

I/ITSEC Preview Issue

A Special Edition of the **NTSA** Newsletter



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I/ITSEC 2016

The World's Largest Modeling, Simulation & Training Conference

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Go Beyond Games

With a Simulation Platform
Built for Land and Sea

SEE IT IN ACTION AT IITSEC **BOOTH 2270**

Book a Demo

Upcoming Events

November 28 - December 2, 2016

[I/ITSEC 2016](#)

Orange County Convention Center
Orlando, FL

January 28 - February 1, 2017

[IMSH \(International Meeting on Simulation in Healthcare\) 2017](#)

Orlando, FL

April 25-27, 2017

[MODSIM World 2017](#)

Virginia Beach Convention Center
Virginia Beach, VA

May 16-18, 2017

[ITEC 2017](#)

Ahoy, Rotterdam

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Headlines from the Interservice/Industry Training, Simulation & Education Conference (I/ITSEC)

NTSA President RADM James Robb, USN (Ret) previews I/ITSEC 2016

Happy 50th Birthday I/ITSEC!! The world's largest training and simulation conference celebrates five decades of excellence. I congratulate the long line of Conference Chairs and volunteers that have created a remarkable legacy of support to the training and simulation community. My most sincere thanks to our planning teams that have set new standards for quality and scope in the conference program each year for half a century. What started as a gathering of 193 in 1966 has grown to over 15,000 in 2016.



Certified Modeling and Simulation Professional
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To learn more about the requirements, the CMSP exam, and the applications process, please visit

WWW.SIMPROFESSIONAL.ORG



I/ITSEC 2016 is tracking to be a record year for government engagement. The interest by senior officials continues to be impressive with keynotes at the Service Chief level and an ever growing number of decision makers and engineers. The service approval process continues to improve and every senior leader that attends is overwhelmed by the tremendous value proposition presented at I/ITSEC. We will also see a significant return of junior

officers and enlisted that have been blocked for several years. These future leaders are critical to the success of our mission.

This year's conference program is spectacular. We begin the week Monday morning hosting members of congress that support the training and simulation community. This will be an exciting event - given the results of the recent election - and is routinely standing room only.

For the opening ceremonies Tuesday, we are honored to have Major General Robert McMurry, Commander, Air Force Research Laboratory and Daniel Serfaty, Founder and CEO of Aptima, Inc. as our Government and Industry keynotes. The Flag/General Officer panel that follows is extremely rich with representation from OSD, all the services, and NATO. This will be followed up Tuesday afternoon by a major panel session featuring Air Force Senior leader perspectives on LVC – Air Force Live, Virtual, Constructive Operational Training (LVC-OT) General Officer Steering Group” (GOSG). Don't miss it.

On Wednesday morning we have a special event featuring the Chief of Naval Operations, Admiral John Richardson, who will give a keynote and then participate in a panel discussion with key Navy senior leaders from the training and acquisition domains. Seating will be tight for this signature event. The Navy and Marine Corps are bringing a large number of flag and general officers leading their requirements, acquisition and training commands for the second year in a row. Interest and Awareness in the power and value of I/ITSEC continues to grow.

Your I/ITSEC Program Committee put together another world class program that highlights panels on Cyber, Cloud-Based Simulation, Modular Open Systems Approaches, Spectrum Solutions, and LVC. We also have a robust International agenda with speakers from around the globe featuring panels from Europe and the Asia Pacific Simulation Alliance.

I/ITSEC 2016 will feature the continuation of two special events inaugurated last year. The first is Operation Blended Warrior, which will bring together capabilities from over 50 government and industry entities in an LVC network on the exhibit floor, as they fight their way through challenging scenarios. The second major theme is Black Swan. Black Swans are low probability but extremely high impact events that have or will dramatically affect the global condition. We will continue our multi-year theme with dynamic presentations on Thursday and continue this thread into

2017. Come explore the virtual world of the unthinkable.

The I/ITSEC exhibition hall will host over 500 companies and organizations again this year. The international presence continues to be very strong with a new presence from Bulgaria and increased presence from Germany, Israel, Norway and Canada. In addition, the European Training and Simulation Association (ETSA) and Canada will host pavilions on the show floor. The International program includes opportunities for international attendees to schedule meetings with government and industry.

NTSA continues to invest in technology that improves the attendee and exhibitor experience at I/ITSEC. This year we are building on the success of our new Show Management application that allows attendees and exhibitors to digitally interact with the Conference schedule and the “digital show floor.” Attendees will be able to “Plan your Show” by searching and sorting conference and show content in real time. The enhanced exhibitor profiles include highlights, videos and the ability to set up visits and interact with booth personnel. Exhibitors and Attendees, please ensure you take advantage of these features.

Special thanks to Debbie Langelier for putting together another world class exhibition and to Dino Pignotti for his two decades of effort putting together the I/ITSEC exhibit guide. I also thank all of you for joining me and over 15,000 of your international team mates here in Orlando for the largest training and simulation event on the planet. Please join us at the Banquet Thursday evening to celebrate I/ITSEC’s 50th!

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Air Force Embraces Live/Virtual/Constructive Training Environment

The U.S. Air Force is proud to be the Lead Service for this year’s conference, as I/ITSEC celebrates its Fiftieth year as the premier professional event supporting the simulation and training community.

This year’s conference theme, “Pushing the Training Envelope: Live – Virtual – Constructive,” reflects the growing trend within the Air Force and other U.S. Services to accomplish operational training through innovative approaches which merge heretofore standalone technologies into a blended solution, synergistically creating a training capability that surpasses anything previously achievable. Within the Air Force, LVC is seen as the next logical step in the evolution of our current Distributed Mission Operations capability. Today’s DMO furnishes a secure, long-haul networking infrastructure and affiliated standards process, facilitating connectivity among architecturally diverse and geographically disparate training devices. The interoperability provided by DMO enables operational units throughout the Air Force to train in

common simulated environments, and participate in realistic warfighting scenarios together. As our most advanced virtual-constructive simulation technology, DMO has proven invaluable in providing effective ground-based training to augment live flight, which has been the traditional foundation of aviation training since the inception of manned flight.

LVC takes the bold step of integrating these complementary but very different training solutions, creating a new type of hybrid training environment, which blurs the lines between live flight and simulation-based training. Indeed, it is a goal of LVC to create a learning environment with sufficient realism to accomplish training as effectively as would be gained through real-world operations, such that it fully prepares the warfighter to conduct his or her mission.

