

THURSDAY NOVEMBER 30, 2023

Fleet Training Officers Panel Page 4

Al Panel Page 6

Professional Development Workshops

Page 8

Army NCO Panel

Page 10

I/ITSEC 2024 Planning

Page 12

Award Winners

Page 22

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Navy Looks to New Industry Relationships

One of the key messages being delivered by the US Navy during I/ITSEC 2023 highlights how that service plans to work with industry to produce better training experiences and results for warfighters.

A ccording to CAPT Tim James, Commanding Officer, Naval Air Warfare Center Training Systems Division (NAWCTSD), the new approach eliminates some of the "That's how we've always done it" thinking that might have delayed or even potentially constrained some previous acquisition programs.

By comparison, he credited his first exposure to a new approach to a previous acquisition officer assignment at the US Special Operations Command (USSOCOM).

"When I got [to USSOCOM], I found out that the way we were doing acquisition wasn't the way it had to be done," he explained. "Now, USSOCOM still follows the same regulations that everybody else does, including NAVAIR. But the way they do it is a lot more effective. There's a lot more trust. For example, if a program manager fills out some market research, the contracting officer just believes it. They don't make them write an extra page or look for yet another source or whatever. Everybody trusts that the people they're working with are experts in their lane until proven otherwise. And then it's a pretty brutal response. You can literally be blacklisted. In fact, I replaced a program manager that the customer wouldn't work with anymore because they lost trust in them."

He noted that experiences supporting this approach included a visit and presentation by Stephen M.R. Covey, author of *The Speed of Trust: The One Thing That Changes Everything*, adding, "That's the kind of thing that USSOCOM valued - effectively working as a team: the special operations mentality that everybody is highly trusted, empowered and fully enabled to do their part of the mission."

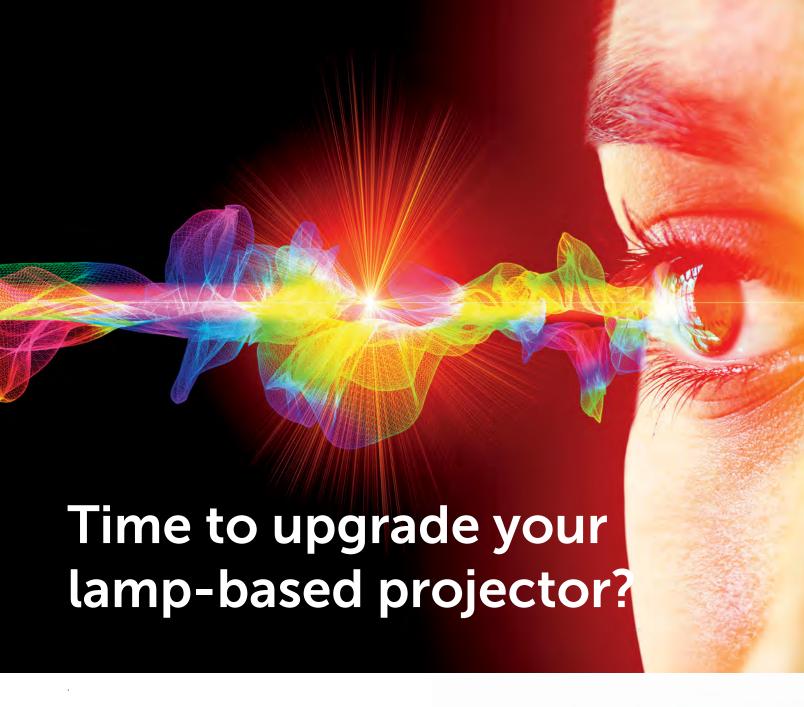
Returning to an acquisition perspective, he continued, "If I tell you that you are accountable for getting something awarded, then you have all the authorities and power to get that thing awarded as well. I'm not going to micromanage you or make you raise decisions up."

James emphasized the importance of including industry in the process.

"They're a teammate," he said. "They're not an adversary. The warfighter doesn't win if government and industry are fighting against each other and trying to double check each other's work or undercut each other. If you can't work as a team, then the only person that loses is the warfighter."

He offered that a glimpse of the new approach will be evident in the service "quad booth" [NAWCTSD Booth 1439] near the center of the exhibit hall.

Continued on p28



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THURSDAY, NOVEMBER 30

CONFERENCE HIGHLIGHTS

REGISTRATION HOURS

0700-1500 (West Concourse)

EXHIBIT HALL HOURS

0930-1500

FOCUS EVENTS

0830-1000 Revolutionizing Training with Generative AI (Room W300 - Theatre)

0830-1000 Wargaming to Warfighting – Training for the Right Fight Across the Learning Continuum (Room W306AB)

1030-1200 Department of the Air Force MAJCOM (Room W304AB)

1030-1200 Medical IGNITE: The Latest Innovations in Medical Simulation
Across Industry, Academia and Government (Room W300 – Theatre)

COMMUNITY OF INTEREST EVENT

0930-1500 Serious Games Showcase and Challenge (Exhibit Hall Booth 3181) 1030-1200 Cognitive Augmentation for Military Applications (Room W306AB)

PROGRAM BRIEFS

0830-1-00 Army Acquisition Update (TSIS Updates) (Room W304EF)

0830-1000 Navy Training Systems Program Managers – Program Brief (Room W305AB)

1000-1100 Department of the Air Force CMSO Industry Day (Room W109B)

1030-1200 Navy Training Programs Vision - Program Brief (Room W305AB)

PAPER SESSIONS

(download the I/ITSEC app for synopses))

0830-1000 (Rooms W307ABD; W308AB)

