THE Signal
Bimonthly Publication of the Society of Broadcast Engineers

SBE
The Association for Broadcast and Multimedia Professionals

www.sbe.org
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SBE Planning Begins for 2022 NAB Show

The 2022 NAB Show, scheduled for April 23-27, is looking to return to an in-person event after two years. While the event is still two months away, you should include the SBE in your convention plans. Everyone spends some time on the exhibit floor, and you may attend some sessions after reviewing the program, but don't overlook the SBE activities as you set your calendar.

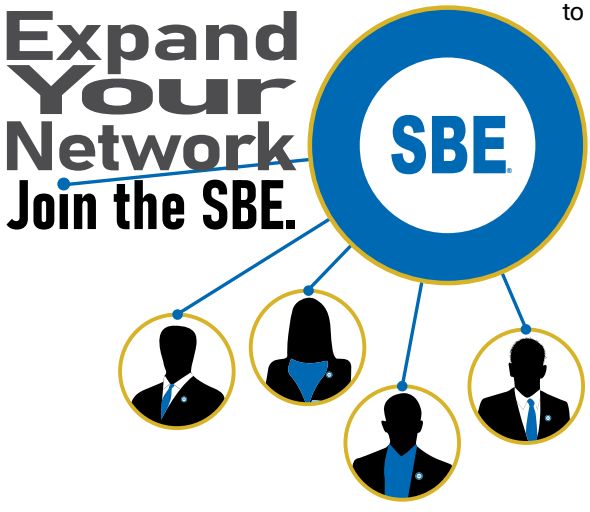
The SBE Ennes Workshop is the traditional kick-off for the convention. It's scheduled for April 23 as part of the Broadcast Engineering and IT Conference sessions. The SBE Ennes Workshop always draws large crowds every year. Convention registration is required to attend the SBE Ennes Workshop.

The highlight for the SBE presence at the convention is the annual SBE Membership Meeting, which will be followed by a reception. With the NAB adjusting the convention schedule to reduce the convention by one day, the Membership Meeting will be held on Monday, April 25. Watch the SBE website or stop at the SBE booth on-site for the room location. The Membership Meeting provides up-to-date information on all the SBE activities and programs, and it includes a milestone-service recognition of SBE chapter certification chairs,

see NAB SHOW, p. 9

SBE Membership Drive Begins in March

At some point in your career, you saw the value of joining the Society of Broadcast Engineers. Now is the perfect time to share that value and recruit a new member during the annual SBE Membership Drive, which begins March 1. The theme of the drive this year is "Expand Your Network."



Talk to your colleagues who are not familiar with the SBE, but could benefit from membership. When you recruit a new member, you might receive some personal benefit in addition to helping the society grow. While anyone can join the SBE at any time during the year, there's an added benefit to joining during the SBE Membership Drive, held from March 1 to May 31.

If you recruit a new member during the Drive and your name is on the sponsor's line of the membership application, your name will be entered into the member drive drawing for prizes donated from our sustaining members. If you recruit a new sustaining member, you'll earn five entries into the prize drawing. Prizes include logo items, books and more from the SBE and many sustaining members. The grand prize is airfare and two nights' hotel stay to attend the SBE National Meeting, planned to be held this fall during the SBE22 Broadcast & Technology Expo in Syracuse, NY, Sept. 29, 2022.

As a recruiter, for every new member you sponsor you will receive $5 off your 2023 dues (up to $25). Need more incentive? If you recruit three or more new members, your 2023 membership will be upgraded to SBE MemberPlus.

Start recruiting now, and make sure your recruits list your name on their SBE membership application so you get the credit.

