

# I/ITSEC Preview Issue

A Special Edition of the **nrsa** Newsletter



## I/ITSEC 2016

The World's Largest Modeling, Simulation & Training Conference

### Upcoming Events

#### [I/ITSEC 2016](#)

November 28 - December 2, 2016  
Orange County Convention Center  
Orlando, FL

#### [ITEC 2017](#)

Rotterdam Ahoy  
May 16-18, 2017

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HEADLINES FROM THE MODELING,  
SIMULATION  
& TRAINING INDUSTRY



Certified Modeling and  
Simulation Professional  
THE DISTINCTION OF A TRUE M&S PROFESSIONAL

#### EARNING THE CMSP DESIGNATION WILL:

- Demonstrate expertise in the field of M&S to your employer and the larger M&S community
- Provide opportunities for professional advancement

Requirements include 3-8 years of work experience (depending on level of highest collegiate degree), 3 professional letters of reference, and successful completion of an online examination.

To learn more about the requirements, the CMSP exam, and the applications process, please visit

[WWW.SIMPROFESSIONAL.ORG](http://WWW.SIMPROFESSIONAL.ORG)

[Modeling & Simulation in the Age of Data: MODSIM World 2017  
Call for Abstracts](#)

[Army Cyber Innovation Challenge Industry Day – November 1,  
Orlando, FL](#)

## **International Training and Simulation Alliance (ITSA) News**

[The ITEC Team is Back at I/ITSEC](#)

## **NTSA Member News**

[ECS Awarded Two Contracts by US Army Research Laboratory](#)

[Canadian Government Partnering with Canadian Defence  
Industry](#)

[National Guard Training on DiSTI LUH-72 Virtual Maintenance  
Trainer](#)

[Newest Version of VBS3 Now Available](#)

[SimthetiQ Contract in Support of CASE Program](#)

[Engility Holdings Wins Advanced Training & Advisory Solutions  
Task Order](#)

[Rheinmetall to Supply Sim Technology for Urban Operations  
Training Centre](#)

[Polish Military Academy Orders Saab Tactical Engagement  
Simulation System](#)

[CAE Wins more than C\\$120 Million in Defense Contracts](#)

[Meggitt Training Systems' EST II Designated US Army Program  
of Record](#)

[Boeing and Saab Reveal First Two Aircraft for US Air Force T-X  
Competition](#)

[CAE Supports Royal Canadian and Royal Australian Air Forces'  
Participation in Coalition Virtual Flag exercise](#)

## **STEM Connector News**

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[Qualcomm and Virginia Tech open Thinkabit Lab in National  
Capital Region to bring hands-on STEM learning to students and  
training to teachers](#)

[Future City Competition Celebrates 25 Years of Inspiring Middle-](#)

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



### **A Message from I/ITSEC 2016 Conference Chair Janet Spruill**

Can you believe that I/ITSEC is now only a little over a month away? But planning has been in the works for well over a year, thanks to our impressive group of over 200 volunteers and under the extraordinary leadership of Beth Biddle, our 2016

Program Chair. As a result, I/ITSEC 2016 definitely promises to be the best yet!

2016 marks the 50th year of what began in 1966 as the Naval Training Device Center/Industry Conference. The conference quickly evolved and expanded through increased participation by all of the military services, the Joint community, international partners, and industry and academia. We will be highlighting I/ITSEC's Golden Year at the Opening Ceremony, the closing Banquet, and in special displays and daily news items throughout the entire Conference week. I invite you to get involved in the celebration.

I/ITSEC provides the world's premier event for modeling, simulation and training professionals to gather, interact and learn from both the successes and challenges of their peers from both within and outside of their industry. The theme selected for this year's conference, "Pushing the Training Envelope: Live-Virtual-Constructive," emphasizes the need to expand the live training environment through simulation to enable training of sophisticated platforms and systems that cannot practically be employed in a situation other than an actual mission.

Operation Blended Warrior '16 will build upon last year's inaugural event that showcased the capabilities of 31 industry and government participants, networked across the exhibit floor. Similar to last year, the event will once again consist of multiple exhibit floor vignettes showcasing government and industry LVC distributed simulation capabilities. Planned as a four-year special event, this year's OBW will add new focus on multi-level security/cross domain solutions as well as crucial human performance measurement.

I/ITSEC 2016 will also continue its rich tradition supporting STEM outreach initiatives, schools, and teachers. Again this year,

I/ITSEC will host a series of special events that contribute to private and public STEM objectives and increase the caliber and qualification of tomorrow's M&S workforce, including:

The Serious Games Showcase & Challenge (SGS&C), which celebrates the use of games and game technology as a delivery medium for instructional material. After a rigorous evaluation, the top eighteen entries will showcase their games on the exhibit floor during I/ITSEC. Be sure to stop by, play the games, and cast your vote for People's Choice.

The Future Leaders' Pavilion – one of my all-time favorite highlights of I/ITSEC – where you will be able to interact first-hand with some of our country's brightest secondary school students who demonstrate commitment and energy through technical projects they have developed that focus on modeling, simulation and training. The Pavilion also enables the students to experience the sights, sounds and learning about high-end, critical technology only available at I/ITSEC. I urge you to set aside a little time to stop by and talk with these future leaders, and to attend their project presentations on Thursday in the session "The Future is Now!" You will not be disappointed!

On Thursday, 1 December, we will host Student Tours to allow groups of local high school students to experience first-hand, real-world Training, Simulation and

#### YouTube - I/ITSEC 2016 Trailer Video



Education solutions that will help give students a complete understanding of how they can apply the STEM-related skills they learn in the classroom to highly successful careers in our Industry. And, for the first time in 2016, through a partnership of NTSA, the Florida High Tech Corridor Council and other "STEM-U-Lators," we are making it possible to extend I/ITSEC to the classroom through a virtual STEMConnect program.

In addition to these special events, I/ITSEC favorites such as Warfighters Corner, Ignite, and the M&S Congressional Caucus are also scheduled throughout the week.

On behalf of the I/ITSEC Leadership team, Beth and I look forward to welcoming you to the most recognized Simulation, Training, and Education conference in the world November 28 – December 2 at the Orange County Convention Center in Orlando, Florida. Be sure to visit the I/ITSEC website at [www.iitsec.org](http://www.iitsec.org) for new and updated conference information. Let's get ready to celebrate I/ITSEC's Golden Year!

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## **I/ITSEC 2016 Speakers**

Among many others, the following individuals are confirmed for I/ITSEC 2016:

- Tuesday Industry Keynote: Daniel Serfaty, Aptima, Inc.
- Tuesday General/Flag Officer Panel: Admiral Manfred Nielson, NATO ACT
- Air Force Flag Panel on Tuesday afternoon led by Ms. Lynda Rutledge, SES, Air Force Materiel Command
- Navy Flag Panel on Wednesday morning led by ADM John Richardson, Chief of Naval Operations

*For more information on these and other speakers, view the detailed program agenda [here](#)*

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## **I/ITSEC 2016 –Registration & Planning Ahead**

See <http://www.iitsec.org/registration/Pages/default.aspx> for complete details on registration for I/ITSEC 2016.

While you're on the website, see additional links for planning your trip to I/ITSEC here: <http://www.iitsec.org/attendees/Pages/default.aspx>

Useful information includes:

- Attendee Justification Templates
- FAQs for New Attendees
- Assistance for International Attendees
- Agenda Overview
- Information on Accommodations
- Directions

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## **Exhibit Spaces & Sponsorships still available for I/ITSEC 2016**

Exhibit spaces and a variety of sponsorship opportunities are still available. Visit <http://exhibits.iitsec.org> to see the Floor Plan, Exhibitor List, and Sponsorships.

New exhibitors are being added on a weekly basis. Visit the website to learn about the latest technologies the exhibitors will be showcasing. Plan ahead to make the most of your visit!

## **I/ITSEC 2016 Subcommittee Reports**



### **Education Subcommittee**

**Chair: Jan Brown, CAE USA, Inc.**

It has been a tremendous pleasure and privilege, along with deputy chair Nina Deibler, to lead the dedicated and experienced Education Subcommittee this year. The 2016 Education Subcommittee is composed of a diverse and talented

group of 31 dedicated training, education and development professionals who bring extensive experience from across government, industry, and academia. Our subcommittee has worked as a finely tuned machine this year, with members contributing their unique knowledge to ensure we solicited and approved papers that maintain the high standards of excellence our industry has come to expect from I/ITSEC. Kudos to each of our subcommittee members for their commitment to the authors they supported, evaluation efforts, attention to detail, passion for quality, and overall commitment to the I/ITSEC community. We'd like to add a very special thanks to our I/ITSEC Council of Chairs representative, Pres McGee, for his leadership and insights. Though nearing the finish line as a subcommittee, our job is not over as we continue to assist authors/presenters so they are successful in taking their approved papers through presentation development to rehearsal and delivery at the conference in Orlando.