At this time, LVC is in its infancy, and its potential is only beginning to be explored. Intuitively, the substitution of simulators for some live-fly assets will yield cost savings, which is the basic rationale for the momentum behind LVC. What is less understood is the impact of such a swap on training effectiveness; this remains an area of further study. It is also known that the capabilities of advanced weapons systems create demanding training requirements, well exceeding those which can be accommodated through traditional training approaches, and that an alternative must be identified to achieve and maintain warfighter readiness with regard to the employment of these new capabilities. These are the immediate goals of LVC; but they only scratch the surface of the hidden potential of this new technology.

Much work remains to be accomplished in order to quantify the value of LVC, in terms of training efficacy as well as cost, in order to determine its ultimate potential. Perhaps the test of LVC effectiveness would be akin to the Turing Test for artificial intelligence: if the quality of training provided is such that the warfighter is unable to distinguish between the live, virtual, and constructive components of a given scenario, the implementation would be considered a success. While achieving this goal is undoubtedly a challenging proposition, thanks to advances in the enabling technologies, the idea is not nearly as far-fetched as it seemed only a few years ago.

As the community's understanding of its potential grows, the application of LVC as a solution will likely evolve and become more pervasive, finding application to a greater variety of training requirements than initially envisioned. Truly, we will be Pushing the Training Envelope through LVC.

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I/ITSEC 2016 Mobile App

Download the Mobile App for use throughout I/ITSEC 2016. Use the App to review the conference schedule, discover what's on the show floor, and plan your time at I/ITSEC!

- [Apple](#)
- [Android](#)
- [ChirpE Web](#)

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Interview with NTSA President RADM James Robb, USN (Ret) – From Military Training & Simulation News

Reprinted with permission of Shephard Media's Military Training & Simulation News

Trevor Nash from Military Training & Simulation News talks to NTSA President RADM James Robb, USN (Ret) about the future of simulation and training in the U.S.

See article [here](#).

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I/ITSEC Preview: Q&A with NTSA President RADM James Robb

NTSA President RADM James Robb, USN (Ret) talks to the Editors of *Modern Military Training* about I/ITSEC 2016 and the top trends in simulation and training.

See the interview here: <http://modernmilitarytraining.com/itsec-preview-ntsa-president-radm-james-robb/>

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I/ITSEC 2016 - Key Speakers and other Important News

We are excited to announce that there will be another stellar group of speakers and events at **I/ITSEC 2016**.



For the opening ceremonies Tuesday, we are honored to have **Major General Robert McMurry**, Commander, Air Force Research Lab and **Daniel Serfaty**, Founder and CEO of Aptima as our Government and Industry keynotes.



The Flag/General Officer panel that follows is extremely rich with representation from OSD, all services, and NATO. This will be followed up Tuesday afternoon by a major panel session featuring **Air Force Senior Leader Perspectives on LVC**. Don't miss this unique opportunity.

On Wednesday morning we have a special event featuring the **Chief of Naval Operations, Admiral John Richardson**, who will give a keynote and then participate in a panel discussion with key Navy senior leaders from the training and acquisition domains.



Seating will be tight for this signature event.

--> For additional details of the **2016 Program and Events**, please visit <http://www.iitsec.org/attendees/Pages/Brochures.aspx>. Select the full program, or go to the separate sections and select the Special Events or Professional Development (Tutorials, Papers, Workshops) sections among many other options. Whichever you decide, be sure and plan your schedule ahead of time as there is SO much to see and do and learn.

--> **Professional Development Workshop** reminder: Many of you may have registered before the final slate of workshops was filled in for Friday December 2nd. You can review the options now and revise your registration [here](#).

--> **Golf: change of venue and schedule.** Because the Shingle Creek course is still completing their renovations, this year's tournament has been changed to Grand Cypress, and there will be no golf on Monday. [Here](#).

--> Download the [My Planner](#) tool for I/ITSEC 2016!

--> **Buyer Beware!** We've alerted you in the past about the pests who try and sell hotel rooms that don't exist. We have a new warning: the latest thing seems to be false claims of an I/ITSEC contact list complete with emails, phone numbers. Please note that NTSA-I/ITSEC values your privacy and we do not sell or rent such a list to ANYONE! Please don't waste your time or your money on following up on these offers.

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Operation Blended Warrior (OBW) Returns for I/ITSEC 2016

**CAPT Kent Gritton,
USN (Ret),
discusses the
second year of
OBW.**



With all that was learned from the inaugural Operation Blended Warrior (OBW) special event at I/ITSEC in 2015, equally high expectations swirl around the second iteration of the special event this year.

OBW as a special event is unique in multiple ways. First, it is planned as a multi-year event, and designed with the primary intent to better understand and address challenges the DoD faces in the development and execution of a Live Virtual Constructive (LVC) environment for training.

Secondly, it is both a demonstration of industry's LVC capabilities

in a representative, highly complex LVC environment, as well as a venue for discussion with LVC experts about the challenges LVC participants face. Lastly, it is a collaborative initiative between government and industry to find solutions to the uncovered LVC challenges.

OBW Focus Areas and Format

The three focus areas for Operation Blended Warrior 2015 were: standards, after action review, and cyber operations. New focus areas for OBW 2016 will include: multi-level security/cross-domain solutions, performance measurement, and long-haul live asset integration. A sub-test of wireless infrastructure for a portion of the architecture will also be conducted.

In addition to the new focus areas for this year's OBW, attendees will be amazed at the growth in complexity, as well as a format change in the presentation. One key metric on complexity is that the 2015 OBW format required one rack of equipment to create the network; this year, the growth in network capability and participants requires two and a half racks.

Last year, each special event block of time was divided into three 30-minute vignettes to demonstrate key LVC activity within a specified discipline. The format changed this year to a more fluid overall scenario spanning five primary disciplines: aviation, maritime (surface and subsurface), ground, cyber, and command and control. This change allows a 153 percent increase in demonstration of discrete LVC events from multiple disciplines over the course of OBW.

Participant Growth and Interest

The success of 2015 can be measured by participant growth in 2016. There was a 58 percent growth in the number of participants this year, with an associated 93 percent growth in the number of integrated applications.

