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SBE 55 Years 1964 - 2019
The Association for Broadcast and Multimedia Professionals

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John Collinson Named SBE Fellow

The Society of Broadcast Engineers (SBE) has elevated John Collinson, CPBE, 8-VSB, AMD, CBNE, to the membership rank of Fellow. The SBE Board of Directors elected him at its meeting held April 7 during the 2019 NAB Show.

John Collinson, who joined the SBE in 1976 and is currently a Senior member, is the chief engineer at Ventana Television, Inc., a branch of HSN, in St. Petersburg, FL. He has held that position since 1994. He previously was the chief engineer of WWSB-TV and WAAY-TV in Sarasota, FL from 2007 to 2008, and the chief engineer of WDAF-AM/KYYS-FM in Kansas City from 1987 to 1993. He attended Oklahoma State Tech and John Brown University.

Collinson has served SBE Chapter 39 Tampa Bay Area as chapter chair from 1999 to 2001, and chapter certification chair since 1995. In the early 1990s, he led the effort to restart the chapter. For the past 11 years, the chapter has presented an annual Broadcast Technology Symposium, and Collinson has been a leader in founding and continuing that project. Many chapter members credit him as being a driving force in keeping the chapter active with, as one of his Fellow nominators wrote, "his steady support and wise counsel even after he handed off the main leadership role to others."

Collinson

His dedication to SBE certification is boundless. One nominator wrote, “John is not only a great mentor for new members, but also pushes the membership as a group for higher certifications every chance he can.”

The Fellow honor is the highest membership level in the SBE. Members must have made significant contributions to the broadcast engineering field or the SBE. Candidates are nominated by their peers. Since the Society's founding 55 years ago, 79 members have been honored with the Fellow rank.

Collinson will be recognized for his election to Fellow during the SBE National Awards Dinner on Oct. 16, 2019, in Madison, WI, during the annual SBE National Meeting, held in conjunction with the Wisconsin Broadcasters Clinic.

Broadcasters Clinic Will Host 2019 SBE National Meeting in Madison, WI

The Society of Broadcast Engineers 55th SBE National Meeting will be held in Madison, WI, on Oct. 15-16, 2019. The event will be held in conjunction with the annual Broadcasters Clinic, presented by the Wisconsin Broadcasters Association and the four SBE chapters of Wisconsin.

The SBE National Meeting includes the SBE National Awards Reception and Dinner, recognizing outstanding achievement by SBE members and chapters. The SBE will also conduct the SBE Annual Membership Meeting on Oct. 16, and stream it live so members not able to attend in person can watch.

The Marriott Madison West Hotel in Middleton, WI, is the site of the 2019 SBE National Meeting.

The Clinic runs from Oct. 15 through 17 and includes a three-day broadcast technology conference and media equipment and services tradeshow. The Clinic draws engineers from a multi-state region and speakers from across the country.

Serving as SBE hosts are SBE chapters 24 Madison, 28 Milwaukee, 80 Fox Valley and 117 La Crosse. The National Meeting begins on Tuesday afternoon, Oct. 15 with the fall meeting of the national SBE Certification Committee from 2 to 4 p.m. The fall meeting of the SBE Board of Directors will take place from 6 to 10 p.m. Attendance at the Board meeting is open to any SBE member. On Wednesday, activities begin with the annual SBE Fellows Breakfast, a reunion of SBE Fellow members including this year’s inductee, John Collinson, CPBE, 8-VSB, AMD, CBNE. In

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Wayne Pecena Appointed SBE Vice President

Pecena

SBE President Jim Leifer announced on April 18 that Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE, has been appointed to the position of SBE national vice president, filling the unexpired term of RJ Russell, CPBE. Russell resigned as vice president on April 12, in anticipation that his company, Technical Broadcast Solutions, will soon be hired to take on a significant SBE project. The SBE will announce that project when details are finalized.

Pecena is the assistant director of educational broadcast services in the Office of Information Technology at Texas A&M University. He serves as the director of engineering of TTVN: The Enterprise Videoconference and Data Network serving the Texas A&M University System and Public Broadcast stations KAMU-TV and KAMU-FM serving the Brazos Valley area. He is a Fellow member of the SBE and active in SBE Chapter 99 in College Station. He has chaired the SBE Education Committee since 2012.

At the time of his appointment, Pecena was serving as SBE national secretary. To fill the vacancy left by his appointment, President Leifer appointed board member Kevin Trueblood, CBRE, CBNT as secretary.

Trueblood is director of engineering at WGCU Public Media at Florida Gulf Coast University in Ft. Myers FL.

Trueblood's appointment created an opening on the Board that Leifer filled with the appointment of Jason Ornellas, CBRE, CRO, Sacramento, CA, market chief for Bonneville International. Ornellas had previously served on the Board for one year.

Per the SBE By-laws, all three appointments were approved by the SBE Executive Committee. Each appointee fills the unexpired term of his predecessor, all of which will end on Oct. 16, 2019.

Trueblood

Ornellas

Certification Question

Answer on page 6

A circuit with a high input impedance that causes minimum loading on the circuit supplying the signal is a:

A. Darlington pair
B. bridging amplifier
C. Cassegrain system
D. parametric LNA

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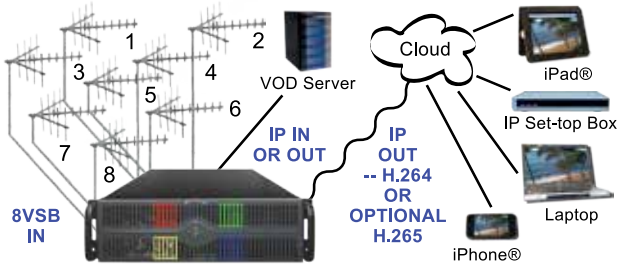

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LETTER FROM THE PRESIDENT

By Jim Leifer, CPBE
SBE President
jleifer@sbe.org

More Than 55 Years Ago...

As the SBE celebrates its 55th year, we look back at the events that shaped the society. You have probably seen the archive photos we're sharing on our social media pages. You can also read more about the SBE's beginnings on our website at bit.ly/SBEhistory.

The society's roots can be traced back to 1961 when the Institute of Radio Engineers (IRE) and the American Institute of Electrical Engineers (AIEE) passed a joint resolution calling for a "merger or consolidation… into one organization." The two joined forces in 1963, forming what is known today as the Institute of Electrical and Electronic Engineers (IEEE). However, the new organization was perceived by some as not addressing the needs of broadcast engineers. John Battison, then editor of *Broadcast Engineering* magazine, was one of those people.

Battison wrote an editorial in the December 1961 issue of *BE* that suggested the idea of a new organization just for broadcast engineers. The key points he raised follow.

[M]ore and more broadcasters are not finding what they want in the IRE. So what is left for the station man?

Possibly a new institute is needed for broadcast engineers, one started in just the same way as the IRE was originally? Perhaps it should be called the IBE, Institute of Broadcast Engineers, and be presided over by one of the great broadcast engineers of a few years ago?

We leave you that thought this month.

Battison's continued efforts sparked interest across the country. He published a membership application in the April 1963 issue of the magazine and the response was encouraging. With help from family members, Battison mailed membership invitations to almost 5,000 radio and TV engineers in the United States and Canada.

Finally, on April 5, 1964, an organizational meeting was held during the National Association of Broadcasters convention at the Conrad Hilton Hotel in Chicago. Approximately 100 interested broadcast engineers attended. The group formed the SBE, which is devoted solely to the needs and interests of broadcast engineers, with Battison as its first president.

NATIONAL MEETING from p. 1

the afternoon, the one-hour SBE Annual Membership Meeting will be webcast live at 4 p.m. EDT (1 p.m. PDT) to members around the world.

The SBE Annual Awards Reception and Dinner takes place on Wednesday with the reception beginning at 5 p.m., followed by the dinner at 6 p.m. The dinner will feature a guest speaker and the presentation of the society's major awards, including the Robert W. Flanders SBE Engineer of the Year and James C. Wulliman SBE Educator of the Year awards. The dinner program will conclude with the presentation of the Fellow honor to Collinson.

Tickets ($16) for the SBE Awards Reception and Dinner went on sale at the SBE website on June 3. The other SBE National Meeting events are included with your Clinic registration.

The Clinic emphasizes radio/audio technology topics on Oct. 15. On Oct. 16, session topics presented will generally apply to all media engineers. On Oct. 17, the focus turns to television technology/video topics. Trade show exhibits will be open on Oct. 15 from 4:15 to 7 p.m., and on Oct. 16 from 10 a.m. to 1:30 p.m. Participants have the option of registering for either two or three days of the conference. Clinic registration will open in July.

The SBE National Meeting and Broadcasters Clinic will be held at the Marriott Madison West Hotel in Middleton, a western suburb of Madison. The hotel will have undergone a complete remodeling prior to our arrival.