1030-1200 (Rooms W307ABCD; W308AB)

1330-1500 (Rooms W307A; W308AB)

AWARDS

1300 Serious Games Showcase & Challenge Awards Ceremony (Booth 2588)

1800 Hosted Reception Sponsored by Lockheed Martin Corporation and the Boeing Company (Hyatt Windermere Ballroom)

1900 Conference Awards Banquet (Hyatt Windermere Ballroom)
Including Scholarship, Best Tutorial and Best Paper Award Presentations

SHOWDAILY

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2023 I/ITSEC AWARDS



LIFETIME OF SERVICE AWARD

RADM James Robb, USN (Ret.) NATIONAL TRAINING & SIMULATION ASSOCIATION

Rear Admiral James Robb USN (ret) was selected as President of The National Training and Simulation Association (NTSA) in June 2012. A distinguished graduate of Rensselaer Polytechnic Institute, he retired from the United States Navy in February 2006 after a distinguished 34-year Naval career where he commanded a fighter squadron, a carrier air wing, the Navy Fighter Weapons School (TOPGUN) and a carrier strike group. Key staff billets included Chief of Plans for Operation during Iraqi Freedom.

Admiral Robb's exceptional expertise has impacted the direction of NTSA including increased emphasis on Gaming, Cyber Security, Artificial Intelligence, Advanced Integrated Live/Virtual & Constructive Architectures and Big Data.

He was committed to expanding NTSA's Science, Technology, Engineering and Mathematics (STEM) programs and established priorities to serve underrepresented students in STEM.

RADM Robb was a passionate advocate for the application of modeling and simulation to improve patient safety. In February 2020, he formed the NTSA Patient Safety Working Group, which remains actively engaged in educating Congress and the broader community on how modeling and simulation can minimize errors in medical treatment.

A keystone achievement during his presidency was the continued expansion of the NTSA Scholarship program. At I/ITSEC 2023, NTSA awarded \$180,000 to six Bachelor degree, nine Master's degree and ten Ph.D. scholars.

As President of NTSA, RADM Robb dealt with enormous administrative and operational challenges such as unpredictable changes to government regulations regarding conferences and the unique existential threat of the COVID pandemic. Throughout all of this and by using his outstanding leadership and managerial wisdom he preserved the health and wellbeing of the M&S community and again underscored the critical importance of I/ITSEC. His successful navigation of these complex challenges assured the continuation, growth and success of I/ITSEC as the world's premier M&S Conference and Exhibition.

RADM James Robb lived a lifetime of service and commitment in the Navy and in the private sector. He was a proven champion of I/ITSEC and even more so of the modeling, simulation, training and education community.

For a full listing of this year's Awardees, see pages 22 and 24

Fleet Training Officers Describe LVC Issues

In a Wednesday morning Focus Event, representatives from across the US Navy shared perspectives on the current state and future potential of live, virtual and constructive training.

r. Christopher Boyle, LVC Training Technology Director, US Fleet Forces Command N72, served as the moderator for the Fleet Training Officers Panel, which included: Captain Peter Shoemaker, USN, Commodore, Strike Fighter Wing Atlantic; Captain Michael Langbehn, USN, Deputy, Naval Air Warfare Development Command; Captain Sean Anderson, USN, Commanding Officer, Tactical Training Group Atlantic; and Captain Brian Miller, USN, Director, Maritime Operations, Carrier Strike Group FOUR.

Boyle, who described the panel as "training experts from across the Navy, who are responsible for the force generation of those forces that are preparing to deploy, fight and win against our enemies," opened his remarks with a "baseline description" of the different training phases – basic, advanced and integrated – that support the Navy's preparations for deployment.

He said that the basic phase, for example, or unit level training, provides "the ability to deploy as a unit with their missions, functions investments, in blending the live, the virtual and the constructive all together so we can pick and choose to enhance training. The LVC technologies that the Navy has invested in do not replace any training; they enhance the training that we're already doing. So what we're looking for is the 'best-of-breed,' best simulation possible, whether that is a live asset, or whether that's putting somebody in a trainer, injecting some kind of constructive entity onto the sensors and onto the situational awareness of live aircraft and live ships that are out there flying around, to make it look as realistic as possible."

He continued, "The purpose of all this is to replicate the intensity and complexity of modern warfare. It's not about the first day of the war. It's not about the first hour of the war. It's about the first minute of the war. When you're looking at anti-ship cruise missiles that are traveling at near or more than supersonic speeds, coming across dozens of feet over the water, your reaction time is going to be measured in seconds, not minutes. So we

have to prepare our forces to be able to fight in that first minute of war, because you're not going to get a second chance."

He pointed to the example of the Russian warship Moskva, Flagship of the Russian Navy's Black Sea Fleet, that was sunk in April 2022.

"That ship was perfectly capable of defending itself," he said. "It had radars, missiles and close in weapon systems. Those weapons sys-

tems didn't fail. It was the crew that failed. It was the crew that didn't utilize the tools they were given to successfully defend themselves against that attack.

"Compare that to what the USS Carney did, or what the USS Thomas Hudner or USS Mason did, just recently, in the Red Sea. Those ships never fought in combat before successfully defending themselves, and Israel, against cruise missile and drone attacks. This was the first time. These crew members were

not combat veterans. This was the first day of fighting ever probably in their lives. And they successfully executed because they were trained through this LVC construct that we've developed."

Panelists expanded on those themes in their opening comments.



It's not about the first day of the war. It's not about the first hour of the war. It's about the first minute of the war.