The value derived from OBW has been amazing. Not only have we uncovered challenges within standards, LVC policy and network integration that are being addressed separately, but there has been an increase in the number of activities that are interested in taking advantage of the venue to improve other LVC/M&S pursuits.

There continues to be a growing interest from international government and industry members for participation in OBW. While it is still too early in planning to determine if we can make this happen in 2017, the desire to address coalition integration challenges remains a high priority.

Another effort being actively considered addresses the creation and distribution of authoritative mission data – both terrain and models. Using OBW as a use case for a proof of concept methodology, a combination of expert mission data organizations are looking to demonstrate the utility of their process through OBW LVC vignettes.

There is one aspect of OBW that changed this year that is not readily apparent to the attendee: the creation of a strategically-focused committee comprised of experts from across industry, government and academia. Its purpose is to not only chart the

course of future OBW focus areas, but more importantly, analyze and develop proposed solutions to mitigate the deleterious effects from the documented challenges uncovered during OBW.

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CAPT Erik "Rock" Etz, UNS, Commanding Officer of NAWCTSD, discusses the importance of LVC as demonstrated in Operation Blended Warrior at I/ITSEC 2016

See video here: <https://youtu.be/99cqxviNPv0>

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2016 Serious Games Showcase & Challenge (SGS&C) - Finalists Announced

Celebrating its 11th year, the Serious Games Showcase & Challenge (SGS&C) has grown to be one of the main attractions at each year's I/ITSEC, and plays a critical role in helping to generate interest in the use of digital

game technology and new approaches for training and education.

While the definition of a "serious game" varies among different communities and different parts of the world, each qualifying SGS&C serious game must have clearly-defined, measurable learning objectives; provide players with a clearly identified challenge/problem; and make use of game play dynamics and/or gaming technology.

Each game must provide players with positive/negative feedback with respect to progress toward the game's challenge and achievement of learning objectives. It must also be an original game and not a modification to an existing game.

The SGS&C finalist games are divided into three primary award categories – business, government and student – based upon the background of the submitting organization, however special awards are also presented for outstanding mobile serious games, Students' Choice voted on by middle and high school students, and the all new innovation award, which is an award judged by and awarded at the sole discretion of the SGS&C innovation award committee. Finally, there is the coveted People's Choice award as determined by votes from I/ITSEC attendees during the week of the show. Don't miss the opportunity to check out the finalist games and cast your vote for your favorite to win the People's Choice award.

The SGS&C leadership team, led by Shane Taber from Engineering and Computer Simulations, Inc., and Steve McCabe,

USAF Simulators Division, invites you to visit booth #2781 to see this year's finalists, including three entries from international partners: the Brazil Independent Games Festival and Australasian Simulation Congress.

SGS&C is very appreciative of this year's sponsors: Bohemia Interactive Simulations, Engineering and Computer Simulations, Inc., Antlion Audio, BreakAway Games, Plas.md, Virtual Heroes Division of ARA Inc., Newport News Shipbuilding, HP, and Box.com.

All finalists are invited to showcase their games in the SGS&C booth the week of I/ITSEC, leading up to the announcement of the winners on Dec. 1 at 1:00 in Warfighters Corner.



"We are excited to showcase a set of products exemplifying the enormous impact serious games offer across the training industry," said Jennifer McNamara, SGS&G director. "At this year's conference, attendees can learn foundations of programming and science, train muscles for the use of prosthetics, conduct skill and psychometric assessments, investigate

crime and attack scenes, experience ethical dilemmas, manage credit, train for robotic surgery, and so much more all through the use of games and all showcased in one booth."

"I can't say I've seen this rich and diverse a set of learning games in one place in a long time", added McNamara. "Congratulations to all our 2016 Serious Games Showcase & Challenge finalists!"

Government

Crime Scene Investigation (CSI) by Dubai Police

CSI provides a training environment to simulate a crime scene to help the trainee experience investigations by carrying out various tasks.

U.S. Army Stars: Elements by Army Game Studio, Software Engineering Directorate

This game helps students learn and visualize the foundations of chemistry through interactive models, games, and challenges.

USC Standard Patient by U.S. Army Research Laboratory developed by USC Institute for Creative Technologies and BreakAway Games

USC Standard Patient allows users to practice their interviewing skills on virtual patients with helpful coaching.

Business

ADAPT-MP by Design Interactive, Inc.

ADAPT-MP is an interactive, mobile, game-based training tool for myoelectric prosthesis users.

Cognify by Revelian

Cognify is the next generation of candidate psychometric assessment that uses game design to offer a better assessment experience. It is a finalist advanced from the Australasian Simulation Congress Serious Game Showcase and Challenge.

Evergreen by Siege Sloth Games

Evergreen is a zen game where players control the growth of a mystical tree with the goal of guiding and nurturing life through Earth's history. It is a finalist advanced from the Australasian Simulation Congress Serious Game Showcase and Challenge.

FRS Virtual Team by Florida Hospital Nicholson Center

FRS Virtual Team is a virtual operating room for robotic surgeons to practice effective and safe team communication techniques.

NBCOT Navigator by National Board for Certification in Occupational Therapy and BreakAway Games

NBCOT Navigator is a virtual continuing competency platform for occupational therapists using game-based case simulations and games.

Night of the Living Debt by Learning Games at New Mexico State University

Survive the zombie outbreak by managing your finances in Night of the Living Debt.

Pediatric Vital Signs by Children's Hospital Los Angeles, USC Keck Medicine, and BreakAway Games

Pediatric Vital Signs is a 2D time management game that assesses physicians' multi-patient management skills in a pediatric emergency department setting.

Post Attack Reconnaissance (PAR) Virtual Training Mode by ARA Virtual Heroes

PAR Virtual Training Mode trains Air Force members assigned to PAR teams to become familiar with what normal and post-attack looks like.

Sales Command by Deloitte Center for Immersive Learning

Sales Command teaches a methodology for closing sales by viewing all available resources, streamlining approvals, and making decisions.

SimScientists Food Web Game by WestEd and Intelligent Automation, Inc.

To predict threats to the fennec fox's survival, players gather clues and build a food web model of the flow of matter and energy.

Vetor by Supernova Games

Players control rookie doctor, Victoria, to fight diseases and learn about prevention and treatment for them. Vetor is the finalist advanced from Brazil's Independent Games Festival.