The Education Subcommittee seeks papers that discuss the development and application of instructional strategies, methods, theories, and best practices that promote or advance learning. Our subcommittee received a total of 41 abstracts for consideration this year, covering a wide variety of topics including cybersecurity, medical education, instructional design, mobile technologies, gaming, training effectiveness, and STEM (Science, Technology, Engineering and Mathematics) related topics. A number of abstracts targeting specific and timely content areas with unique educational approaches were also submitted. Nine (9) of the abstracts we received were submitted by international authors. Thirty-one (31) abstracts were selected for development into papers, representing 75% of abstracts received. Twenty-four (24) papers were submitted for review, and 20 of those were accepted for publication and presentation at this year's conference, an 83% acceptance rate. Our subcommittee paper birddogs are now diligently working with their authors as they support them in developing their presentations. This year we will have 8 Education (ED) sessions for you to attend including two special sessions, one which showcases the best papers from ITEC and SimTect, and one which showcases papers from our Future Leaders Pavilion. Based on the quality, breadth and depth of the papers accepted this year, I am confident that once again our sessions will be

inspiring, insightful, and very informative to you and our entire community.



**Emerging Concepts & Innovative Technologies Subcommittee**  
**Chair: Anne Little, Ph.D., Addx Corporation**

This year's conference theme, "Pushing the Training Envelope – Live, Virtual, Constructive" has directly shaped the suite of paper sessions that will be provided by

the Emerging Concepts and Innovative Technologies (ECIT) subcommittee at this year's I/ITSEC. There will be several presentations discussing LVC from a variety of perspectives including use within radar simulators and other part-task trainers. In addition to I/ITSEC's continuing commitment to provide valuable learning opportunities directly related to the conference theme, this year conference participants will also have the opportunity to learn about newest trends in Visual Systems, Big Data, and MSaaS (Modeling & Simulation as a Service). The authors who will present their papers have examined these concepts and will discuss how they integrate within social media and trend detection, joint training implementations, and training assessment for the Warfighter and medical personnel.

The 32 members of the ECIT subcommittee began preparing for this year's conference shortly after I/ITSEC 2015. Our membership was expanded to include representatives from the Veterans Health Administration (VHA), the Office of the Secretary of Defense (OSD) and government/academic partnership agencies. These talented members reviewed 81 abstracts and accepted 52 to advance to Paper Review. The subcommittee members' support to the authors has been outstanding; professionals do not often serve to champion an individual's success outside of their industry and organization, but within the I/ITSEC community, this is the norm. Even our newest members have jumped in and welcomed the opportunity to support the ECIT author community.

During Paper Review, the subcommittee brought their collective subject matter expertise to review and accept the 27 papers that will form our nine paper sessions. If you are interested in hearing about behavior anticipation models, cyber-trafficking surveillance and how social media networks are being used to detect trends to support U.S. Border Security, you will definitely find value in the varied sessions that we will present at this year's conference. We also offer a special welcome to our three international authors who are presenting two different papers on MSaaS architectures as well as a paper identifying radio communication inefficiencies.

I would like to thank the members of the ECIT subcommittee for all of their efforts to provide a stellar professional development opportunity for this year's conference attendees. Each member has significantly contributed to the field by ensuring we have a representation of papers that truly showcase our conference

theme. I also want to thank my outstanding Deputy Chair, Dr. Jennifer Murphy, and together we both are looking forward to another outstanding conference.



**Human Performance Analysis and Engineering (HPAE) Subcommittee  
Chair: Kelly Hale, Ph.D., Design Interactive, Inc.**

I/ITSEC is around the corner, and we are excited about what HPAE has to offer the community this year. In today's technology-enriched environment, humans remain an

integral component within systems and in mission accomplishment. HPAE focuses on the application of Human Systems Integration (HSI) theories, methods, and tools for topics such as: human performance assessment / effectiveness; human behavior modeling; human-computer interface design and evaluation (HCIs); usability / user experience; performance support tools; job aids; decision-support systems; knowledge management tools and techniques and impact of HSI on organizations. Papers and presentations cover a range of domains, technologies, and training capabilities.

HPAE committee members, including industry, Government, and academic participants, have put in extensive volunteer hours to review and guide authors in developing top-notch papers and presentations this year. Through our extensive review process at both abstract and paper reviews, the committee has assembled three informative paper sessions that will entice audience members with insights and new approaches in intelligent tutoring systems, human-centered design, and workload measurement. The three sessions presented by HPAE will showcase advances from Government, industry, academic authors from both here in the US and from our International partners.

Session H1, ITS – A Challenge, will be held on Tuesday at 1400. It will highlight two papers from industry describing advances in measurement of cognitive reasoning and assessment techniques within an intelligent tutoring system. Session H2, How May I Help You?, is scheduled for Wednesday at 1600, and includes evaluations on audio warning signals, augmented reality navigation, and survey data capture using an experience API framework. Session H3, Let's Get to Workload', will be held on Thursday at 0830, and will present workload assessment for both manned and unmanned flight scenarios. All sessions will be presented in room W304A.

This year, our best paper nominee will be showcased on Wednesday at 1500 in room W304A as well. The paper, entitled "Encounters with the Public: A Novel Process for Developing Metrics that Measure What Police Do", discusses social complexities in high risk and high consequence encounters between warfighters/police officers and community members. The lead author, Dr. Stephen James, and his coauthors, present their approach to develop measurement scales to evaluate performance during dynamic encounters, providing a



user-friendly, cost-effective method for designing and evaluating performance during such social encounters.

We look forward to seeing a large audience at HPAE events during I/ITSEC, and invite authors to submit abstracts to HPAE for I/ITSEC 2017! Look for the call for abstracts soon.



**Policy, Standards, Management & Acquisition (PSMA) Subcommittee  
Chair: Chuck Secard, Lockheed Martin**

Last year was a transitional year for the Policy, Standards, Management, and Acquisition (PSMA) subcommittee. We emphasized a program that was heavily influenced by cybersecurity policy and training return on investment. This year we continue to deliver on those themes as well as live, virtual, constructive (LVC) training influences. We received 43 abstracts, an increase of over 30% compared with last year. Our subcommittee of 30 members spent a full day considering every one of those abstract carefully, and selected the cream of the crop to proceed to paper preparation. We have five new members from industry and two from government who are bringing fresh ideas to our group of veteran I/ITSEC subcommittee members.

The papers promise to provide informative papers on contracting, acquisition, and management issues that will provide you valuable insights into how to get the most modeling, simulation, and training value for the investment. The topics of information assurance and security also garnered multiple quality abstracts. Eight percent of our abstracts were received from authors outside the US, so we would more international submissions for next year's PSMA sessions.

While most of the PSMA papers address non-technical management topics, technical standards are also within our scope. This year promises an increased number of papers on technical standards. Speaking of standards, the PSMA subcommittee will once again be sponsoring the Geospatial/ Environmental Database Standards meeting at I/ITSEC 2016. This meeting brings together environmental database production and integration experts from across the US DoD and other nations. This group of experts has directly impacted the emergence of best practices, standards, and data sharing agreements that make environmental data more readily accessible and affordable for all consumers. This meeting is open to all registered I/ITSEC attendees.



**Simulation Subcommittee  
Chair: Carla Cropper, Rockwell Collins  
STS**

The Simulation Subcommittee is geared up for another successful I/ITSEC, 2016.

The subcommittee, consists of thirty individuals, sixteen (16) from industry, fourteen (14) from Government, and one

(1) from academia. The Subcommittee Chair, Carla Cropper and Deputy Chair Bob Kleinhample led the team through paper review in July. Statistics from the review itself as well as the papers and presentations are included below.

Of a total number of fifty (50) abstracts approved and thirty five (35) papers submitted, an impressive 83% were accepted for presentation and publication. This compares to a 75% acceptance ratio in 2015. The quality of the papers this year was outstanding even though the quantity of papers was down by approximately 20% over last year. For the first time in I/ITSEC history, a paper from China was accepted! International authors from Poland, Turkey, UK, and Argentina will also present this year. Accepted paper demographics include four (4) Government, nineteen (19) industry, six (6) academia, and five (5) international. The best paper nomination from the Simulation Subcommittee is paper number 16133, "Development of a Parachute Deployment Model for Airdrop Simulation" by Mr. Joseph Mudrak. In terms of special designations, the subcommittee identified five (5) Live Virtual Constructive papers, one (1) Black Swan, four (4) Medical, and one (1) Cyber paper. Analysis was also done on the withdrawals prior to paper review, paying special attention this year as quantity was down slightly over last year. Reasons given include two (2) for personal/medical reasons, one (1) was unable to obtain clearance, four (4) had a lack of data due to funding or delayed experiments, five (5) to work load or other time constraints, and only three (3) that were unresponsive with no reason for withdrawal.