As a representative example, Anderson noted that "adding 'V' and 'C' into the 'L' environment really started in in earnest in 2017... That year we had 970 man hours of training for LVC. Dedicated LVC man hours in 2023 were up to 60,000. I'd love to say our manpower increased by a similar percentage as well. It did not. But it's a success story that we're pulling that off."

In response to a moderator question surrounding how they conduct training in their organizations today, Shoemaker pointed to the benefits of virtual and constructive in reducing the need to use combat airframes as 'red air' [opposing aircraft].

"We're burning flight hours on assets that we should be using for training and combat," he explained. "The second part of this question is, if we had all the money in the world, we would buy J-20s [fighters] from China, and fly those as our adversary aircraft. But we don't have enough money to do that, so [we can] use live virtual and constructive."

"LVC is great when it comes to tactics and proficiency and warfighting and thinking through some things, but it doesn't replace the live," said Anderson. "I just want to make sure I get that message out early. Because I'll forget, it's more cost avoidance and savings and the L doesn't ever go away. It's still absolutely necessary. But V and C are great enablers."

He concluded, "I'd say you know our report card, collectively is how folks do on deployment. I think Thomas Hudner, Carney and Mason recently have shown that they are pretty ready. We're feeling pretty good about that, because we can draw a line to the exact training we did."



and tasks." The follow-on advanced phase focuses on getting units working together. Finally, the integrated phase is where the Navy pulls the entire battle group together with supporting assets.

"Each one of these phases leverages the \$4 billion in prior investments that the Navy has made into live, virtual and constructive technologies and training," he said, adding, "Each one of these elements is not separate. And that's where the Navy has made major



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Panel Explores Training Implications of Generative Al

ater this morning [0830-1000, Room W300-Theatre], I/ITSEC 2023 attendees will have an opportunity to hear a panel perspective on Revolutionizing Training with Generative AI. Specifically, with generative AI models, such as ChatGPT, becoming more robust and mature, how might they be put to use productively and safely in training, education and simulation? Additionally, beyond how they might support their human counterparts as highly personalized assistants, could they fundamentally change the way we learn, train and work in today's digital world?

Panelists will include Yair Shapira, PhD, founder and chief executive officer, Ed-with-Al, Andy Van Schaack, PhD, associate professor of the practice, Vanderbilt University, Svitlana Volkova, PhD, chief Al scientist, Aptima, Inc., and Keith Brawner, PhD, Program Manager, Institute for Creative Technologies, UARC, US Army DEVCOM SC STTC.

"It will be a panel in the format that I have had for the past several I/ITSECs, in which I bring in experts from very different domains, and we have a fireside kind of chat. It's not like bombardment by PowerPoint. It's exactly the opposite. And then I leave the audience time to interact," offered panel moderator Daniel Serfaty, chairman and chief executive officer at Aptima, Inc.



I wonder about the time people saw the first airplane in the air, and whether they could imagine mass transportation and speeds higher than the speed of sound.

Serfaty said that the panels "are usually on things that are really cutting-edge topics that people have heard of, or have even experimented with, but there is not yet an established discipline on that topic or an established practice, in the military in particular."

He noted that this is not the first year that he has moderated an AI panel at I/ITSEC, highlighting the fact that one of his previous panels included an AI panelist named Charlie. Turning to today's panel, he explained, "This year, I wanted more specifically to explore the true impact, for better or for worse, not just a theoretical impact, of those generative Al technologies, what we call large language models, like ChatGPT, but not just ChatGPT, on our training, simulation and education markets. How are they being used? Is that really a true revolution? Or is it just

another technology? Are they being already experimented with? What are people worried about?"

In terms of worries about the technology voiced by some, he asserted that "people don't like many things that they don't know yet."

"I wonder about the time people saw the first airplane in the air and whether they could imag-

ine, mass transportation and speeds higher than the speed of sound," he said. "And that's exactly what we have today."

He offered the example of the Internet, which "was on the drawing board for decades, but when it finally arrived it was distributed on everybody's laptop, phone and computer."

He said that his goal for this year's I/ITSEC Al panel was to have panelists explore Al with the audience based on their own experiences and backgrounds.

"For example, on the panel we have a diverse combination of people from the military, industry, academia and even one person who is an entrepreneur who started a company to transform the life of teachers in grades K through 12 through enabling them to use AI to develop their lessons plan. And it's not only to develop their lesson plan, but to totally tailor an individualized lesson plan to each child according to their preferences, to the game they like to play, to their aspirations, to their scores, or to their grades on previous material. So, if you're going to teach fractions, for example, to group of third or fourth graders, Johnny is going to experience it with visuals and lessons and games very differently than Mary will. Why? Because the Al system knows a thing or two about Johnny and about Mary. And the teacher is totally able to adapt it to their own preferences or their own skills. And we can do all that using software or using capabilities that are built on top of that generative Al."

Serfaty shifted to the example of today's warfighters, offering, "How do we use AI to create new scenarios, to create 10 or 20 or 30 new scenarios that normally take days and weeks for scenario developers to develop in a simulation environment and now do it in a matter of minutes or seconds? How does it help our people better train? Or are they going to train

faster as a result of that? Are we exposing data that we shouldn't be exposing? What if it's wrong? What if we generate the wrong scenario and we don't know that until people are trained on the wrong things? Do we have the right safeguards for it? So these are the questions that I will ask my panel to answer. And I will ask the audience also to participate."

He acknowledged those who have expressed hesitancy and even concern about the application of AI, referencing a pre-I/ITSEC webinar, sponsored by NTSA, in which webinar panelists were asked, "What is one key security or operational concern you have with generative AI as we continue to advance and expect increased participation of AI in the M&S industry?"