Student

A Fine Line by Carnegie Mellon Entertainment Technology Center

This game is a first person narrative experience about academic integrity in which players learn that every decision affects the characters and the ending.

Bots & (Main)Frames by New York University Tandon School of Engineering

Bots & (Main)Frames allow players to develop programming and computational thinking skills by programing Robby the robot to navigate various obstacles.

Limbitless Training Games by University of Central Florida

Limbitless Training Games features a series of training games to strength the muscles for the use of a prosthetic limb.

Musikinésia by Federal University of Sao Carlos

Musikinésia is a 2D educational digital game idealized to support music students in identifying music notes and keys in a music keyboard.

Project Zap by Orange Technical College, Mid-Florida Campus

Project Zap provides a creative rocket building simulator that puts a player's knowledge to the test as they aim for the stars.

Robonaut by Fullsail and UCF School of Visual Arts and Design

Robonaut is a top-down resource gathering game where players race against the clock, dodge debris, and mine asteroids.

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International Outreach: Business Opportunity event at I/ITSEC 2016

This is the second annual **International Outreach: Business Opportunity** event at I/ITSEC. This is an opportunity you won't want to miss!

International Outreach: Business Opportunities II **Wednesday, 30 November** **1030 am • Room W311A**

The event will feature presentations by:

- Col (sel) Sean Bradley, USAF, OSD Director, Comparative Technology Office (CTO)
- Col Mike Malley, USAF, OSD Director, Coalition Warfare Program (CWP)

Individuals may sign up for one-on-one meetings following the presentations.

International Industry Representatives

Will meet with the team of Col (sel) Sean Bradley, USAF, OSD Director, Comparative Technology Office (CTO).

US/International Government, Military, Laboratories, & Universities

Will meet with the team of Col Mike Malley, USAF, OSD Director, Coalition Warfare Program (CWP).

You can request a meeting slot in advance via the website, or onsite in the International Pavilion. See the International Attendee page for full details and to request a meeting slot:

<http://www.iitsec.org/attendees/Pages/InternationalAttendees.aspx>

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STEM @ IITSEC 2016

The National Training and Simulation Association (NTSA) is focused on filling our workforce pipeline with prospects who are better prepared, more confident and highly engaged to take on careers in the Science, Technology, Engineering & Math (STEM) fields, particularly those in the modeling and simulation (M&S) industry. As such, NTSA recognizes the critical importance of engaging students early in hands-on STEM activities while supporting educators who are our front line in shaping and building our future workforce.

Using the Interservice/Industry Training, Simulation and Education Conference (I/ITSEC), the world's largest modeling, simulation, and training conference, as a platform, NTSA's goal is to leverage industry professionals in inspiring students and preparing teachers to help secure our industry and our nation's future. STEM @ I/ITSEC is made possible by corporate and individual sponsors who all recognize the importance of securing our future workforce. As such, there are many opportunities during I/ITSEC to support the STEM initiatives.

For teachers, we have several opportunities for professional development. We host teachers from across the nation, called America's Teachers at I/ITSEC. These teachers learn about modeling and simulation first hand, through workshops, visits to the Exhibit Hall, and structured teacher training and discussions to learn ways to bring M&S into their classrooms. Each year we sponsor a team of teachers and administrators with their commitment to take this experience back to their schools and their classrooms, and ignite excitement for this technology in their students. We also host local teachers and administrators each year for a day of teacher education and training. These teachers will also tour the Exhibits and take advantage of opportunities to meet with key leaders in the industry to learn more about ways to take this back into their classrooms.

For students from across the country, NTSA hosts the Future Leaders' Pavilion. This provides a venue for high school students to demonstrate their M&S expertise in original projects developed and presented at the I/ITSEC conference. Along with their teachers, these students present papers and demonstrate their capabilities throughout the length of the conference. In this endeavor, we have also partnered with the University of Central Florida's Institute for Simulation and Training to pair these students

with graduate students who can serve as mentors. These mentors work with the high school students, sharing first hand insights about the rigorous requirements demanded of professionals in the M&S industry.

Each year NTSA also hosts more than 700 high school students from throughout the Central Florida region to participate in the unique learning experience found only at I/ITSEC. Escorted through the exhibit hall, these students experience first-hand real world simulation solutions, and have the opportunity to interact with industry professionals throughout their tour.

Each year we host the Serious Games Showcase and Challenge, which is used to spotlight game-based approaches to training and education. Students from schools around the country evaluate the games selected for inclusion in the showcase. Additionally, students and teachers also provide input in the selection of the "best in show" games and technologies.

Our STEM Pavilion provides a venue to showcase educational non-profit organizations who are nominated to exhibit either their community-based STEM innovations or to demonstrate Project-Based Learning initiatives. This venue provides opportunities for industry and educators alike to have hands-on experiences designed to ignite learning in our youth to follow careers in the STEM fields.

Finally, we provide undergraduate and graduate scholarship opportunities for students entering the M&S industry. We also offer continuing education units (CEUs) for professionals in the field who attend I/ITSEC and participate in many of the tutorials in on-site classes offered during the conference. Our commitment to educators and to our future workforce is unmatched in this industry. We encourage you to participate as a sponsor or by attending one or more of these great events during I/ITSEC. It will open a world of new opportunities for you!

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I/ITSEC 5K Walk, Run, Roll

We are excited to once again be holding the IITSEC 5K Run/Walk/Roll to benefit the Camaraderie Foundation and the I/ITSEC STEM Initiative. Come out and have a great morning of fun on Wednesday at I/ITSEC while you support these two great organizations!