Make hotel reservations through Marriott reservations at 888-745-2032. Ask for the Society of Broadcast Engineers SBE special rate of $134 plus tax per night. A limited room block has been set aside for our guests. Check-in is 4:00 p.m. and check-out is 12:00 p.m. Free parking is included for Broadcasters Clinic/SBE National Meeting participants.

Save the dates and plan to make your way to Madison for the Broadcasters Clinic and SBE National Meeting!

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The trust offers scholarship and educational programming and grants that benefit broadcast engineering and the broadcast engineer. Submit tax-deductible donations, payable to the Ennes Educational Foundation Trust, to the Society of Broadcast Engineers; 9102 N. Meridian St., Suite 150; Indianapolis, IN 46260.

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EDUCATION UPDATE

By Wayne M. Pecena, CPBE, 8-VSB, AMD, DRB, CBNE
Chair, SBE Education Committee
wpecena@sbe.org

Is SNMP Really Simple?

Like many technology related questions, the answer is often "it depends." The Simple Network Management Protocol or "SNMP" was created by the Internet Engineering Task Force defined by a series of (IETF) request for comments (RFC) as a means to monitor and control devices in an Internet Protocol (IP) network. SNMP is widely used in information technology (IT) environments from equipment providers such as Cisco, Juniper, Microsoft and many others. More importantly to the broadcast engineer is the increasing popularity in broadcast specific equipment. A quick look at familiar products from Nautel, GatesAir, Burk and Davicom reveals SNMP implementation in their equipment today.

SNMP version 1 was adopted in the late 1980s and has matured to the current offering as version 3. SNMP v3 was adopted in 2004 and incorporated security enhancements missing from the previous release versions. These enhancements focused upon encrypted communications and authentication. Previous versions of SNMP are now considered to be deprecated. SNMP operates at the Application Layer of the OSI model and is considered one of the core protocols within the IP family. The User Datagram Protocol (UDP) is utilized for all SNMP communications directed to or from designated ports.

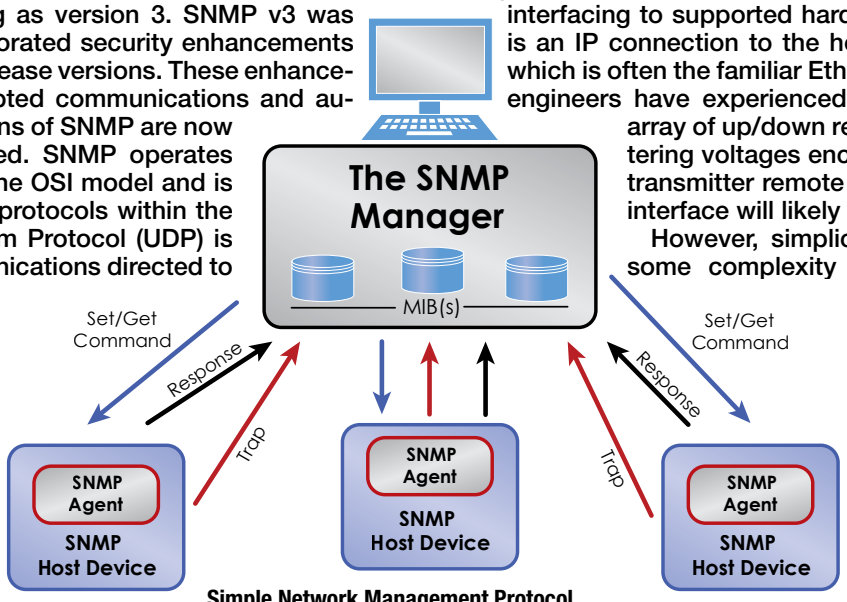
Maybe SNMP is considered simple because there are only three system components:

- The SNMP host device
- The SNMP agent
- The SNMP manager

The SNMP host device is the hardware device that is monitored and/or controlled. An SNMP agent is the software application that is executed on the host device that caches performance data that is monitored on the device. The gathered data is either pulled from the device or the agent may proactively send data based upon an event. The SNMP manager is the heart of a SNMP system that acts as a centralized collection point to poll agents for the desired performance data or accept events that occurred. The manager contains an SNMP management information base (MIB) associated with each type of device being monitored or controlled. The MIB is a hierarchical database using object identifiers (OID) to define the specific parameter to be monitored or controlled.

Maybe SNMP is considered simple because the command set consists of four basic commands with seven commands making up the entire command list:

- GET
- SET
- RESPONSE
- TRAP



Simple Network Management Protocol version 3 (SNMPv3) is defined by IETF RFC(s) 3411-3418.

The GET command is issued by the manager to a host device to retrieve a variable or a set of variables at a desired polling interval. The RESPONSE is the information returned by the host device to the manager. The SET command allows the manager to change a variable on a host device. And the TRAP command is an alert sent by the host device to the manager rather than waiting for a GET command from a polling interval. The additional three commands making up the entire SNMP command set allows bulk operations to more efficiently poll or gather large amounts of data in a structured manner from a device.

Keeping it simple

Maybe SNMP is considered simple because of the ease of interfacing to supported hardware devices. All is needed is an IP connection to the host device being monitored, which is often the familiar Ethernet cable. Many broadcast engineers have experienced the multi-conductor wiring array of up/down relay closures and scaled metering voltages encountered when interfacing a transmitter remote control system. The ease of interface will likely be appreciated.

However, simplicity does not come without some complexity potentially in other areas. The complex part of implementing SNMP is likely found in the programming or configuration of the SNMP manager to poll devices to display desired operating parameters and/or act upon SNMP events occurring. Performance parameters out of tolerance limits and error conditions in turn commonly drive email or SMS text alerts to the broadcast engineer. This laborious task is often eased by a SNMP manager that offers graphical user interface (GUI) design tools or wizards.

Another area of potential complexity is the wide variety of the SNMP options available ranging from open-source managers to commercial manager platforms capable of monitoring thousands of devices with appropriate price points. As more of the broadcast technical plant becomes an IT-based system and more broadcast equipment providers incorporate SNMP in their products, don't overlook the power and flexibility of a centralized SNMP based monitoring system alerting you to system performance and fault reporting. When shopping for system equipment look for SNMP support and the appropriate MIB from the manufacturer.

Your SBE Education Committee is here to help achieve your professional development goals. Let us know your thoughts on current and future programs, lend your advice and guidance to your SBE Education Committee to help establish the right mix of educational content to meet your professional development needs.

For more information on any SBE education program click the Education tab at sbe.org, or contact Education Director Cathy Orosz at the SBE National Office at 317-846-9000 or corosz@sbe.org.

CERTIFICATION UPDATE

By Dane Ericksen, PE, CSRTE, 8-VSB, CBNT
SBE Certification Committee Member
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Retiring a Forty-Year Old Cert Question

When the SBE created the Program of Certification in 1975, an entry-level exam questions asked where a broadcast station license (or other instrument of authorization) had to be posted. It was intentionally an easy, confidence building question, but nevertheless important information for a duty operator at a broadcast station to be aware of. Now, more than 40 years later, it is finally time for the SBE to retire that certification question and update the next printings of the SBE Certification Handbook for Radio Operators and SBE Television Operator's Certification Handbook. Why? Because as of Feb. 8, 2019, the FCC deleted the requirement for a radio or TV station to post a copy of its station license (or other form of authorization) as part of its program to "modernize Media Bureau regulations." The Commission reasoned that because station licenses were now available online using the Licensing Management System (LMS), the Consolidated Database System (CDBS), or the Universal Licensing System (ULS), there is no longer any need to post physical copies of such documents at a station control point. However, there are four caveats that may apply, which are discussed later, so pay attention.

Of course, the FCC is a federal agency subject to the requirements of the Administrative Procedures Act, so first a 23-page notice of proposed rulemaking (NPRM) had to be issued on May 10, 2018 (this included five-pages of Initial Regulatory Flexibility Act certifications). The NPRM was published in the Federal Register on July 2, 2018, establishing a comment deadline of Aug. 1, 2018, and a reply comment deadline of Aug. 16, 2018. Seven parties filed comments, all supporting the deregulation. No parties found it necessary to file reply comments. On Dec. 11, 2018, a 17-page report & order (R&O) to MB Docket 18-121, again including five-pages of Final Regulatory Flexibility Act certifications, was released. The R&O was subsequently published in the Federal Register on Feb. 8, 2019, and because of the deregulatory nature of the rulemaking, the rule changes were concurrently effective.