In terms of the paper review itself, it was very well attended by subcommittee members. There were twenty two (22) in person participants and four (4) virtual participants, with four (4) excused absences and only one (1) unexcused. The room provisioning, video/audio quality, wireless, and general review location were excellent. Online voting was used this year by the subcommittee and turned out to be very successful. Review time was spent discussing important aspects of the papers as opposed to counting votes. Another notable improvement was the simplification of the voting spreadsheets. Much effort was put in ahead of the review by Ramona Shires to make improvements and this paid off when it came to both using the spreadsheet during the review and also in the prep work to consolidate subcommittee feedback. In addition, the simulation subcommittee carried forward the tradition of assigning new member mentors in addition to battle buddies for those unable to attend in person. Two meetings were held to discuss the agenda, answer questions, and ensure the team was ready to go on the morning of the review. All of these efforts combined insured the subcommittee could successfully execute.

Since the paper review, the entire team has been working diligently to ensure authors and presenters are prepared for the conference. Thanks to the subcommittee, to deputy chair Bob Kleinhample, to Barbara McDaniel, Janet Spruill, Dave Hutchings, Beth Biddle and Brian Holmes for all their hard work.

We look forward to the months to come!



**Training Subcommittee**  
**Chair: Eliot Winer, Ph.D., Virtual Reality Applications Center, Iowa State University**

Our goal, as members of the I/ITSEC community, is to support our warfighters and first responders with cost-effective and innovative training tools that assist them to

perform their duties. This is what drives our efforts. The conference theme of “Pushing the Training Envelope” exemplifies our dedication to making sure that we employ innovative methods to ensure that our personnel are trained for their challenges and ready for all missions the country may call upon them to perform.

Our Training Subcommittee is composed of 28 volunteers from Industry, Government and Academia, who worked together to evaluate 67 submitted abstracts from around the world. Each one of these volunteer members has years of experience in simulation and training, and they dedicate themselves every year to vetting submitted papers to identify the best this community has to offer. We had a very strong group of experienced subcommittee members this year, with six new members to the Training Subcommittee. I, along with my deputy Chair, Michael O'Connor, want to thank each of them for their commitment and effort this year in selecting an excellent group of papers for presentation.

Of the 67 submitted abstracts, 52 were accepted for development into papers. Early on, our members sought out and encouraged new and seasoned authors to submit abstracts for the Subcommittee's consideration. During our July paper review process, we evaluated 36 submitted papers and accepted 30 for presentation and publication at this year's conference in Orlando, FL, scheduled 28 Nov. – 2 Dec., 2016.

The Training Subcommittee is focused on showcasing work that leads to innovative training solutions. We invite papers that discuss the application of training related to state-of-the-art concepts, methods and technologies. We welcome papers that address all phases of the training system including planning, analysis, design, development, implementation, evaluation and life cycle support. The I/ITSEC community is driven to open this forum up and embrace new industries that recognize training and simulation as an effective way to keep their personnel sharp.

Our Subcommittee selected the paper titled “Designing Effective Feedback in Adaptive Training Systems” by authors Carla R. Landsberg, Shannon Bailey, Wendi L. Van Buskirk, Emily Gonzalez-Holland, and Cheryl I. Johnson, as our Training subcommittee's Best Paper. Our nominated paper will be evaluated along with five other papers from the other subcommittees to be the recipient of the conference's Best Paper award in December. We invite you to attend the paper's

presentation and learn more about the exciting and innovative work being done in this arena.

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## **International Programs at I/ITSEC 2016**



### **K. Denise Threlfall, Ph.D., Director, International Programs**

The conference countdown is on! International Programs is excited about our numerous events and special plans for I/ITSEC 2016! It is going to be an amazing celebration, 50 years in the making! We hope all our friends from around the globe are making their plans to join in this year's incredible conference agenda.

Over the years, International Programs for I/ITSEC has not only seen a growth in international attendance but has expanded our program offerings to include special events, internationally-focused sessions, and greater international integration/involvement. Not only have the number of events expanded, but our planning committee has grown as well. This year, in addition to bringing on Mr. Paul Thurkettle of NATO as one of our core committee members, we have created an IPT which consists of one member of each of the six subcommittees. Many thanks to Tom Archibald, Ben Bell, Jan Drabczuk, Nick Giannias, Scott Hooper, and Cindy Krisan for adding to their conference volunteer duties and being actively involved in the planning of all these activities. The support of all these folks, along with long-term members Cathy Matthews and Mike Weber, is invaluable to the success of International Programs at I/ITSEC.

The North Atlantic Treaty Organisation (NATO) will continue its strong support to I/ITSEC with international participation and involvement by Admiral Manfred Nielson, the Deputy Supreme Allied Commander Transformation (DSACT). Admiral Nielson will be a speaker on the General/Flag Officer Panel session scheduled for Tuesday morning, 29 November. Admiral Nielson is from the German Navy and is a specialist in underwater weapons systems. He has held various commands from minesweepers to Commander in Chief of the German Fleet in Glücksburg, then Chief of Staff Joint Support Service of the Bundeswehr, prior to his NATO post at Allied Command Transformation in Norfolk, Virginia. NATO will have a booth on the exhibit floor and will have many Flag and NATO officers from its 28 nations attending the conference.

In a year where we celebrate 50 years as an evolving conference, and with the theme, *Pushing the Training Envelope. Live · Virtual · Constructive*, International Programs has created the most robust agenda for our global audience to date. Please

check out all the offerings on our website page at [www.iitsec.org/attendees/Pages/InternationalAttendees.aspx](http://www.iitsec.org/attendees/Pages/InternationalAttendees.aspx). There you will find the listing of events as well as an opportunity to sign up for the one-on-one meetings with the representatives from the Comparative Technology Office and the Coalition Warfare Program. Be sure to plan ahead as there will be so much to choose from at I/ITSEC 2016!

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### **I/ITSEC 2016 Mobile App**

I/ITSEC 2016 Mobile App is now available for download! Currently you are able to review the floor plan and exhibitors; then be sure to look for the Program/Sessions to be made available by late September.

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

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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!

Registration open NOW at <https://secure3.rhq.com/iitsec/iitsec2016/5k16/index.cgi>

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### **Hotel Reservations for I/ITSEC – Beware of Imposters!**

Rogue companies continue to inaccurately represent themselves as our "housing vendor" when contacting individuals in the I/ITSEC community. Specifically, they will offer to make hotel reservations within the I/ITSEC block on your behalf, and some will also claim to be calling from one of the I/ITSEC hotels. If you provide your credit card information to any of these unauthorized vendors, your card may be charged but you may not have a reservation when you arrive in Orlando.

Stick with our approved provider – “**OnPeak**” - or a company that you know and trust. Disregard unsolicited sales pitches claiming to have rooms available for I/ITSEC. **OnPeak** is the only provider approved by NTSA-I/ITSEC. Complete housing

information is available at [www.iitsec.org/attendees/planningyourstay](http://www.iitsec.org/attendees/planningyourstay)

If you have any questions about the I/ITSEC hotel block, or general questions about I/ITSEC, please contact Barbara McDaniel at 703-247-2569 or [bmcdaniel@ndia.org](mailto:bmcdaniel@ndia.org). Complete information about the conference is also available online at [www.iitsec.org](http://www.iitsec.org).

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## **Q&A with the I/ITSEC 2016 Scholarship Winners**

The **RADM Fred Lewis I/ITSEC Postgraduate Scholarship** awards are offered at the Masters level in the amount of \$5,000, and at the Doctoral level in the amount of \$10,000. The scholarships are being offered to stimulate student interest and university participation in preparing individuals for leadership in the Modeling & Simulation, Training, and Education communities. The scholarship recipient(s) will attend I/ITSEC at the expense of the I/ITSEC organization, where he or she will be recognized, view the latest in simulation, training and education technologies and meet leading figures from Government, Industry, and Academia associated with this community.

### **Doctoral level Scholarship Winners**



**Shannon Bailey**  
**Doctoral Candidate in Psychology,**  
**University of Central Florida (UCF)**  
**Research Psychologist, StraCon**  
**Services Group, LLC / NAWCTSD**

#### **1. What first motivated you to become interested in modeling and simulation?**

My honest answer is very nerdy; I first became interested in simulated environments from watching Star Trek as a kid. In the show, the ship has a "Holodeck" that can simulate any programmed environment with life-like fidelity. Of course, as a kid I didn't realize what virtual reality was and thought the idea of a computer-simulated environment was just science fiction. I never dreamed that I would now be working on creating virtual environments. It wasn't until two years ago when I began an internship with the Navy that I was able to work firsthand with virtual reality and saw how simulations could benefit the real world. Since diving headfirst into developing training in virtual reality, I have become an advocate for the applied uses of simulation. My interest now is in refining virtual training through research and discovering the best uses of the technology.

