division (NAWCTSD) has been provided with a new "North Star" to help prioritize and guide actions and activities through the recent release of a new command vision statement.

In outlining the new vision, Captain Dan Covelli, USN, Commanding Officer, NAWCTSD, began by pointing to this year's I/ITSEC theme and the need to Accelerate Change by Transforming Training.

"It's time to act on ACTT!," he continued. "And that theme is closely related to our vision statement. So that's pretty exciting. And I want to emphasize that our vision statement is not something that we take lightly. Our mission statement is our purpose, but our vision statement serves as a guide to get us where we want to go towards mission accomplishment. It's our 'North Star,' if you will."

Identifying the new NAWCTSD Vision Statement as *Accelerating Warfighter Readiness Through Training Solutions*, Covelli explained, "It places an emphasis on speed. And when we talk about accelerating warfighter readiness, that has multiple implications. First, we are changing direction to improve our product development and delivery time. We've been trying to do that over the last year or so but now we're doubling down, trying to go faster, because the sailors in the fleet need training now. In fact, warfighters in general need training now; not next year or the year

after. They need it now to prepare to preserve the peace or to go into combat and return safely."

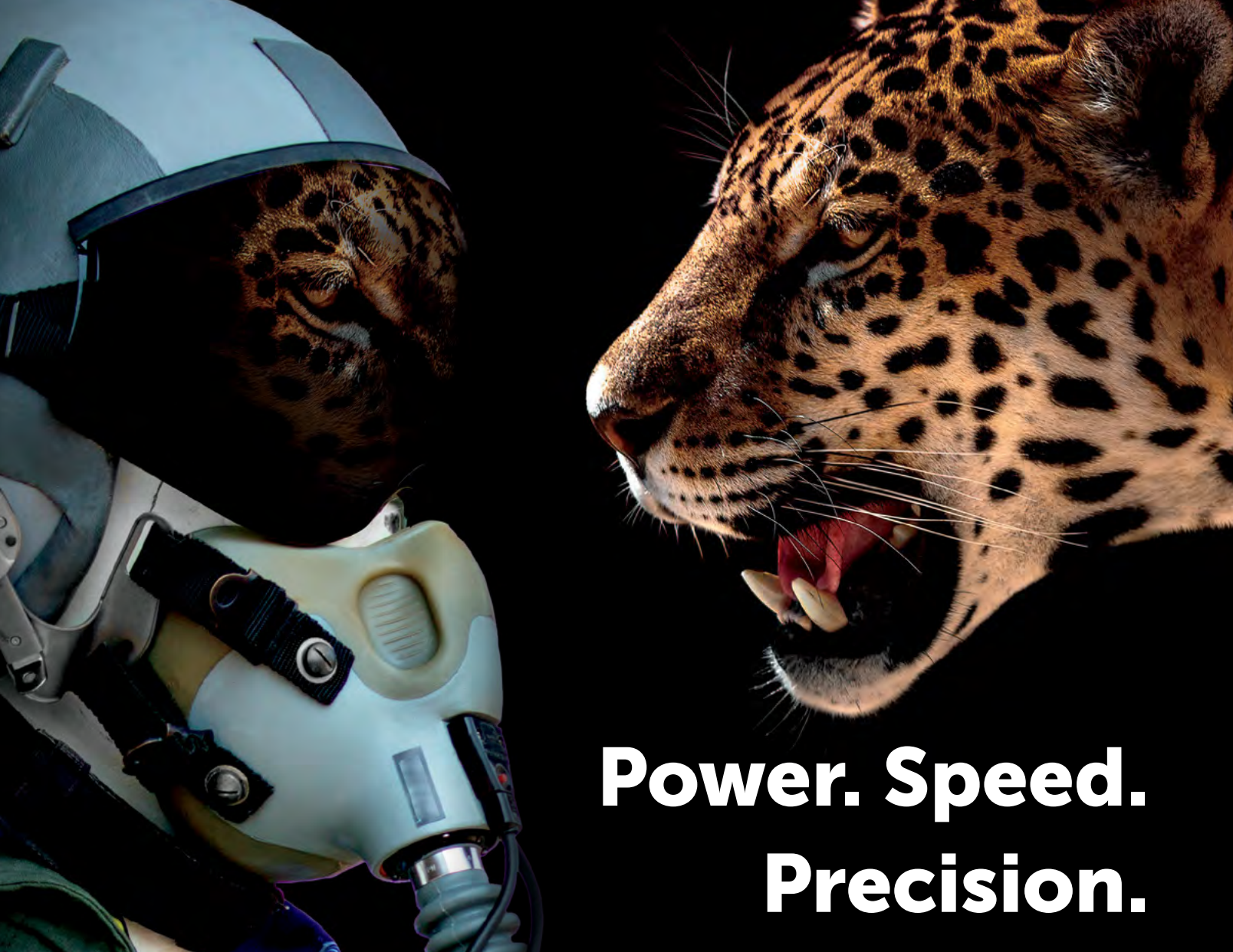
He continued, "Against that background, we can't afford to have warfighters tied up with training procedures that were developed last century, where they spend months in a classroom using outdated curriculum. That's just not going to cut it. We want to be able to teach the skills and have them learn the skills quickly. Additionally, we are dedicated to producing training products to enable warfighters, because we do more work than just with the Navy, helping them learn relevant skills when they need them; the right training at the right time in their career and at the right place, whether that be out on the waterfront, the flightline, back in a 'brick and mortar' schoolhouse or out on deployment. There is a place for each one, because you always need training, and it needs to be timely."

Covelli said that meeting these needs also translates to accelerated learning, with less time in a classroom environment and more time applying their skills in the fleet.

"That's important," he said. "We've done it before, and we want to continue to provide products and services that are producing a higher quality warfighter, in the same amount of time, or we want to reduce the time to train, increase training throughput, or reduce the cost of training, so that money can be reinvested

*Continued on p24*





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## TUESDAY, NOVEMBER 29

### CONFERENCE HIGHLIGHTS

#### REGISTRATION HOURS

0700-1800 (*West Concourse*)

0730-1600 (*Satellite Registration, Hyatt Regency Main Lobby/Rosen Centre Hotel*)

#### OPENING CEREMONIES

0815-1000 (*Hyatt Windermere Ballroom*)

Including Conference Chair Opening Remarks, Fireside Chat with USAF and USSF Senior Leaders, and Industry Keynote

#### EXHIBIT HALL HOURS

1200-1830

1700-1830 Exhibitor Networking Event

#### SIGNATURE EVENTS

1015-1200 Senior Leader Panel (*Hyatt Windermere Ballroom*)

1400-1530 Department of the Air Force (DAF) Senior Leader/General Officer Panel (*Room W311ABCD*)

1600-1730 Virtual Training for Actual Results (*Room W304EF*)

1600-1730 Indo-Pacific Training Capability Improvements for Multi-Domain Warfighting (*Room W304AB*)

#### FOCUS EVENTS

1200-1830 I/ITSECverse (*Exhibit Hall – Booth 1332*)

1400-1530 Thinking on Your Feet: Agile Acquisition for a Dynamic World (*Room W309AB*)

1600-1730 The Data is the Thing!: Successes and Challenges in Measuring Performance, Proficiency and Effectiveness Outcomes in Multinational Real World Contexts (*Room W304GH*)

#### PROGRAM BRIEFS

1400-1530 PM TRASYS Program Reviews (*Room W308C*)

1600-1730 USAF Acquisition Update (*Room W308C*)

#### PROFESSIONAL DEVELOPMENT

(Download the I/ITSEC app for synopses)

1400-1530 Paper Sessions (*Rooms W307ABCD; W308AB*)

1600-1730 Paper Sessions (*Rooms W307ABCD; W308AB*)

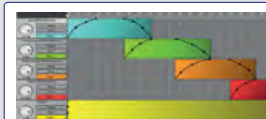
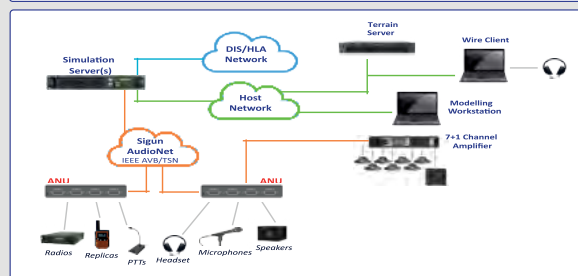


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## SHOWDAILY

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

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## Congressional Caucus Highlights Challenges and Opportunities

In the first Signature Event of I/ITSEC 2022, four members of the Congressional Modeling and Simulation Caucus provided their professional perspectives on M&S as well as identifying a number of challenges and opportunities that they see in the future to an overflow audience.