No need to post

So, as of Feb. 8, 2019, radio and TV stations no longer have to post a copy of their station license (or other authorization documents) at the control point. Ditto for Class A TV stations, low-power TV stations, TV translator stations, TV booster stations, FM translator stations, FM booster stations, or FM low-power stations, and international broadcast stations. The deregulation also freed from the burden of license posting all Part 74 Broadcast Auxiliary Services (BAS) stations, such as remote pickup (RPU) stations, studio-to-transmitter links (STLs), intercity relay (ICR) stations, TV translator relay stations, and mobile TV pickup stations. This deregulation also applies to Subpart H Low Power Auxiliary (LPA) stations such as wireless microphones and wireless intercoms. The Commission ended up modifying one Part 0 ("Commission Organization") rule, one Part 1 ("Practice & Procedure") rule, and one Part 5 ("Experimental Radio Service") rule, and amended a total of ten Part 73/Part 74 rules. Five Part 73/Part 74 rules were removed in their entirety, and the former rule sections marked "reserved."

Now, the caveats:

1. The Commission did not delete Section 90.437 of its rules governing Part 90 Land Mobile stations. If you have a Part 90 Land Mobile two-way license (as opposed to a Part 74 RPU license), the license still needs to be posted.

2. The Commission did not delete Section 101.215 of its rules governing Part 101 Fixed Service (FS) stations. If you have a Part 101 FS point-to-point microwave license (as opposed to a Part 74 BAS STL or ICR license), the license still needs to be posted.

3. The Commission did not delete Section 78.59 of its rules governing Part 78 Cable Television Relay Service stations. If you have a Part 78 CARS* license, it still needs to be posted.

4. The Commission intentionally only amended Section 1.62(a)(2) to exempt "non-broadcast" licenses. If you have a satellite uplink or downlink license, a copy of the satellite Earth station license must still be posted.

** Originally Community Antenna Relay Service; the CARS abbreviation was retained.*

CQ **Answer from page 3**

The answer is B

A terminating load would have the two circuits' output and input impedances being equal so the input draws the maximum current from the source. A bridging load has an input impedance much higher than the source, which draws less current from the source.

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Robert Lindner, Reston, VA - Chapter 37

Certified Broadcast Networking Engineer (CBNE)
Glenn Anderson, Richmond, TX - Chapter 105
Andy Forges, Orlando, FL - Chapter 42
Timothy Nesbitt, Brooklyn, NY - Chapter 15

8-VSB Specialist (8-VSB)
Ryan Phillips, Seattle, WA - Chapter 16

Certified Television Operator (CTO)
Kalen Cunningham, Aurora, CO - Chapter 48

2019 NAB SHOW EXAMS

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Gerry Field, Watertown, MA - Chapter 11
Kevin Tucker, Chapel Hill, NC - Chapter 93

Certified Broadcast Networking Technologist (CBNT)
Brian Proksch, Montgomery, TX - Chapter 105
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SPECIAL PROCTORED EXAMS

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Alabama Broadcasters Association
Certified Broadcast Television Engineer (CBTE)
Louis Creamer, III, Phenix City, AL - Chapter 118

Certified Broadcast Technologist (CBT)
Jordan Ellis, Columbia, SC - Chapter 101
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Technical Presenter Group with Wayne Pecena
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Certified Broadcast Technologist (CBT)
Cleveland Institute of Electronics
Gregory Beery, West Hills, CA - Chapter 47

Loyalist College
Kevin Davis, Kemptville, ON

CERTIFIED PROFESSIONAL BROADCAST ENGINEER (CPBE)

Certified Professional Broadcast Engineer (CPBE)
Stan Carter, Pearl, MS - Chapter 125

Applicant must have 20 years of professional broadcast engineering or related technologies experience in radio and/or television. The candidate must be currently certified on the Certified Senior Broadcast Engineer level.

CERTIFIED BY LICENSE

Certified Broadcast Technologist (CBT)
Stephen Pavlik, Austin, TX - Chapter 79
Timothy Thompson, Myrtle Beach, SC

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Carl Nelson, DeKalb, IL

Cave City High School
Rose Mendez, Elizabeth, AR
Andrew Benke, Batesville, AR

East Valley Institute of Technology
Stephanie Calvo Gomez, Phoenix, AZ
Angel Chavez, Chandler, AZ
Oscaldo Chavez-Rios, Mesa, AZ
Taylor Cooper, Chandler, AZ
Andres Daniels, Mesa, AZ
Tanner Davis, Mesa, AZ
Kylan Dubiel, Mesa, AZ

Carlos Fernandez, Mesa, AZ
Fatima Fernandez Galindo, Chandler, AZ
Michael Gazda, Gilbert, AZ
Eva-Marie Johnson, Tempe, AZ
Edward Kaszycki, Gilbert, AZ
Lucas Kleinman, Phoenix, AZ
Amanda Krainski, Gilbert, AZ
Adam Kurth, Scottsdale, AZ
Jacqueline Kuru, Gilbert, AZ
Alex Lamont, Gilbert, AZ
Jaxon Lucas, Scottsdale, AZ
Madison McCarty, Queen Creek, AZ
James Messner, Gilbert, AZ
Johan Rodriguez-Pagola, Chandler, AZ

Therese Thirkhill, Tempe, AZ
Matthew Valdez, Phoenix, AZ
Uziel Villalobos Mendoza, Mesa, AZ
Ethan Motta, Chandler, AZ
Fatima Nava-Vidrio, Queen Creek, AZ
Alex O'Neil, Gilbert, AZ
Mario Pesqueira, Phoenix, AZ
Kole Rathje, Phoenix, AZ
Lee Teeples, Chandler, AZ
Raela Trujillo, Chandler, AZ
Abbigail Tumerkan, Apache Junction, AZ
James Watters, Gilbert, AZ
Ellie Willard, Gilbert, AZ

CERTIFIED TELEVISION OPERATOR (CTO)

Amaury Corniel, Albany, NY
Brett Hammond, Salisbury, MD
Grant Hovander, San Diego, CA
Mark Payne, Minneapolis, MN
Francis Rana, Houston, TX

Ford HS Media Arts
James Carney, Quinlan, TX
Parker Cole, Quinlan, TX
Alexandra Collins, Quinlan, TX
Matthew Grugel, Quinlan, TX
Justice Lewis, Quinlan, TX

Ford HS Media Arts (cont.)
Mason Malone, Quinlan, TX
Ryan Myre, Quinlan, TX
Jeremy Robinson, Quinlan, TX
Joseph Shanklin, Quinlan, TX

RECERTIFICATION

Applicants completed the recertification process either by re-examination, point verification through the local chapters and national Certification Committee approval and/or met the service requirement.

Certified Professional Broadcast Engineer (CPBE)
Michael LeClair, Watertown, MA - Chapter 11
Tracy Gibson, Manhattan, KS - Chapter 3
Kevin Rodgers, Hacketts Cove, NS

Certified Professional Broadcast Engineer (CPBE) Digital Radio Broadcast Specialist (DRB)
Louis Johnson, IV, Lyndhurst, OH - Chapter 70

Certified Senior Radio Engineer (CSRE)
William Blum, San Francisco, CA - Chapter 40
David Caires, Glen Carbon, IL - Chapter 55
Glenn Leffler, El Paso, TX - Chapter 38

Certified Senior Radio Engineer (CSRE) AM Directional Specialist (AMD)
Kevin Kidd, Lawrenceburg, TN - Chapter 111

Certified Broadcast Radio Engineer (CBRE)
Ronald Huckeby, Butte, MT- Chapter 6
Jon Kenneke, Albany, OR - Chapter 76
Derek Murphey, Fitchburg, WI - Chapter 24
Charles Osgood, Wenatchee, WA - Chapter 16
Thor Waage, Woodburn, OR - Chapter 124
John White, Portland, OR - Chapter 124

Certified Broadcast Television Engineer (CBTE)
Dennis Dutra, Eliot, ME - Chapter 11
Michael Kemmerling, Aiea, HI - Chapter 63
Raymond Pashley, Campbell, CA - Chapter 40
Dennis Wallace, Waldorf, MD - Chapter 37
Michael Winsky, Morrice, MI - Chapter 91

Certified Broadcast Radio Engineer (CBRE) Digital Radio Broadcast Specialist (DRB)
Ralph Brancato, Jr., St. Louis, MO - Chapter 55

Certified Audio Engineer (CEA)
Kevin Salger, Long Beach, CA - Chapter 47

Certified Broadcast Networking Technologist (CBNT)
Michael Davison, Northfield, MN - Chapter 17
Tracy Gibson, Manhattan, KS - Chapter 3
Larry Gregg, Amarillo, TX - Chapter 105
Louis Johnson, IV, Lyndhurst, OH - Chapter 70
Raymond Pashely, Campbell, CA - Chapter 40
Patrick Perez, Mesa, AZ - Chapter 9
Kevin Rodgers, Hacketts Cove, NS
Kenneth Scott, Seattle, WA - Chapter 16
Walter Sewell, Highland, IN - Chapter 26