#### **2. Where do you see modeling, simulation and synthetic environments heading in the near and more distant future?**

I get very excited about this question, because I think that virtual and augmented reality (VR/AR) is about to finally hit the mainstream. Commercial headsets are being introduced now

and in the next few years that will make VR/AR affordable for the masses. As the technology gets better and cheaper, it will be more feasible to extend VR/AR to all sorts of uses – from entertainment and gaming to applied training and education across all domains. What’s exciting about these new simulation systems is that there isn’t a standard way to interact with or use the technology yet, so the field is open to so many research opportunities. I think that the distant future of having a perfectly simulated virtual environment like Star Trek’s Holodeck is not as far away as we imagine.

### **3. Where do you think the challenges lie in developing the full potential of modeling and simulation?**

I think the challenges of developing simulations (at least in VR/AR) are two-fold. The first challenge is the obvious limitations of cost and fidelity. Until very recently, virtual environments were prohibitively expensive for practical purposes, and technological limitations created a number of issues for fidelity and usability (e.g., slow refresh rate causing simulator sickness, etc.). Hopefully, the boom in commercial VR/AR will reduce this challenge by producing affordable options of a much better quality. Once the technology is widely available at a more reasonable price, developing simulations for practical purposes will be a better financial bet. Then, virtual training can be cost effective instead of cost prohibitive. The second issue I see in developing simulations for real-world uses is that the research on virtual environments is still young with many gaps in the literature. There is a lack of systematic testing of different VR/AR characteristics in training and education. Without a systematic body of literature to draw conclusions from, it’s hard to develop effective training with virtual environments.

### **4. Many corporations, government, and private organizations have launched efforts to attract more young people to the sciences. What do you believe could be done in addition to interest more young people in STEM?**

Reaching out and making information on STEM careers available to a diverse audience of young people is key. I think young people today have much more information available to them than was around when I was that age, and they are much better at searching for the information they are interested in; therefore, it’s important to provide the information about STEM professions for young people to find, making information on these careers open and the people accessible to interested young minds. Saying to young people that they could grow up to be a scientist is hard to imagine and prepare for. Instead, giving more details about what specific sciences study, how they perform their research, and what education is needed to do that kind of science would be more helpful. I’ve been fortunate to be involved in a few STEM outreach events, such as volunteering to judge an elementary school science fair and talking to a local Girl Scout troop about my STEM experiences. There are many opportunities to get involved and engage young people in STEM. I think often that young people’s involvement in STEM fields may be more about lack of knowledge or opportunities than a lack of interest.



**Rebecca L. Law**  
**Faculty Research Associate**  
**MOVES Institute, Naval Postgraduate**  
**School**

**1. What first motivated you to become interested in modeling and simulation?**

When I first entered into the Graduate

Program in International Studies at Old Dominion University, I was extremely interested in pursuing the foreign policy as my area of concentration. Since my husband and I were both enrolled in the same graduate program with two small children at home, we had to find a way to take care of our children in the evenings without assistance while attending class. We knew we would have to attend class on different nights, and ultimately, he beat me to enrolling in fall semester courses. As it turns out, not too many students in our program wanted to take modeling and simulation courses, so in my first semester I enrolled in game theory and introduction to modeling and simulation. I am glad I did, because I was completely hooked. This synergy of hard science/social science, left brain/right brain was everything I had been searching for in an academic program.

**2. Where do you see modeling, simulation and synthetic environments heading in the near and more distant future?**

I could undoubtedly see modeling, simulation and synthetic environments migrating into the mental health and therapy fields. My younger sister is a therapist at Kennesaw State University in Atlanta, Georgia, and the majority of clients she sees do not have social skills or even the life skills necessary to succeed on their own in college. Therapy occurs in an office setting where the therapist is at the mercy of the client to describe as best as he or she can the circumstances for which they are being seen. They can never really know or experience what the client knows or experiences. Synthetic environments could help simultaneously address the client's need by providing an alternate environment in which he or she could build and practice these skill sets, as well as, help the therapist gain greater fidelity into a client's state.

**3. Where do you think the challenges lie in developing the full potential of modeling and simulation?**

I believe the biggest challenges for developing the full potential of modeling and simulation lies in the cross fertilization of fields of study. The more exposure modeling and simulation has across academic disciplines the more it can be scrutinized, improved and expanded. Many other fields are subject to analogous challenges found within the modeling and simulation community and face similar debates. We can learn lessons on how to address and overcome those challenges through the exposure of these to fields to one another. In addition, we have the opportunity to share our strengths and successes in modeling and simulation with others who may benefit from that knowledge.

**4. Many corporations, government, and private organizations have launched efforts to attract more young**



**people to the sciences. What do you believe could be done in addition to interest more young people in STEM?**

Recognizing and promoting the importance and necessity of both the fine arts and STEM in our education system is the first step to interest more young people in STEM. As a mom of a second grader and kindergartener, I have witnessed budget cuts and standardized test scores in our school systems drive this tension between preserving the fine arts and STEM in school. School districts are then presented with a false choice-cut art and music or math and science.

I can tell you from my own experience, both are necessary to be successful and adaptive in today's society. I am a serious game designer for the Naval Postgraduate School. My primary job is to take problems and to frame these problems and create a narrative around those problems in order to engage the imaginations of thousands of people to think differently about those problems. On the surface this sounds like a trivial task, but my work requires that I utilize knowledge in areas such as human and organizational psychology, anthropology, public policy in order to address problems in electromagnetic warfare and energy. I also have to have knowledge of the mechanics and programming of serious game platform itself. Knowing this helps us improve the user experience through human centered design.



**Anastacia MacAllister**  
**Research Assistant**  
**Iowa State University - Virtual Reality**  
**Applications Center**

**1. What first motivated you to become interested in modeling and simulation?**

What first motivated my interest in

modeling and simulation was working on a Live, Virtual, and Constructive training project for Army Research Labs as an undergraduate at Iowa State University. This project exposed me to the intriguing challenges and value associated with modeling and simulation.

**2. Where do you see modeling, simulation and synthetic environments heading in the near and more distant future?**

In the future I see modeling, simulation and synthetic environments heading more towards mobile devices. With the release of devices like Google Cardboard we have the ability to run fairly robust simulations using nothing more than a phone and a headset viewer. While these devices will never replace top of the line systems like CAVESTM, they do open up many possibilities in areas like Augmented Reality work instructions or simulated environments for team tutoring.

**3. Where do you think the challenges lie in developing the full potential of modeling and simulation?**

There are two main challenges that I believe modeling and simulation faces. The first being demonstrating its value to those outside the discipline and the second continually adapting to a rapidly changing development landscape. The first challenge involves convincing those outside the discipline that the costs associated

with simulation are far outweighed by the benefits. Demonstrating the added value that modeling and simulation can bring to a situation is paramount to keeping the discipline moving forward. The second challenge stems from the fast shifting technology landscape. With new devices such as the Oculus Rift, Microsoft HoloLens and evolving cross-platform development tools like Unity and Unreal Engine, keeping up with all the new tools is challenging. With this changing environment it is very important to build adaptability into modeling and simulation projects. This adaptability will allow the community take advantage of the latest tools, providing the warfighter with the best technology available.

#### **4. Many corporations, government, and private organizations have launched efforts to attract more young people to the sciences. What do you believe could be done in addition to interest more young people in STEM?**

The ongoing efforts to attract students to STEM fields is a very important endeavor. Those who receive a STEM education in college are equipped with critical thinking skills necessary to tackle the problems of the future. As we renew our focus on STEM education, it may be beneficial to start exposing students to simplified STEM concepts well before they even consider college. Programs that extol the benefits of STEM would ideally happen in elementary school, demonstrating to students the potential of science and stoking curiosity that leads them on a path of scientific exploration. Hopefully this early exposure would show them that it's okay to question and sometimes fail intelligently, preparing them for the rigors of a college STEM education.

#### **Master's level Scholarship Winner**



**Emily Gonzalez-Holland**  
**Masters of Modeling and Simulation**  
**Program**  
**University of Central Florida**

##### **1. What first motivated you to become interested in modeling and simulation?**

Modeling and Simulation, being such a growing and every expanding field, really piqued my interests as being a field where I could apply my interdisciplinary education. Coming from a psychology background I understood the interaction between machine and human, however, M&S really expands on this relationship and I wanted to be a part of this broad growing field.

##### **2. Where do you see modeling, simulation and synthetic environments heading in the near and more distant future?**

I can see modeling, simulation and synthetic environments really being a pivotal part of our distant future. May that be in space exploration, military, education, or healthcare, I believe that M&S can really contribute to these realms in a very grand way. There is still so much work to be done and much more things to be determined for our future that especially in space exploration I believe that M&S and synthetic environments can really help with this growing field of discovery.

### 3. Where do you think the challenges lie in developing the full potential of modeling and simulation?

I think the challenges lie in the development of substantial KSAs that are applicable to this extremely various field. However there is so much overlap in the field that this shouldn't be a debilitating challenge that will hinder the full potential of modeling and simulation.

### 4. Many corporations, government, and private organizations have launched efforts to attract more young people to the sciences. What do you believe could be done in addition to interest more young people in STEM?