Observing that all participants had strong answers, Serfaty added, "I think what happens is that all these very capable leaders still do not understand what the AI is doing. And as a result, they tend to be overly cautious about it. If it was just a new little technology, their answers would have been much more targeted. But right now, it's almost like, I really don't know what it is. I know it's huge. And therefore, I prefer to be extremely cautious."

Serfaty summarized, "The main question we should all ask ourselves is how do we design a system so that humans and Als team up? That's the key word here, team, in a way that gives a better, more effective product, effective outcome, but also is more efficient and less time consuming. And I think this is the key – we are not taking the human out of the loop. In fact, we are putting it more in the loop, but perhaps in a changed capacity."





Don't Forget Friday's Professional Development Workshops

In planning your week at I/ITSEC, don't forget to consider Friday morning's Professional Development Workshops.

"Professional development has always been part of the I/ITSEC mission," explained Benjamin Bell, PhD, chair of I/ITSEC's Professional Development Workshop subcommittee. "And professional development workshops are part of that."

Noting that the workshops were initially managed "outside of I/ITSEC's conference structure by a university partner," Bell added, "Over the past four or five years, the conference leadership team and NTSA started to see the success that the tutorials program and the paper subcommittees were having. So people started thinking, 'Why don't we replicate that success by bringing the workshop program more into the fold, and apply all those lessons learned, from tutorials and papers, to make the workshops a more robust, rewarding and enriching professional development

experience for the audience?' So starting in 2021, we began to incrementally bring the workshops program into the I/ITSEC process."

Bell said that the process reflected the fact that "There's always more to do to replicate the paper and tutorials processes with a brand new part of the program, workshops. But in 2021, we implemented some of those processes. As a result, the workshops became more formalized, all the way from the process of soliciting submissions, through reviews and then presentation at the conference. And I'm happy to say that the process continued into 2022, where we saw an 80% increase in attendance. It's not that attendance is the goal, but it's a demand signal that gives us confidence that the I/ITSEC audience likes and wants professional development workshops."

The processes continued this year, when, for the first time, the program was put together with its own standing subcommittee.

"And what that has done is help us to

professionalize the process of recruiting presenters, evaluating them and helping them through 'the bird-dog process,' so that the workshops that get presented are meeting that I/ITSEC quality standard. This year, we have eight outstanding workshops, and we've managed to achieve of greater diversity of topics



Professional development has always been part of the I/ITSEC mission

because we're getting more submissions than in previous years. So that's part of the benefit of bringing the workshops into the fold and replicating those successful processes. We're getting more submissions. We can be more selective. We can pick topics that are relevant and timely...there's something for everyone. And I think it enriches the I/ITSEC experience.

Looking to I/ITSEC 2024, he concluded, "Plan your travel because I/ITSEC is now a Monday through Friday event."



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Senior NCO Panel Provides Perspectives

panel of senior Non-Commissioned Officers (NCOs) convened on Wednesday morning for a unique I/ITSEC 2023 Special Event. For the first time ever, I/ITSEC presented training perspectives from multiple senior NCOs, focused on "Operational Readiness Leveraging Simulations for Training and Mission Rehearsal." The NCO perspective is a critical aspect of the training community given the key training responsibilities assigned to these individuals.

"I would like to share that this is the first senior enlisted panel held here at I/ITSEC, and we're really happy to pave the way for, hopefully, future panels here," said moderator Command Sergeant Major (R) Walter Tagalicud, USA, Synthetic Training Environment Cross Functional Team Senior Advisor

"Yesterday, some of you may have had the opportunity to attend the opening ceremony and hear the Honorable Bush talk about modernization and General Brito talk about expanding the TRADOC mission, which is to train, educate and support the global joint operations," he said. "And you also heard Ms. Saunders talk about 'it's a team sport,' where you have military, educators and industry part-

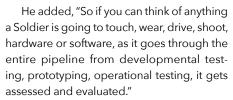
say, and really talk about the important perspective of NCOs in our training, and how simulations can really shape it."

After describing the multiple roles and functions of PEO STRI, he continued, "As I thought about this panel and what's important, thinking about training and every piece of equipment that gets touched and gets developed, it's a collaboration of industry and leaders shaping what the future looks like so that Soldiers are ready."

He added, "And I think right now we're at a pivotal time where technology is advancing fast enough, and we can harness that to shape the future so that Soldiers going forward are ready when the time calls."

"What's great about this panel is all of us up here know each other, and we know how each of our organizations can help all of us," said Sergeant Major Chris Kohunsky, USA, Senior Enlisted Advisor, US Army, CAC-T, Fort Leavenworth. "So, as senior NCOs we can leverage those relationships and those networks to help out at the point of need."

Command Sergeant Major Erick E. Ochs, USA, US Army Training Center and Fort Jackson, said, "At Fort Jackson, our mission



"I realized very quickly," Otero continued, "that what we all do here is to enable a warfighter to have the best equipment possible to keep them successful when they're in harm's way."

Sergeant Major William Pouliot, USA, Senior Advisor to the Assistant Secretary of the Army (Acquisition, Logistics and Technology) ASA (ALT), said, "I have the privilege of being the senior advisor to the Army Acquisition Executive, the Honorable Douglas Bush."

He continued, "We are the acquisition arm of the Army, and we do that through our 12 PEOs who work with industry to develop everything that [CSM Otero] just said he's testing. So, we do work together a lot with that. I'm glad to be here, and I look forward to this conversation."