IN THIS ISSUE

February 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 ▼ Hawaii Alaska	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
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27	28					

Contact Nick for COP quote Nick@qcomm.tv

March 2022

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Contact Phil & Schedule CV Phil@qcomm.tv

April 2022

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3				7	8	9
10	1			14	15	16
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24	25	26	27	28	29	30

Contact Kris for CBAND install Kris@qcomm.tv

May 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8 HAPPY MOTHER'S DAY	9	10	11	12	13	14
15	16	17	18	19 ▬	20 ▬	21 ▬
22 ▬	23	24	25	26	27	28
29	30	31				

Upcoming Events:

★ REPACK Deadline for Phases 6-10

◆ Nate Unite 2022

● Great Lakes Media Show

▮ NAB 2022

▬ NTA annual meeting & Convention

QCOMMUNICATIONS

Broadcast (AM/FM) Radio License renewal/expiration dates by STATE:

▲ Renewals must be filed

▼ License expires

Repack deadline is approaching quick!
Connect with us and learn how we can help!
Nick@qcomm.tv

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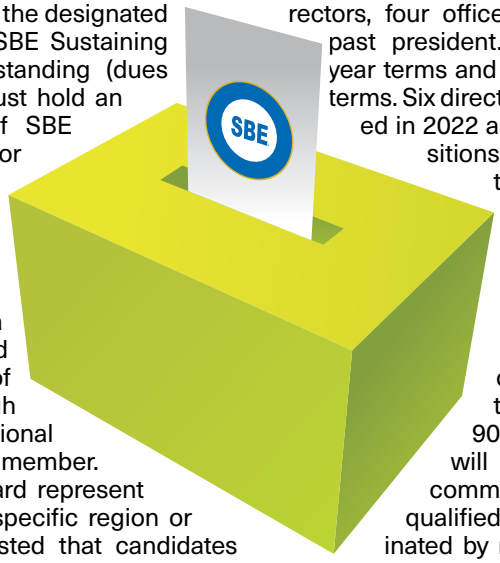
SBE National Office
317-846-9000 www.sbe.org

Candidates Sought for SBE Election

The annual election of officers and directors to the national SBE Board of Directors will take place this summer. The SBE Nominations Committee seeks qualified candidates who are voting members (Member, Senior, Fellow or the designated representative of a SBE Sustaining Member) in good standing (dues paid). Candidates must hold an engineering level of SBE certification (CBT or higher or CBNE) and maintain it the entire duration of service on the Board, if elected. Candidates should have a desire to serve and lead as a member of the board and through service as a national committee chair or member. Members of the Board represent all members, not a specific region or chapter. It is suggested that candidates have previous experience as a leader in his or her local chapter, or other volunteer leadership experience, prior to running for the national SBE Board, but this is not required.



Members of the Board are expected to attend two regularly called meetings each year: in the spring, held during the annual NAB Show, and in the fall, at the annual SBE National Meeting. Other meetings may be called via conference call during the year.

The national SBE board includes 12 directors, four officers and the immediate past president. Directors serve two-year terms and officers serve one-year terms. Six director seats will be contested in 2022 as will all four officer positions. The SBE By-laws limit the number of terms for elected members of the Board.

If interested, contact SBE Nominations Committee Chair Roz Clark at roz.clark@cmg.com or via the SBE National Office at 317-846-9000. A nomination slate will be assembled by the committee by April 19. Other qualified members may be nominated by members no later than July 8.

The election runs from July 15 to Aug. 17. Those elected will be installed at the SBE National Meeting, held during the SBE22 Broadcast & Technology Expo in Syracuse, Sept. 29.

Certification Question

FCC rules require an operator's prime responsibility to be:

Answer on page 6

A. to get programs on the air.
B. to make station identifications.
C. to operate transmitter.
D. up to station management because it is not specified in the FCC rules.

SBE CERTIFIED

LETTER FROM THE PRESIDENT

By Andrea Cummis, CBT, CTO
SBE President
acummis@sbe.org

Datacasting Updated

In December, I watched a terrific datacasting presentation from Erik Langner CEO of Information Equity Initiative that was part of the The Public Media Venture Group CTO meeting. From that, I asked Erik for more information to share with SBE members in my column.