I believe that the interest in STEM really starts within the system of education which STEM fields are presented. If the interest is presented at an early enough age and in a various way then the motivation for young people to get into the field is greater. I know that the efforts presented through my undergraduate experience really pushed me towards a STEM-driven higher education path. For example, I was a peer mentor for Academic Resources at UCF as an undergraduate student for one summer where I was able to mentor incoming freshman students on how to achieve their academic goals and I was able to introduce STEM fields to them in a very mentor-mentee type of relationship which I found to be mutually beneficial.

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## Full Articles 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](http://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](http://www.modsimworld.org).

Please direct any questions to the Program Chair, Benjamin Bell ([benjamin.bell@eduworks.com](mailto:benjamin.bell@eduworks.com)) or to the Deputy Program Chair, Marco Estrada ([marco.t.estrada@hii-nns.com](mailto:marco.t.estrada@hii-nns.com)).

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### Army Cyber Innovation Challenge Industry Day – November 1, Orlando, FL

The Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT)), specifically the Program Executive Office (PEO) Simulation, Training, & Instrumentation (STRI), Army Cyber Command and Second Army (ARCYBER & 2A), and the Army Training and Doctrine

Command (TRADOC) are initiating a Cyber Innovation Challenge to investigate training platform prototype solutions. The intent of the challenge is to evaluate the technical feasibility of solutions for specific focused gap areas relevant to the Persistent Cyber Training Environment (PCTE). (See website for more detail about the PCTE and solution requirements.)

The Industry Day will provide Industry/S&T/Academia the opportunity to obtain further details and discuss requirements with the Government sponsors. It will serve as an initial opportunity for interested members of industry and academia to meet and discuss details with key Army organizations to include PEO STRI, US Cyber Command, Army Cyber Command (ARCYBER), and the TRADOC Cyber Center of Excellence (CoE).

The Industry Day is open to all interested parties across Government, industry, and academia. U.S. Citizenship is required. The agenda will include briefings on the entire PCTE requirement and the Cyber Innovation Challenge specific requirement.

For Registration and full event details, visit

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## International Training and Simulation Alliance (ITSA) News



### The ITEC Team is Back at IITSEC

The [ITEC](#) team will be at **IITSEC** on **Booth 2635**. Please join us for a cold beer at our stand at 3PM on Tuesday, **November 29th** to discuss the leading event for military training, simulation and education in Europe.

### ITEC Presentation at IITSEC

- **WHAT?** The **ITEC** presentation about the International Forum for the Military Simulation, Training and Education Community.
- **WHEN?** Wednesday, **30th November** in **Room W205A**.
- **WHAT TIME?** 10am to 11:30am.
- **FOR WHO?** Military, press & industry are all invited.

See here for more details on ITEC events at IITSEC 2016:  
[clarion-events.msgfocus.com](http://clarion-events.msgfocus.com)

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## NTSA Member News

### ECS Awarded Two Contracts by US Army Research Laboratory

**The US Army Research Laboratory (ARL) has awarded two contracts to Engineering and Computer Simulations (ECS) for research & development services designed to demonstrate and advance state-of-the-art simulation and training technologies.**

The goal of the initiative, called Simulation, Training and Engineering Services (STES), is to produce training/simulation systems that can adapt over time to changing Army needs and conditions. STES addresses three technical areas - TA 1: advanced simulation; TA 2: medical simulation; and TA 3: squad and small-team research. ECS will be developing simulations for medical simulation and squad and small-team research.

STES represents 13 contracts granted under a Multiple Award Indefinite Delivery/Indefinite Quantity Contract. The flexibility of this type of agreement gives the Army the ability to respond

rapidly to changing conditions by requesting and receiving resources at the exact time they are needed.

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## **Canadian Government Partnering with Canadian Defence Industry**

**The Canadian Association of Defence and Security Industries (CADSI) has proposed concrete ideas for the Government of Canada to partner with the Canadian defence industry to drive innovation-led growth.**

“The Canadian defence industry proposed that as part of its *Inclusive Innovation Agenda*, the government develop a Made in Canada Defence Industrial Policy to help bring to bear existing government policies and programs. This would allow the government to more effectively use defence procurement budgets to generate both innovation-led growth in Canada and the military capabilities required by the Canadian Armed Forces (CAF),” said CADSI president Christyn Cianfarani.

The ongoing recapitalization of the CAF - the largest re-equipping of the Forces in decades - provides a once in a generation opportunity for the government to drive innovation-led growth through the Canadian defence industrial base. The opportunities presented by the Canadian defence industry are unique in that the government has more influence over the industry’s growth and its impact on innovation as the government is the main if not sole customer within Canada.

The roundtable was hosted by two Government of Canada Innovation Leaders, Dr. Arvind Gupta, a visiting Professor at the University of Toronto, and Dr. Ilse Treurnicht, CEO of the MaRS Discovery District. The roundtable is part of the government’s larger Inclusive Innovation Agenda spearheaded by the Honourable Navdeep Bains, Minister of Innovation, Science, and Economic Development, along with the Honourable Kirsty Duncan, Minister of Science and the Honourable Bardish Chagger, Minister of Small Business and Tourism.

“Today’s discussions were just one of the many opportunities the Canadian defence industry - an innovation-rich sector of the Canadian economy - is sharing its global experiences and insights with the government so that Canada can thrive as an international leader for innovation,” said Ms. Cianfarani.

The [Canadian Association of Defence and Security Industries \(CADSI\)](#) represents more than 800 Canadian defence and security companies.

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## **National Guard Training on DiSTI LUH-72 Virtual Maintenance Trainer**

**DiSTI has delivered a first-of-its-kind virtual maintenance trainer (VMT) for the for the US Army's UH-72A Lakota helicopter to the Western Army National Guard Aviation Training Site (WAATS). The VMT is being used for training in the UH-72A Light Helicopter Repairer Course at the Silverbell Army Heliport.**

Consisting of 12 workstations, the VMT provides students the ability to familiarize and practice maintenance tasks prior to ever opening a door or hatch on the physical aircraft. As the only UH-72A Light Helicopter virtual trainer, it will support the training program for maintainers from the Army National Guard, Reserve and Active Duty components.

"The repair course provides instruction on 66 essential maintenance tasks," said Army Lt. Col John Morelos, battalion commander of the WAATS Total Army School System. "By leveraging technology and learner-centric teaching strategies, the VMT provides a familiar digital platform that connects with the new generation of Soldiers."

In addition to the selection by the National Guard Bureau to conduct the LUH-72 maintenance course, the Arizona Army National Guard and the WAATS are home to more than 20 LUH-72 Lakota's. These aircraft are utilized daily in support of civil authorities and in assistance to the US Customs and Border Patrol along the southwest border, requiring regular maintenance at a higher standard than most army aircraft.

The LUH-72 is a Federal Aviation Administration registered aircraft owned by the Army and the Army National Guard and must be maintained to FAA standards of flight safety, making the training and maintenance more stringent, and strictly monitored.

Working with Ft. Eustis and the Eastern Aviation Training Site, the WAATS assisted in building the training curriculum needed to conduct the course. This process to build this curriculum began in February 2013 and was completed in April 2013, with 12-hour work days six-to-seven days a week.

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## **Newest Version of VBS3 Now Available**

**Bohemia Interactive Solutions (BISim) has announced that VBS3 v3.9.1 is now available for customers to download. The latest version of VBS3 includes a range of new features, content, updates and bug fixes.**

"This new version features detailed updates of tools such as a new close air support system and expanded artillery strike feature, making it easier for scenario editors and administrators to incorporate these elements into training," said Oli Arup,

BISim's vice president of product development. "These have been done under the close guidance of SMEs to ensure they further enhance the training value for customers."

New features and updates include new close air support system; artillery strike update; AC-130 updates; AI rules of engagement; nighttime sensor sim; flight model plugin; added animations; and windage effects.

VBS products are used in more than 30 countries by military organizations such as the US Army, US Marine Corps, UK Ministry of Defence, Australian Defence Force, French Armed Forces, Bundeswehr, Swedish Armed Forces, Canadian Armed Forces, and New Zealand Defence Force.

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### **SimthetiQ Contract in Support of CASE Program**

**SimthetiQ has been awarded a three year contract (with options to extend a further three years) from the Canadian Department of National Defence to provide Simulation Entity Models (3D models) in support of the CASE (Canadian Advanced Synthetic Environment) program.**

Under the contract, SimthetiQ will be tasked to deliver 3D model content from their extensive 3D library as well as provide on-demand services for model configuration and development in support of Canadian Armed Forces simulation and training activities. The models will be used by the Canadian Armed Forces in national and international training and simulation activities.

The CASE project was created with the goal of providing a distributed simulation environment that enables and supports the linking of simulators and simulation centres from various branches of the Canadian Forces in order to achieve combined, collaborative training. SimthetiQ's openflight, DIS/HLA compliant model content will be integrated into CASE-enabled training systems, which use the Genesis RTX image generator from Diamond Visionics.

