

BICSI WINTER

Conference & Exhibition

Tampa, Florida, USA • 9-13 February 2020

The Global Leader in ICT Education, Certification & Standards

**Register by 10 January
and save!**

Bicsi[®]

Don't Miss the Premier Information and Communications Technology & Infrastructure Event of the Year!

Come to the Tampa Convention Center for the largest BICSI event of the year and join career-driven professionals in the information and communications technology (ICT) industry for an engaging educational experience designed to give you the insights needed to succeed in the ever-changing ICT landscape. When you attend a BICSI conference you can expect to leave the event equipped with knowledge and industry connections you can apply and benefit from long after the conference is over.

Learn About the Latest Technologies and Trends

Through innovative presentations and seminars prepared by thought leaders and industry influencers, must-see keynote presentations and a bustling Exhibit Hall, you'll learn about and experience firsthand the latest technical innovations and trends in:

-  **Optical Fiber**
-  **Passive Optical Networks (PONs)**
-  **Audiovisual (AV)**
-  **Intelligent Buildings and Smart Cities**
-  **Internet of Things (IoT)**
-  **Data Center**
-  **Wireless and Distributed Antenna System (DAS)**
-  **Power over Ethernet (PoE)**
-  **And more!**



Rich and Dynamic Content to Help You Succeed

Pre-Conference Seminars

Available Sunday-Monday, these exclusive learning opportunities are a great way to earn continuing education credits (CECs), in addition to credits earned from conference attendance. Seminars are available for an additional fee when you register for the conference. See all Pre-Conference Seminars available on pages 4-6.

General & Concurrent Sessions

Insightful presentations with real-world applicability continue Tuesday-Thursday with the opportunity to personalize your schedule based on your individual interests and career needs. See all General and Concurrent Sessions on pages 6-11.

Training Classes

Maximize your learning while in Tampa and earn more CECs, by signing up for additional training offered by BICSI prior to the start of the conference (Tuesday, 4 February through Saturday, 8 February). Go to bicsi.org/winter-classes to see the training classes available. (Note: All training classes will be held at the Tampa Marriott Water Street—not at the same venue hosting all conference activities.)



Sunday, 9 February

Pre-Conference Seminars

8:30 a.m.-4:30 p.m.

☐ "Fundamentals of Passive Optical LAN" – Day 1 of 2

- ▶ Matt Miller – AECOM – Baltimore, Maryland, USA
- ▶ Chad Hines – ITConnect Inc. – Santa Fe, New Mexico, USA
- ▶ Thomas Ruvarac – Association for Passive Optical LAN – New York, New York, USA

12 CECs

Optical Fiber/PON

This two-day seminar will provide an overview of the value, architecture, design and powering considerations for a passive optical LAN technology. Specific focus will be given to system components, benefits, design methodologies, power survivability using AC and DC methods, planning and commissioning of electronics, infrastructure testing, and closeout package deliverables.

(Note: This seminar will be delivered over the course of two days, Sunday and Monday from 8:30 a.m.-4:30 p.m. each day. You must attend **both** days to receive CECs for attending.)

1-4:30 p.m.

☐ "Installing AV in New Age Collaboration Spaces"

- ▶ Karl Rosenberg – Extron – Anaheim, California, USA

3 CECs

Audiovisual

In today's connected world, everyone depends on technology to communicate and collaborate; whether it's across the room or across the world. To work as intended, these technologies must not get in the way and must be secure. In this seminar, we will discuss the best ways to incorporate AV systems into conference rooms, classrooms and huddle spaces in order to make these gathering places effective for sharing ideas and getting things done. The practical knowledge we share will help you design and install the best AV system for each application. Learn digital video and audio basics, data rates, copy protection, compression schemes for streaming, and auxiliary signals associated with HDMI and USB interfaces. We will also address the world of wireless AV and how it can be integrated into a Collaboration Space using existing Wi-Fi as well as walk through some real-world AV designs for typical venues that could be implemented.

☐ "Redefining Specification and Standards Writing for an IoT World"

- ▶ Henry Franc, RCDD, OSP – Belden – Mississauga, Ontario, Canada
- ▶ F. Patrick Mahoney, RCDD – Direct Supply – Milwaukee, Wisconsin, USA

3 CECs

Intelligent Buildings/Smart Cities/IoT

Technology provides revolutionary opportunities that building owners, managers and tenants can capitalize on for their success. The key will be ensuring a future-ready infrastructure layer can and will seamlessly support a connected world. We will explore how to use these related but different documents to make sure both the core enterprise expectations are described and the specific project needs are met. Attendees will learn with real-world examples how to advance their documents to achieve practical relevance.