Register now at <https://secure3.rhq.com/iitsec/iitsec2016/5k16/index.cgi>

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**HEADLINES FROM THE MODELING,
SIMULATION
& TRAINING INDUSTRY**

**Modeling & Simulation in the Age of Data: MODSIM World
2017 Call for Abstracts**

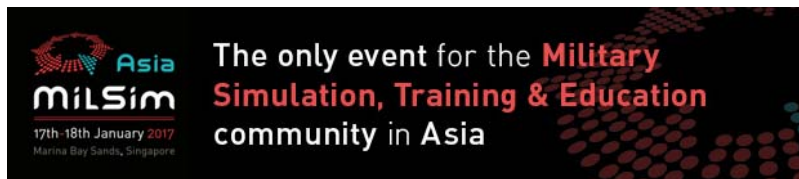
Abstract Submission Deadline: 7 December 2016
MODSIM World 2017 (www.modsimworld.org) will be held 25-27 April 2017 in Virginia Beach, VA, co-located with the SCS SpringSim (<http://scs.org/springsim>). We invite your abstract submission to **MODSIM WORLD 2017** in one of the following MODSIM World conference tracks:

- Training and Education: enhancing the application of M&S in training and education
- Analytics and Decision-Making: M&S for decision support, data mining, prediction, analysis
- Science and Engineering: enhancing M&S from concept to integration to visualization
- Visualization and Gamification: techniques to enhance M&S-enabled training and decision aiding

Abstract Submission Guidelines

Abstracts of up to 250 words must be submitted by **7 December 2016**. Include (1) a concise and descriptive title and the author(s) affiliation(s); (2) a short statement of the main point(s); (3) the methodology (for experimental and survey work); (4) the scope of the work; and (5) key findings and major conclusions. For more details and to submit an abstract please follow the submission instructions here: www.modsimworld.org. Please direct any questions to the Program Chair, Benjamin Bell (benjamin.bell@eduworks.com) or to the Deputy Program Chair, Marco Estrada (marco.t.estrada@hii-nns.com).

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The logo for ITSA NEWS features the letters "ITSA" in a stylized font with a blue and red gradient, followed by the word "NEWS" in a bold, black sans-serif font.A banner for MilSim Asia with a dark background and a pattern of red and blue dots. It features the MilSim Asia logo on the left and text on the right: "The only event for the Military Simulation, Training & Education community in Asia".

MilSim Asia
17th-18th January 2017
Marina Bay Sands, Singapore

The only event for the **Military Simulation, Training & Education** community in Asia

MilSim Asia
January 17-18, 2017
Marina Bay Sands, Singapore

The MilSim Asia conference agenda is now available. Speakers from both military and industry will address issues ranging from the strategic outlook in Asia to specific simulation solutions unique to the region.

[View the Day 1 Agenda](#)
[View the Day 2 Agenda](#)

Speakers

Exhibit spaces are also available.

For complete details, please visit <http://www.milsimasia.com/>.

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ITEC 2017 Briefings & Announcements at I/ITSEC

Wednesday, 30 November, 10-11:30 a.m., Room W205A

Everyone is welcome to join, from military to press and industry

Agenda:

- Introduction to ITEC 2017 and event outline
- 2017 Conference Outline
- Netherlands/Rotterdam aspirations for ITEC 2017
- Advanced Engineering 2017 Launch
- ITEC Key Developments
- Q&A
- Coffee & Networking

Speakers:

- Rear Admiral Simon Williams, Clarion Defence & Security Chairman
- Wim Huiskamp, ITEC 2017 Chair
- Major Chris Lukose, Netherlands MoD
- Sanjay Khetla, Chief Technology Officer, CFMS

Please RSVP below to let us know you will be attending the briefing:

<http://www.itec.co.uk/i-itsec-presentation-rsvp>

ITEC Conference Preview

Innovation through collaboration in military training and education:

Focusing efforts, harvesting success

We will be releasing the ITEC 2017 conference agenda at

I/ITSEC. Drop by Booth 2635 to pick up your copy of the

conference preview and receive an exclusive I/ITSEC discount

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NTSA Member News

CAE Wins Defence Contracts Valued at More than C\$100 Million

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CAE has won defence contracts valued at more than C\$100 million to provide a range of training and support services for global military customers.

The US Air Force has exercised the option for the seventh year of aircrew training services provided by CAE USA as the prime contractor on the KC-135 Aircrew Training System (ATS) program. CAE USA will continue to provide classroom and simulator instruction as well as upgrades, maintenance, and support of all KC-135 aircrew training devices.

The US Navy has exercised the option for the third full-year of comprehensive T-44C aircrew training services provided at Naval Air Station (NAS) Corpus Christi in Texas. CAE USA provides T-44C aircrew training services under a contractor-owned, contractor-operated training program. CAE is providing academic and simulator training for approximately 600 US Navy, Marine Corps, Coast Guard and international students who annually go through the Navy's T-44C training program.

Rotorsim, the joint venture owned equally by CAE and Leonardo's Helicopter Division (formerly AgustaWestland), has awarded CAE a contract to provide long-term maintenance and support services on a range of helicopter simulators located at the Rotorsim Training Centre, which is part of the A. Marchetti Training Academy in Sesto Calende, Italy, as well as an AW189 simulator located in Aberdeen, Scotland.

CAE USA has also been awarded a contract by Insitu to provide ScanEagle Remotely Piloted Aircraft System (RPAS) instructors for Insitu's training center in White Salmon, Washington. CAE instructors will complement Insitu's existing instructor cadre and provide classroom and simulator instruction for ScanEagle RPAS operators. In addition, instructors at the Insitu schoolhouse provide unmanned aircraft system (UAS) familiarization training as well as mission coordination and planning instruction.

Boeing Selects Flightdeck Solutions

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Flightdeck Solutions, Ltd. of Canada has been selected to design and produce a C-17 flight deck mock-up for The Boeing Aircraft Company based in Seattle.

Peter Cos, president at Flightdeck Solutions said: "Being named preferred bidder for this significant order is a fantastic

endorsement of our unique capabilities and the trust we have developed with our friends at Boeing. This new device is the latest of many such devices we have developed and supplied to Boeing over the past decade. We are always honoured to work with the industry leader in aircraft manufacturing."

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Radar Simulators for USMC Training

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Adacel Systems Inc. has been awarded a contract by the US Naval Air Warfare Center Training Systems Division (NAWCTSD) for the provision of Air Traffic Navigation, Integration, and Coordination System (ATNAVICS) Training Simulators.

The ATNAVICS Training Simulators are stand-alone, portable systems which will be used to provide training to Marine Corps Air Traffic Control detachments. The stand-alone, portable training devices replicate the Air Traffic Control (ATC) functions of the AN/TPN-31 ATNAVICS. The systems will provide individual radar ATC training using speech recognition and/or pseudo-pilot capabilities along with the ability to create, edit and save training scenarios. The systems are to be deployed to ten locations in the United States and overseas. These initial deployments will occur over a twelve month time period. The program also includes three years of system support, operator training and the application of the appropriate DoD Information Assurance Cyber Security protocols.