Tagalicud continued the session by posing a wide-ranging set of questions to the panelists on topics that included: how simulation enables our Soldiers to be more lethal; where simulation technology should be located to get the biggest return on investment; and what senior enlisted leaders can do to help recruit and retain Soldiers in today's complex world. The panelists also focused attention on matters such as benefits and uses of Soldier touchpoints and how data, as part of digital transformation and modernization, is incorporated into simulations and training to augment readiness.

Regarding data, Pouliot said, "The Army has been looking at data for a long time. I think we are becoming as an Army more data literate, as a military becoming more data literate, capable of using data in more abstract ways, of thinking more dynamically versus statically, where we can get to a point where we can take real time data and apply that to training programs. And this allows for warfighter formations to do more reps and sets with less time and less logistical support, while at the same time as we're using the data, we are virtually putting them in the most logistically constrained complex environments to train, and this allows our leaders to fail and learn without the loss of life."



ners working together to solve a common goal. You may have attended the general officer panels that talked about the value of simulation and how it complements live training, and also its challenges."

Tagalicud offered, "Today, you'll hear the perspective of the senior enlisted leaders. They are the experts in their fieldcraft. And they also serve as the senior advisor for their commanders and directors."

Sergeant Major Tom Dow Jr., USA, Senior Enlisted Advisor, US Army PEO STRI, said, "I really appreciate everybody taking their time to come in here and listen to what we have to is to train over 60% of the Army's basic combat training for Soldiers coming into the Army."

"Most of our Soldiers coming in, I dare say all the trainees coming in, are digital natives," he continued. "So, we set the foundation of showing how the Army is using simulation starting at basic training."

In describing his role, Command Sergeant Major Bryan Otero, USA, US Army Combat Capabilities Development Command (DEVCOM) said, "I'm a little bit different from everybody else here. We're not in the training business. We're in the testing and evaluating business."



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Planning Already Underway for I/ITSEC 2024

Tonight marks both the end of I/ITSEC 2023 and the start of I/ITSEC 2024. In fact, planning activities for I/ITSEC 2024 have been underway for months.

eremonies at tonight's dinner will signal the official end to I/ITSEC 2023. However, it will also mark the official start of I/ITSEC 2024. James Threlfall, who will serve as next year's I/ITSEC conference chair, sat down with Show Daily to discuss the range of activities that are already taking place.

He started with reflection on next year's conference theme: Assuring Deterrence Through Integrated Training and Readiness – The Need is Now!

"We've been working with the sea services – both the Navy and the Marine Corps – on that theme," he began. "That made it a little interesting, because, unlike this year where they were dealing with just the Army, we will have two lead services next year."

Threlfall said that the NTSA team actually started working with the sea services in January of 2023, explaining, "We have a certain timetable that we go through. For example,

we like to try and have the theme locked down by the time we get to 'paper review,' which is in the July timeframe. And the hard work for any of the services is trying to come up with a theme that's based on their service chief of staff's guidelines for the year. So one thing that threw a bit of a monkey wrench into the planning process for us this year is that there were changes at that level. And anytime you have a change in command at the top, they have to wait for the new commander to come on board. They aren't running the theme by the new commander, they are getting the commander's directions for the entire service and then building a theme off that guidance. So we ended up pushing that until just a little bit after summertime to finally lock down the theme."

The theme decision was followed by the preparation of a special theme video that will be unveiled during tonight's ceremonies. Additionally, the event will include the traditional

passing of the I/ITSEC conference flag between lead services.

Threlfall said that the I/ITSEC 2024 planning tempo will accelerate on Friday morning, when planners meet to discuss "lessons learned," followed by "a soft kickoff" with all of the subcommittee chairs and the leadership for I/ITSEC 2024.

Threlfall said that later in December the subcommittee chairs will conduct a culling of any volunteers who wish to retire or might have lost company support. That process will be completed around the third week in January when an official kickoff meeting will be held with all the services and the leadership for 2024.

"This year's theme is connected to next year," he concluded. "We follow that into next year, with deterrence through readiness. We want it to be deterrence and not actual war. But we must make sure that our forces are ready – deterring our enemies while showing strength to our allies.



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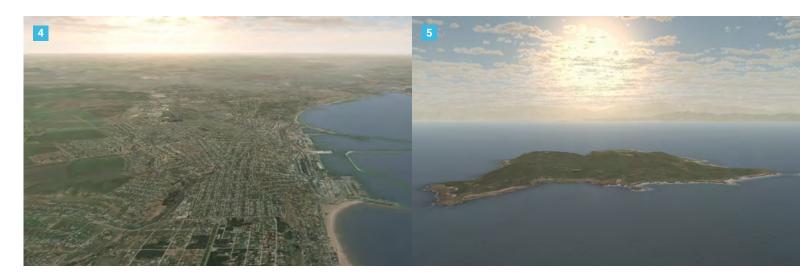
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- 1 A 3D MQ-9 entity in flight over VRSG's CONUS NAIP terrain of the Grand Canyon.
- 2 CONUS NAIP terrain of Vail, Colorado.
- 3 VRSG's new high-res geospecific terrain of Mount Fuji, Japan.
- 4 VRSG's updated Ukraine terrain offers a continuous high-res 50cm imagery basemap of eastern Ukraine, with several high-resolution 30-50cm imagery insets including the city of Luhansk.
- 5 VRSG's new 50cm high-res Taiwan terrain covers the majority of the island, the Penghu Islands and Green Island.



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Doron Spotlights High Fidelity Advanced JLTV and Snow Machine Simulators

poron Precision Systems, Inc. [Booth 1165] is showcasing two of its advanced simulators at I/ITSEC 2023, where attendees can experience its Joint Light Tactical Vehicle (550JLTVplus) and snow machine (550H2plus). Both simulators feature the company's unique 3 degree-of-freedom (DOF) motion system and high fidelity graphics.