☐ "Dealing With the Challenges and Demands of Today's Rapidly Changing Data Center"

- ▶ Sean Adam – AFL – Westford, Massachusetts, USA
- ▶ Doug Baker – AFL – Duncan, South Carolina, USA
- ▶ Lucas Mays – AFL – Duncan, South Carolina, USA

3 CECs

Data Center

This seminar is an in-depth look at the key challenges to designing and deploying the optical infrastructure within today's fast-moving data center environment. Beyond bandwidth and data rate, today's data center market requires speed-to-service and ease-of-support. This seminar will provide both information and hands-on opportunity to understand the options and choices to be made in the areas of optical cable, fiber management and infrastructure, achieving low-loss connections, and test and measurement of the final deployment.

Monday, 10 February

Pre-Conference Seminars

8:30 a.m.-4:30 p.m.

☐ "Fundamentals of Passive Optical LAN" – Day 2 of 2

- ▶ Matt Miller – AECOM – Baltimore, Maryland, USA
- ▶ Chad Hines – ITConnect Inc. – Santa Fe, New Mexico, USA
- ▶ Thomas Ruvarac – Association for Passive Optical LAN – New York, New York, USA

12 CECs

Optical Fiber/PON

This two-day seminar will provide an overview of the value, architecture, design and powering considerations for a passive optical LAN technology. Specific focus will be given to system components, benefits, design methodologies, power survivability using AC and DC methods, planning and commissioning of electronics, infrastructure testing, and closeout package deliverables.

(Note: This seminar will be delivered over the course of two days, Sunday and Monday from 8:30 a.m.-4:30 p.m. each day. You must attend **both** days to receive CECs for attending.)

8:30 a.m.-noon

☐ “Fiber’s Role in Smart Buildings – Considerations for Deployment and Testing”

- ▶ *Jim Davis – Fluke Networks – Everett, Washington, USA*
- ▶ *Rodney Casteel, RCDD, DCDC, NTS, OSP – CommScope – Shakopee, Minnesota, USA*
- ▶ *Rob Gilberti – AFL – Duncan, South Carolina, USA*
- ▶ *Romain Tursi – EXFO – Quebec, Quebec, Canada*
- ▶ *Tyler Vander Ploeg, RCDD – VIAVI Solutions – Bothell, Washington, USA*

3 CECs

Intelligent Buildings/Smart Cities/IoT

An extremely interesting presentation team made up of four leading test equipment manufacturers and the Chair of the FOTC. During this seminar the FOTC will examine the role of fiber for Smart Building automation to support applications such as IoT, 5G and edge data centers. We will look at fiber and connector choices as well as testing considerations. This seminar offers a mix of panel-style discussion and small group activities, providing an opportunity for discussion.

☐ “First Responder Radio Coverage Code Requirements, Test Procedures and Amplification System Requirements”

- ▶ *Steve Wheeler, RCDD – JDRM Engineering – Sylvania, Ohio, USA*

3 CECs

Wireless & DAS

This seminar will cover the three main code areas of First Responder Radio: What does the code require for new and existing building coverage?; What does the code require for testing a building?; and What are the code requirements for designing and

installing enhancement systems? The seminar will focus on the code requirements for each of the three areas and how to meet these codes and the differences throughout the country and how they differ.

1-4:30 p.m.

☐ “Business Transformation: Leveraging Technology for the Future”

- ▶ *Jeff Sample – Ironman of IT LLC – Avon, Colorado, USA*

3 CECs

ICT Professional Development

Is your company struggling to understand the technology facts from fiction? Are you struggling with the endless selections available or possibly drowning in shiny toys? This seminar will help clear up fact from fiction and then dive into proven process that you can take back to your company and implement now.

☐ “Power over Ethernet Lighting: Why the Future Looks Bright for Building Owners”

- ▶ *Tom Cabral, RCDD – Chatsworth Products, Inc. – Atlantic Beach, Florida, USA*
- ▶ *Shane Slater – DMI Technologies – Ft. Worth, Texas, USA*
- ▶ *Stephen Eaves – VoltServer, Inc. – East Greenwich, Rhode Island, USA*
- ▶ *Matt Laherty – Platformatics, Inc. – Bloomington, Indiana, USA*
- ▶ *Mike Siefer – Platformatics, Inc. – South Bend, Indiana, USA*

3 CECs

Power over Ethernet

Power over Ethernet (PoE) has increased the demand for applications with increased power for the delivery of data, security devices and sensors. And, with the 2018 release of IEEE 802.3bt providing specific enhancements for LED lighting systems, now is the perfect time to bring the conversation back to the benefits of using PoE for enhanced, more efficient lighting systems throughout your building. During this seminar, the speakers will discuss what digital lighting systems currently look like, what these systems plan to provide in the future, and how to get there through unique emerging technologies to make PoE function at a new level.