Certified Broadcast Technologist (CBT)
Rachel Copher, Milwaukee, WI - Chapter 28
Jeff Crews, Lake Wales, FL - Chapter 39
Daniel Herrmann, Yucaipa, CA - Chapter 47
Curtis Kirk, Tyler, TX - Chapter 67
Goran Poprzen, Calgary, AB
Alan Rhodes, Jacksonville, FL - Chapter 7

Certified Television Operator (CTO)
Robert Holden, Powell, TN - Chapter 113
Todd Nunes, Los Angeles, CA - Chapter 47
Al Taglialavore, Friendswood, TX

Certified Radio Operator (CRO)
Donald Connelly, Cullowhee, NC
Michael McCormick, Ogallala, NE - Chapter 87
Dave Ogren, Eagle River, WI

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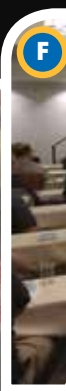

Sights from the NAB Show

A. SBE Secretary Wayne Pecena speaks at the SBE Membership Meeting, which included several committee reports. B. The SBE booth was a busy scene. C. Jim Leifer announces John Collinson being named an SBE Fellow. D. The SBE Board of Directors met on Sunday. E. The SBE Member Reception was a way to unwind on Tuesday. F. SBE at PBS TechCon drew a large crowd. G. Education Committee Chair Wayne Pecena delivers his report at the Membership Meeting. H. Jerry Whitaker (center), who won the Blackmagic Design URSA Broadcast camera at the membership meeting, stands with Blackmagic Design's Bob Caniglia (left) and SBE VP RJ Russell. I. Certification Committee Chair Ralph Hogan delivers the certification report and recognizes chapter and national certification volunteer efforts. J. The Ennes Workshop drew yet another large crowd.

SBE Fellow
John Collinson, CPBE, 8-VSB, AMD, CBNE
SBE

D

G

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H

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The Society of Broadcast Engineers

I

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The Association for Broadcast and Multimedia Technology Professionals

J

LEGAL PERSPECTIVE

By Chris Imlay, CBT
SBE General Counsel
cimlay@sbe.org

Let's Talk About the T-Band

What is the fate of TV Channels 14-20 (470-512 MHz) after the Middle Class Tax Relief and Job Creation Act, passed by Congress in 2012? What effect will this legislation have on the TV repack that is going on right now? It is a bit confusing for both broadcasters and public safety land mobile licensees as well.

Right now, there are fewer than 1,000 public safety licensees in the T-Band, but those licenses allow multiple transmitters. All are licensed in 11 metropolitan areas where Channels 14-20 (inclusive) is allocated for land mobile radio (LMR) use: Boston, Chicago, Dallas/Fort Worth, Houston, Los Angeles, Miami, New York City and northeastern NJ, Philadelphia, Pittsburgh, San Francisco/Oakland, and Washington, DC, and the MD/VA suburbs of DC. The bands are reasonably heavily used, mostly for public safety land mobile communications. In these 11 markets there are no T-Band channels used for TV broadcasting. But there are a lot of full-power and Class A TV stations in T-Band channels outside the 11 markets, and the 2012 legislation does not directly affect television broadcast licensees in markets other than the eleven markets in which the T-Band is used for land mobile radio.

The 2012 legislation requires that within nine years of enactment (by Feb. 22, 2021), the FCC must take certain steps to begin an auction and start to relocate the T-Band land mobile licensees. The deadline for all public safety T-Band licensees to have relocated from the T-Band spectrum is two years after the date when competitive bidding is completed. Therefore, the exact timing of the relocation deadline will depend on when the T-Band competitive bidding process concludes.

The logic on which the T-Band reallocation was based in 2012 has been largely undercut by the 600 MHz auction, which triggered the TV repack. Congress originally was of the view that the T-Band should be removed from public safety land mobile use because public safety had been given 700 MHz spectrum for a nationwide public-safety broadband network (NPSBN). At the time, the 600 MHz auction had not been taken into account, and it arguably supplanted any benefit in displacing almost a thousand public safety entities from spectrum that they depend on.

The proceeds of the auction of the T-Band will be used by the National Telecommunications and Information Administration (part of the Commerce Department, which regulates government spectrum and advocates on telecommunications policy for the current administration) to make grants that will cover relocation costs for public safety entities. There is no provision for payments to relocate business/industrial licensees that also occupy the T-band.

Future plan

The FCC has not yet taken any steps to implement the legislation. It is not clear what any of the details are at the present time, or even how the auction will be conducted. No replacement spectrum has been identified yet for displaced land mobile licensees either. However, the Enterprise Wireless Association (EWA), in an apparent effort to proactively minimize the damage to displaced licensees, recently filed a petition for rulemaking with the FCC, requesting the FCC to designate some 800 MHz guard band spectrum as “green space” for business/industrial/land transportation licensees who may be required to vacate T-Band spectrum. The EWA claims that its effort is to provide "meaningful and realistic spectrum solutions that will allow licensees to be relocated to comparable spectrum."

This is well-intentioned but insufficient; the guard bands at 800 MHz do not offer sufficient spectrum for relocation of these licensees, and no provision is included for relocation of public safety entities. The FCC says that T-Band licensees are eligible to relocate to public safety channels in the VHF (150-174 MHz), UHF (450-470 MHz), 700 MHz, and 800 MHz bands, “to the extent channels in these bands are available.” Nor is there any provision in case the auction revenues are insufficient to cover the cost of public safety licensee relocation out of the T-Band.

The large number of full-power and Class A TV stations in the T-Band spectrum and those in the process of being repacked into channels 14-20 now creates a poor auction environment for potential bidders. So, clearing public safety users from the T-Band does not “clear the band.” Several hundred full-power and Class A television broadcast stations already on those channels would remain throughout the U.S., even if public safety operations are relocated, and the repack is bringing in more still. The FCC has taken steps to minimize the number of stations relocated to Channel 14, but has taken no steps to minimize the number of stations to be relocated to the other T-Band channels.

In 2012, after enactment of the legislation, the FCC froze all T-Band land mobile applications that would create new systems or expand existing ones. The freeze has lasted to the present time.

In the last session of Congress, the “Don’t Break Up the T-Band Act,” a House Bill and a companion Senate Bill, encountered opposition and did not pass. So far, there is no replacement legislation in this session of Congress, and no plan on the horizon at FCC so far.

Still Time to Renew Your SBE Membership

By renewing your SBE membership, you have retained all your member benefits without interruption. But if you have not yet renewed, you should today. If you don't renew by June 30 (the end of the grace period), you will be dropped from the active roll.

Member, Senior, Student, Associate and Fellow membership categories can renew online at sbe.org. Click on “Renew Membership” in the upper right-hand corner of the website home page. The online system is available 24/7, is secure and accepts Visa, MasterCard and American Express.

When renewing, consider upgrading to SBE MemberPlus. For $175, SBE MemberPlus provides you with access to all archived and all new SBE webinars.

You may also renew by completing and returning the renewal form with payment that you received in early February by mail to the SBE national office: Society of Broadcast Engineers; 9102 N. Meridian St., Suite 150; Indianapolis, IN 46260; or by fax at 317-846-9120.

Questions about renewal? Contact Scott Jones at the SBE National Office at 317-846-9000 or kjones@sbe.org.

FOCUS ON SBE

By John L. Poray, CAE
SBE Executive Director
jporay@sbe.org

Update from the Spring Board of Directors Meeting

The spring meeting of the SBE Board of Directors was held during the 2019 NAB Show this past April in Las Vegas. Led by SBE President Jim Leifer, the Board met for four hours to cover a long agenda. I'd like to highlight a few of the decisions and discussion that took place.

The Board heard from Director Kirk Harnack regarding the experimental SBE WEBxtra program that he and SBE Member Communications Director Chriss Scherer had been producing since January. An idea that came out of last year's strategic planning conference, WEBxtra is a monthly gathering of SBE members via webcast that features an interview format, hosted by Kirk, with guests that discuss media technology, SBE programs and other industry topics. Though open to anyone, the primary mission of WEBxtra is to provide informative monthly programming to members who don't live near a chapter or who otherwise are not able to attend local chapter meetings.

Following a successful three-month trial run, Kirk recommended to the Board that the program continue. To help ensure that the program can be sustained over time, he recommended that production help be enlisted and that advertising, perhaps using a "public broadcasting style" of underwriting sponsors, be enlisted to offset the production cost. The Board enthusiastically agreed to continue the program and thanked Kirk and Chriss for their efforts. The day following the Board meeting, the trustees of the Ennes Educational Foundation Trust met for its annual meeting. To ensure that the SBE WEBxtra would go on without interruption, they authorized a grant to the SBE of up to $2,500 over a 12-month period to offset production costs, if there was a shortfall in sponsorship revenue.

To help chapters get their annual rebate checks into their bank accounts quicker, the Board approved a change to the payment procedure. Checks, which are mailed on June 1 each year, or the first business day after the 1st, will now be mailed to the chapter treasurer rather than the chapter chair. An email will be sent to chapter chairs notifying them when the check has been mailed to their treasurer.