"We are the world leader in land vehicle simulation," said Mike Stricek, senior vice president of sales and marketing at Doron. "We have delivered more than 25,000 driving simulators to more than 60 countries, and we're proud of that."

While Doron's business has been traditionally focused in the commercial arena, Stricek said the company has experienced unprecedented growth in land vehicle simulator sales to the Department of Defense [DoD] over the past several years.

At I/ITSEC, he said, "We're bringing a new simulator, the 550H2plus,

which is a snow machine

simulator. We've been getting a lot of interest from air bases all around the world, from the US Air Force, who have to remove snow from runways. These simulate those huge snow plows that you would see at a typical air base or a commercial airport."

In addition, Doron is utilizing I/ITSEC 2023 to highlight its Joint Light Tactical Vehicle simulator, the 550JLTVplus. The company has partnered with Oshkosh Defense, the

original equipment manufacturer for JLTV, and is currently manufacturing and selling the simulator system.

"The JLTV is a very unique vehicle," Stricek said. "For example, it has very limited visibility, so we created a visual system that recreates what a driver would see when they look out the window of the JLTV."

He was quick to highlight a range of visual elements, from the quality of the graphics to the windshield look, offering, "When you're sitting in this simulator, you're going to be immersed within that simulation. You're going to feel like you're sitting behind the wheel of an actual JLTV. So the visual characteristics are the first key aspect of the system."

The simulator also provides procedural training. For example, in starting the vehicle, Stricek explained, "You don't just turn the key and start the engine. You have to go through certain procedures and operations. And of course, these vehicles are used in combat

missions, so we've created very specific

scenarios that train the warfighter how to maneuver this vehicle in a tactical or combat situation."

With Doron's advanced 3 DOF motion system, the simulator's three-axis motion base moves the entire simulator, so the student feels movement in the seat, dash, pedals, steering wheel and visual system. The result is a highly sophisticated driving simulator that accurately simulates the dynamics of the actual vehicle with unmatched realism.

"Our motion system is a little unique in that we move the entire simulator," Stricek asserted. "With some of our

competitors, their designs just move the seat and they keep the visual system stable. That's simply not as realistic as moving the seat, the pedals, transmission, dashboard and the visual system. So just think about when you're driving in your car, and you hit a pothole, your whole car goes up and down with a pothole, not just the seat. So, in the world of simulators, it's a big deal for us because we are a huge differentiator with our commercial competitors. In the Department of Defense

arena, everyone knows that one of the keys to realism is moving the entire simulator, with screens and everything else."

He added that vehicle dynamics are also employed in the 550JLTVplus design, stating, "The Doron simulator has actual vehicle dynamics that replicate what you would feel in an actual vehicle. We can simulate different types of environments, such as snow, rain, mud, sand or water, and the vehicle dynamics will change with all those variants."



The simulator's three-axis motion base moves the entire simulator, so the student feels movement in the seat, dash, pedals, steering wheel and visual system

In addition to its visual system match and procedural and performance training aspects, the 550JLTVplus addresses the reality of rollover accidents. The DoD continuously takes steps to mitigate and prevent accidents during tactical vehicle operations, and rollover accidents are a primary concern.

Stricek said the 550JLTVplus addresses that problem. "We can actually simulate a rollover and show the conditions of that rollover and what you should do and shouldn't do," he said. "One of the key elements in saving the life of the warfighter is that we're able to replicate an actual rollover as it would happen in a real vehicle."

In his takeaway message to I/ITSEC attendees, he summarized, "First of all, we believe that they're going to be very surprised by the technology that we've incorporated just within the last 12 months, as well as the graphics and the resolution characteristics. In fact, we think they are going to be blown away by our simulation. But I think more important than the graphics is the actual realism that they're going to experience. They're going to walk away saying, 'Wow. This feels like the real vehicle.' That's because we dealt with the original equipment manufacturers. And they actually help us with the vehicle dynamics and the cosmetics and the visuals and so on, so it feels like the real thing. And that's how we're going to train our warfighters to become better drivers."



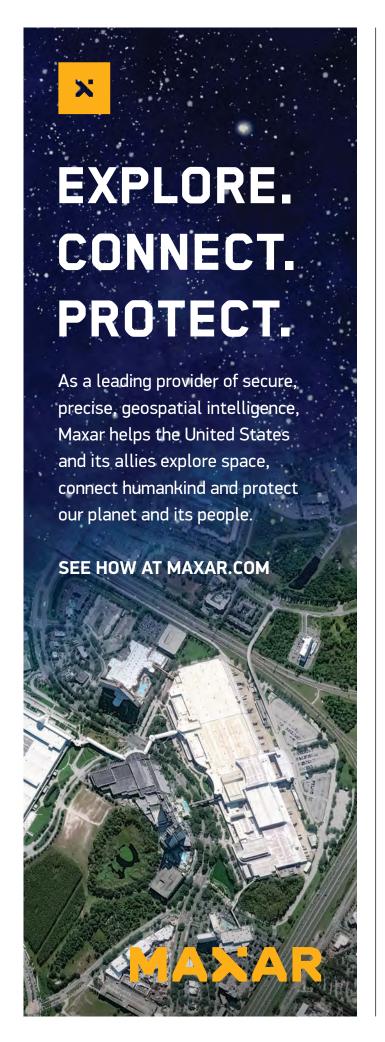
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NTSA 2023 TOP 10 Under 40

NTSA is very pleased to announce our inaugural NTSA Top 10 Under 40 awardees for this year. These awardees are being recognized for significant impact to the modeling, simulation and training (MS&T) community via their leadership, professionalism and volunteerism. Sponsored by CESI, a By Light Company and Aptima, Inc.