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VirTra Receives IDIQ Contract Orders Valued at \$1.4 million

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VirTra, Inc. has received its third and fourth orders for delivery of law enforcement simulators under the previously announced indefinite delivery/indefinite quantity (IDIQ) contract by the United States Department of State (DOS) that could result in up to \$40 million in revenue for law enforcement training simulator equipment and services over the order period, which expires in April 2021.

These orders are valued at approximately \$1.4 million and will consist of both multi and single screen training simulators, related accessories and training for three additional locations in Mexico and six new location in Costa Rica.

"We are pleased to have received these delivery orders under our IDIQ contract with the DOS to supply additional firearm training simulator systems for the US Foreign Assistance Program," said Bob Ferris, Chairman and CEO of VirTra. "With these orders, we will have installed our training simulators in fifteen of the eighteen locations identified for this program to date, bringing the total value of the contracts that we have been awarded to approximately \$2.6

million."

The simulators are expected to be used "in basic and advanced weapons training for developing proficiency in marksmanship, use of force judgement skills, close quarters shooting skills, tactical reloading and weapon malfunction clearing related to typical situations which law enforcement personnel face in the execution of their duties."

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3D Geospatial Modeling & Simulation Summit

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CAE recently hosted an event in Orlando called the 3D Geospatial Modeling and Simulation Summit that brought together experts and stakeholders from the geospatial intelligence and modeling and simulation industries to discuss ways to collaborate and establish greater interoperability in the use of geospatial data.

The summit was jointly convened by the Open Geospatial Consortium (OGC), the Simulation Interoperability Standards Organization (SISO), and the US Geospatial Intelligence Foundation (USGIF). During the same week, CAE also hosted and sponsored the 100th meeting of the OGC's Technical Committee.

"Both the geospatial and simulation industries have requirements for accurate, detailed terrain data that is used for a range of requirements in the defense, intelligence, mapping and other industries," said Marc St. Hilaire, CAE's chief technology officer and one of the keynote speakers at the OGC Technical Committee meeting. "We firmly believe there is tremendous value in establishing standards that better enable the interoperability and integration of data that can serve to create and maintain a common, dynamic, and persistent virtual terrain capability."

The 3D Geospatial Modeling and Simulation Summit was attended by industry experts and professionals from across the United States defense and intelligence communities, as well as international allies. The panels at the summit included participants from the OGC, US Army, US Special Operations Command, US Joint Staff, United Kingdom Ministry of Defence, National Reconnaissance Office, SISO, and USGIF.

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Rheinmetall to Modernize & Expand German Army Combat Training Centre

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The German Bundeswehr has awarded Rheinmetall AG several modernization contracts worth a total of around €24 million.

Through to 2020, Rheinmetall will be expanding the system technology of the German Army Combat Training Centre, or GÜZ,

in a series of staggered projects. Among other things, the orders (booked in Q2 2016) encompass special expansion of the headquarters software to enable execution and evaluation of training sequences in the site's "Schnöggersburg" urban combat environment, as well as modernization of the training area's data communication system.

The Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support has assigned Rheinmetall's Simulation and Training unit the task of readying the GÜZ for MOUT exercises.

The expansion and modernization of the GÜZ encompasses the hardware of the existing GÜZ system technology in the headquarters cell will be upgraded to state-of-the-art status; and regeneration of the communication system, involving modernization of the software and hardware for connecting tactical radio systems and network technology.

At the German Army Combat Training Centre, military formations of all types can train and prepare for every conceivable task and mission. In future, this will include training for military operations in urban terrain and inclusion of Future Soldier (IdZ) equipment, whose expanded Gladius/IdZ-ES system is also made by Rheinmetall.

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New Eurofighter Maintenance Simulator Trainer

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Airbus Defence and Space has delivered a new Maintenance Simulator Trainer (MST) to the German Air Force for training Eurofighter technicians. The Luftwaffe is now equipped with the world's most complex, state-of-the-art maintenance simulator for a fighter jet.

The extensive scope of the simulated elements means the system can be used to offer realistic and efficient training not only on standard maintenance and repair workflows but also on complex systems, such as the right procedures for troubleshooting, detecting and correcting faults, and carrying out system tests.

The MST can be operated both as an independent trainee workplace and in a classroom network. At each workstation, the functionality of a single-seater Tranche 2 Eurofighter is simulated in a 3D environment with state-of-the-art graphics. In contrast to the procedural maintenance trainers used before now, the MST simulates all requisite aircraft signals, thereby ensuring that the simulation behaves like the real Eurofighter even when there are deviations from the standard procedure.

30 animated diagrams display the functionalities and enable users to peer deep inside the aircraft in real time. Moreover, the 32 simulated ground service and testing devices allow training to proceed when the real training devices are unavailable, which can often be the case. In addition to maintenance hangar tasks, the

MST also allows training on and simulation of radar tests on the apron as well as engine test runs in the brake hall.

A total of some 400 fault scenarios can be simulated in the MST, either individually or in combination, which trainees have to resolve independently or under guidance. A cockpit replica and real control elements reinforce the tactile learning experience.

The MST was developed at the Military Air Systems Centre in Manching in close collaboration with the German Air Force's Technical Training Centre and handed over to the Luftwaffe in early July 2016. In the interests of future proofing, there are already plans to further develop the MST for Tranche 3 (P1E).

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Lockheed Martin Selects Adacel for Simulated ATC Environment

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Adacel Systems has won a contract from Lockheed Martin to provide Simulated Air Traffic Control Environment software for Australia's Project AIR 5428 Pilot Training System.

The Project AIR 5428 Pilot Training System will provide the Australian Defence Force with a new training system to take pilots from flight screening through basic and advanced flying training, part of which will include training on flight simulators. Adacel's Air Traffic Control in-a-Box (ATCiB) will supply a Simulated Air Traffic Control Environment (SATCE) for Flight Simulation Training Devices (FSTDs) that will complete the flight simulation experience with realistic virtual traffic and synthetic air traffic controllers to create a higher quality training environment.

To date, Adacel has sold more than 125 ATCiB licenses. ATCiB is compliant with ARINC 439, Guidance for Simulated Air Traffic Control Environments in Flight Simulation Training Devices as well as ICAO DOC 9625 Manual of Criteria for the Qualification of Flight Simulators Edition 4.