The new Technologies Committee, which was formed to discuss and make recommendations to the Board regarding emerging technologies the SBE should integrate into its educational and certification programs, made a recommendation that the SBE include IP media distribution, virtualization, 5G, and social media-distributed content into the society's certification exams and education programs. Director Shane Toven chairs this committee, which, like SBE WEBxtra, was created from a recommendation that came out of the strategic planning conference.

SBE Certification Committee chair, Ralph Hogan provided an update on the development of the new SBE ATSC 3.0 certification. Several members of the SBE Certification Committee and Certification Director, Megan Clappe, have been meeting regularly with a number of ATSC 3.0 experts from ATSC to develop exam questions. They anticipate that the SBE CertPreview test preparation software will be available this month and the first exams available in August.

Fred Baumgartner was recognized at the SBE Membership Meeting.

In closed session, the Board voted on a nomination for Fellow, brought forward by the Fellowship Committee chaired by past national president, Troy Pennington. The vote was unanimous to elevate John Collinson, CPBE, 8-VSB, AMD, CBNE, of Chapter 39, Tampa Bay, to the member rank of Fellow. John will officially be recognized during the SBE National Meeting in Madison, WI on October 16. He has long been a dedicated and key member in the life of Chapter 39.

President Leifer congratulated several volunteers who were responsible for two outstanding educational programs presented the previous day in Las Vegas. Tom Mikkelsen and Stan Moote teamed up to organize and moderate the annual Ennes Workshop, presented by SBE, which serves as the kickoff to the NAB Broadcast Engineering and IT Conference. At its peak, more than 200 people were in attendance and heard from nine excellent speakers.

Fred Baumgartner, who previously had organized those same Ennes Workshop programs since 2003, organized and moderated the first-ever, "SBE at PBS TechCon" program, *Launching NextGen Broadcast - An SBE Tutorial*. The all-day, comprehensive program featured no less than 35 presenters, each a subject matter expert covering a slice of ATSC 3.0 technology. More than 170 people attended the separate-ticket event, held at the Flamingo Las Vegas Hotel in conjunction with the annual PBS TechCon.

There were other items on the agenda, including more resulting from the strategic plan and also our work with the U.S. Department of Defense (DoD). We anticipate sharing details about a project that is in the works with the DoD later this year.

Before I finish, I want to tell you too, that President Leifer presented Fellow member, Fred Baumgartner with a special plaque during the SBE Membership Meeting in Las Vegas, commemorating him for his 25 years of service as an Ennes Trustee, and for being the heart and soul behind the dozens of Ennes Workshops held regionally and in Las Vegas at the NAB Show. Also, for his outstanding effort this year to produce the SBE NextGen Broadcast tutorial held with PBS TechCon. There are so many SBE members who have benefitted from the work that Fred has done to produce broadcast technology educational programs over the years. The crowd of more than 150 members at the Membership meeting enthusiastically gave Fred a well-deserved standing ovation.

You can be pleased with your hard working national Board of Directors. They are dedicated to making decisions that are in the best interest of the Society and its membership. We are coming up to the annual election season where we will say good bye to a few of our Board members and welcome in some new directors. When you receive the email on July 26 that signals the beginning of the one-month election period, be sure to take a few minutes to review the candidates listed, and cast your vote.

ENGINEERING PERSPECTIVE

By Steve Lampen, CBRE
Broadcast Industry Consultant
slampen@sbe.org

Broadcast is Planted in the Server Farm

In 1860, the Mayor of New York City formed a committee of the best thinkers available. The question: What will New York City look like in 100 years, in 1960? One of these experts predicted that New York would be a ghost town.

His reasoning was, statistically, the city would have something close to 10,000,000 inhabitants. And, the expert argued, this meant the city would also have 10,000,000 horses and the smell would be so bad that nobody could live there.

And this is the problem with prediction. You're not playing with a full deck of cards. And just like our expert in 1860 could not have predicted the arrival of the automobile, we cannot predict many of the significant changes to our technological world in the next decade or two, and definitely not in 100 years.

So, when I start talking about 5G, the next generation of phone technology, I have to tread lightly. And there is no doubt that someone will pull this article out in a few decades and have a good laugh.

As I mentioned during my presentation at the NAB Show Ennes Workshop, amidst a discussion of all the amazing technological breakthroughs that 5G promises, you can still use this device *to make a phone call*! And thinking about that fact has made me believe that perhaps this generation of communications device is the first where its application *as a telephone* might be one of its lesser attributes.

The data gathering and dissemination that 5G predicts, its increased bandwidth, lower latency and versatility, seem to predict that it can be anything you need it to be. And as a broadcast engineer, I look at 5G from that perspective: What can it do?

There are apps for smart phones that will turn your phone into a remote camera. Put it on a stable surface, push the button, and a TV station can use it as a remote source. If this were a common app for 5G, it would mean that everyone with a phone is a reporter. And the person first on the scene of a major story could make serious money... at least until the traditional cameras and microphones arrive.

This also means that even the smallest TV station would have hundreds or thousands of truly local reporters. A station would have a tough time deciding what the news would contain and what it would reject. And the storage and manipulation of these thousand streams would require cloud-based storage that would be beyond the control of human eyes and ears.

So an outcome might be robotic analysis of content, looking for key words or images, inserting and manipulating the metadata on every shot just in case a minor story turns into something major in the next few hours or days.

It seems very clear to me that the classic idea of a studio, with humans choosing what music to play, or what news stories to present, would be better handled as data in some giant server farm. The news would be even more local than it is now. But all these streams, music, news, commercials, interstitials, everything, would just be another stream going into the servers in the data center.

So the first thing you would need is some kind of robotic overlay that could put all these streams in the right order, to create a log that any station employee would recognize. The difference, of course, would be that this log could go weeks or months into the future. Except for the parts that are live or close-to-live, this log could go as far in the future as you need it to go. And this data center could be in Siberia, Antarctica or on the moon (perfect line-of-sight for part of each day). Who would know and who would care?

Live sports would be a special case. There you want the latency to be zero, especially if you're watching in the stadium during the game. Maybe a moon-based server farm might not work. There and back is 2.7 seconds, and this would be unacceptable for anything live. Or maybe by then we will have "quantum entangled" broadcasting, which has a latency of zero regardless of the distance. (Google "quantum entanglement" in case you don't believe me.)

And then, strangely enough, the result of all this could appear on the same 5G device where it could entertain or inform a huge audience (7.5 billion potential customers). The question in my mind is, how would you segregate a local area (like a city) so it would only receive that local content? Is there a "subscription stream" mechanism? Would you please build one?

And, as I often say, if you know who is working on the add-on pieces that will enable 5G to be the perfect medium for broadcasters, see your stockbroker! Knowing how to pick what's next is how people get rich. Just remember me after you've made your first billion.

SUSTAINING MEMBERS

Support the companies who support the SBE and the industry

AC Video Solutions • 2014
Andrea Cummis 201-303-1303
Consulting, Systems Design/Integration

AEQ Broadcast International • 2015
Peter Howarth 954-581-7999
Broadcast Audio, Video and Communications

American Tower Corporation • 2000
Peter A. Starke 781-926-4772
Development/Construction/Management

Audemat-Worldcast Systems Inc. • 2000
Christophe Poulain 305-249-3110
Control Manufacturer

AVCOM of Virginia, Inc. • 2010
Tom Pagonis 804-794-2500
Spectrum Analyzers

Belden Electronic Division • 1991
Sales 800-235-3361
Cable and Connectivity

Blackmagic Design • 2012
Terry Frechette 408-954-0500
Production Switchers, Digital Cameras, Routers, Video Editing and Monitoring, Color Correction, Video Converters

Bracke Manufacturing LLC • 2012
Patra Largent 949-756-1600
RF & Microwave Components

Broadcast Depot • 2018
John Lackness 305-599-3100
TV, Satellite, Radio, IP

Broadcast Devices, Inc. • 2015
Robert Tarsio 914-737-5032
Audio/RF Support Products

Broadcast Electronics Inc. • 1978
Tom Beck 217-224-9600
Radio Equipment Manufacturer

Broadcast Software International • 2016
Marie Summers 888-274-8721
Radio Automation, Audio Logging

Broadcast Supply Worldwide • 1986
Shannon Nichols 800-426-8434
Audio Broadcast Equipment Supplier

Broadcasters General Store • 2004
Buck Waters 352-622-7700
Broadcast Audio Video Distributor

Burk Technology • 2019
Tom French 978-486-0086 x613
Transmitter Facility Control Systems

Calrec Audio • 2016
Helen Carr 703-307-1654
Audio Mixing Equipment

Camplex • 2017
Daniel Coscarella 800-445-7568 x7409
Fiber Optic Cable Assembler

Canon USA Inc. • 1985
Larry Thorpe 201-807-3300, 800-321-4388
Broadcast Lenses & Transmission Equipment