□“Data Center Electrical Code Issues for the Low Voltage Designer”

- ▶ Leo Marsh, RCDD, PE – Jacobs Engineering – Pittsburgh, Pennsylvania, USA

3 CECs

Data Center

This seminar begins with an overview of the *National Electrical Code*® (NEC®) then progresses to an analysis of the NEC and related data center issues. The overview will cover the NEC organization with a focus on sections common to low-voltage system designers. Data center topics will include NEC Article 645, clearances, grounding, cable trays, battery systems, IT equipment and fiber optic cabling. The seminar will conclude with a discussion of newer NEC sections and future trends.

Tuesday, 11 February

General Session

8:45-9:30 a.m.

Opening Keynote

9:30-10:30 a.m.

□“Fiber in the NOW: Trends and New Technologies Demanding Fiber Deployment”

- ▶ Rodney Casteel, RCDD, DCDC, NTS, OSP – CommScope – Shakopee, Minnesota, USA
- ▶ Darryl Heckle – Corning – Corning, New York, USA
- ▶ Tony Irujo – OFS – Sturbridge, Massachusetts, USA
- ▶ Robert Reid – PANDUIT Corp. – Tinley Park, Illinois, USA

Optical Fiber & PON

With high-speed applications dominating the data center and 5G and IoT rolling out, optical fiber is more in demand than ever before. This panel discussion will cover fiber trends, fiber standards, application standards and emerging technology for high-speed fiber infrastructures. The panel, comprised of members of TIA's Fiber Optics Technology Consortium, will provide a comprehensive view of the current technology and trends.

11 a.m.-12:30 p.m.

Annual Membership Meeting

Concurrent Sessions

1:30-2:30 p.m.

“AVoIP – Streaming Media Comes to Professional Systems”

- ▶ Michael Pincus, RCDD, PE, CTS – Vantage Technology Consulting Group – Concord, Massachusetts, USA

Audiovisual

Is AVoIP (Audio-Video over IP) right for your project? In this presentation we'll discuss the advantages of networked audio-video and the impact on the building's network. You'll also learn about the components of an AVoIP system and the tradeoffs to consider when choosing a streaming protocol.

□“How to Build a Mission-Critical Facility – A Checklist to Keep in Your Pocket”

- ▶ Roberto Sanchez, RCDD, CxA, PE – PlaneRS – Mexico, Mexico

Data Center

This presentation will provide the key steps to coordinate a successful mission-critical building project. The attendees of this presentation will walk away with a checklist that will provide them the certainty to engage in this class of projects and be aware of details to keep them at cost and on time. The presenter's experience in more than 235 buildings will give a designer's and contractor's vision in the México market.

□“Cable Testing Means More Uptime: Standards and Testing of Industrial Ethernet Copper Cabling”

- ▶ Mike Berg – PANDUIT Corp. – Tinley Park, Illinois, USA
- ▶ Jim Davis – Fluke Networks – Everett, Washington, USA

New & Emerging Applications

More than half of Industrial Ethernet problems can be traced to cabling. Some of these show up immediately during the startup process—others can allow the connection to function properly until something such as environmental changes cause communications failures. Ethernet is a robust technology that allows communications to continue even under marginal circumstances—but a change in those circumstances might cause communications problems or a complete failure down the road. Testing cables when installed can speed the startup process and prevent problems in the future. In this presentation, we will review twisted-pair cabling standards, cabling issues and testers for pre-deployment and troubleshooting.

Having a cable tester handy in the case of a failure can save hours of troubleshooting and downtime.

□“Channel, End-to-End and MPTL: Staying Current and Understanding Your Cable Test Setup”

- ▶ Tom Jallo – Softing, Inc. – Knoxville, Tennessee, USA

Power over Ethernet

Information-dense applications, such as security, IoT and Power over Ethernet (PoE), are generating variations on typical network channel topology. MPTL (Modular Plug Termination Link) and End-to-End are two topologies growing quickly in enterprise networks. Learn what these topologies mean for network testing and certification. For starters, each of these three topologies are certified to different standards. In fact, the MPTL standard in TIA 568-D.2 was only approved within the past 12 months. Testing differs specifically where links terminate! Common test methods factor out plug performance. If the test cable terminates in a faulty connection, contractors may be passing a link that will fail or underperform. Manufacturer warranties go hand-in-hand with certification. This presentation will educate contractors on the correct standards and test methods to certify these topologies, helping to prevent future warranty hassles and unnecessary service calls.

2:45-3:45 p.m.

□“Deploying SMPTE ST 2110 in a Distributed Campus System”

- ▶ Tony Pearson, CTS – North Carolina State University – Raleigh, North Carolina, USA
- ▶ Shawn Colvin – North Carolina State University – Raleigh, North Carolina, USA

Audiovisual

When North Carolina State University was looking to upgrade the Pro-AV gear driving its Distance Education and Learning Technology Applications program, they decided to future-proof their infrastructure with a standards-based approach to IP, while continuing to leverage existing SDI gear. Using SMPTE ST 2110, NCSU significantly multiplied the capacity of their fiber infrastructure – where four single-mode fiber strands had supported four HD video channels, now just two fiber strands deliver 32 bidirectional HD channels. This presentation will share the real-world experiences and lessons learned from adopting AES 67 and ST 2110 to successfully deploy a first-of-its-kind inter-campus Pro-AV system.