Datacasting is the broadcasting of data over a wide area via radio waves. Datacasting technology has existed for decades, used to deliver encrypted and targetable public safety data to police, fire and other first responders. But despite its promise, it has never scaled to become a widely used service. With advances in cloud infrastructure and ATSC 3.0, and the increasing role that broadcast spectrum can play in supporting the country's communications needs, that is in the process of changing. Recently there are many television stations launching Datacasting to deliver educational materials to students without internet access to access on their Wi-Fi-enabled devices. Many manufacturers and technology groups are providing the technology for the new version of datacasting, including S&T, Triveni, Silicon Dust, and West Pond, among others. One group working on delivering education related materials over the air, Information Equity Initiative (IEI), a nonprofit organization, was recently formed by PBS stations WITF, WLVT and SCETV to help bridge the digital divide by combining 50 year-old, hardened and nearly ubiquitous broadcast infrastructure with cutting-edge software and cloud technology. A brief explainer video of IEI's platform can be watched at vimeo.com/624951180/74d7cad049.

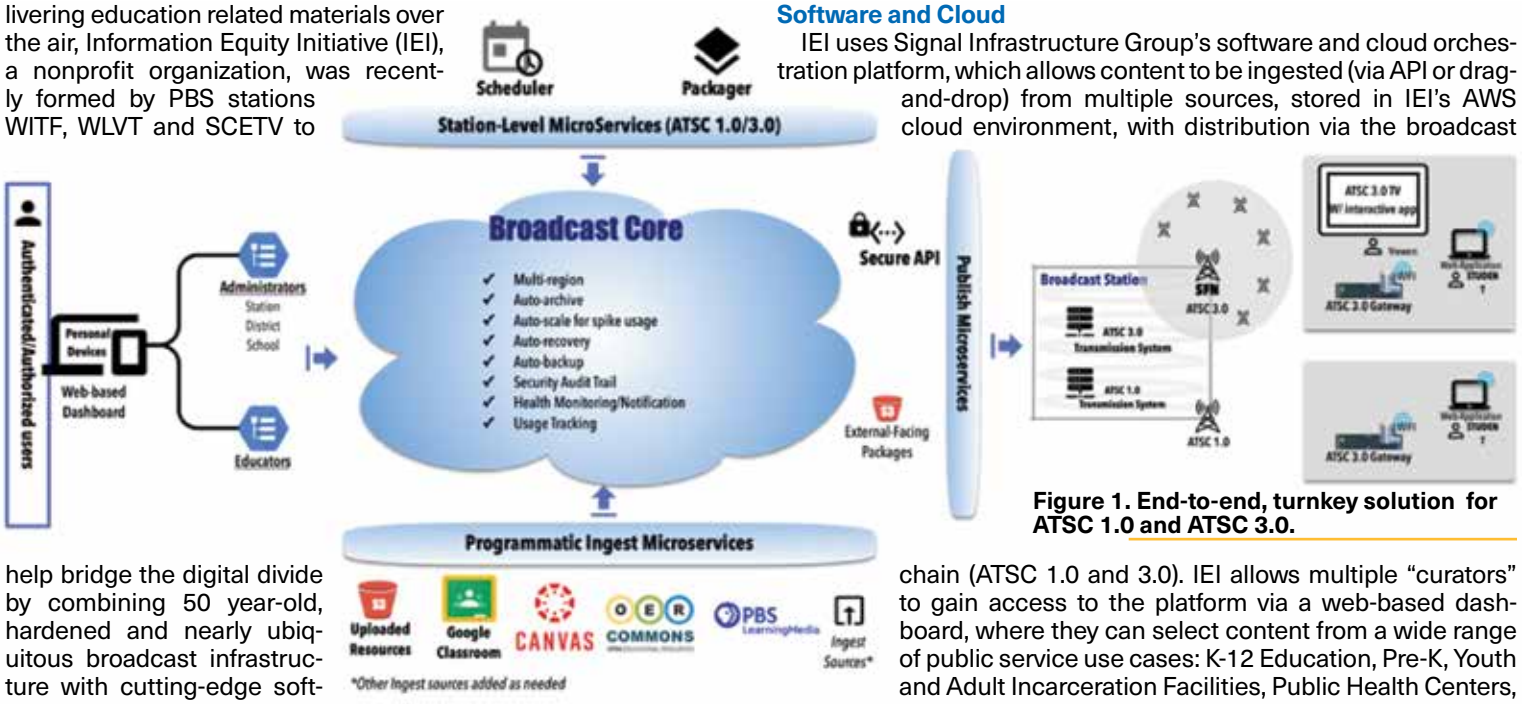


Figure 1. End-to-end, turnkey solution for ATSC 1.0 and ATSC 3.0.