Rear Admiral James A. Robb, USN (Ret.), President of the National Training and Simulation Association, welcomed the four participating Caucus members, allowing each to deliver brief opening remarks prior to answering questions submitted by the audience.

One of four Caucus Co-Chairs, Stephanie Murphy (Florida 7th District), noted that 2022 represented her sixth year of attendance at I/ITSEC, adding that she would be retiring from Congress in the next few months.

"I just want to say what an incredible community this is, and what a delight it's always been to be here with you all at the nation's premier event for modeling, simulation and training," she began, adding, "I think one of the interesting things that's happening right now is that our National Security Strategy as well as the National Defense Strategy, which all of your companies work to support, have identified the 'pacing threat' of China. The National Security Strategy calls China a major competitor, and the National Defense Strategy calls it the greatest danger to American security. And I think if there's bipartisan agreement on anything in Congress, it's a little bit around this China competition.

She offered challenges and opportunities for industry, based on what she described as the "keep away" of export controls balanced

against the community need to "run faster."

"I think balancing those two things provide both challenges and opportunities for this industry, especially as it gets expanded beyond semiconductors, which I imagine is part and parcel to a lot of your technology, but also into AI, supercomputing, etcetera," she said. "I think the challenging piece is that a lot of what we are doing as America we are doing alone, and while our allies knew we were going to engage in some of these export controls, they haven't yet committed to also joining us there. And so that can create inequities in the playing field. And I know that American businesses, when given a level playing field, will outperform any foreign market. But if our American businesses are the only ones that are subject to the export controls, then we could be put at a disadvantage, impacting profits and your ability to reinvest in R&D. And this is a big piece of moving forward, high tech and innovation is R&D investment. The opportunity, however, is for you all to help America run faster, right? Let's get out ahead of them in a lot of these tech areas. There's so much innovation and R&D in this room, that I am optimistic that your participation in helping us execute on National Security Strategy and our National Defense Strategy that we will be successful," she said.

Caucus Co-Chair John Rutherford (Florida 4th District) reflected on his earlier 41-year career in law enforcement, observing, "The domestic security for America rests with our state and local law enforcement. And the importance of simulation and modeling to that industry is equally important as it is to

our national security."

"One of the things that I want to make sure that we're doing in Congress is to help you all, be sure that we are putting our dollars where they need to go, so that we get the best bang for our buck," he said.

Caucus Co-Chair Jack Bergman (Michigan 1st District) shared some philosophical thoughts with the audience, reflecting on topics like "time and money."

"You can lose every dollar," he said. "And, with a little luck and planning, you can regain financial stability, if you persevere. But when you waste a moment, that moment is gone forever. So, this is a question that I would like you to contemplate regarding the nature of time: is time cyclical or is time linear?"

After elaborating with several examples he asserted his own belief that time is linear, but that there are cycles of time that go on within that linearity, drawing comparisons to the positive dialogues that occur at I/ITSEC.

A fourth participating member of the Caucus, Congressman Darren Soto (Florida 9th District), offered brief remarks, including, "I'm really here today just to hear your ideas with regards to industry...John mentioned already with regard to law enforcement preparedness, Jack mentioned it with regard to medical and the digital twin, capabilities and technologies that will be critical for everything from medicine to factories and helping with logistics to worker safety. So I look forward to your innovation, your suggestions and just thank you all for being here again.

The opening remarks were followed by a Q&A period moderated by Robb.





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

Bohemia Interactive Simulations' (BISim's) flagship product, VBS4, is a whole-earth virtual and constructive simulation that allows military units to create and run any imaginable military training scenario. VBS4 is a core component of the U.S. Army's Synthetic Training Environment (STE), the next generation collective training capability.

**We invite you to come by our booth #1071 to see the latest VBS4 demos including brand-new military AI and other STE-related enhancements.**

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# Industry Keynote Offers Attendee Challenge

Van Sullivan, Chief Executive Officer at Trideum Corporation, describes himself as a storyteller. And, time permitting, he plans to share some of his favorite stories during his industry keynote address, which is part of the opening ceremonies on Tuesday morning.

**A**long the way, he plans to weave a primary message together with a professional challenge for I/ITSEC attendees.

"My main message is 'the what' and the subliminal message woven through it is 'the how,' Sullivan told *Show Daily*. "And 'the how' is really based, as much as anything, on my experience and my background."

Sullivan outlined his early years, "growing up on a dirt farm," adding, "We never had everything we needed but we always had enough. If something broke, we had to figure out how to fix it, since going to Tractor Supply and buying something wasn't an option. And the phrase my grandfather always used was, 'Son, you got to figure out how to get 10 pounds of sugar out of that five-pound bag.'"



If you have got a broken blade on a plow, you don't try to replace the whole plow. You just try to replace the blade. And, if you are really short on money, you try to figure out how to fix the blade. And often, in the military world, we try to redo everything, and then we never get anything done."

Shifting his observations to the modeling and simulation community, he said, "Philosophically, that's a lot of how we operate with our customers. We partner with them to help them figure out how to get 10 pounds of mission accomplished with five pounds of resources. And, with the military, that's almost always the case."

He characterized that statement as "a subliminal message," continuing, "Why that subliminal message is important is, if we are going to accelerate anything, we have to look

at the laws of physics. The laws of physics say that force equals mass times acceleration. So you have either got to increase your acceleration or put more force on it. And in our world, that means more money, more people or more manpower. And none of that is an option in a lot of cases. Or you have got to work with less mass. And in our world less mass means you have got to simplify things and not try to eat the whole apple at once.

"Now, going back to my earlier farm analogy, if you have got a broken blade on a plow, you don't try to replace the whole plow. You just try to replace the blade. And, if you are really short on money, you try to figure out how to fix the blade. And often, in the military world, we try to redo everything, and then we never get anything done. So the subliminal message, which is tied in to the 'ACTT!' in this year's I/ITSEC theme, is that to accelerate the change, we have got to be very focused and purposeful. We can't try to solve everybody's problem. We have got to find a very specific problem; a very important problem or gap, and we have got to take one thing, we've got to focus on it and we've got to work through it," he said.

Acknowledging that the one thing he might focus on could be different from what someone else would focus on, Sullivan said, "That's fine. But if I focus on one thing, and I work it to death, I'm going to have a higher probability of getting it done successfully."

In addition to that subliminal message, Sullivan plans to offer a challenge to the I/ITSEC audience.