□“The Key to 400G: Technology, Infrastructure and Design for Making 400 Gb/s Ethernet a Reality”

- ▶ Gary Bernstein, RCDD, CDCD – Leviton Network Solutions – Bothell, Washington, USA

Data Center

It was just last year that 100 Gb/s was next-gen, and 400 Gb/s was theory. As 2020 gets started, 400 Gb/s is already a reality. It is enabling innovation and efficiencies with data center interconnects, core infrastructure, and research & education networks with enormous data loads. Learn how more cloud service providers and hyperscale data centers will migrate to 200 and 400 Gb/s to support the growing 50 and 100 Gb/s server speeds.

□“2020 Code + Communication = More Challenges”

- ▶ Daniel Pohnert, Sr., RCDD, PE – AECOM – Jacksonville, Florida, USA

New & Emerging Applications

The 2020 Electrical Code’s impact on communication system design will be explored in detail. This presentation will help the designer understand the ambiguities of the code that makes the interpretation challenging. This presentation will also clarify some of the challenges that exists in the code today and point to some of the paradoxes in the code that make its application more challenging.

□“Remote Power Delivery: PoE vs. Powered Fiber – Understanding the Difference”

- ▶ Jamey Calloway, RCDD – Optical Cable Corporation – Roanoke, Virginia, USA

Power over Ethernet

The latest PoE standard nearly triples the power delivered to network devices over 100 meters of 4-pair category cabling. As fiber optic cabling is deployed deeper into the network, powered fiber is increasingly being utilized to provide the capability to go beyond the 100-meter distance limitation of PoE. This presentation will discuss similarities and key differences between PoE and powered fiber solutions and how these solutions can co-exist and complement one another.

4-5 p.m.

□“The Basics of Sound Masking”

- ▶ Steve Brooks – AtlasIED – Phoenix, Arizona, USA

Audiovisual

This presentation is for anyone wishing to learn the basics of sound masking and how it is applied to create acoustical comfort and privacy in today's open office plan. Sound masking is designed to remove the mystery and myths that are so prevalent today as more and more companies and facilities look for ways to improve office acoustics, improve employee productivity and to improve speech privacy.

□“Trends in Designing and Testing Data Center Infrastructure”

- ▶ Ed Gastle – VIAVI Solutions – Ottawa, Ontario, Canada
- ▶ Arelis Soto – Corning Optical Communications – Hickory, North Carolina, USA

Data Center

As enterprise and data center networks migrate toward architectures that utilize multi-fiber connectivity such as MPO, standards bodies such as IEEE®, IEC and TIA are releasing updates to incorporate these technologies into standardized structured cabling. This session provides an update on the revisions to industry standards to support multi-fiber connectivity and will explain how to implement testing procedures that will allow users to provide certification for networks with multi-fiber connectivity.

□“Technology in Airport Operations Centers: Integrated Operations Centers and Emerging Trends”

- ▶ Syl Santo, RCDD – Faith Group, LLC – St. Louis, Missouri, USA

New & Emerging Applications

With heightened needs for security and surveillance at today's modern airports, more and more of them are developing plans for integrations operations, communications, security and emergency operations centers. This opens many opportunities for qualified professionals to properly design and implement these centers while taking into consideration the various elements of design that are outlined in BICSI standards. This presentation provides an overview of the systems and technologies in use at these emerging centers and illustrates how a qualified BICSI credential holder plays an important role in the successful design and implementation.

□“Impact of Patch Cords on PoE Performance”

- ▶ Arvind Patel – AEM – Singapore, Singapore

Power over Ethernet

This presentation will address patch cord resistance, patch cord conductor-to-conductor unbalance, and patch cord pair-to-pair unbalance and their impact on the operation and efficiency of delivering IEEE® Power over Ethernet (PoE).

Wednesday, 12 February

Concurrent Sessions

9-10 a.m.

□“Distributed Fiber LAN Architectures in the Enterprise...Not So Weird Anymore”

- ▶ Sean Kelly, RCDD – Rosenberger North America – York, Pennsylvania, USA

Optical Fiber & PON

This presentation will address the trends in the Enterprise market environment where fiber extended beyond the telecom room and deeper into the occupied space. Unlike the fiber-to-the-desk architectures of the 90s that proved costly, cumbersome and unreliable, these newer distributed fiber LAN infrastructures provide high reliability along with proven CapEX and Opex savings. Topics such as Passive Optical LAN and Fiber-to-the-Active Consolidation Point (FTT-ACP) will be discussed.

□“4th Utility Expectations – What Does it Mean for Building Network Design?”