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NTSA Modeling and Simulation Awards

Each year, NTSA presents awards for outstanding achievement in the development or application of models and simulations. Awards are given for outstanding achievement in the following categories: Education and Human Performance, Training and Simulation and Training Systems Acquisition. Award nominees may come from government, industry or academia.

Lifetime Achievement in Modeling & Simulation

Dr. Susan Numrich INSTITUTE FOR DEFENSE ANALYSES

Susan K. Numrich, PhD, CMSP, has contributed to the science and technology of modeling and simulation for over 50 years. Dr. Numrich began her career as a Research Physicist at the US Naval Research Laboratory (NRL) at the engineering level of modeling and simulation and transitioned into parallel and distributed simulation. She was selected by NRL and their parent organization, the Office of Naval Research (ONR), to represent the Science and Technology (S&T) community as part of the Navy's Modeling and Simulation Management Office, a position that broadened her knowledge base to simulation used for training, acquisition, analysis and support to operations. When NATO elected to add simulation to their Studies and Analysis group, Dr. Numrich joined as the US representative for simulation, a position she held for a three-year term. During her final three years as a civil servant, Dr. Numrich served as the Director of Technology for the Defense Modeling and Simulation Office where she was exposed to simulation across the entire Department of Defense. Dr. Numrich has dedicated more than a half century of effort to advancing the role of women in national security. In 2018, she was nominated as an I/ITSEC Fellow – thus far, the only female to receive this prestigious designation. Throughout her career, Dr. Numrich has served as an intellectual leader and mentor to the broader research community.





Lifetime of Service

RADM James Robb, USN (Ret.)
NATIONAL TRAINING AND SIMULATION ASSOCIATION

Full Biography on page 3.

Receiving the award on Admiral Robb's behalf was his son, Justin Robb.

Appearing in the photo are RADM Frederick L. Lewis, USN (Ret.) (NTSA, past President), Courtney Chapman (daughter), Judy Robb (wife), Kendall Valenzuela (daughter), Debbie Langelier (NTSA, Vice President), Allison Lewis (NTSA) and Justin Robb (son).



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2023 NTSA Awards ... continued from p22



Simulation and Training International

General Santander Police Cadet School COLOMBIAN POLICE / ALLBREAKER

Enhancing cadets' training with virtual reality has radically transformed the paradigm of police training at the General Santander Police Cadet School, benefiting 500 students annually, the first of its kind in Latin America. The implementation of this virtual reality training program aims to form the technical and tactical prevention competencies that allow the officer to assess situations and make the most accurate decisions for their intervention, minimizing risks and threats to the integrity of people and themselves. One of the notable conclusions was the remarkable improvement in students' confidence in their abilities. This initiative sets a new standard in police training, preparing cadets in a more realistic manner for the challenges they will face.



Training Systems Acquisition

Gladiator Delivery Team ROYAL AIR FORCE CAPABILITY DELIVERY

This award is given to the UK RAF Gladiator program in recognition of its M&S-based capability development and delivery; its use of technical, commercial and programmatic innovation; and its impact on the UK's ability to deliver effective synthetic multi-domain operations training while enhancing UK operational capability. Enabling UK Force Elements operating at different classifications to train together without risking disclosure of classified information required a novel approach to cross-domain security. Lessons identified from the Gladiator program are already being used within the Five Eyes and NATO communities to enhance delivery of synthetic training capabilities for joint, multinational operations with key partners and allies.



Simulation and Training

Training Operations HELP ME SEE, INC.

HelpMeSee, a global nonprofit organization, has a mission to combat the widespread issue of cataract blindness and vision impairment. This debilitating condition affects over 100 million individuals, imposing significant hardships on their daily lives, and the number is expected to double by 2050. HelpMeSee employs a cutting-edge virtual reality eye surgery simulator, complemented by an in-house-developed standardized training curriculum. In 2022, they trained 1,529 ophthalmologists in Manual Small Incision Cataract Surgery, a cost-effective procedure for cataract care in resource constrained settings. HelpMeSee's innovative approach is making significant strides in addressing the critical shortage of eye care specialists in underserved regions.



Education and Human Performance

Dynamic Altitude Breathing Threats Research & Development Team NAVAL AIR WARFARE CENTER TRAINING SYSTEMS DIVISION AND NAVAL SURVIVAL TRAINING INSTITUTE

The Dynamic Altitude Breathing Threats R&D Team validated technology that significantly impacts aviation survival education and ultimately warfighter performance. Specifically, the team leveraged the emerging Flight Breathing Awareness Trainer (FBAT) to address a broader range of breathing experiences to prepare aviators to identify and mitigate adverse physiological conditions. As a result, the team has delivered a capability that improves operator performance and associated emergency procedures to avoid catastrophic consequences. This effort will have an immediate impact on approximately 13,500 total aircrew trained at Aviation Survival Training Centers.



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UCF Highlights "Digital Twin" Projects

n a recent interview with the I/ITSEC Show Daily, RADM James Robb, president of the National Training and Simulation Association, projected that this year's conference would witness "a continuing trend toward digital engineering and the use of digital twins, both of which rely on the core technologies from modeling and simulation."

His vision is being proven valid in the I/ITSEC 2023 exhibit hall, where dozens of

exhibitors are highlighting their recent efforts in this area. One representative exhibitor is the University of Central Florida (UCF) [Booth 2818], which is highlighting a range of its recent and current digital twin activities.