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### **Engility Holdings Wins Advanced Training & Advisory Solutions Task Order**

**Engility Holdings, Inc. has won a \$16 million contract to deliver advanced training solutions and embedded advisory support to the US Marine Corps (USMC). The Space and Naval Warfare Systems Center (SSC) Atlantic selected Engility to support and train warfighters on USMC command and control systems worldwide.**



Engility will develop and deliver training support on newly-fielded equipment and software. The company will also develop virtual-world 3-D immersive training environments to host USMC training in a media-rich classroom or in a mobile app to accommodate individual distance learning. Engility will also supply Command Post Systems Advisors, who will be embed with the Marine Expeditionary Force and major supporting commands. These advisors will support information management officers, who are responsible for the deployment and use of command and control systems within their respective units.

The third quarter cost-plus-fixed-fee win represents a re-compete award with an expanded level of effort for the multiple programs supported by Engility. "With this contract, we have the opportunity to help modernize the Marine Corps training program with a variety of live, virtual and simulation environments," said Engility CEO Lynn Dugle. The award is for one year with a one-year option.

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### **Rheinmetall to Supply Sim Technology for Urban Operations Training Centre**

**The Rheinmetall Group of Düsseldorf has won another important export order. A military customer from the Middle East-North Africa (MENA) region has contracted with the Group to equip an ultra-modern facility where troops can practice combat operations in urban terrain.**

The order is worth an eight-figure euro amount. A complete 'training city' site will be constructed in the customer country, whose technical features will make it the world's most advanced training centre for preparing soldiers and security personnel for urban operations.

Rheinmetall will equip urban infrastructure specially constructed by the customer with a complete array of simulation technology, creating a unique, and high-tech training environment.

Core elements include a high-performance wireless data and position locating system as well as a state-of-the-art control and evaluation centre, to include presentation systems for exercise briefings.

An advanced laser engagement system, designed to take into account the special requirements of urban operations and house-to-house fighting, make it possible to bring a full range of participants into the exercise loop. The training facility is suitable for simulation-supported force-on-force exercises with Laser Engagement System as well for live fire operations.

A virtual simulation system for prior tactical training of leaders also forms part of the package. For sections of the facility where live firing takes place, a video monitoring system will be

installed.

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### **Polish Military Academy Orders Saab Tactical Engagement Simulation System**

**Saab has received the first order, under a two-year agreement recently signed with the General Tadeusz Kosciuszko Military Academy of Land Forces in Wroclaw (WSOWL), Poland, to deliver a high fidelity tactical engagement simulation system (TESS).**

This initial order will provide the future officers with a proven, off-the-shelf and technically advanced training system which offers unrivalled interoperability options within NATO and beyond, whilst providing the capacity for long-term system growth.

With this system, WSOWL can conduct realistic combat training using small arms and anti-tank weapons laser simulators and evaluate the results of the exercises. Saab will work with WSOWL to deliver a value for money, off-the-shelf TESS capability that will enhance the army's ability to conduct and subsequently analyze the outcomes of force-on-force exercises.

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### **CAE Wins more than C\$120 Million in Defense Contracts**

**CAE has won defence contracts valued at more than C\$120 million to provide a range of training services and simulation product upgrades for global military customers.**

The United States Air Force (USAF) has awarded CAE USA a contract for option year three on the MQ-1 Predator and MQ-9 Reaper remotely piloted aircraft aircrew training services and courseware development program. CAE USA works closely with active-duty USAF personnel to provide classroom, simulator and live flying instruction for more than 1,500 pilots and senior operators who train annually at Holloman AFB, New Mexico; Creech AFB, Nevada; March Air Reserve Base, California; and Hancock Air National Guard Base, New York.

The United States Navy has exercised additional contract options as part of the MH-60R/S Tech Refresh and Procurement of Simulators (TPRS) program. Under the MH-60 TPRS program, CAE USA is performing major updates and upgrades to the US Navy's suite of MH-60S Sierra and MH-60R Romeo training systems, including tactical operational flight trainers and weapons tactics trainers.

CAE was awarded an upgrade contract to provide the latest generation CAE GESI command and staff training system to the Austrian Armed Forces. The latest generation CAE GESI

software will be provided in phases over the next year to update and enhance the command and staff training provided to military and civil commanders.

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### **Meggitt Training Systems' EST II Designated US Army Program of Record**

**Meggitt Training Systems has completed the System Verification Test (SVT) and Site Operational Test (SOT) for the US Army's next-generation small-arms trainers, and obtained certification as the Program of Record for Army small-arms training.**

Completion of these tests confirms Meggitt has met all of the Army's Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) requirements to deliver the Engagement Skills Trainer (EST) II system to active US Army, National Guard and Reserve units worldwide.

"The completion of EST II testing marks a significant milestone in a long-standing relationship between the US Army and Meggitt," said Jeff Murphy, president, Meggitt Training Systems. "This summer, Meggitt will commence delivery of the first EST II systems, which are fully compatible with the Army's existing arsenal of simulated weapons and current training doctrine."

Meggitt was originally awarded the \$99 million, five-year Indefinite Delivery/Indefinite Quantity (IDIQ) contract in 2014, and deliveries of 890-plus ESTII systems will occur during the next 18 months at locations worldwide. As the Certified Program of Record, the system will train new and experienced soldiers in marksmanship, collective scenarios and judgmental video scenarios. Each mode provides critical training based on the skill level of the soldier or unit.

"Meggitt is delivering on our commitment to 'best value' through 3D marksmanship, automatic coaching, a tablet interface, enhanced graphics and compatibility with existing Army simulated weapons," said Mark Parr, EST program manager. "The EST II provides advanced tools that enable instructors to provide efficient training for current and future challenges."

Meggitt's open-architecture system allows integration of Meggitt and third-party training modules and will accommodate evolutions in fidelity and graphic complexity for greater realism. Current Meggitt architecture facilitates enhanced 3D marksmanship, with an intelligent automatic coaching application on a wireless tablet, enabling trainers to provide better and more effective guidance within a given training session.

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## **Boeing and Saab Reveal First Two Aircraft for US Air Force T-X Competition**

**Partners Boeing and Saab AB have revealed their two new production T-X aircraft and will use them to show the US Air Force the performance, affordability and maintainability advantages of their approach.**

The Boeing T-X is an all-new aircraft designed specifically for the US Air Force training mission that takes advantage of the latest technologies, tools and manufacturing techniques. Boeing says it is an advanced aircraft designed to evolve as technologies, missions and training needs change. The design is more affordable and flexible than older, existing aircraft.

The Boeing T-X aircraft has one engine, twin tails, stadium seating and an advanced cockpit with embedded training. The system also offers state-of-the-art ground-based training and a maintenance-friendly design for long-term supportability.

The T-X will replace the Air Force's aging T-38 aircraft, with Initial operating capability planned for 2024.

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## **CAE Supports Royal Canadian and Royal Australian Air Forces' Participation in Coalition Virtual Flag exercise**

**CAE recently supported the Royal Canadian Air Force (RCAF) and Royal Australian Air Force (RAAF) as they participated in Coalition Virtual Flag 16 (CVF16), one of the world's largest virtual air combat exercises.**

Hosted by the United States Air Force, CVF16 took place in mid-August so that simulated aircraft could participate in the joint, multi-national air combat training exercise. Aircrews from the United States, United Kingdom, Australia and Canada participated.

"These kinds of distributed mission training exercises, often involving both live and virtual assets, are becoming more critical as militaries and coalition partners look to cost-effectively prepare for operations and maintain readiness," said Gene Colabattisto, CAE's Group President, Defence & Security. "CAE brings a great deal of expertise and experience as a training systems integrator to help enable defence forces to conduct distributed mission operations and increasingly leverage more virtual training as part of these exercises."

CAE assisted the RCAF's 426 Squadron at 8 Wing Trenton and the Canadian Forces Air Warfare Centre (CFAWC) in the preparation, planning and execution of the RCAF's participation in CVF16. The RCAF's 426 Squadron flew a CAE-built CC-130J full-mission simulator as part of the exercise where the RCAF had responsibility for performing a range of airland and airdrop missions, including the insertion of Special Operations Forces

(SOF) assets. CAE's computer-generated forces software provided added realism by generating numerous enemy virtual threats, such as SU-27 fighters and ground-based surface-to-air missiles, as well as a range of friendly forces. In total, CAE's simulation software provided more than 2,000 computer-generated constructive and virtual entities in the synthetic environment.

The RAAF's CAE-built C-130 full flight mission simulator (FFMS) along with a C-130J tactical airlift crew trainer (TACT), both located at RAAF Base Richmond in New South Wales, took part in CVF16. CAE supported the integration, networking and testing of the FFMS and TACT into the Coalition Virtual Flag exercise.