- ▶ Brian Davis, RCDD – Corning Optical Communications – Charlotte, North Carolina, USA

Intelligent Buildings/Smart Cities/IoT

How can you deliver a reliable 4th Utility connected experience? In this session we will walk through an Intelligent Building case study that used remote powering, software defined networking, cellular and optical network solutions to provide an easy to manage, scalable, and cost-effective common infrastructure that saved more than 25% over traditional copper networks.

□“Great Lessons Learned from a Major University Campus Electronic Security System Deployment

- ▶ Tom Sorrell, RCDD – CMTA – Technology Solutions – Prospect, Kentucky, USA
- ▶ Nathan Brown – University of Kentucky Police Department – Lexington, Kentucky, USA

ICT Professional Development

In recent years colleges and universities across the nation have experienced an increased demand from student, faculty and staff for enhanced security in and around campus properties. This includes electronic access control, emergency phones and towers, security cameras, panic alarms, early warning systems and a host of safety applications. Designers, facility managers and public safety officials assigned the task of implementing enhanced security often find disparate technology among the facilities and face challenges in determining how to create a foundation for enterprise security standards. This presentation will help key designers and decision makers understand the steps necessary to develop a successful converged security rollout.

□“There’s Nothing Wireless About Wireless! Planning a Cabling Infrastructure to Support Wi-Fi Today and Tomorrow”

- ▶ Frank Straka – PANDUIT Corp. – Tinley Park, Illinois, USA

Wireless & DAS

There are significant advancements in wireless technologies, where today’s Wi-Fi 5 standard is moving towards Wi-Fi 6 and beyond. This presentation will explore the advantages of these new wireless standards. It will also discuss adjacent technologies like 5G and their anticipated impact on enterprise Wi-Fi networks. Finally, it will delve into recommendations on how to plan a cabling infrastructure to support both today and tomorrow’s Wi-Fi to maximize the ROI of your cable plant.

10:30-11:30 a.m.

□“Single-Mode Fiber – The Perfect Fit for the Evolving Enterprise”

- ▶ Sean McCloud, RCDD – Berk-Tek Leviton Technologies – Bothell, Washington, USA
- ▶ Todd Harpel, RCDD – Berk-Tek Leviton Technologies – New Holland, Pennsylvania, USA

Optical Fiber & PON

The demands of new and emerging technologies – 5G, BloT, Wi-Fi-6 and DAS – present both opportunities and challenges for enterprise fiber networks. While legacy applications for single-mode fiber centered on service provider, data center and large campus applications, several factors have made an OS2 cabling infrastructure a recommended enterprise network solution. Increasing data demands, market shifts and increasing contractor capabilities are making single-mode in the enterprise the logical next step.

□“Design Considerations for PoE Lighting”

- ▶ Karl Griffith, RCDD – Hubbell Premise Wiring – St. Peters, Missouri, USA

Intelligent Buildings/Smart Cities/IoT

This session will explain the generic architecture for PoE lighting systems, types of Ethernet lighting connections, control and sensors for PoE lighting, advantages of a robust Software Defined Network (SDN) for lighting, PoE power supply options and cabling design considerations. The session will also provide information to help the attendee participate in PoE planning meetings with building owners, IT professionals, facility professionals, architects, lighting designers, lighting agents and general contractors.

□“Practical Lightning Mitigation”

- ▶ Jerry Hogan – Solara Technical – Spearfish, South Dakota, USA

ICT Professional Development

Lightning can affect electronic systems, often in catastrophic ways. This presentation will review some of the problems and suggest practical mitigation methods to reduce system susceptibility. Our discussion will concentrate on radio antennas feeding into small shelters or enclosures, along with proper grounding, inductance effects, soil quality and multi-point grounding.

□“Take the Leap of Faith: From DAS and Cabling to Wi-Fi Consultancy”

- ▶ Jussi Kiviniemi – Mist, A Juniper Company – Helsinki, Finland

Wireless & DAS

Typical BICSI members do cabling, maybe even DAS. But few of them do Wi-Fi. However, the job opportunities and profits for those working with Wi-Fi are vast. What’s preventing us from going Wi-Fi is perceived complexity of the technology, and fear of “5G vs Wi-Fi.” This presentation will address those and bust the myths behind them. The presentation will also describe the latest Wi-Fi technologies (Wi-Fi 6 and 6GHz Wi-Fi included) and the latest tools.

1:30-2:30 p.m.

▣ **“Gigabit Passive Optical Network (GPON) Powers Learning at Ryerson University’s Two Largest Residences”**

- ▶ *David Lester, RCDD, DCDC, ESS, NTS, OSP, RTPM, TECH – Ryerson University – Toronto, Ontario, Canada*

Optical Fiber & PON

In order to achieve a better wireless network and internet connection at Pitman Hall and DCC for all its students, Ryerson University has deployed fiber optic and GPON technology. The need for this upgrade was required as Ryerson is one of the most important technical universities in Ontario, and it is important to supply its students with the best technology available. This will help maintain its status as one of the top universities in Canada.