"In the training world, we talk a lot about technical proficiency, whether it's operating a piece of equipment, maintaining a piece of equipment, developing plans, etcetera," he asserted. "What we don't talk about and work on enough is how we train people to make good decisions. So, the bulk of what I'm going to be talking about is: in a military context, what are the really important decisions that need to be made? Who makes them? How do we, as a training community, help



What we don't talk about and work on enough is how we train people to make good decisions."

train those people to make good decisions? How do we assess the quality of those decisions? What metrics do we use? What data do we collect? What environments do we collect that data in? How can we have a really big impact, with a small amount of effort, to accelerate change?"

He summarized, "My challenge is going to be that we can do that by putting some concentrated effort on training not everybody, but the right people, who have to make important decisions, either in the heat of battle, or how to make a battle plan or which programs to fund, and train them on how to make good decisions. Additionally, we need to make sure that our training is successful in that they are making good decisions. And if we have somebody that's incapable of making good decisions, don't put them in the position where they have to make those critical decisions."

Along with a few relative anecdotes, Sullivan hopes that the timing allows him to share "a couple of his favorite stories."

"I've got one story that is relevant to the current conflict in Ukraine," he offered, "and one or two others that illustrate many aspects of what I've been talking about."





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## Elbit Systems UK's ICAVS(D) Delivers Training to British Army

Elbit Systems [Booth 2034] UK's Interim Combined Arms Virtual Simulation (Deployable) (ICAVS(D)) has proved its agility and highly deployable capabilities on British Army exercises in Germany and Estonia after eight months in service.

ICAVS(D) was deployed as part of Exercise CERBERUS 22 in November, one of the largest field army exercises in Europe for over a decade. The flexibility and immersion provided by ICAVS(D) provides extensive mission rehearsal in complex environments for both mounted and dismounted operations. ICAVS(D) is currently in use by British troops in Estonia as part of Operation CABRIT, where it is bolstering operational readiness in contribution to NATO's Enhanced Forward Presence.

In April this year, ICAVS(D) came into service, providing a solution that is highly mobile and can be rapidly deployed by troops on exercise with systems configured to maximize soldiers' use of physical space, allowing them to capitalize on precious live-fire training opportunities. Selected as a pathfinder project for the British Army's Collective Training and Transformation Programme (CTTP), ICAVS(D) reached full operational capability to schedule at the system's 25th training event at Tidworth on Salisbury Plain in the summer.

ICAVS(D) uses the latest high-specification hardware and defense virtual simulation software to deliver immersive virtual tactical training in the Army's Battle Craft Syllabus, enabling regular and reserve units to get the most out of subsequent live field training exercises.

## Engineering & Computer Simulations Delivers CH-47F Software Suite

Engineering & Computer Simulations (ECS) [Booth 1829] has enhanced its software suite of adaptive, customized learning products and training tools in support of the U.S Army Program Executive Office – Aviation (PEO Aviation) for its Project Manager Cargo (PM Cargo) CH-47F Block II Training Program.

Conceptualized and designed by ECS to provide optimal performance, lowest cost of ownership and maximum return on investment, this upgraded software suite features a high fidelity immersive environment which encourages critical thinking and targets the individual user's learning style and level of knowledge. The one-to-one digital representation of the CH-47F Block II serves as the foundation for a digital twin.

The team's objective was to provide our soldiers with comprehensive and engaging technical training while strengthening job proficiency and enhancing mission success.

The suite offers a first-person perspective in a high fidelity 3D immersive environment and is available on multi-platform delivery on Windows Standalone, WebGL and mobile. In addition, the ECS team delivered numerous computer-based training lessons, covering 39 Terminal Learning Objectives (TLO) and 93 Learning Step/Activities (LSA).

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# Tutorial Provides Comprehensive Look at Medical Simulation

As part of I/ITSEC 2022's vast Professional Development offerings, Monday's tutorial, A Comprehensive Introduction to Medical Simulation, provided attendees a wide-ranging overview of the subject, including its early history and evolution, modalities, learning theory, surgical simulation, accreditation and use of AI in medical simulation. The tutorial is one of three nominated for the I/ITSEC Best Tutorial award to be announced at Thursday evening's Conference Awards Banquet.

Beginning the session, Roger Smith, PhD, CEO of in[3] Thinking, said, "We're hoping that you learn or pick up knowledge from the things that we share with you, so that you comprehend how simulation systems will work for you and solve problems. And hopefully, ultimately you'll be able to look at a simulation system and analyze what its capabilities are and assess how it should best be used."

Adding that there is no scarcity of resources to draw from regarding medical simulation," he said, "We are very lucky in

medical simulation. Unlike defense simulation, there are a lot of textbooks on medical simulation."

He went on to share some of the historical origins of medical simulation, from utilization of cadavers and animals in the 1400s to a nurse's life-size doll creation in the early 1900s as one of the earliest teaching manikins and through the evolving use of medical simulation ranging from standardized patients to VR to AI.

Additionally, he explained how medical simulation was utilized during the COVID-19 pandemic. "During the COVID crisis, the World Health Organization was actively publishing training materials and instructions for using simulation to teach staff how to treat patients. They were very actively putting out facilitators' guides and drills that you could use to prepare your clinical staff for the flood of patients that would be coming in," he said.

Danielle Julian, research scientist at AdventHealth Nicholson Center, continued

the session by talking about the origins of standardized patients in the early 1960s and the reasons they were utilized. "Today, we utilize standardized patients in medical and nursing education, both for clinical and conversational skills, so that they can actually encounter the patient," she said. "They are able to provide us with automatic feedback, and also allow us standardization of training."

She also discussed applications of human/manikin hybrid simulators, part-task trainers, high fidelity patient simulators and teamwork training before addressing training specifically for surgeons. Additionally, she presented considerations in accreditation for simulation centers.

Alyssa Tanaka, PhD, a lead scientist at Soar Technology, concluded the session by presenting considerations regarding the use of AI and speech recognition in medical simulation and training, as well as medical education concerns about AI, including transparency, privacy and data control, standards of use and presenting AI-based diagnoses to patients.

The session concluded with attendees' questions centering on training evaluation processes and surgical readiness.

## I/ITSEC Community Supports JOSH Charity

The I/ITSEC community is supporting an additional charity at the conference this year.

On Sunday morning, volunteers with Just Our Soldiers' Helpers (JOSH) packed 140 care packages at the Orange County Convention Center to be sent to forward deployed troops.

"That's JOSH's mission," said JOSH board member Scott Ariotti. "We're a morale boosting organization that supports soldiers that don't have easy access to a post or base exchange," adding that currently the care packages are shipped to service members in locations including Iraq and the Horn of Africa.

The effort began in 2010, Ariotti explained, when the organization's founder, Kathy Hewitt, promised to send a monthly care package to her nephew, Captain Josh Kinsel, when he was deployed to Afghanistan. "As she realized the austere conditions which our forward deployed soldiers live and operate in, she started shipping more care packages. It made a big impact on the group that was over there, and when her nephew came back and told



her, 'Don't forget about the guys over there,' she set up the organization as a 501(c)(3) in 2011. And we've been doing this ever since."

The organization ships from 140 to 160 care packages every month. The flat rate shipping boxes are filled with full-size, name brand products, either food or hygiene items. "We don't ship generics or trial sizes because we see each one of these boxes as a gift," Ariotti said. "That's why everything that goes into

the box is carefully selected. And we ship food and hygiene items separately, so your toothpaste doesn't taste like beef jerky or your snacks don't smell like dryer sheets."

Having been part of the I/ITSEC community for decades, Ariotti emphasized, "This industry really needs to know about what this organization is doing because it segues so well into what we do. This is an industry built around making sure our troops can be successful, with everything we're doing around simulation, training and education. This is another part of that – while they're deployed, trying to take care of them at an additional level."