Cavell, Mertz & Associates Inc. • 2011
Gary Cavell 703-392-9090
Consulting Services

Comrex Corporation • 1997
Chris Crump 978-784-1776
Audio & Video Codecs & Telephone Interfaces

Continental Electronics • 1976
Dale Dalesio 412-979-3253
TV and Radio Transmitters

CueScript • 2014
Michael Accardi 203-763-4030
Teleprompting Software & Hardware

D2D Technoloies • 2018
Jessica Colyer 619-248-0618
PSIP & EAS Insertion, IP Gateways, Multiplexers, SRT Transmission

Davicom, Division of Comlab, Inc. • 2014
Louis-Charles Cuierrier 418-682-3380 x512
Remote Site Monitoring and Control Systems

DEVA Broadcast • 2015
Todor Ivanov 305-767-1207
Monitors, IP Audio Codecs, RDS/RBDS Encoders, Audio Processors, Broadcast Tools

Dialight Corporation • 2006
US Headquarters 732-919-3119
FAA Obstruction Lighting, LED Based

Dielectric • 1995
Cory Edwards 207-655-8131
TV & FM Transmission & Cellular Products

Digital Alert Systems, LLC • 2005
Bill Robertson 585-765-1155
Emergency Alert Systems

DoubleRadius, Inc. • 2012
Jeffrey Holdenrid 704-927-6085
IP Microwave STL

Drake Lighting • 2015
Dave Shepeard 270-804-7383
FAA Obstruction Lighting - Medium and High Intensity

DTS Inc./HD Radio Technology • 2014
Rick Greenhut 443-539-4335
HD Radio Technology

du Treil, Lundin & Rackley, Inc. • 1985
Jeff Reynolds 941-329-6000
Consulting Engineers

The Durst Org. – 4 Times Square • 2004
John M. Lyons, CPBE 212-997-5508
TV/FM/Microwave Tower Site

DVEO - Division of Computer Modules Inc. • 2011
Laszlo Zoltan 858-613-1818
Everything About Transport Streams

Econco • 1980
Debbie Storz 800-532-6626, 530-662-7553
New & Rebuilt Transmitting Tubes

ENCO Systems Inc. • 2003
Ken Frommert 800-362-6797
Playout and Automation Solutions

ERI - Electronics Research • 1990
David White 812-925-6000
Broadcast Antennas, Transmission Line, Filters/Combiners,Towers and Services

Florical Systems • 2008
Shawn Maynard 877-774-1058
Television Broadcast Automation

Fujifilm/Fujinon • 1986
Gordon Tubbs 973-686-2769
Broadcast & Cine Lens Products

GatesAir • 1977
Dave Hopson (TV) 513-445-5243
Mark Goins (Radio) 513-899-9124
Broadcast Equipment Manufacturer

Heartland Video Systems, Inc. • 2011
Dennis Klas 920-893-4204
Systems Integrator

Hilights, Inc. • 2016
Timothy Nash 352-564-8830
Obstruction Lighting Maintenance

Hitachi Kokusai Electric Comark • 2013
Jack McAnulty 413-998-1523
Manufacturer Broadcasting Transmission Equipment

iHeartMedia, Inc. • 2019
Troy Langham 918-664-4581
Radio Group Owner

IMT-Vislink • 2009
John Procacci 908-747-3011
Wireless Video Systems

Indiana Association Broadcasters • 2019
Dave Arland 317-701-0084
Indiana Association for Radio & TV Broadcasters

Inovonics Inc. • 2012
Gary Luhrman 831-458-0552
Radio Broadcast Equipment

JAMPRO Antennas Inc. • 2011
Alex Perchevitch 916-383-1177
DTV, FM-HD Radio, DVB-T/T2, ISDB-T, DAB

JVC Professional Video • 2014
Edgar Shane 973-317-5000
Professional Video Products, Camcorders, Display Monitors, Recording Decks

Kathrein USA Inc. • 1985
Les Kutasi 214-238-8835
Antennas for Broadcasting & Communications

Kintronc Labs, Inc. • 2015
Joaquin Raventos 423-878-3141
Radio Broadcast Antenna Systems - ISO9001 Registered Company

Lawo AG • 2017
Michael Dosch 888-810-4468
AoIP Consoles & Virtual Radio

LBA Technology Inc. • 2002
Javier Castillo 252-757-0279
AM/MW Antenna Equipment & Systems

Linkup Communications Corporation • 2017
Mark Johnson 703-217-8290
Satellite Technology Solutions

LYNX Technik • 2007
Steve Russell 661-251-8600
Broadcast Terminal Equipment Manufacturer

Markertek • 2002
Wesley Brewer 800-522-2025
Specialized Broadcast & Pro-Audio Supplier

Micronet Communications Inc. • 2005
Jeremy Lewis 972-422-7200
Coordination Services/Frequency Planning

Microwave Video Systems • 2011
Warren J. Parece 781-665-6600
Microwave Equipment Rental, Sales & Service

Middle Atlantic Products • 2005
David Amoscato 973-839-1011
Equipment, Mounting, Solutions

Moseley Associates Inc. • 1977
Bill Gould 805-968-9621 x785
Digital STLs for Radio and Television

MusicMaster • 2014
Shane Finch 352-351-3625
Advanced Music Scheduling Solutions

Nascar Productions • 2014
Abbey Kielcheski 704-348-7131
Live/Post Production Services

National Association of Broadcasters • 1981
Industry Trade Association 202-429-5340

National Football League • 1999
Ralph Beaver 813-282-8612
Game Day Coordination Operations

Nautel Inc. • 2002
Jeff Welton 877-662-8835
Radio Broadcast Transmitter Manufacturer

Nemal Electronics Int'l Inc. • 2011
Benjamin L. Nemser 305-899-0900
Cables, Connectors, Assemblies and Fiber Optic

Neutrik USA, Inc. • 2012
Kathy Hall 704-972-3050
Ruggedized Optical Fiber Systems

NPR Distribution Services • 2019
Dan Riley 202-513-2624
Your Content Delivery Partners

Orban Labs, Inc. • 2011
Mike Pappas 480-403-8300
Audio Processing AMFMTV

Pasternack Enterprises • 2001
Christine Hammond 949-261-1920
Coax & Fiber Products

Potomac Instruments • 1978
Zachary Babendreier 301-696-5550
RF Measurement Equipment Manufacturer

ProAudio.com- A Crouse-Kimzey Co. • 2008
Mark Bradford 800-433-2105 x560
Proaudio Broadcast Equipment Distributor

Propagation Systems Inc. - PSI • 2010
Doug Ross 814-472-5540
Quality Broadcast Antenna Systems

QCommunications • 2019
Tony zumMallen 816-729-1177
Services Behind the Scenes

Quintech Electronics and Communications Inc. • 2002
James Herbstritt 724-349-1412
State-of-the-art RF Hardware Solutions

QVC • 2011
Kevin Wainwright 484-701-3431
Multimedia Retailer

Radio Frequency Systems • 2015
Eddy Vanderkerken 214-471-6693
Broadcast Infratructure Manufacturer

RF Specialties Group • 2008
www.rfspecialties.com
Everything from the Microphone to the Antenna

Rohde & Schwarz • 2003
Walt Gumbert 724-693-8171
Transmitters, Test & Measurement, Video

Ross Video Ltd. • 2000
Jared Schatz 613-228-0688
Manufacturer, Television Broadcast Equipment

Sage Alerting Systems Inc. • 2010
Harold Price 914-872-4069 x113
Emergency Alert Systems Products

SCMS Inc. • 2000
Bob Cauthen 800-438-6040
Audio and RF Broadcast Equipment Supplier

Seacomm Erectors, Inc. • 1997
John Breckenridge 360-793-6564
Tower/Antenna Erections

SEG • 2014
Chris Childs 913-324-6004
Supply Chain Products and Services

Shively Labs • 1996
Dale Ladner 888-SHIVELY
FM Antennas & Combiners

Shure Incorporated • 2012
Bill Ostry 847-600-6282
Microphones, Wireless Systems, Headsets

Sierra Automated Systems and Eng. Inc. • 2011
Al Salci 818-840-6749
Routers, Mixers, Consoles, Intercoms

Silvus Technologies • 2015
Mark Tommey 617-816-6588
Wireless Video Mesh Network

Solid State Logic • 2014
Steve Zaretsky 212-315-1111
Digital Audio Mixing Consoles, Networked Audio Routing, Embedded Audio Solutions

Staco Energy Products Co. • 2010
Paul Heiligenberg 937-253-1191 x128
Manufacturer of Voltage Regulators, UPS

Sutro Tower Inc. • 1989
Eric Dausman 415-681-8850
Broadcast Tower Leasing

Technical Broadcast Solutions, Inc. • 2018
Robert Russell 215-983-0855
Engineering and Consulting Services