▣ **“PoE Lighting and IoT: A Winning Problem-Solving Combination Panel”**

- ▶ *Brian Hansen, RCDD, NTS – SIEMON-Rosemont, Minnesota, USA*
- ▶ *Matt Scharkozy – SIEMON – San Diego, California, USA*
- ▶ *Dwight Stewart – Igor – West Des Moines, Iowa, USA*
- ▶ *Mike Barbera – Intersect Management, LLC – San Diego, California, USA*

Intelligent Buildings/Smart Cities/IoT

A new state-of-the-art 85,000 square foot headquarters building for a forward-thinking developer includes a PoE lighting deployment with integrated IoT and PoE technologies. This presentation will provide an overview of how and why the customer decided on a fully-integrated, intelligent building approach with PoE, the consultative process, the solutions deployed, the overall value to the building owner and occupants and the need for the right cabling infrastructure to support it all.

▣ **“Emergency Responder Radio Systems for Hospitals, Museums, etc.: Insights on Making All Buildings Safer”**

- ▶ *Chip Chapman, RCDD – Integrated Building Systems – Columbus, Ohio, USA*

ICT Professional Development

Fire code requires all new buildings and most major renovations to provide indoor radio coverage for first responders. Even though this code is longstanding in many states, enforcement is heating up. Learn practical insights for deploying emergency responder radio systems (ERRS) and collaborating

with local authorities. This presentation will feature case studies of ERRS projects at a children’s hospital campus, an international home furnishings store, a national museum, a regional bank and a fraternity house.

▣ **“Fires, Active Shootings and Natural Disasters: Looking at In-Building Systems Through a Public Safety Lens”**

- ▶ *Jim Lilienfeld – Advanced RF Technologies, Inc. – Burbank, California, USA*

Wireless & DAS

Fires, active shooters, natural disasters and so many more emergency situations require fast action from first responders, but how can building owners empower these responders to effectively connect with each other? This presentation will look at the scope of public safety through the lens of communication, touching on public safety solutions, such as DAS and repeaters, and how ICT professionals can implement these technologies to provide seamless connectivity required during cases of disaster.

3-4 p.m.

▣ **“New and Emerging Standards for Short Reach Enterprise LAN and Data Center Optical Links”**

- ▶ *John Kamino, RCDD – OFS – Norcross, Georgia, USA*

Optical Fiber & PON

Enterprise and data center networks continue to experience growth in bandwidth demand. Where 10Gb/s networks once were considered high speed, now 40 and 100 Gb/s networks are being installed. High-definition video, multi-site video conferencing and shared services are all combining to drive the need for increasing network speeds. The importance of standards in guiding the direction of enterprise networks remains as enterprise data centers migrate to multi-tenant sites or build their own cloud DC.

▣ **“From the Grid to the Gridiron: Gaining Network Stability in Stadiums and Other Large Venues”**

- ▶ *Tom Cabral, RCDD – Chatsworth Products, Inc. – Atlantic Beach, Florida, USA*

Intelligent Buildings/Smart Cities/IoT

It’s showtime, but is your network ready for the bright lights and big data that result from having thousands of people together in one space? In a world where today’s smart devices capture every moment, it becomes imperative to have

the right wireless networking solutions and infrastructure to handle big crowds in bigger venues. This presentation will discuss the innovative ways to address your large venue networking concerns and make your next event a win.

□“Data Center Modeling 101”

▶ *Moises Levy, PhD – Boca Raton, Florida, USA*

ICT Professional Development

This presentation describes the basic concepts of data center modeling, validates the proposed model and shows simulations to understand the behavior of a data center. Mission critical facilities present a high coupling between IT equipment and their physical environment. The energy consumed in a data center is related to how the workload is processed, affecting the physical environment during operation. Examples will be presented to understand the approach and to draw practical conclusions.

□“Tips, Techniques and Tools for Troubleshooting Wireless LANs”

▶ *Keith Parsons – Wireless LAN Professionals, Inc. – Elk Ridge, Utah, USA*

Wireless & DAS

This presentation is an overview of the entire wireless LAN troubleshooting process from Wi-Fi client devices to full two-way packets traversing the Internet. The presentation will include specific examples, processes, and especially the tools needed to solve Wireless problems, even when they aren't.

6 p.m.

Cocktail Reception

7 p.m.

Annual Awards Banquet

Thursday, 13 February

General Session

8:30-9:15 a.m.