Adding that "every little bit helps" in offsetting the product and shipping costs, Ariotti said, "Corporate sponsorships are a big deal for us. We can't do it without the support of sponsors. So, whatever the industry can do to support this organization would be fantastic."

To learn more visit [GoJOSH.org](http://GoJOSH.org)



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# CAE Spotlights Training Solutions

CAE Defense & Security [Booth 1734] is utilizing the I/ITSEC 2022 venue to highlight a range of training solutions that the company characterizes as “transformative and timely.”

“We’re going to have six separate capability demonstrations in our booth this year,” offered Todd Bryer, vice president of strategic growth and business development for CAE’s Defense & Security business unit. “And we are very excited about all of them.”

He identified the six capabilities as Joint All Domain Operations (JADO), Simulator Common Architecture Requirements and Standards (SCARS), Virtual Intelligence Surveillance & Reconnaissance Training Application (VISTA), Immersive Maintenance Guide (IMG), CAE Trax Academy Biometrics and Single Synthetic Environment (SSE).

“As one example, our JADO capability demonstrations will showcase a multi-domain, near peer virtual environment,” he explained. “It demonstrates how training and mission rehearsal can be integrated through many forms, including intelligence assessment, operational planning, targeting and command and control. It incorporates our technologies, modeling and simulation, AI-driven assessments of operations, and human machine teaming and feedback on cognitive performance, all wrapped in a complex and immersive training experience.”

CAE will also be highlighting Joint Synthetic Environment (JSE) and Distributed Mission Operations (DMO) capabilities, reflecting its role as the prime contractor for the U.S. Air Force Simulator Common Architecture Requirements and Standards (SCARS) program, which includes more than 2400 simulators across over 300 locations.

Bryer noted that a third element of the CAE exhibit will address an application called CAE Virtual Intelligence Surveillance & Reconnaissance Training Application (VISTA).

“VISTA provides real-time dynamic feeds from virtual C4ISR assets, which are then fed directly to intelligence screeners and command and control terminals,” he said. “So VISTA is a key enabler for a true common virtual training environment for the joint force. It provides C4ISR professionals a dedicated, stand alone and very cost-effective capability to train, to conduct mission rehearsal, or assess operational plans for any mission set from initial preparation of the operational

environment, to real time interdiction support for high value individual targeting and strike, as well as all domain near peer targeting.”

A fourth element of the CAE display is the Immersive Maintenance Guide (IMG).

“Employing complex systems and equipment relies quite heavily on skilled maintenance technicians with the knowledge and skills to effectively maintain those assets,” he said. “As the operational tempo increases, the demand becomes even greater. So our IMG, which is part of our ‘+Tempo’ line of training products, is designed to enhance and accelerate maintenance training. It’s constructed with detailed interactive 3D graphics. It’s delivered via tablet, or in an immersive virtual reality environment through headsets.

So IMG provides access to the same advanced courseware, which includes current technical orders and interactive electronic technical manual data. The benefits include the ability to rapidly adjust all of that updated technical order data, accelerated skills acquisition, built-in performance feedback, and simply a reduced need for the live assets.”

He added, “It’s really hard when you’re working on a system and you want to induce or diagnose a fault on that system. This solution does exactly that. With this IMG we’ve created an innovative solution that leverages the latest technology for really effective maintenance training, at what we consider to be the point of need.”

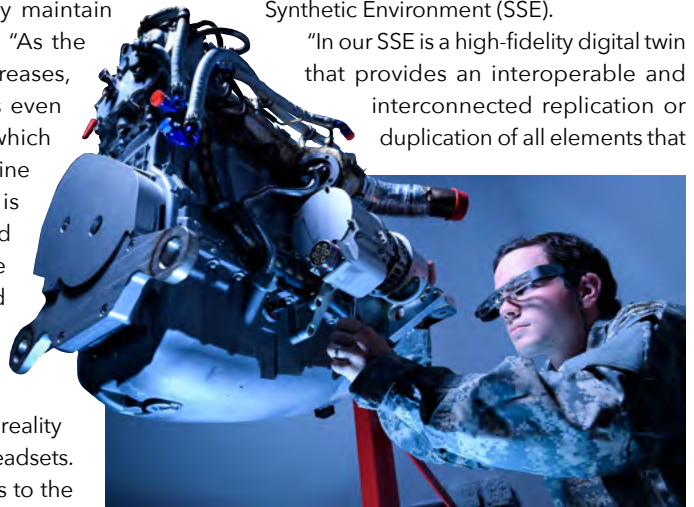
CAE Trax Academy Biometrics is the fifth major area highlighted by CAE at I/ITSEC 2022.

“That leverages digital technologies and big data for student-centric adaptive learning of multiple tasks such as training tasks, procedures, maneuvers or missions. So we’ve combined our Sprint virtual reality trainer with our patented Adaptive Learning Environment (ALE) to provide real time assessment across performance and biometrics. That accelerates

learning and yields the additional benefit of reducing the instructor workload. This active performance monitoring provides both the instructors and the students with real-time feedback, and that allows for immediate coaching through a blend of instructor as well as automated cueing. Instructors can also gauge, through this, a student’s level of stress, engagement and cognitive workload levels, which then allows instructors to modulate the complexity based on those biometric indicators.”

A sixth capability in the company spotlight at I/ITSEC is a demonstration of CAE’s Single Synthetic Environment (SSE).

“In our SSE is a high-fidelity digital twin that provides an interoperable and interconnected replication or duplication of all elements that



are relevant to a situation or an operational environment, and at scale. So using simulation and data that’s aggregated, integrated and synthesized from multiple sources, it provides comprehensive insights to model events and analyze scenarios, again, to facilitate data-driven decision making,” Bryer said.

He summarized, “CAE is the world’s leading platform agnostic training and simulation pure play. And what I mean by pure play is that this is all we do. Many of the big OEMs provide training and simulation and modeling, but it’s not all that they do. They do many other things. This is all that we do, and that makes us a pure play – ensuring mission readiness by integrating solutions across all domains.”

He concluded, “CAE’s purpose is to lead at the frontier of digital immersion with high tech training and operational support solutions to make the world a safer place. So whether we’re innovating or integrating, we are leveraging our 75 years of expertise and experience to ensure that our customers are prepared for those moments that most matter.”



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## QinetiQ Signs Next-Phase Demonstrator Contract with Royal Navy

QinetiQ [Booth 1370] has signed a contract with the Royal Navy, in partnership with Inzpire and BAE Systems [Booth 465], to deliver the next concept demonstration phase of the synthetic training solution, Platform Enabled Training Capability (PETC).

In Phase 1 of PETC, QinetiQ and Inzpire demonstrated the ability of the operational crew of a Royal Navy platform, HMS Kent, to train in its own operations room, simulating a realistic warfighting situation in an immersive environment. Utilizing secure communications links from Portsmouth Technology Park, Portsmouth, the QinetiQ-Inzpire team generated the synthetic training environment that, through advanced sensor emulators, was fed directly into the combat system of the ship. This enabled Inzpire's White Force – a training force that works closely with customer organizations to design, implement, control and facilitate debrief of complex multifaceted military training events – to implement and direct a rich

training scenario to demonstrate the benefit to the ship's operations room team.