Tektronix Inc. • 1977
Jim Lang 503-627-2980
Video Test & Measurement, Equipment Manufacturer

Teledyne e2v US • 1997
Dominic Piarulli 845-578-6137
Electronic Components

Televes USA, LLC • 2018
Andy Ruffin 937-475-7255
ATSC 3.0 Transmission Solutions, Antennas

Telos Systems/Omnia/Axia • 2003
John Bisset 216-241-7225
Telos Systems Talk-Show Systems

Teradek • 2011
Jon Landman 949-743-5783
Camera-top ENG Solutions

Tieline The Codec Company • 2003
Dawn Shewmaker or Jacob Daniluck 317-845-8000
Audio Codec Manufacturer

Unimar Inc. • 2001
Thad Fink 315-699-4400, 813-943-4322
Tower Obstruction Lighting Designer, Manufacturer, Distributor

Wheatstone • 2010
Jay Tyler 252-638-7000
IP Consoles, Routers & Processors

Wireless Infrastructure Services • 2006
Travis Donahue 951-371-4900
Repacking Services - West Coast Turnkey Services

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Member Spotlight: Zhulieta Ibisheva

Member Stats

SBE Member Since: 2017
Chapter: 63 Hawaii
Employer: ION Media Networks
Position: Station Technician
Location: Honolulu, HI
I'm Best Known For: A positive attitude and unyielding desire to complete the task at hand.

Q. *What do you value most about your SBE involvement?*

A. The educational content is phenomenal, but the ability to connect and network with other engineers is priceless.

Q. *What got you started in broadcast engineering?*

A. I wanted to work in television since I was 7. I first studied engineering in college, but then transferred schools to obtain a degree in filmmaking and broadcasting. A month before graduating, ION TV hired me as a part-time MCO, and I've been in love with broadcasting ever since.

Zhulieta at Twelve Apostles, Great Ocean Road, Australia

Q. *Who do you consider to be a mentor?*

A. Rich Grissom was my chief at ION TV. I started following him around and learned a great deal about engineering. But truly every person I've met throughout my career has taught me something.

Q. *What do you like most about your job?*

A. The industry is evolving so quickly that you learn something new every day.

Q. *When I'm not working...*

A. ...I travel, scuba dive, hike, travel some more.

Q. *What's your favorite gadget?*

A. I'm fascinated with RFID and one of the coolest gadgets as of late is the Smart Nail, which can be used as an elevator card, parking card, membership card, and more.

Q. *Do you have a nickname?*

A. A unique name prompts creative nicknames. I once tried to count them all, but lost track after 28. My favorite one is Zhu Zhu.

Candidates Announced for Upcoming SBE Election

Each year the SBE membership elects members to serve on the national Board of Directors; the governing body of the society. This includes all four officers for one-year terms and half the 12 directors for two-year terms.

Additional candidates may be nominated by the membership. Any eligible member proposed by at least ten members to the national Secretary by July 12 will be added to the ballot. The election will take place July 26 through August 28. Balloting will be via the election website, except for those members who have opted out of electronic voting this year or who have not provided the SBE national office with their email address. They will receive their ballots through the mail.

For more information about candidacy, contact Secretary Kevin Trueblood at ktrueblood@sbe.org or Executive Director John Poray at jporay@sbe.org or 317-846-9000.

Nominations Committee Candidate Slate

Officers:

President: Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE; Chapter 99 Bryan, TX, College Station, TX
Vice President: Andrea Cummis, CBT, CTO; Chapter 15 New York; Bethlehem, PA
Secretary: Kevin Trueblood, CBRE, CBNT; Chapter 90 Southwest Florida; Estero, FL
Treasurer: Ted Hand, CPBE, 8-VSB, AMD, DRB; Chapter 45 Charlotte; Charlotte, NC

Directors (top six vote getters will be elected):
Dave Bialik, CBT; Chapter 15 New York; New City, NY
Mark Fehlig, PE, CPBE, 8-VSB; Chapter 40 San Francisco; Walnut Creek, CA
Jeff Juniet, CBTE; Chapter 42 Central Florida; Casselberry, FL
Ched Keiler, CPBE, 8-VSB, CBNE; Chapter 53 South Florida; Ft. Lauderdale, FL
Geary Morrill, CPBE, CBNE; Chapter 91 Central Michigan; Saginaw, MI
Jason Ornellas, CBRE, CRO; Chapter 43 Sacramento; Sacramento, CA
Chris Tarr, CSRE, AMD, DRB, CBNE; Chapter 28 Milwaukee; Milwaukee, WI
Daniel N. Whealy, CBTE; Chapter 96 Rockford; Sumner, IA
Randy Woods, CBNE; Chapter 42 Central Florida; Apopka, FL

Cummis

Trueblood

Hand

Pecena

Bialik

Fehlig

Juniet

Keiler

Morrill

Ornellas

Tarr

Whealy

Woods

WELCOME TO THE SBE

NEW MEMBERS

Ricardo F. Alfaro Ramos - Alexandria, VA
Audrey Alley - Warrensburg, MO
Andre Anderson - San Francisco, CA
Danilo P. Anoos - Odessa, TX
Benjamin Aubin - Holland, MI
Reinaldo Ayala - Hialeah, FL
Scott C. Baker - Rochester, NY
Derek Batterham - Tucson, AZ
Gregory T. Beery - West Hills, CA
Kevin F. Birch - Escondido, CA
George J. Boes - Lafayette, IN
Ken P. Borja - Dededo, GU
Nicholas S. Borzych - South Bend, IN
Michelle Bradley - Mardela Springs, MD
Travis Brigman - Nashville, TN
Scott A. Burch - Sugar Land, TX
Kolby K. Burke - Edmonds, WA
Kelly Campbell - Lexington, KY
James D. Cash - Harleysville, PA
Oliver Cayetano - Noblesville, IN
Eric S. Chin - Kirkland, WA
James B. Claassen - Meade, KS
Matthew T. Converse - Antigo, WI
Stacy Copeland - Nederland, TX
Jaime Cordova - Tucson, AZ
Thomas D. Craig - Westminster, CO
Corey Ditinno - Tampa, FL
Jeremy Dral - Saginaw, MI
David A. Duca - Oconto, WI
Martin J. Dzurenko - Richardson, TX
Jordan T. Ellis - Columbia, SC
Eduardo Evertz - Santo Domingo, Dominican Republic
Ponziano Ferraraccio - Albuquerque, NM
Garry T. Franklin - Urbandale, IA
Ontario Gaines - Beaumont, TX
Paul Gapinski - Denver, CO
Randy L. Gardner - Nashville, TN
Alexis N. Grazdan - Oklahoma City, OK
Clay Grigsba - Broken Arrow, OK
Francisco J. Guerra - Miami, FL
Emmanuel Gutierrez - Las Cruces, NM
Imran Haider - Erbil, Kurdistan Region, Iraq
Charlie Halley - Sarasota, FL
Derik W. Hancock - Owensboro, KY
Richard W. Hanovich, Jr. - Eastpointe, MI
Kenneth Harl - Columbus, IN
Blake G. Haynes - Ridgeland, MS
Jose M. Herrera - Brooklyn, NY
Kendell Hills - Raleigh, NC
Austin Hodges - Bellevue, WA
Christopher Hoffman - San Diego, CA
Sam Holaday - Bowling Green, KY
Herman W. Horkey - Columbus, OH
Warren Hough - Midwest City, OK
Eric Hunter - Boise, ID
Tim Hurley - Menands, NY
Jean Rony Icena - Petionville, Haiti
Carl E. Johnson - Albuquerque, NM
Russ Johnson - Smyrna, TN
Eric D. Johnson - Green Bay, WI
Chad M. Kelley - Lake Forest, CA
Joseph E. Kloss - Centennial, CO
Daniel W. Kulin - Fort Worth, TX
Darren A. LaGroe - Los Angeles, CA
Gary C. Liebling - Lawrence, KS
Arnold Lopez - Austin, TX
John Lucchese - Sun Valley, CA
Joshua Lynch - Millsboro, DE
Saliu I. Macaulay - Ikoyi, Lagos, Nigeria
Matt Manix - Murfreesboro, TN
David S. May - Kelly, NC
William M. Meyer - Clearwater, FL
April Michaels - Atlanta, GA
Danny Miller - Indianapolis, IN
Rachel Moore - Thunderbolt, GA
Harold Mora - Odessa, TX
Jose Moreno - Tucson, AZ
Eugene Negron - Centennial, CO
Joshua M. Nelms - Warrior, AL
Maciej Ochman - North Potomac, MD
Jeremy A. Ohmes - Clarksville, TN
Matt A. Osman - Cypress, CA
Anna C. Patterson - Los Angeles, CA
Stephen K. Pavlik - Austin, TX
Eric G. Pfeiffer - Red Lion, PA
Michael Prestridge - Olive Branch, MS
Paul Pritchett - Tulsa, OK
Danny Rahlmann - Weldon Spring, MO
Joseph Michael J. Remo - Tampa, FL
Elliott L. Rice - Sacramento, CA
Aaron E. Rigby - Chippewa Falls, WI
Kelly Ann Rittenhouse - Holbrook, NY
Lawrence C. Roberts - Silsbee, TX
Brad Roybal - Idaho Falls, ID
John Rudolph - St. Louis, MO
Rick Ruhl - Rialto, CA
Gary B. Saber - Raleigh, NC
Austin T. Sego - White Bear Lake, MN
Matthew Sharison - Chittenango, NY
Kyle Shepperd - Meridian, MS
Thomas Skinner - Broomfield, CO
Clark R. Smith - Union, KY
Steven N. Smith - Long Beach, CA
Robert Sobol - Hernando, FL USA
Edgar J. Socias Salcedo - San Juan, PR
Stephen M. Somerville - Tucson, AZ
David J. Sourdis - Greenville, NC
Billy D. Steen - Kosciusko, MS
George A. Thomas - Ridgeland, MS
Timothy D. Thompson - Myrtle Beach, SC
Todd Tomplait - Beaumont, TX
Nammy K. Tran - Shoreline, WA
Michael Travis - Prairie Du Sac, WI
Kevin Tucker - Chapel Hill, NC
Jaime L. Walters - Charlotte, NC
Stephen P. Wilkinson - Seven Hills, NSW, Australia
Josh Winstead - Denver, CO
David L. Yerzley - Burbank, CA
Scott L. Youngblood - Fairfax, VA
Angela Yousse - Spring, TX