□“Tech Ready Buildings – Lifecycle Servicing Opportunities for Contractors”

▶ *Dennis Mazaris, RCDD, RTPM – Concert Technologies – Dulles, Virginia, USA*

Intelligent Buildings/Smart Cities/IoT

The mindset of building connectivity evolving from a competitive selling feature to the new 'fourth'

utility marks a definitive change in the way building ownership groups and tenants have traditionally approached building technology. Attendees will learn about the coming of age for the 4th utility (2nd deciding factor for a tenant's selection of space) and its importance to building stakeholders seeking new services to satisfy the demands of modern tenants occupying space within their facilities.

9:15-10 a.m.

□“Building the 4th Utility™”

- ▶ *Andrew Jimenez – Anixter – Glenview, Illinois, USA*
- ▶ *Rob Murchison – Intelligent Buildings – Charlotte, North Carolina, USA*
- ▶ *David Haley – Acuity – Plano, Texas, USA*
- ▶ *Matt Toner – CBRE – Atlanta, Georgia, USA*

Intelligent Buildings/Smart Cities/IoT

This panel discussion will review the latest standards developments from BICSI, the Telecommunications Industry Association (TIA) and the Institute of Electrical and Electronics Engineers® (IEEE®) that will play a key role in next-generation facilities design, the technology demands of facilities and property managers, and the industry challenges related to building construction and code compliance.

10:15-10:30 a.m.

BICSI Cares Presentation and Drawing

10:30-11:30 a.m.

Closing Keynote Speaker

Eugene Seah, CEO – Trainium Academy PTE LTD

ANTITRUST

BICSI believes strongly in competition. U.S. antitrust laws are the rules under which our competitive system operates. It is BICSI's policy to comply in all respects with the antitrust laws.

Association meetings or workshops by their very nature bring competitors together. Accordingly, it is necessary to avoid discussions of sensitive topics. Agreements to fix prices, allocate markets, engage in product boycotts and to refuse to deal with third parties are automatically illegal under the antitrust laws. It does not matter what the reason for the agreement might be.

Accordingly, at any association meeting discussions of prices (including elements of prices such as allowances and credit terms), quality ratings of suppliers, and discussions that may cause a competitor to cease purchasing from a particular supplier, or selling to a particular customer, should be avoided. Also, there should be no discussion that might be interpreted as a dividing up of territories.

An antitrust violation does not require proof of a formal agreement. A discussion of a sensitive topic, such as price, followed by action by those involved or present at the discussion is enough to show a price-fixing conspiracy. As a result, those attending an association-sponsored meeting should remember the importance of avoiding not only unlawful activities, but even the appearance of unlawful activity.

REGISTER NOW AND SAVE \$100!

Save \$100 or more on registration by signing up now through 10 January 2020. Registration includes all conference materials; admittance to general and concurrent conference sessions, exhibitions and receptions; a continental breakfast and lunch in the Exhibit Hall on Wednesday; and admittance to the Annual Awards Banquet on Wednesday evening—additional banquet tickets for guests are available for \$100 per guest. The registration fee does not include admittance to Training Classes or Pre-Conference Seminars.

All prices are listed in U.S. dollars.

Full-Conference Registration	Available through 10 Jan.	Available after 10 Jan.	Available thru 13 Feb.
	EARLY BIRD RATE	REGULAR RATE	SIMS RATE*
BICSI Member	\$895	\$995	\$695
Nonmember	\$1025	\$1,150	\$695

*SIMS Registration is valid for Seniors, Installers/Technicians, Military and Students.

Pricing for Pre-Conference Seminars can be found on the enclosed registration form and online at bicsi.org/winter/reg.

Four Easy Ways to Register



Web
bicsi.org/winter/reg



Fax
+1 813.971.4311
(available 24 hours)



Phone
+1 813.979.1991 or 800.242.7405
(USA & Canada toll-free)



Mail
2020 BICSI Winter Conference & Exhibition
8610 Hidden River Parkway
Tampa, FL 33637-1000 USA

EARN YOUR CECs AT THE CONFERENCE

Conferences are an ideal time to earn the continuing education credits (CECs) needed for credential renewal. A BICSI credential holder that attends the Winter Conference will be awarded a total of 15 CECs. Additional CECs can be earned by registering separately for one or more of our Pre-Conference Seminars and/or Pre-Conference Training Classes.

All CECs earned from attending the Winter Conference and/or Pre-Conference events will appear on your transcript approximately 30 business days after the conference.

Business and Committee Meetings



BICSI is your association. In order to bring you the best events, products and services, we need your help! Sitting in on and volunteering for a BICSI Committee is the best way you can contribute to BICSI and gain valuable insights into the ICT community and changes in the industry. Consider adding one or more of these meetings to your conference schedule.