Phase 2 of PETC will allow the Royal Navy to undertake combined simulated warfare training as a carrier task group, while geographically dispersed. This will involve use of BAE Systems' digital twin of the combat system, facilitating faster transition in and out of the training environment. The combined industry team will simultaneously emulate the combat systems of multiple platforms in the carrier task group, including the Queen Elizabeth Class aircraft carrier, enabling them to work together in a common, simulated threat environment. This next phase will demonstrate an adaptive solution that enables key warfighting elements of the platforms to be tested in a far more complex and realistic environment than can be represented in live training.

Captain Paul Brooks, Senior Responsible Owner, Defence Operational Training Capability (Maritime) (DOTC(M)), of the Royal Navy

says, "Phase 2 of PETC brings together key capabilities from QinetiQ, Inzpire and BAE Systems to accelerate the demonstration of synthetic collective training to our crews, ensuring they are ready for the demands of a future warfighting environment. It will help us to understand how this training capability fits into the wider DOTC(M) program."

Christina Balis, Global Campaign Director, Training and Mission Rehearsal at QinetiQ adds, "This next phase enables the simulation of high-end warfare and the required interaction between the platforms that is not possible in the live environment. In addition, enabling the crew to train while they are on deployment is more cost-effective for the Royal Navy than training ashore, as they can combine the training with other elements of the deployment. As with Phase 1, it is great to see the capabilities at Portsmouth Technology Park, combined with Inzpire's White Force, being used to accelerate the delivery of capability to the Royal Navy."

The QinetiQ-Inzpire-BAE Systems team will deliver Phase 2 of PETC to the Carrier Strike Group in the summer and autumn of 2023.



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# Virtual Reality Scene Generator: bringing the F-16 Mission Tactics Trainer to life

## Providing visuals for U.S. Air National Guard and U.S. Air Force Reserve Command F-16 simulators

Ten new VRSG enabled F-16 Block 30 Mission Tactics Trainer (MTT) simulators have been delivered to support training at Lackland Air Force Base and Tucson, AZ Air National Guard Base during 2022.



- 1 F-16 entity in MVRsimulation's virtual replica of Kelly Field at Lackland Air Force Base, built from 0.15mpp imagery blended into 1mpp imagery of MVRsimulation's CONUS++ terrain.
- 2 VRSG, combined with 4K cockpit displays, renders the pilot's immersive field-of-view on the F-16 MTT with near 20/20 visual acuity.
- 3 MVRsimulation's virtual replica of Kelly Field features a runway, lights, hangars, geotypical buildings, storage tanks, and 40,860 geotypical volumetric trees.
- 4 More than 380 VRSG licenses have been ordered for F-16 MTTs at Tucson, AZ; Lackland, TX; Buckley Field, CO; Atlantic City, NJ; Andrews AFB, MD.





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Each 11-channel VRSG simulates multiple views for the F-16 MTT: out-the-window, embedded HUD, HMD/HMIT, RTSP in the central display unit, ground map radar, targeting pod, and maverick missile displays.

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# Vcom3D Highlights Multimodal Medical Simulation

Vcom3D [Booth 2382], an Orlando-based, woman-owned small business, provides immersive medical simulation and training systems based on plug-and-play architectures with interoperable physical and virtual patient and treatment modules.

According to Ed Sims, PhD, co-founder and chief technology officer, the company is using I/ITSEC 2022 to highlight its multimodal medical simulation technologies and products.

"We're really emphasizing our new Immersive Modular PATient Care Team Trainer (IMPACTT) product line," he said. "IMPACTT enables teams such as trauma teams to practice collective skills, like leadership, communication and decision making on a shared virtual patient. As such, it supports team training protocols. How do you form and build a team? How do you assign roles, especially a leadership role? And how do you keep the team on track and bring up issues as they come up in treating the patient?"

He continued, "Those kinds of protocols

are covered by TeamSTEPPS, one of the training curricula. But we also train trauma skills like advanced trauma, life support and advanced burn support. Something unique about IMPACTT is that it's available in both on-site and remote forms. An on-site team, which might be four people practicing – doctor, nurse, respiratory tech and other specialist roles – would interact with a virtual patient. Think of a large screen that could be on the wall or could be represented on an operating table. They observe the patient. They diagnose them based on the patient's behaviors, as well as various assessments they can do, and they can select from over 150 different interventions, then perform them while communicating with each other and revising the plan of attack as they go along."

"I/ITSEC also marks the first introduction

of IMPACTT Remote, which allows learners at different locations to view the same virtual patient at home, or home station," he added. "They all view the same virtual patient and can interact, using Teams or Zoom in combination with the simulation."

Sims said that both of the systems are highly portable and adaptable, noting, "In addition to using them just virtually, you can actually integrate in physical task trainers. For example, if you were practicing intubation, the doctor might actually have an airway trainer they were working with. But they could interact with the nurse who's providing the sedatives and paralytic drugs, the respiratory tech who's operating the ventilator, etcetera. So they actually get into treating the patient in a form very similar and along a similar timeline as if they were in the ER or in a field."

He concluded, "We always get great feedback at I/ITSEC, which is one of the reasons for us to be here. And we also want to publicize both the products as well as the interoperability standards that they use."



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# E-4B Aircrew Training System Provider

CymSTAR is the prime contractor responsible for the E-4B ATS program that produces highly skilled aircrews for the USAF 595th Command and Control Group.

The contract includes the design and construction of the E-4B training center situated near Offutt Air Force Base in La Vista, Nebraska. The facility, home to the high-fidelity, full-motion E-4B simulator, has been operational since April 2022.

The contract also includes the delivery of the following services:

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SCAN ME



# NAWCTSD Issues OTA – Quicker Solutions to the Fleet

Even before the end of I/ITSEC 2021, the Naval Air Warfare Center Training Systems Division (NAWCTSD) team was already thinking about how they could improve a process. If they saw a concept on the floor they felt could meet a need for the Fleet – a technology or capability – how could they rapidly get it on contract to further evaluate whether it met that objective?

**"S**ince the last I/ITSEC, this was percolating in our heads as to how to do this," said Kent Gritton, NAWCTSD's director of special projects and Navy's I/ITSEC Principal. "We had been going through a lot of different concepts and we came across using an Other Transaction Authority (OTA), which moves things very rapidly. We scheduled it so that the period of time that we will accept white papers for the initiative coincides with what we're doing at I/ITSEC 2022."

On Monday, October 3, the Naval Aviation Systems Consortium issued a request for white papers (RWP) on behalf of NAWCTSD, the first step in helping them find a solution for speeding up the ability to get capabilities to the Fleet. White papers for the Broad Announcement for Training and Simulation offers businesses up to \$100,000 per award, with an estimated delivery date of their prototype six to eight months after the award.

The hope is that if NAWCTSD sees something at I/ITSEC they'd like to know more about, they can ensure those people know about the OTA Broad Announcement and how to submit a white paper.



**White papers for the Broad Announcement for Training and Simulation offers businesses up to \$100,000 per award, with an estimated delivery date of their prototype six to eight months after the award.**

"Now they have a vehicle by which they can get evaluated and potentially we can rapidly award something that we see on the show floor," said Gritton. "But the beauty of this is it doesn't have to only be at I/ITSEC because

the call for white papers is open now, and will continue to be all the way through I/ITSEC."

Plus, Gritton said, that while they are doing the presentations at I/ITSEC, it is not a requirement to register and attend I/ITSEC in order to be a part of this effort. "We are setting up a TEAMS meeting in a publicly accessible area so that if the offerors are not at I/ITSEC, they can present virtually."

He said this setup also allows any subject matter experts (SMEs) to participate in the presentations if they are not attending I/ITSEC.

A Special Notice about the OTA is posted on SAM.gov, which directs interested parties to NAVAIR's Naval Aviation Systems Consortium (NASC).