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VirTra Receives \$12.2 Million IDIQ Awards from US Customs & Border Protection

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VirTra Systems, Inc. has received two indefinite delivery/indefinite quantity (IDIQ) contracts from US Customs and Border Protection, an agency within the US Department of Homeland Security.

Under the first \$3.2 million IDIQ award VirTra will be the sole provider of ongoing service and maintenance on law enforcement training simulators installed by the company under a previous contract, and under the second \$9 million IDIQ award VirTra will fulfill the purchase of additional V-300™ systems and accessories,

for a maximum combined value of \$12.2 million over the next five years.

Under its previously announced contract with the US Department of Homeland Security, VirTra delivered and installed its V-300 multiple screen systems at 28 separate US Customs and Border Protection field locations, all of which are currently in operation. The new award, if exercised, will extend service and maintenance of those systems and accommodates additional systems to be installed at existing and future field locations over the next five years.

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STEM News

Dominion Donates \$100,000 to the NEED Project for Updated Science Materials for Middle Schools Across Virginia

- Program will help about 350 schools and 95,000 students
- Updated energy curriculum, training and classroom kits will help students pass science SOLs
- Program includes educational materials and special training for teachers

Thanks to a \$100,000 educational grant from the Dominion Foundation, public middle schools across Virginia will receive updated educational materials and teacher training this year to help sixth-graders learn the science behind energy. Dominion is partnering with the NEED (National Energy Education Development) Project and the Virginia Department of Education for this statewide initiative.

"We are very pleased to support Virginia schools by funding a high-quality energy curriculum that will help students excel in the science classroom and better understand energy sources," said Hunter A. Applewhite, president of the Dominion Foundation.

NEED representatives will use the grant to develop instructional materials and energy tool kits to engage students in the science of energy, energy transformations, Virginia's energy geography and natural resources, and more. NEED and Dominion will host teacher workshops in three regions this month to introduce the new curriculum.

"This is an exciting opportunity for middle-school teachers and students to learn more about energy through interactive STEM-focused explorations," said Mary Spruill, executive director, NEED. "The new curriculum will allow students to understand energy in an authentic way, connecting them to energy in the world around them."

"All of the materials in the *Energy in Virginia!* teacher kit align with the state Science Standards of Learning and support other subjects, such as mathematics, writing, reading, and social studies," said Eric Rhoades, the Virginia Department of Education's director of science and health education. "The program makes learning about energy sources engaging and

enjoyable for students. It's a wonderful hands-on learning opportunity."

Last year, Dominion partnered with NEED to launch the Dominion Solar for Schools program, which installed solar photovoltaic systems that convert sunlight into electric power on the grounds of four schools in the Dominion Virginia Power service area. For more information on these partnership programs, visit www.need.org/dominionpartnership.

The [Dominion Foundation](#) is dedicated to improving the physical, social and economic well-being of the communities served by Dominion companies, including Dominion Virginia Power. Dominion and the Foundation support nonprofit causes that meet basic human needs, protect the environment, support education and promote community vitality. For more information about Dominion ([NYSE: D](#)), headquartered in Richmond and one of the nation's largest producers and transporters of energy, visit www.dom.com.

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MathAlive! Exhibit at Virginia Air and Space Center

Award-winning STEM exhibit brings math to life for students



MathAlive!®, a highly immersive and interactive traveling exhibition, opened Oct. 22 at the [Virginia Air and Space Center](#). Presented by Raytheon Company ([NYSE: RTN](#)), the MathAlive! exhibition has drawn record-breaking attendance around the world as visitors

experience math in action. MathAlive! is on a multi-year engagement with museums on or near military installations.

Forty unique and interactive experiences make up the 5,000 square-foot [MathAlive!](#) exhibition with six themed galleries to show math in areas of design, engineering, technology and science. In each gallery, high-tech, mechanical and multimedia interactive experiences provide challenges with various types of mathematics as tools to help visitors compete, design, build and play.

"Our goal is to inspire today's students to be tomorrow's STEM innovators and problem solvers. MathAlive! shows how math and science relates to their everyday lives," said Todd Probert, vice president of Raytheon's vice president of Mission Support and Modernization. "MathAlive! connects math with the things students love most, such as music, sports, movies and games."

The U.S. faces a significant gap in the talent needed to fill current and future jobs in science, technology, engineering and math (STEM), according to an annual index introduced by Raytheon and U.S. News in 2014. The [STEM Index](#), a comprehensive measure of key factors relating to STEM jobs and education, found the U.S. is making strides in some areas but continues to fall short in preparing students for tomorrow's innovation workforce.

MathAlive! will be at the Virginia Air and Space Center until Jan. 8 and is included with general admission. The exhibit appeals to visitors of all ages and levels of math ability, with particular relevance to students in grades 3-8.

"MathAlive! is undoubtedly the best science exhibit to feature math that has ever hit the travelling exhibit circuit. It is a must-see experience!" said Robert Griesmer, executive director and chief executive officer of the Virginia Air and Space Center.

About the Virginia Air & Space Center

The Virginia Air & Space Center is the visitor center for NASA Langley Research Center and Langley Air Force Base. The Virginia Air & Space Center opened April 5, 1992 in Hampton, Va. Touted as the birthplace of America's space program, the Virginia Air & Space Center features interactive aviation exhibits spanning 100 years of flight, more than 30 historic aircraft, a hands-on space exploration gallery, unique space flight artifacts, and more! The Center is home to the Apollo 12 Command Module and the Orion PA-1 Test Vehicle.

About Raytheon

Raytheon Company, with 2015 sales of \$23 billion and 61,000 employees, is a technology and innovation leader specializing in defense, civil government and cybersecurity solutions. With a history of innovation spanning 94 years, Raytheon provides state-of-the-art electronics, mission systems integration, C5I™ products and services, sensing, effects, and mission support for customers in more than 80 countries. [Raytheon](#) is headquartered in Waltham, Massachusetts. Follow us on Twitter [@Raytheon](#).

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[100 CEOs in STEM](#)

Michael J. Ward, Chairman and Chief Executive Officer, CSX Corporation
CSX Corporation, together with its subsidiaries based in Jacksonville, Fla., is one of the nation's leading transportation suppliers. The company's rail and intermodal businesses provide rail-based transportation services including traditional rail service and the transport of intermodal containers and trailers.