Hardware

When designing its platform, IEI was intentional in building a system that is hardware agnostic. By allowing for interoperability, it increases competition amongst vendors to help drive down costs and to improve feature sets. This also means a greater number of use cases can be delivered across various types of equipment stacks (see below). At the station, a datacast or signaling server is installed, and IEI's service connects via the internet. Most stations are currently dedicating between one and two Mbps of spectral capacity to invigorate IEI's service.

In the home, IEI has spec'd home gateways that have 128 GB of storage capacity, connect to a window or roof-mounted antenna, and create a hotspot that allows up to eight concurrent users to connect via any Wi-Fi-enabled device. Because this is broadcast, all content is distributed across the DMA. However, IEI's architecture has created significant storage efficiencies so that content is only stored on the appropriate devices based on the users and use case. So instead of 128 GB of storage being available across an entire DMA (if all content is stored on all devices), this means that each home will have access to 128 GB of individualized content specifically curated for their needs.

In larger facilities, such as a prison or a school in a developing country, IEI is using a larger receive device and router to accommodate hundreds of concurrent users across a wider wi-fi radius. And in early 2022, IEI will be deploying touch screen kiosks to over 300 public health facilities, which will provide patients with access to a content-driven menu user experience within these facilities. No internet is required at the edge for any of IEI's use cases.

Software and Cloud

IEI uses Signal Infrastructure Group's software and cloud orchestration platform, which allows content to be ingested (via API or drag-and-drop) from multiple sources, stored in IEI's AWS cloud environment, with distribution via the broadcast chain (ATSC 1.0 and 3.0). IEI allows multiple "curators" to gain access to the platform via a web-based dashboard, where they can select content from a wide range of public service use cases: K-12 Education, Pre-K, Youth and Adult Incarceration Facilities, Public Health Centers, News and Information, and Elderly Care, to name a few. Using a simple drag-and-drop interface, a curator is able to add its own files, or select from IEI's growing cloud-based library of content when curating a service for the intended audiences. These videos, html files, and other pieces of content are then transmitted over the broadcast chain (ATSC 1.0 or ATSC 3.), received by the equipment described above, and then accessible on any Wi-Fi enabled device: laptop, tablet, smartphone or smart television.

IEI's algorithm allows new content to be prioritized over older content. If a home gateway is unplugged when the first distribution takes place (at a higher speed), that content will remain on the distribution carrousel so that there will be additional opportunities for reception. And for IEI's public safety use case, emergency commu-

see PRESIDENT, p. 11

EDUCATION UPDATE

By Geary Morrill, CPBE, AMD, CBNE
Chair, SBE Education Committee
gmorrill@sbe.org

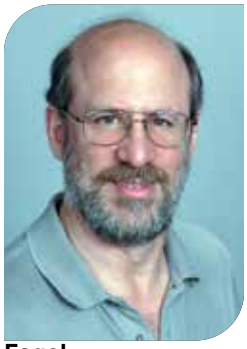
Troubleshooting: More Than What You Think

One of the most intimidating tasks we face is getting the note or call that something isn't working as it should. When that means you're off the air, the angst can be palpable. If you're in a new situation it can be overwhelming, as you're just getting familiar with a technical facility. Fortunately, that doesn't mean you can't be an effective troubleshooter.

Besides technical expertise (or hard skills) a troubleshooter often calls on interpersonal (soft) skills as well. Use of both can often mean the difference between success and failure.

We'll explore effective troubleshooting in an introductory webinar presented by Dan Fogel, the founder and former CEO of DNF Controls. DNF Controls (dnfcontrols.com) has provided products and systems to the television broadcast and production industries for the past 30+ years. Dan's background also includes work with live concerts, music recording, audio post-production, and commercial two-way radio systems. He has taught broadcast industry professionals how to use troubleshooting techniques to solve problems, create solutions, create products, as well as help bridge the human-to-human, and human-to-machine divides by thinking through problems rather than reacting to them.