Saturday, 8 February

8-10 a.m.
Finance & Audit Committee Meeting

10 a.m.-noon
Program Coordination Committee

Noon-5 p.m.
Board of Directors Meeting

Sunday, 9 February

8-9:30 a.m.
BICSI Cares Committee Meeting

8:30 a.m.-noon
Membership Outreach and Development
Committee Meeting

9-11 a.m.
Standards: OSP Construction and Installation
Methods Subcommittee Meeting

9 a.m.-3 p.m.
Registration and Credentials Supervision
Committee Meeting

11 a.m.-noon
Standards: ICT Installation
Subcommittee Meeting

1-2 p.m.
Standards: Building Information Modeling
Subcommittee Meeting

1-4 p.m.
Ethics Committee Meeting

2-4 p.m.
Standards: Intelligent Building
Subcommittee Meeting

4-6 p.m.
Nominating Committee Meeting

Monday, 10 February

7:30-10 a.m.
Standards: Codes Subcommittee Meeting

7:30 a.m.-noon
Global Development Committee Meeting

8-11:30 a.m.
Education Advancement Committee Meeting

10-11:30 a.m.
Standards Committee Meeting

10:45-11:45 a.m.
Membership Outreach and Development:
Technician and Education Subcommittee Meeting

11:30 a.m.-1:30 p.m.
Technical Information
& Methods Committee Meeting

1:30-3:30 p.m.
Provider Services Update (being held at
BICSI World Headquarters in Tampa)

Tuesday, 11 February

12:30-2 p.m.
Exhibitor Liaison Committee Meeting

Wednesday, 12 February

8-9:30 a.m.
Past President's Meeting

Thursday, 13 February

Noon-5 p.m.
Board of Directors Meeting

Conference Hotel Information

Tampa Marriott Water Street (BICSI Headquarter Hotel)

700 South Florida Avenue
Tampa, FL 33602
Tel: +1 813.221.4900

Westin Tampa Waterside

725 South Harbour Island Boulevard
Tampa, FL 33602
Tel: +1 813.229.5000

Sheraton Tampa Riverwalk Hotel

200 North Ashley Drive
Tampa, FL 33602
Tel: +813.223.2222

Embassy Suites by Hilton Tampa Downtown Convention Center

513 South Florida Avenue
Tampa, FL 33602
Tel: +1 813.769.8300

Visit bicsi.org/winter/hotel for information, including pricing, and to book your room.
Reserve your room by 10 January 2020 to secure the discounted rate.

**Competitor Application and Sponsorship
Form due 3 January 2020**



2020 BICSI Winter Conference & Exhibition 9-13 February 2020, Tampa, Florida

2020 BICSI Cabling Skills Challenge

Competition: 10-12 February

Compete. Sponsor. Take part in this exciting event!

Visit bicsi.org/skillchallenge for a competitor application, as well as a sponsorship form.

**Imagine winning \$5,000 cash
& bragging rights as the 2020
BICSI Installer of the Year!**

Bicsi[®]



The BICSI Exhibit Hall Experience



As an attendee or exhibitor, you will derive immense benefit from BICSI's Exhibit Hall—highly regarded in the technology industry as the global platform for innovation and revolutionary information and communications technologies. Broaden your understanding of the expansive ICT market and expand your network on the show floor.

Exhibit Hall Happenings

Technology Showcase

Explore the latest products and services in the ICT market at this lively area of the show floor. Get in on the action and cast your vote for "Best in Show" in a variety of product categories.

PoE Lighting Pavilion

The all-new PoE Lighting Pavilion is an impressive area dedicated to specialized Power over Ethernet products and services. Here you'll view demonstrations and talk one-on-one with exhibitors that thrive on the business of delivering data and power over a single Ethernet cable.

What's New, What's It Do? (WNWID)

Take a seat at the BICSI Theater to see brief presentations from exhibitors on the latest technical solutions. Visit the presenting exhibitors at their booth with your *WNWID* passport handy for a chance to win an all-expense paid trip to an upcoming BICSI Conference!

First-Time Exhibitor Pavilion

See BICSI's newest exhibitors at this location in the Exhibit Hall.

2020 Cabling Skills Challenge

A Winter Conference favorite, the 2020 Cabling Skills Challenge will take place in the Exhibit Hall Monday and Tuesday.

Exhibiting and Sponsoring

Interested in showcasing your products or services at one or more of the events listed? We have a variety of opportunities for you to get involved as an exhibitor or sponsor.

Visit bicsi.org/winter-sponsorships or email Courtney Nalls, Exhibit Sales and Marketing Manager, at cnalls@bicsi.org to apply or for more information.



8610 Hidden River Parkway, Tampa, FL 33637-1000 USA
Tel: +1 813.979.1991 or 800.242.7405 (USA & Canada toll-free)
Fax: +1 813.971.4311; Email: bicsi@bicsi.org; Web: bicsi.org

Register by 10 January and save!
bicsi.org/winter/reg

Keynote Speaker

Eugene Seah

CEO, Founder and Chief Coach
at Trainium Academy

Thursday, 13 February
10:30-11:30 a.m.

**Eugene is one of Singapore's
most entertaining, engaging
and inspirational speakers in
the area of growth mindset
and future-readiness.**