"We're trying to keep the submission process simple," explained Gritton, "starting with getting the requirement information in, just so we can get as many of these potential white papers submitted and then very quickly and easily evaluate them to see which ones make sense going forward for actual awards."

This part of the OTA is important to Gritton and his team because a lot of smaller companies, which include what's known to some as the "non-trationals," maybe don't have the know-how or the resources to complete what's normally required for a request for white paper.

"But that's why we wanted to keep white paper submissions to a maximum of three pages," he said.

The next step in the three-step process is a down-select of the submissions to determine which groups – if any – are invited to present their topic. Those showing the greatest

degree of promise enter the third and final step, which is being invited to present their proposal and discuss their concept, technology or capability with the SMEs.

Capability gaps identified by the Navy and for which they are seeking capabilities, technologies and/or concepts fall into four broad categories: immersive training environments; simulated weapons; marksmanship; and game-based training.

"We have 30-minute blocks of presentation time set up at I/ITSEC, so our plan is to do as many presentations as we can there," Gritton said. "It's not supposed to be like a

formal proposal brief; it's a chance to have more dialogue with the offerors to validate what the SMEs are interested in. Based on those presentations, the commands hosting the requirements will make

the decision whether to move forward on an actual award or not."

It's important to note that although there is much hope and excitement for the capabilities and technologies that will be shared through this OTA, there is no requirement that an award will be extended, just the possibility. But those that do get an award also receive the opportunity for a larger follow-on contract should the prototype be deemed appropriate for full development and/or production.

"It's a trifecta – a classic win-win-win," said Gritton. "It's getting product into the hands of the Fleet quickly, casting a broader net to include the non-traditionals, and leveraging the power of I/ITSEC like we haven't done before."

OTAs are not new. They were created as a method of reaching nontraditional defense contractors that cannot or do not want to do business with the federal government. Although legally binding agreements, they are not subject to the federal laws and regulations governing procurement contracts.

To register for the "Broad Announcement for Training and Simulation," register at the Naval Aviation Systems Consortium (NASC) portal.







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# General Dynamics Focuses on Live Training

General Dynamics Mission Systems [Booth 1357] is using I/ITSEC 2022 to highlight the company's significant multiyear investments in the live training arena.

According to Roger McNicholas, vice president for the company's Training, Testing & Efficiency Solutions (T2ES) business area, the company will be highlighting several technologies and programs centered around an evolution of increased capability live training solutions.

"Obviously, the customer is getting close to where they want to start procurement activities around replacing the MILES [Multiple Integrated Laser Engagement System] training system," McNicholas explained. "And so we've been developing technologies that would give them that potential. At the same time, the Synthetic Training Environment would like to advance the state of live training, along with all the rest of training, and not just for direct fire kinds of capabilities. So there's been a lot of emphasis towards indirect fire and counter-defilade and those type of activities. And those capabilities require different instrumentation to do that."

He noted that a glimpse of the indirect fire capabilities will be presented in the company's booth during I/ITSEC, where visitors will have the opportunity to utilize a Magic Leap 2 headset in conjunction with a Threat Tec MK19 automatic grenade launcher. Those partner systems and technologies will be linked to the live training command and control software that is utilized at the Army's primary training ranges.

McNicholas also described the company's recent work on what they call a Universal Test Adapter (UTA), which essentially replaces the CPU [Central Processing Unit] in a MILES IWS [Individual Weapon System].

"Those processors that were on the MILES IWS are at 'end-of-life,'" he said. "You simply can't get them anymore. So one thing that is pretty significant is that the customer, PM ST [Project Manager Soldier Training] has an active procurement with us to replace some number of the [MILES] player units and radios at JRTC [Joint Readiness Training Center] to

see if it's possible to give them an upgrade path while STE and MILES replacement are ongoing activities in parallel. In fact, they are having us do JRTC rotations right now using the UTA connected through Bluetooth to a cell phone that allows us to run software we developed with the government – called the Live Training Engagement Composition (LTEC) – which is a mobile app on that phone. So we're able to now start fielding that



capability that could become the basis of the instrumentation solution as they go forward."

"Another important reason for the UTA is, as much as the Army would love to replace all of that legacy equipment all at once, it would be very hard to fund that approach," added Brandy Castle-Ges, director T2ES strategy and business development. "It would still take time, due to both logistics and funding issues, to get that fully replaced. So this technology that General Dynamics Mission Systems has developed will allow them to bridge the legacy and new technology together and field new capability at the 'pace of funding.'"

Elaborating on the company's partnership

with Magic Leap and the application of Magic Leap 2 goggles on the MK19 simulator, McNicholas acknowledged the technical challenges of using augmented reality (AR) in outdoor settings.

"We are working pretty closely with Magic Leap to solve some of those problems, using what we call a sensor fusion approach," he said. "When you're indoors, the Magic Leap headset tells us where we are, because they can see the walls and the doorways and the windows and figure out precise location. But when we're outdoors, it's more challenging. So now we use our POD [Position Orientation

Device], a supplemental capability that feeds and exchanges information to and from the Magic Leap headset, allowing it to synchronize to the underlying terrain database. In fact, with this solution it is very hard for Magic Leap to not be synchronized."

"With high fidelity it's important to know where you are in the real environment," Castle-Ges added. "And the reason is that, if you don't know to a very, very high degree of accuracy, a soldier would see imagery in the places that they shouldn't, as well as experiencing other problems, which could lead to negative training and possibly cause AR sickness, and it would compound all the different errors that would be experienced in the environment. So, knowing exactly where you are, with a high degree of fidelity, to employ augmented reality effectively for live training, is extremely important."

Elaborating on the company's live training developments and industry partnerships, she said, "When you are in the AR space and you are trying to find a solution for live training, we are trying to bring in new weapons that haven't been simulated before. So we believe we picked the best headset with the best technology."

McNicholas concluded, "We are making significant investments to develop technology, not just to be a 'rack and stack' integrator, but to solve the true science problems, whether they are in quantum technologies, training technologies, computing, ruggedized devices or other areas."



# Exhibitor Networking Event [Exhibit Hall – 1700-1830]

Be sure to kick off I/ITSEC 2022 with a stop by one of the participating booths at the I/ITSEC Exhibitor Networking Event. This is a great way to view the latest technology, while networking with exhibitors and your fellow attendees. Be sure to check the official I/ITSEC website and onsite signage for updated hospitality participants.

BOOTH	COMPANY NAME	OFFERING
239	Soar Technology	Michigan v Florida beer
700	Yorktown Systems Group	Beer, wine, mimosas, Bloody Marys & pretzels
810	GDIT	Hors d'oeuvres and a margarita station
1019	3D Perception	Beer and specialty beverage
1089	Bohemia	Beers from around the world
1332	Brightline Interactive	Assorted hors d'oeuvres and cocktails
1413	MAK Technologies	New England clam chowder and Sam Adams, gator fritters and a local brew
1748	Lockheed Martin	Refreshments and hors d'oeuvres
1760	Valiant Integrated Services	Drinks and appetizers
1809	Engineering Support Personnel, Inc.	Angus beef sliders, Cuban spring rolls, chicken cordon bleu and a hosted full-service bar
1990	Connexions Federal Service	Keg and raffle
2208	Scalable Display Technologies	Full-service bar
2491	Metris Global	Light appetizers, domestic and imported beers
2548	Barco	Belgian beer and Norwegian aquavit
2673	Ingalls Information Security	Beignets, southern sweet tea and decaf coffee
2864	Command Post Technologies	Corona Premier keg
3018	Ruddy Nice	French champagne with LuxCarta, punchy beers from Fight Club, New York Vigilante Whiskey, Ruddy Nice British Gin o'clock, 4GD/D3A Euro beers
3058	Radiation Emergency Services	Hosted bar – for those with tickets



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## Navy North Star ... continued from p1

by the CNO [Chief of Naval Operations] for whatever he needs it for. But most of all, we have to provide training faster. Our adversaries are moving at an incredible pace, and we have to counter them. We have to get training out there to the warfighters when they need it. And another challenge is that it's going to change constantly, so we need to be able to really quickly turn that training around and provide updates."