Because this is a new area for our Webinars by SBE offerings, I recently spoke with Dan to get a feel for what you'll learn from this session.



Fogel

Dan: I was talking to one of the local community colleges in Southern California recently, and they do a survey with employers annually. The biggest concern their employers have is that these graduates don't know how to problem solve. They know how to do math, but they can't solve a problem in math. Or, their auto guys know how to fix transmissions but what happens if the problem is in the entertainment system. Now what do you do?

People are used to working within a silo, but the minute they leave their comfort area, they don't know what to do. I've been putting together a very simple approach to understanding some of the key aspects of troubleshooting.

Geary: Does the average person see troubleshooting the way that you see it?

Dan: No. Most people see troubleshooting as fixing a thing. They see it as something that only requires special skills and advanced technical knowledge.

Geary: But there's another important part in the process?

Dan: I moved from New York to LA years back after getting married, and I went to work in an audio post place, working with mixing engineers on solving issues. I would look at their trouble reports and I'd see NT written on the bottom and I asked "what does that mean"? I was told that means not true. Someone was taking their trouble reports, and if they couldn't replicate the issue they decided they were not true.

My third day there I went into a mixing room with a report of a problem. The mixing engineer asks "What are you doing here? I said "Well, you have a problem you want repaired right"? He said, "Yeah", so I said "Tell me about it. I read what you wrote, so give me some help so I can help you."

I was just dumbfounded. I was watching how the other maintenance guys dealt with things. Instead of a cooperative relationship, it was a hostile antagonistic relationship. How do you troubleshoot when the first thing you do is irritate the people that are counting on you to help them; and might be able to give you some information? It was just amazing.

If you just spend five minutes talking with someone, give them respect and the benefit of the doubt, they can demonstrate their problem or you can help them understand how it works. Perhaps they're making an assumption incorrectly. And they work with you, give and take, and it's a great thing. But not everyone looks at it that way.

Geary: I've noticed folks tend to gravitate towards the technical side of broadcasting because they like things more than they like people. Does that make it a challenge for them when they have to involve people to make things work?

Dan: Yeah, we would have fewer problems in the studio if we didn't have to deal with recording engineers [laughs]. You know, part of it is that [technical folks] are used to thinking in a certain way, and creative people are used to thinking a different way. Getting them to communicate is a challenge. They're not really taught how. It's not natural [for them].

Dan will also provide insights on thought processes required for effective troubleshooting, including how to be successful when things seem to be going wrong in bunches. Register for the Webinars by SBE *Troubleshooting: It May Be More Than What You Think*. It will be presented live on February 24.

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.

Education Almanac

Webinars by SBE

February 17: Staying Compliant: Lighting Considerations for Your Tower (A free-to-anyone webinar)

February 24: Introduction to Successful Troubleshooting

sbe.org/webinars

Leadership Development Course

August 3-5: Atlanta

sbe.org/ldc

SBE Ennes Workshops

April 23: 2022 NAB Show

Contact the SBE to arrange an SBE Ennes Workshop in your area.

sbe.org/ennes_workshop

CERTIFICATION UPDATE

By Doug Garlinger, CPBE, 8-VSB, ATSC3, CBNE
Garlinger Technical Services, LLC
SBE Certification Committee Member
dgarlinger@sbe.org

ATSC3 Specialist Certification

The new ATSC 3.0 system will eventually replace ATSC 1.0. It will allow broadcasters to offer new services to viewers. It is more than "NextGen TV," it is the "Next Generation Broadcasting." The SBE offers webinars that give an overview of the ATSC 3.0 system and an understanding of how the new system will work. ATSC 3.0 was designed to be an adaptable data/IP platform as new technology and the new revenue services are created. The SBE offers the ATSC3 Specialist Certification, and now would be a good time to think about obtaining it.

ATSC 3.0 is being actively deployed around the nation. Approximately 45 markets are operational, and 50 more have announced plans to do so in 2022. At the end of 2021, approximately 185 TV stations will have deployed ATSC 3.0. Follow the link below to see a list of deployed and planned stations. Approximately 35% of American households are reached by ATSC 3.0. There are dozens of ATSC 3.0 receiver models available from Samsung, LG and Sony as well decoders, like those from Silicon Dust.