Overall, the CSX Transportation network encompasses about 21,000 route miles of track in 23 states, the District of Columbia and the Canadian provinces of Ontario and Quebec. Our transportation network serves some of the largest population centers in the nation. Nearly two-thirds of Americans live within CSX's service territory.

CSX serves major markets in the eastern United States and has access to over 70 ocean, river and lake port terminals along the

Atlantic and Gulf Coasts, the Mississippi River, the Great Lakes and the St. Lawrence Seaway. CSX moves a broad portfolio of products across the country in a way that minimizes the effect on the environment, takes traffic off an already congested highway system, and minimizes fuel consumption and transportation costs.

Michael J. Ward is chairman and chief executive officer of CSX Corporation, one of the nation's premier transportation and logistics companies. Over his 39-year career, Mr. Ward has headed CSX's operations, coal sales and marketing, and finance departments. Under Mr. Ward's leadership, the company continues to achieve record safety performance while providing vital services to customers and posting strong financial results for shareholders. The company's commitment to safety and preparing its network for increasing freight demand is demonstrated by its planned 2016 capital investment of \$2.4 billion and its long-term plan to invest approximately 16 to 17 percent of its revenues back into its core business to support growth. A native of Baltimore, Md., Mr. Ward's commitment to personal philanthropy and corporate citizenship has been recognized with City Year's prestigious Lifetime of Idealism Award. He earned a bachelor's degree from the University of Maryland in 1972, and received a master's degree in business administration from the Harvard Business School in 1976. Mr. Ward is a member of the Board of Directors of the Association of American Railroads, and also serves on the boards of Ashland Inc., City Year, United Way of Northeast Florida, and Hubbard House. His other business affiliations include The Florida Council of 100 and The Business Roundtable. CSX, based in Jacksonville, Florida, is a premier transportation company. It provides rail, intermodal and rail-to-truck transload services and solutions to customers across a broad array of markets, including energy, industrial, construction, agricultural, and consumer products. For nearly 190 years, CSX has played a critical role in the nation's economic expansion and industrial development. Its network connects every major metropolitan area in the eastern United States, where nearly two-thirds of the nation's population resides. It also links more than 240 short-line railroads and more than 70 ocean, river and lake ports with major population centers and farming towns alike. More information about CSX Corporation and its subsidiaries is available at www.csx.com.

The benefits of science and technology have become so pervasive that we often barely notice them. In our business of moving freight, computers routinely tell us the status of shipments, the mechanical condition of our locomotives and rail cars, and help us move 1,200 trains a day safely and reliably across 21,000 miles of track.

Yet our heavy and increasing reliance on technology has not created a commensurate desire among young people to study the disciplines essential to its development. As a consequence, our nation is facing a well-documented shortage of candidates to fill the growing number of science, technology, engineering and math (STEM) jobs.

It's tempting to place responsibility for solving this challenge on our education system, and, indeed, our schools and educators are on the front lines of the solution. But the truth is that all facets of our society, including corporate America, have a shared responsibility to close the "STEM gap" between the skills required in the contemporary workplace and the candidates who possess them.

CSX has a unique historical perspective on this issue. From the founding of America's first railroad, our industry has been solving major engineering and technology challenges in every era along the timeline of industrial development. The game-changing technologies and engineering breakthroughs of past generations were often awe-inspiring in scale, from steam locomotives to feats of infrastructure engineering.

Today's technological advances, by contrast, are often embedded on tiny computer chips and driven by invisible algorithms. They're harder to see, and for most people, harder to comprehend. But that doesn't make them any less exciting. Conveying that excitement to young people lies as much with the companies who will employ them as with the schools who will educate them.

At CSX, our technology organization is attracting the next generation of job candidates by creating an inclusive work environment and making the connection between our IT systems and their benefits to railroad operations. We do that by sending our technology teams into the field to meet, observe and interact with the people using their systems. This practice, along with our company's strong diversity programs, has contributed to CSX being named to IDG Computerworld's list of the "100 Best Places to Work in IT" for the past three years.

Taking that approach a step further, we can change the perceptions of our nation's young people and excite their imagination by inspiring, engaging and demonstrating the tremendous value and potential of STEM careers. Business leaders have an obligation to provide clear and meaningful support of initiatives that introduce STEM subjects earlier and more prominently in general curricula. We need to make STEM subjects — and creative ways of teaching them — as essential to a well-rounded education as English or history, rather than a specialized discipline available only to those who have innate abilities.

We must also communicate more effectively that not every student needs to pursue a STEM-related field to benefit from a better understanding of STEM subjects. A good example at CSX is our employees who operate some of the most technologically advanced locomotives in the world. Our engineers don't write the algorithms that instantaneously process terrain, speed, train length and weight data to reduce fuel consumption and support safe operations. But a basic understanding of such a system enables them to work effectively as a partner in the human-machine interface.

Our instructors at the CSX Railroad Education and Development Institute have found that applicants for jobs as train crew

members, or for mechanical and rail maintenance positions, are much better prepared to succeed when they're familiar with STEM disciplines. They may not require the same level of STEM skills as our analysts who use computer modeling to optimize network capacity, civil engineers who design tracks, or mechanical engineers who enhance locomotive and railcar designs. But by understanding, in a general way, the technology systems and force dynamics behind the equipment they operate, repair and maintain, all front-line employees are able to work more safely and maximize productivity.

The potential benefits of improved STEM education extend far beyond the workplace. Improving our citizens' familiarity with probabilities and statistics, for example, would enable us as an informed society to make better decisions about how to allocate tax dollars to deliver greater rewards in areas ranging from transportation safety and homeland security to healthcare and environmental protection.

We live in an increasingly complex world, and the amount of data available to us is exploding. But without providing our young people with an education that enables them to use data to better understand their world, our technological advances cannot deliver their full potential to improve the health, safety and financial security of our nation and its people. As we emphasize the need to enhance STEM education to fill technology jobs in the modern workforce, we cannot overlook the broader societal benefits of an increased emphasis on STEM subjects at all levels of the education system.

Our nation's STEM challenge, in addition to filling STEM-related jobs, is to create a STEM-literate society that is prepared to meet all the challenges of a technology-driven future. CSX is committed to being a leading partner in the solutions that will take us there.

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