Covelli explained that the development of the new vision statement was fed by the warfighter.

"The Fleet is our customer," he stated. "We are going to serve them, and we are going to be judged by them, not only on the products and services that we provide, but also on the speed at which we provide them. I've said that from the beginning of my time at NAWCTSD. We want to ensure that we're providing what they need and that they're happy with the quality of products and services."

Noting that NAWCTSD places great importance on customer feedback that they have solicited for the past two years, he added, "Their feedback is always enlightening. Across the board, our customers say we provide good, high quality products. But we're also being told that we need to be quicker. There is a sense of urgency in improving warfighter readiness because, like I said, we must outpace our adversaries. And that sense of urgency is now even baked into our vision statement."

Asked how the new vision statement differs from previous vision statements, Covelli responded, "The previous vision statement was to be the Fleet's premier provider for modeling, simulation and training human performance. That focused on the command and basically

the desire to be the best at what we do. But the new vision statement highlights our purpose. It gives us direction. And it focuses on the warfighter. When I walk through the hallways and I ask somebody what they do, I want them to say: 'I accelerate warfighter readiness.' That should be the answer, not 'I work in contracts' or 'I do program management' or 'I sweep the floor.' I want them to say: 'I accelerate warfighter readiness,' because this is a team, and everyone on the team does that."



**There is a sense of urgency in improving warfighter readiness because ... we must outpace our adversaries. And that sense of urgency is now even baked into our vision statement."**

Reiterating that the new vision is warfighter focused versus command focused, he elaborated, "Our previous vision statement was more of a lofty goal. And it still remains

accurate. I mean, it's our goal to be the best. Everyone wants to be the best. But that vision statement really didn't provide our team with a 'North Star,' which is the function of our new vision statement. Our new vision statement highlights the importance of working quickly to deliver those products and services, without delay, so the warfighter can stand ready."

He noted that the new vision will be incorporated into all official communications, to the point where every member of the team, along with government and industry partners, can speak to the importance of delivering quality training products and services quickly.

"Speed is the number one priority," he said. "We are focused on speed."

Cautioning that the new vision "is not about doing more with less," Covelli clarified, "It's about doing more for the fleet or more for the warfighter and doing less internal processing. I don't want people viewing this as doing more with less. It's the exact opposite. It's more for the Fleet and less internal processing. We have to act with a sense of urgency, like we're going to war tomorrow and the Fleet needs something."

Covelli hopes that "the Fleet doesn't see a big difference" as a result of the new vision, observing that NAWCTSD will continue to provide great products and services.

"But the intention is that they are going to start seeing them delivered sooner," he said. "Speed is our number one priority. We need to meet or exceed the required delivery dates. And we do that now to a point, which is great. But we need to go faster. We need to make sure we're always doing it. If something is a day late, it's late. We can't even be a day late. We need to be on time. If the warfighter says: 'I need something on May 1,' it needs to happen on





May 1 – not May 2. And we want to continue to provide those products and services to make that higher quality sailor. We just have to do it quicker.”

Reflecting on how industry can assist the process, Covelli asserted, “Acquisition is a team sport. Whether it’s every member of an integrated product team in the government or whether you are working with contractors, it’s all one big team. Everybody contributes to the success

of a product or effort. It’s not just the person holding it last. But we’re in this together with industry. We can’t succeed without them.”

He added, “Accelerating warfighter readiness through training solutions is more than just words. It’s a mindset change. That’s what we’re trying to make. We are trying to change culture here. And I ask our industry partners to join us and join me in understanding the



urgency of our mission, and to join us in this cultural change to make reduced delivery times a priority. They need to make speed a priority. We’re looking for efficiencies in our processes internally and hoping that industry is doing the same thing. If our industry partners see our processes as an impediment to timely delivery, I want to know. I want them to challenge the status quo and

identify non-value added tasks. Just the same way I want my team internally to do that, I want my industry partners in the bigger overall team to do that. We shouldn’t accept a ‘this is always the way we did it’ mentality, or just blankly follow a checklist. We need to do a little bit of critical thinking and modify those checklists. Those checklists are there for a reason but they should be modified, depending on the task at hand.”

“We will know when products and services are delivered and provided on time,” he summarized. “And my goal is to have nothing awarded late and everything delivered on time. Really, it’s all about delivery. We get feedback from our customers and we’re going to continue to monitor that feedback to make sure that we’re achieving that vision statement.”

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# MVRsimulation Challenges Training System Paradigms

MVRsimulation Inc. [Booth 1187] is highlighting its new data training system called the Deployable Joint Fires Trainer (DJFT) at I/ITSEC 2022. The system will be networked with its fixed wing trainer, the Part Task Mission Trainer (PTMT), in a scenario run in MVRsimulation's Virtual Reality Scene Generator (VRSG's) Hajin, Syria terrain.

The company delivered a full DJFT system to U.S. Air Forces in Europe and Air Forces Africa's Warfare Center (UAWC) – previously called the Warrior Prep Center – in mid-2022. That delivered system software included: VRSG 7, Battlespace Simulation Incorporated's (BSI's) Modern Air Combat Environment (MACE) 2021R1, the Varjo XR-3 with Steam VR, and WinTAK. Hardware includes the mobile, multi-station Role Player, Instructor Operator Station and Observer Station; XR-3 mixed-reality head mounted display enabling 360 degree FOV; and integrated JTAC equipment: emulated/simulated SOFLAM, Laser Range Finder, DAGR, IZLID 1000P, Night Vision Goggles, IR strobe, signal mirror, ROVER/VDL, binoculars, PRC-117G and PRC-152.

In October 2022, MVRsimulation received notification that the system has achieved interim accreditation with the customer. That interim accreditation covers the following operations: Type 1/2/3 TAC [Terminal Attack Control]; BOC; FW; RW; Laser Control; IR Pointer; Remote Observer; VDL; SEAD; FAC(A); Night; and Urban.

According to W. Garth Smith, co-founder and president of MVRsimulation, the evolved system capabilities recently delivered and on display at I/ITSEC 2022 point to a corporate "pivot" in which the company shifted from its early roots of providing only software to providing complete training systems.

"We pivoted during the pandemic," Smith explained. "There are a lot of reasons for it, but one of the key reasons was that we wanted to have more control over how the simulator looked when it got into the warfighter's hands. We have a lot of capability and we were not always seeing the end

product end up in a warfighter's hands in a way that made us proud or where we felt they were getting the most effective simulator possible."

As a result of this realization, he said that the company rented the physical space neces-



sary to start building its own simulators. Smith organized a pre-I/ITSEC remote briefing for *Show Daily* in which company staff used the simulators to demonstrate a range of training and operational capabilities.

"The cockpit is an all-aluminum welded structure that is running our software and the BSI software MACE, which is the flight model performing all of the EW and other aspects," he said. "And we have delivered 30 of those physical cockpits to Spain, where they are being used in the Tactical Leadership Program (TLP), to actively train NATO pilots."

He emphasized that the BSI software represents "an enormous part" of the complete capability.