NEW STUDENT MEMBERS

Ho Fung Chan - Kowloon, Hong Kong
Chun Yeung Chan - Shatin, NT, Hong Kong
Ma Chung Chan - Hong Kong
Hang Yu Cheung - Kowloon, Hong Kong
Cheuk Hong Chui - Tai Wo, NT, Hong Kong
Siu Chung Chung - Hong Kong
Yiu Tung Ho - Hong Kong
Ping Yuk Lam - Hong Kong
Ka Ki Lam - Hong Kong
Chun Leung Lau - Sheung Shui, NT, Hong Kong
Lap Ming Leung - Sheung Shui, NT, Hong Kong
Sze Chun Leung - Kowloon Bay, Kowloon, Hong Kong
Leung Tim Li - Hong Kong
Yun Wa Li - Sheung Shui, NT, Hong Kong
Hon Chuen Mark - K.T., Kowloon, Hong Kong
Ka Shing Ng - Shatin, NT, Hong Kong
Jia Ming Ou - Hong Kong
Brian Proksch - Montgomery, TX
Jon Sanelli - Albertson, NY
Yau Tung Shum - N.T., Hong Kong
Tsun Hung Siu - Tin Shui Wai, Hong Kong
Kwan Ho Tam - Ngau Tau Kok, Hong Kong
Kam San Tang - Hong Kong
Tsz Hin Wong - Tai Po, NT, Hong Kong
Chi Wai Yiu - Tai Wai, NT, Hong Kong
Ka Him Yung - Shutin, Hong Kong

NEW ASSOCIATE MEMBERS

Brenda K. Bratton - Colorado Springs, CO
Eric D. Castagne - Orlando, FL
Levi A. Malan - Odin, IL
Thomas H. Tasker - Boylston, MA

RETURNING MEMBERS

Bobby D. Allen, Jr. - Memphis, TN
Timothy J. Annett - Topeka, KS
Quay F. Austin - Charlotte, TN
James Blackford - Evansville, IN
David E. Budwash - Atlanta, GA
John B. Cleary - Rome, GA
Brent Colflesh - Camp Hill, PA
Thomas P. Conroy - Aberdeen, MD
Richard R. Coutee - Shreveport, LA
Steven C. Densmore - Elkridge, MD
Brett R. Erieg - Richmond Hill, GA
Douglas Houston - Centennial, CO
Lowell E. Kiesow - Tacoma, WA
Robert D. LaFore - Acworth, GA
Prentis W. Laird - Springfield, TN
Peter C. Lundquist - Mountlake Terrace, WA
Timothy A. Meier - Bakersfield, CA
Jim O'Brien - Agoura Hills, CA
Daniel T. Olewine - Fairfax, VA
David C. Oliver - Grand Haven, MI
Richard A. Paleski - West Paterson, NJ
Adam Paul - Savannah, GA
Jan E. Pazral - Pittsford, NY
Gary M. Reed - Tulsa, OK
Matthew A. Reidy - Cleveland, OH
Joel M. Robertson - Pearl, MS
Daniel R. Rowland - Centennial, CO
Nathan Russell - Indianapolis, IN
Augustine C. Saydee - Laurel, PA
Eric E. Schultz - Centennial, CO
Charles B. Scudder - Murfreesboro, TN
Kim L. Seelye - Tampa, FL
Mary A. Seidler - Portland, ME
Huascar P. Sousa - Santo Domingo, DN, Dominican Republic
Robert B. Venditti - Sacramento, CA
Scott D. Washburn - Carbondale, IL
Rakif J. Waters - Savannah, GA
Leonard W. Welch - College Station, TX
Steven M. West - Incline Village, NV
Jordan Williams - Conroe, TX
Jaclyn Wilson - Ocala, FL
James P. Wright - St. Louis, MO

RETURNING STUDENT MEMBERS

Chit Long Chan - Tsuen Wan, NT, Hong Kong
Wai Tat Mak - Tai Po, NT, Hong Kong
Anthony D. McCallum - Berkeley, CA
Ho Kit Wong - Sha Tin, NT, Hong Kong

Society of Broadcast Engineers, Inc.

2018 Audited Financial Statements

Combined Statement of Assets, Liabilities* & Net Assets Dec. 31, 2018

ASSETS	
Cash & cash equivalents	$15,677
Investments	949,359
Property & Equipment, Net	19,975
Intangible Assets, Net	840
Total Assets:	$990,851
LIABILITIES and NET ASSETS	
Liabilities	$0
Net Assets:	$990,851
TOTAL LIABILITIES and NET ASSETS	$990,851

** CPA-conducted financial audit reflects modified cash accounting method. Investments are listed at market value.*

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2018 SBE Revenue & Expense Statement

INCOME:	
Membership Fees & Support	$385,072
National Meeting	29,979
Certification	76,590
Publications/Communications	44,628
Education Services	138,789
Spring Meeting Sponsorship	14,100
Net Realized/Unrealized Gain (Loss) from Investments	(19,834)
Miscellaneous Income	6,345
Total Income:	$675,669
EXPENSES:	
Program Services	$567,434
Management & General	232,709
Total Expenses:	$762,705
CHANGE IN NET ASSETS:	$(124,474)
NET ASSETS 12/31/2017	**$1,115,325**
NET ASSETS 12/31/2018	**$990,851**

2019 Ennes Workshops

Plan to attend one near you

Five SBE Ennes Workshops are on the calendar for 2019. Ennes Workshops were created to bring affordable education to SBE members locally. These programs feature multiple topics and speakers that provide television and radio engineers with the latest information in broadcast and media technology.

May 30 in El Paso, TX
Aug. 7 in Murfreesboro, TN
Sept. 28 in Atlanta, GA
Oct. 24 in Indianapolis
Nov. 8 in Lansing, MI

Information for these workshops is listed on the SBE website, or contact Education Director Cathy Orosz at 317-846-9000 or corosz@sbe.org.

sbe.org/education/wkshp

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Members On The Move

Chuck Kelly is VP market development TV for Elenos.

Clif Groth will be inducted into the Wisconsin Broadcasters Association Hall of Fame.

Gary Cavell and **Cindy Hutter Cavell** received the 2019 NAB Engineering Achievement Awards for radio and TV respectively.

Isaiah Chavez has been promoted to broadcast engineer at Home Shopping Network.

Frank Grundstein, CBRE, CBNT, is regional sales manager at Broadcast Electronics.

Ethan Miller is chief engineer at ION Media Networks, Utica, NY.

Have a new job? Received a promotion? Send your news to Chriss Scherer at cscherer@sbe.org.

MARK YOUR CALENDAR

S M T W T F S

Webinar: RF Power Measurement
online
June 12, 2019 — sbe.org/webinars

Webinar:ATSC 3.0 Networking Module 2: Ethernet Switching
online
June 26, 2019 — sbe.org/webinars

Webinar: ATSC 3.0 Networking Module 3: IP Routing
online
July 24, 2019 — sbe.org/webinars

SBE Certification Exams
Local Chapters
Aug. 2 - 12, 2019 — sbe.org/certification
Application deadline June 3

SBE National Meeting
Madison, WI
Oct. 15-16, 2019 — sbe.org

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