"This is our second year participating in Coalition Virtual Flag and we continue to learn a lot of lessons and overcome various technical challenges to improve the immersive quality of the training," said Wing Commander Jason Baldock, 285 Squadron, Royal Australian Air Force. "A big step forward this year was linking the C-130J tactical airlift crew trainer with the C-130J full mission simulator so that the entire C-130J crew could be immersed in the same training environment. CAE was instrumental in providing the technical guidance and expertise in making this possible."

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## STEM Connector News



### **CEO Leader in STEM: Michael Strianese of L-3**

Headquartered in New York City, L-3 employs approximately 38,000 people worldwide and is a leading provider of a broad range of communication and electronic systems and products used on military and commercial platforms. L-3 is also a prime contractor in aerospace systems. The company reported 2015 sales of \$10.5 billion.

As a provider of innovative solutions that help its customers achieve their goals, L-3 is committed to encouraging STEM education initiatives, from elementary to postgraduate schools, that turn today's students into tomorrow's scientists and engineers. We do this by visiting schools and universities and speaking to students about the difference a STEM education can make in their lives. We also support various STEM-related programs with communities and universities, and participate in career fairs and mentoring programs. In addition, we invite students to work side by side with our engineers in internships that often lead to fulltime positions and fulfilling professional careers.

Michael T. Strianese is chairman and chief executive officer of L-3, and a strong advocate of STEM-related education. His

commitment to STEM is centered on developing tomorrow's science and engineering leaders to ensure that our men and women in uniform have the most innovative technology available. In 2014, Mr. Strianese served on the Board of Trustees and bolstered the expansion of STEM education at his former high school with a \$1 million gift as part of the Michael T. Strianese '74 STEM Program at Xaverian, established through a partnership with Project Lead the Way. His firm belief in the power of STEM-related education is reflected in his founding of the annual L-3 Engineers of the Year Awards program, which recognizes innovation and technical achievement across the company.

Mr. Strianese played a key role in L-3's formation in 1997 and served as the company's first vice president of finance and controller. Following L-3's Initial Public Offering in 1998, he was promoted to senior vice president of finance in 2001. Mr. Strianese was appointed chief financial officer in 2005 and in 2006 was named president and chief executive officer and was elected as a director. Until 2007, he also served as the company's first corporate ethics officer, where he led the development and implementation of a comprehensive, companywide integrity program for L-3 employees. In 2008, Mr. Strianese was elected chairman of the company's board of directors.

Mr. Strianese served as chairman of the Aerospace Industries Association in 2014 and is a member of the Executive Committee. He is also a member of the Council on Foreign Relations. Mr. Strianese received the 2014 Coast Guard Foundation Award and he has also been recognized by the Association of the United States Army with its John W. Dixon Award for outstanding contributions to national defense by a member of the industrial community and has received the Semper Fidelis Award from the Marine Corps Scholarship Foundation, as well as the Eisenhower Distinguished Citizen Award from the Army Distaff Foundation.

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### **Why is STEM education important?**

Over the long term, the leaders in our industry are the companies that are able to attract and retain the best technical talent. By supporting STEM programs starting in the formative school years, we have a wonderful opportunity to inspire a love of technology and the difference it can make. In a competitive, international economy, it is our responsibility to promote STEM education as a pathway to a fulfilling life and career.

### **What does L-3 do to promote STEM education?**

We look at STEM as a mutually beneficial opportunity – both for students and for L-3. We encourage our engineers to develop mentoring relationships with students, entry-level workers and new hires. This familiarizes them with our products and technologies and fosters their ability to contribute in a meaningful way. In turn, we get the benefit of a fresh perspective and an energized workforce. We support STEM initiatives in many of our local communities as part of our focus on corporate citizenship.

For example, our Salt Lake City business provides high-capacity, networked communications solutions. We work closely with Utah's highly ranked universities to attract top engineering talent. Through our work on Utah's university advisory boards and technology councils, we have developed strong relationships with students and administrators. Our STEM support extends to our partnerships with high schools, trade schools and community colleges.

In Greenville, Texas, we provide highly technical systems for airborne intelligence gathering and systems integration solutions. We welcome Greenville High School students to our facility to work with our engineers in electrical manufacturing to learn basic skills and acquire valuable project experience. We also support the Team America Rocketry Challenge (TARC), which is the world's largest student rocket contest and an important component of promoting STEM education to the workforce of the future. These are just a few examples of how L-3 is focusing on STEM as a strategic tool in nurturing engineering talent and staying competitive.

### **What part does diversity play in the effectiveness of STEM-related programs?**

Diversity in the workplace enriches the environment with new and different experiences and perspectives. In the context of STEM education, diversity has a direct positive impact on approaches to solving complex technological challenges. You might think of it as a shortcut to innovation, if you will, because it gives us a bigger arsenal of brainpower and a broader pool of ideas from which to create innovative solutions.

In recruiting college graduates for STEM careers at L-3, we have developed partnerships with diversity related publications such as US Black Engineer & IT, Hispanic Engineer & Information Technology, and Women of Color Magazine. We also participate in important diversity-focused groups, such as the National Action Council for Minorities in Engineering (NACME), the Society of Women Engineers (SWE) and the Society for Human Resource Management (SHRM) Diversity & Inclusion Conference. Our partnerships with various universities, including MIT, are examples of our commitment to nurturing a diverse pipeline for engineering talent.

### **How do you translate STEM education into innovation?**

That's an excellent question because it gets to the heart of our effectiveness as an organization, which is our people. The advances from STEM education only come when company mentors provide pertinent context. What is our company trying to accomplish? What are the goals of our customers? How can we build on our customer relationships? Who is our competition and how do we differentiate ourselves? All the STEM innovations won't deliver their intended result if we're shooting at the wrong targets, so to speak. This is why working collaboratively is so important. We are seeking pathways to connect STEM with students and our business. The more information we have and the broader our talent pool, the more likely we are to succeed in

meeting our customers' needs and helping them to achieve their goals.

### **What implications does STEM have for our nation?**

It's no secret that technological advances abroad have mounted a serious challenge to the United States' competitive profile. In some ways, we have become complacent about our long-held global leadership status, while other nations, our adversaries among them, have made significant inroads. The lesson here is that technological breakthroughs and innovations are not to be taken for granted. They require persistence and hard work, two of the cornerstones of STEM education. That's why our company and our industry are focusing on STEM as a competitive discriminator.

It would not be an overstatement to say that our national security is partially reliant on STEM-trained professionals. When you think about it logically, a STEM education yields innovative technologies. These lead to state-of-the-art products and services, many of which are used by our men and women in uniform. The better we are at our jobs, the more effective our military will be in defending our freedoms. Internationally, that contributes to global stability, which benefits everyone.

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### **Qualcomm and Virginia Tech open Thinkabit Lab in National Capital Region to bring hands-on STEM learning to students and training to teachers**

[Qualcomm Incorporated](#) and [Virginia Tech](#) begin a multi-year collaboration this fall with the launch of the Qualcomm® Thinkabit Lab™ at Virginia Tech's Northern Virginia Center in Falls Church.

The Thinkabit Lab experience offers both teachers and students an engaging learning environment—part lab, makerspace and classroom—to foster creativity, collaboration and the critical skills necessary for the 21st century. The new Thinkabit Lab is led by Virginia Tech's Department of Engineering Education in the [College of Engineering](#) and School of Education in the [College of Liberal Arts and Human Sciences](#), based on Qualcomm's World of Work and STEM coursework.

Residing in the [National Capital Region](#), the lab is Qualcomm's first outside of San Diego, servicing underserved students, students underrepresented in STEM careers, and teachers from the metro Washington D.C. area. For some students, the Thinkabit Lab experience will offer a first introduction to hands-on STEM learning and real-world careers.

"The work that Qualcomm and Virginia Tech are doing at the new Thinkabit Lab is remarkable," said Qualcomm CEO Steve Mollenkopf. "Beyond being a space to inspire the next generation of inventors, it will allow us to leverage the expertise of both organizations, and through research and practical application, we



will bring new advancements to STEM education at all levels."

The lab will serve as a cornerstone facility, leveraging Virginia Tech's academic depth in engineering and education, to develop educators who may lead further Thinkabit inspired, innovative STEM experiences in schools and community programs. Additionally, faculty research will assess how the program impacts students' access to STEM teaching and learning activities, and awareness of STEM education and career options. The findings will help to continue developing the Thinkabit Lab and STEM programs.

"We know that STEM skills can enhance every student's future, regardless of their field of study, and we need to prepare both students and teachers to address the complex challenges of tomorrow," said Virginia Tech President Tim Sands. "The Thinkabit collaboration with Qualcomm will allow us to join complementary strengths and work synergistically to create opportunities and lower barriers."

The Thinkabit Lab has served more than 8,000 students and educators since launching at Qualcomm's San Diego headquarters in 2014, and has been replicated in three middle schools and a library in San Diego. It provides students with a unique STEM and career exposure program. . For more information, visit [www.ThinkabitLab.com](http://www.ThinkabitLab.com) or contact [info@Thinkabit.Tech](mailto:info@Thinkabit.Tech).