As part of the remote briefing presented by MVRsimulation, the cockpit was networked with the company's JTAC simulator, which includes a mixed reality capability.

Referencing the Air Force Remote Simulator Instructor (RSI) program, Smith offered,

"What you are seeing here physically in our production facility in Sudbury, Massachusetts, is a pilot who is actually remotored in and can log into any one of the simulators you see in that room. I'm in a separate room in Sudbury and other briefers are logged in from Texas and Idaho. And we're all doing it through encrypted devices."

He added, "The idea here is that we're doing some fairly sophisticated things with the simulators (physically), and then remotely. And it includes mixed reality."

He pointed to a system capability in which a remote pilot could control the projection of red and blue beams, observing, "We've actually solved a major problem through the creativity of our folks, which is the ability to see where the operator is looking. It's not just their head position, but it's their eyes."

Smith continued, "Varjo is a Finnish company that produces absolute magic. Before Varjo, I hated headsets and I really didn't care too much for virtual reality because of the latency issues, along with resolu-

tion and quality of the display. Then Varjo came along and they happened to have this 3D eye tracking capability. I think they were thinking of using it more to determine where a pilot was looking when they were flying. But we turned around and made it a visual component, so for anybody wearing the Varjo headset we can actually track their head position and their eye position. And that overcomes a major obstacle in after-action reviews for pilots or JTACS, saying, 'Where were you looking and why did you not see the target in this particular area?' So it's not just mixed reality, and doing away with these large physical displays. It has added this whole new capability of eye tracking, which we think is crucial for after-action reviews."

Smith asserted that other design benefits of the headset range from greater comfort in wearing to a level of immersion so high that he now enjoys the headset experience.





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# New Training Platforms in Moog Spotlight

Moog [Booth 539] is using the I/ITSEC 2022 venue to highlight the company's motion control and electromechanical technology expertise.

"We will have two new products at this year's show," explained Shennon R. Yaw, global simulation business manager at Moog Industrial Group. The first is a very large 14,000 kilogram hexapod system and the other is a small 1,500 kilogram hexapod system. Both are new and both represent the next generation of those technologies, where we have a long legacy."

He said that the large motion platform "Gen 3" system offers exceptional reliability, lower total cost of ownership and lower operating costs, building on the company's legacy of being the first provider of electromechanical systems

to achieve Level D flight simulator certification, as well as certification by

agencies in 24 different countries.

Yaw noted that the new large platform would be useful in flight simulations for large to medium cabin aircraft, with examples ranging from 787 down to 737 aircraft.

"The small motion platform also builds off our reliability and the fact that we have more than 500 systems in our global installed base," he continued. "The new small platform has optimized performance. It represents a cost-effective solution with a small footprint but a high payload capacity."

He added that the new small platform would be useful for smaller aircraft, such as a Cessna, or a light helicopter.

"Both of the platforms are next generation and are being released to the market," he said. "I/ITSEC represents great exposure and allows prospective customers to see these exciting new products."

He summarized, "The big takeaway is



that Moog is always improving. We want to enhance our products to allow our customers to be more competitive and the large and the small motion simulators will lower their total cost of ownership."

He characterized I/ITSEC 2022 as "a great opportunity for us," noting, "Number one, we're excited to interact again face-to-face with customers. It's been a long COVID experience and we are interested and excited to talk with folks again, because we are a company that is open and available to customization for our customers and their specific needs."

Yaw concluded, "Moog is going to leverage the legacy that it has established to bring the best solution to our customers wherever we can."



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# SIMETRI Integrates New Capabilities

With the company's foundations in the development of part-task trainers and individual training devices, SIMETRI, Inc. [Booth 1113] is utilizing I/ITSEC 2022 to showcase its new technologies, demonstrating the expansion of new and developing systems into a broad range of innovative capabilities and services.

One of the spotlighted systems is the company's new multi-modal medical simulation technology, M3TS, which integrates augmented reality and haptic technology with physical models. Two procedures, Smart Tourniquet and Smart NPA (nasopharyngeal airway), are highlighted.

Using the actual instrument, "SIMETRI has added sensors and the ability to collect data from those devices as they're being used and manipulated by the trainee," said company founder and CEO Angela Alban. "So those devices, combined with a tablet, will show what you're doing to this virtual patient."

For example, the Smart Tourniquet combines a realistic amputated limb physical simulator with a tablet-based mobile app that replicates vital signs and monitors tourniquet tension to ensure proper tightening to reduce bleeding. "The tablet shows that patient either dying because you didn't do it correctly, or the bleeding will stop and vital signs stabilize," Alban said.

Ed Stadler, SIMETRI's vice president of engineering, added, "Before, it was just the tourniquet device that you would put on a roll player or a manikin, and you could visualize the pressure that was being applied. Now we've advanced that and integrated it into this mixed modality training, where you have a virtual soldier with an amputation and virtual blood pool, and you can actually visualize the bleeding stopping when you apply the tourniquet because that pressure data is tied into the bigger simulation that's running."

Similarly, the Smart NPA allows insertion of a nasopharyngeal airway into a physical model that simulates the head and shoulders of a female patient, with the tablet displaying animation of insertion technique and vital signs that validate proper insertion.

Alban said these are examples of work

that they've been doing under a Small Business Innovative Research grant funded by the Department of the Army. "We already have an entire AR/Haptic Care Under Fire system for combat medics in development under the M3TS umbrella, so the interactive procedures at I/ITSEC will help us emphasize the diversity of applications for our multi-modal approach."

SIMETRI is also showcasing its Smart Module Prolonged Field Care (PFC) system at I/ITSEC. Initially developed for USSOCOM, the company adapted a SimMan 3G manikin, created by Laerdal, by integrating SIMETRI's individual part-task trainers physically and



digitally with the manikin. The integrated technology tracks a trainee's interventions being performed on the attached SIMETRI products and updates the manikin's physiological status.

Alban said, "SOCOM has been using that prototype manikin for more than a year at Fort Campbell to collect data and inform their decision on how to move forward as they continue to evolve the prolonged field care curriculum and training environment."

At I/ITSEC, the company is highlighting a Smart Module manikin integrated with various modules including SIMETRI leg, arm and torso escharotomy, humeral head intraosseous

infusion, amputation and fasciotomy modules.

"We've had a lot of success developing modular training devices with integrated tech to modify existing manikins, so we were in a unique position to create a system for SOCOM that is as customizable as it is comprehensive," said Alban. "That adaptability makes it just as useful outside of the Special Operations environment, not just for combat medics training PFC, but also for the broader emergency medicine population."

In what Alban described as a "huge" development for the company, SIMETRI recently signed a North American/global distribution contract with healthcare industry giant Laerdal. "It could take SIMETRI into a space where we will grow such that we can continue to do what we do and evolve more products," she said.

Alban was equally enthusiastic about additional collaborations including with ECS working on the Modular Medical Environment, and under that contract, incorporating an automated performance assessment capability that Raytheon BBN has developed. "We've integrated the tourniquet and also have done some experimentation with needle chest decompression," she said. "We're looking at some of these devices and capabilities that SIMETRI provides and combining them with other technology devices developed by BBN and funded by STTC, because we see the value of these applications coming together."

Stadler summarized, "SIMETRI is known for its realism and its expertise in producing limbs and part-task trainers associated with the human form. But last year and this year really showcased all of the embedded things that we've been doing that really highlight our mechanical software and electrical engineering capabilities, as well. We're able to do things in an agile fashion; we're small, so we can react and we can do things on a short-term basis because of our agility. I would want people to walk away from the booth saying, 'That company really has a technological base that I didn't realize they had.'"



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