UCF representatives say that the school began work on digital twins in the early 1990s, during the US Army's "digital transformation," when the Army Chief of Staff, Gordon Sullivan, identified simulation for use in every stage

of the life cycle for equipment, training and Soldier integration to ensure the Army was ready for future challenges. The UCF Institute for Simulation and Training partnered with the Program Executive Office for Simulation, Training and Instrumentation – formerly STRICOM - to participate in simulation exercises and perform research in specific technology areas.

A digital twin provides a unique capability for leaders, managers, manufacturers, designers, researchers and anyone in need of predicting performance to use simulation, machine learning, sensors, artificial intelligence and other technologies to create and run virtual models of a system, object, process or even a human. As a virtual model of a physical system, the digital twin can be changed or updated during any part of the physical system's life cycle, in real-time, to explore design updates, processes, manufacturing efficiency, predictive maintenance, process improvement and any other decision-making function without disrupting the physical system.

Related technologies have matured since the 1990s, and UCF is continuing to make significant internal investments to explore and develop digital twin technology. Investment areas include computing infrastructure and research talent to progress the field of digital twins. Additionally, UCF is also working with proponents from multiple regional agencies and organizations to tap into and exploit the benefits of creating virtual representations of physical systems or items to unleash the power of this capability.

Examples of recent activities highlighted in the exhibit hall include strong partnerships emerging within the university itself as well as new alliances with government, industry and other universities to create even greater impact on industry sectors like the microelectronic semiconductor industry. Examples range from last year's arrangement with Osceola County partners to win a \$50.8 million grant to develop a digital twin of the semiconductor fabrication processes to the recent selection of UCF for an award from the Department of Education to develop a graduate certification program for digital twin to attract students and professionals who will become the next modeling and simulation generation of researchers, developers and analysts.



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Navy Industry Relationships ... continued from p1

"Instead of just showing off random technology – especially tech that industry is doing for us, so why would we bother showing it off? – we're going to try and make that an

interactive experience where we can tell industry what our 'head hurters' are, or some of our problems. And industry will have a way to submit either solutions or find our point of contact. So we're going to make that a more effective exchange of information." he said.

He acknowledged that a separate US Navy booth will allow the different service warfare centers to highlight products that they are working on that aren't necessarily resident in the Orlando area.

"It starts with little actions like that," he said. "If we can avoid those little paper cuts across the way that we interact, then it will all improve for the better."

As another early example of the new approach, James pointed to the Navy's

Procurement Administrative Lead Time (PALT) briefings every other month, where industry is briefed on the Navy's forecast. Whereas the forecast was formerly "read as a script to



industry," the information will now be posted for download at leisure.

"So instead of taking those notes they can pay attention to us," he said. "And we can have conversations with them on whatever the 'head hurter' for government or industry is. So, rather than just reading a list of upcoming contract actions, we can say, 'Hey, here are the contract actions. There are no changes on the top 10. But let's talk about that 11th one that

did change and why."

Asked about some of the biggest challenges facing a new approach, James offered that some people might be entrenched in how things have been done for decades and might be reticent or hesitant to take a new approach with industry.

"It's pretty clear in the FAR [Federal Acquisition Regulation] and in security classification guides what you can't share. So as long as you're not crossing that line, then everything else is fair game. And we're going to start

championing these new behaviors," he said.

James said that the new approach will be extended across the entire NAWCTSD portfolio, noting that the vision is understood by Continued on p30



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Navy Industry Relationships ... continued from p28

all current product directors and that it will be clearly conveyed through two pending hiring panels.

"We're going to make sure that that's part of the vision, that people that believe and understand are able to work in that environment," he stated. "But they're fully empowered to run their portfolios. And if they need 'top cover' from the front office, we're going to give that to them."

James told *Show Daily* that the best way for industry to help the process is to start by "letting the government know what they don't know."

He explained, "We can't change if we don't know that we're causing a problem for industry: If we're using certain selection criteria, or contract vehicles or whatever it is that's limiting competition, or limiting innovation, we need to hear about that as early as possible; preferably, when we're at the very initial stages of an idea, when we're telling industry, 'Hey, next year or two years from now, we're going to have this project. So now's the time, you need to start throwing ideas at the government."

In implementing the new approach, he

enthused that "There is a bumper sticker across every rank of leadership right now: 'the status quo is a losing proposition.' So we are aligned as an entire Navy, all the way to the CNO, on doing things differently, on not letting the bureaucracy run the machine, but value for the warfighter being what we're using as our decision maker. If taking a risk on paperwork is going to benefit the warfighter, that's what we should be doing."

In his summary message, James urged everyone to "look at the news and understand how chaotic the world is right now."

Against that reality, he elaborated, "Whatever you think is going to happen in the world in the next three to six years, the acquisition community is already in that. We are a delayed effect. So the contract I'm releasing now, that awards in six months, that delivers in two years, gets fielded a year after that. Think about that timeline. We are already in the future. If you think we're in a deterrence fight, or an actual fight, or whatever that is, we are already there in the acquisition community. So we need to act like that."

He concluded, "Training is readiness for the warfighter. And any day there's going to



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be a strike group or a ship or an airplane that goes over the horizon with today's training. So we need today's training to be better. We need to deliver faster, because you never know when you're going to have that one day slip that results in a carrier strike group or something going over with stale tactics because we couldn't get through the bureaucracy. So I need everybody involved in the system on the government and industry side to pretend like they're already in a fight; align to the warfighter and get those products out, with the value of the warfighter being that discriminator."



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