### **About Virginia Tech**

Virginia Tech, founded in 1872 as a land-grant institution, is currently ranked as a Top 25 Public University by US News & World Report and a Top 25 Public Research University by the National Science Foundation. Through a combination of its three missions of learning, discovery, and engagement, Virginia Tech continually strives to accomplish the charge of its motto: *Ut Prosim* (That I May Serve). As the Commonwealth's most comprehensive university and its leading research institution, Virginia Tech serves a diverse population of 30,000+ students and 8000+ faculty and staff from over 100 countries, and is engaged in research around the world.

### **About Qualcomm**

Qualcomm Incorporated is a world leader in 3G, 4G and next-generation wireless technologies. Qualcomm Incorporated includes Qualcomm's licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm's engineering, research and development functions, and substantially all of its products and services businesses, including its semiconductor business, QCT. For more than 30 years, Qualcomm ideas and inventions have driven the evolution of digital communications, linking people everywhere more closely to information, entertainment and each other. For more information, visit Qualcomm's [website](#), OnQ blog, Twitter and Facebook pages.

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## **Future City Competition Celebrates 25 Years of Inspiring Middle-School Students to Imagine, Design and Build the Cities of the Future**

### **This Year's Theme, *The Power of Public Space*, Asks the Nation's Sixth, Seventh and Eighth Graders to Envision Urban Public Spaces of Tomorrow**

Public spaces have the capacity to revitalize a city's economy by introducing new businesses and bringing in new visitors. They can also help reduce crime, ease traffic congestion, improve pedestrian safety, promote healthy living, improve the environment, and enhance civic engagement. A recent study by the UN-Habitat's Global Urban Observatories Unit found that cities that devoted about 50% of their space to public use tended to be more prosperous and have a higher quality of life.

Imagine what it would be like to walk down the main street of a city 100 years in the future. What would you hear, see, smell, and feel? How would the people who live in your future city describe it? What would make it futuristic and innovative?

Celebrating its 25th Anniversary in 2016-17, this year's Future City Competition poses these questions and more as it asks middle school students to address ***The Power of Public Space*** and challenges them to design innovative, multi-use public spaces that serve a city's diverse population.

Working in a team with an educator and STEM mentor, students present their vision of the future through a virtual city design (using *SimCity™* software); a 1,500 word city essay; a scale model of their city (built with recycled materials); and in a short presentation to a panel of STEM professionals. Teams from 38 regions present their ideas at Regional Competitions in January. Winners represent their regions at the Finals in Washington, DC in February.

Over **40,000** students, representing **1,350** schools, take part in the Future City® Competition. The deadline to register is October 31, 2016. Register today or learn more at [www.futurecity.org](http://www.futurecity.org). Visit our [Facebook](#) page for more information and updates on the Future City® Competition.

Future City was honored in 2015 as the grand prize winner of a \$100,000 award in the UL (Underwriters Laboratories Inc.) Innovative Education Award program (ULIEA). Developed in collaboration with the North American Association for Environmental Education (NAAEE), the [UL Innovative Education Award](#) is open to nonprofits that motivate K-12 schools about science research through E-STEM programming and education about the environment.

Future City has ongoing opportunities for engineering and technical professionals to volunteer in a number of different roles, including mentors and regional coordinators. For

information about Future City or to volunteer, visit [www.futurecity.org](http://www.futurecity.org).

Major funding for Future City comes from the Bechtel Corporation, Bentley Systems, Inc, and the Shell Oil Company.

### **About DiscoverE**

DiscoverE is leading a growing volunteer movement that inspires and informs present and future generations to discover engineering. Our network of volunteers in the US and abroad is drawn from the DiscoverE coalition of more than 100 professional societies, major corporations and government agencies. Together we meet a vital need: introducing students, parents, and educators to engineering, engaging them in hands-on engineering experiences and making science and math relevant. For more information, visit [www.discovere.org](http://www.discovere.org).

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### **Simulation Technology Center Coming to UC College of Engineering and Applied Science**

#### ***Siemens provides PLM software and pledges up to \$1M to establish center***

Siemens and the University of Cincinnati today announced a partnership to establish an innovative simulation and modeling center enabled with Siemens product lifecycle management (PLM) software. Housed on UC's main campus in its College of Engineering and Applied Science (CEAS), the Siemens PLM Simulation Technology Center will be a hub for developing and applying new methodologies and technologies in engineering education and research in all aspects of PLM. Through a significant pledge from Siemens of up to \$1 million, as well as Siemens' staff support and additional PLM software, this partnership will enhance experiential learning opportunities for students in UC's CEAS.

"As manufacturing company's worldwide move closer to Industry 4.0, it is more important than ever for academic institutions and educators to move beyond only CAD software and embed digitalization into their curriculum," said Chuck Grindstaff, president and CEO, Siemens PLM Software. "The Siemens PLM Simulation Technology Center will help establish the connection between academia and industry to develop future employees for the digital enterprise."

CEAS faculty led by Dr. Jay Kim, Department Head of Mechanical and Materials Engineering, and Dr. Sam Anand, a professor of Mechanical Engineering who will also serve as the operational director of the Center, will work with Siemens PLM Software staff to educate and train up to 500 students over five years at the center. Through this close collaboration, a transformational change in undergraduate engineering and applied science curricula is expected, which will incorporate

CAD, Digital Design & Manufacturing and Computer Aided Engineering (CAE) from early year courses to multi-year projects with global multi-disciplinary teams in upper-level courses.

In addition, Siemens PLM Software has entered into a long term talent development partnership with UC to employ co-ops on a strategic and programmatic basis. These co-op working students will be placed on important software development programs and related projects in Siemens PLM Software's Milford, Ohio office. This strategic co-op program includes additional training in the business and skill development programs to prepare these students for their careers upon graduation.

"UC, including our College of Engineering and Applied Science, is known for having one of the best co-op and experiential learning programs in the world," said Beverly J. Davenport, UC Interim President. "The new Siemens PLM Simulation Technology Center takes CEAS to new heights by giving our students the latest tools to enhance their hands-on experiences."

"It's like co-op 2.0," said CEAS Dean Teik Lim. "At the new center, students will have the opportunity to actively solve problems using Siemens' PLM software and gain valuable hands-on learning experience. We are committed to producing outstanding engineers and scientists; this center provides a vital tool in our workforce readiness efforts by training students on software used in the field by 140,000 companies globally. We are grateful to Siemens PLM Software for its partnership, which will enable us to produce even better engineers. In fact, part of the Siemens PLM Software business came from its acquisition of SDRG, a company that grew out from UC engineering about 50 years ago, making this partnership even more meaningful."

At the new Siemens PLM Simulation Technology Center students will have access to Siemens' full suite of PLM offerings including its recently announced Simcenter™ portfolio, a robust suite of simulation software and test solutions based on predictive engineering analytics to more accurately predict product performance. Using these solutions, students will have the opportunity to perform state-of-the-art design, engineering analysis, product development and manufacturing simulations, and learn from industry experts. In addition, upper level undergraduate students and graduate students will be exposed to solving real life multi-physics, multi-domain engineering problems through simulations in the form of vertical industry specific template apps.

"With Simcenter, Siemens has one of the world's most comprehensive and robust simulation software portfolios," said Dr. Jan Leuridan, Senior Vice President, Simulation and Test Solutions, Siemens PLM Software. "We believe that simulation expertise will be a real differentiator for UC, and we are proud that together we are empowering the next generation of digital talent."

Siemens PLM Software, a business unit of the Siemens Digital Factory Division, is a leading global provider of product lifecycle

management (PLM) and manufacturing operations management (MOM) software, systems and services with over 15 million licensed seats and more than 140,000 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with its customers to provide industry software solutions that help companies everywhere achieve a sustainable competitive advantage by making real the innovations that matter. For more information on Siemens PLM Software products and services, visit [www.siemens.com/plm](http://www.siemens.com/plm).

## About the University of Cincinnati Foundation

Established in 1975, the University of Cincinnati Foundation is a 501(c)(3) not-for-profit corporation and is the private sector fundraising entity for the University of Cincinnati and UC Health. The foundation supports UC's aspirations through philanthropic collaboration with the colleges, the Academic Health Center, UC Health and other units to maximize private support. The foundation's advancement efforts promote the development of productive, enduring relationships with alumni, friends, colleagues, students, foundations, corporations and the Greater Cincinnati community. For more information, please visit [uc.edu/foundation](http://uc.edu/foundation).

**Siemens AG** (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 165 years. The company is active in more than 200 countries, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is No. 1 in offshore wind turbine construction, a leading supplier of gas and steam turbines for power generation, a major provider of power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. The company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2015, which ended on September 30, 2015, Siemens generated revenue of €75.6 billion and net income of €7.4 billion. At the end of September 2015, the company had around 348,000 employees worldwide. Further information is available on the Internet at [www.siemens.com](http://www.siemens.com).

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