Pearl TV publishes the *NextGen TV Host Station Manual*, which features the Phoenix, AZ, test bed model. Be sure to look for the most current Version 11. This manual provides many of the basic operational principles for how to successfully transition to ATSC3.0. The Pearl TV group membership includes eight of the largest broadcast companies in America.

Any broadcaster can transition to ATSC3.0 if they have two stations in the same market, or by cooperating with competitors in the same market. Typically, a market will designate a host station's transmitter that will carry four ATSC3.0 stations in that market.

LINKS

A list of deployed and planned ATSC 3.0 stations
atsc.org/nextgen-tv/deployments

NextGen TV Host Station Manual
pearltv.com/station-resources

BitPath
bitpath.com

For example, I live in Indianapolis, the home of the SBE National Office. On Aug. 10, 2021, four network stations owned by Nexstar Media Group, Inc., E.W. Scripps Company and Tegna, Inc., all combined to broadcast ATSC 3.0 on WTTK on DT Channel 15. This single transmitter broadcasts WTTV CBS Channel 4, WRTV ABC Channel 6, WTHR NBC Channel 13 and WXIN Fox Channel 59. This required a lot of cooperation between competitors in the same market.

This transition project was managed by BitPath, which works closely with all markets and broadcast groups. BitPath is supported by the Sinclair Broadcast Group and Nexstar Media Group to accelerate implementation of the ATSC 3.0 for their stations. In Indianapolis, some ATSC 1.0 sub-channels were relocated from the WTTK Nexstar transmitter to a competitor's ATSC 1.0 transmitter. Viewers must rescan their channels to retain their previous ATSC1.0 sub-channels.

Greater capability

ATSC 3.0 can be used for audio and data transmission as well as video. BitPath is building the nation's first dedicated broadcast data network to provide innovative new wireless services at a fraction of the cost of cellular systems.

Indiana currently has more ATSC 3.0 receivers than any other state. Many of them are dual ATSC 1.0 and ATSC 3.0, and they receive data, not television. It is an Educast system with 128 GB of storage.

Existing ATSC 1.0 transmitters use 8-VSB modulation (Vestigial Sideband Modulation Suppressed Carrier). ATSC 3.0 transmitters use OFDM (Orthogonal Frequency Division Multiplexing). This system is very similar to the DVB-T (Digital Video Broadcasting - Terrestrial) system used in Europe. An existing ATSC 1.0 transmitter has a crest factor of 6.2 dB, while an ATSC3.0 transmitter has an 8 to 10 dB crest factor. This means that the rated power of an existing transmitter may have to be recalculated for ATSC 3.0.

When ATSC 1.0 8-VSB was adopted, there was little emphasis on being able to receive on a mobile device. ATSC 3.0 reception is more robust in a mobile environment when an appropriate mod-cod (modulation-coding) scheme is implemented. ATSC 3.0 also can be used in a single frequency network (SFN), allowing a market to place additional transmitters on the same channel around the market to improve reception in hilly areas and downtown areas.

One interesting capability of ATSC 3.0 (of many) is Dynamic Ad Insertion. The Broadcaster Application (BA) and the viewer's receiver can support personalized client-side ad insertion. The viewer's smart TV may contain a cache system. The system can control the pre-caching of appropriate ads based on the viewer's preference, past viewing, cookies, etc. and then execute a seamless splice of the replacement ad into the broadcast stream for that viewer.

For a practical example of Direct Ad Insertion, Indiana has nine U.S. Congressional Districts; six of them are reached by the Indianapolis host station's transmitter. A candidate running in one district has no need to place an ad in the other five districts. A Broadcaster Application can identify the locations of many receivers in a given district. The broadcaster can then sell time to the congressional candidates and that ad will appear in the appropriate congressional district, potentially allowing the broadcaster to sell the same 30-seconds of air time six times.

ATSC 3.0 is the future of television. Show your proficiency in the technology by applying to earn the SBE ATSC3 Specialist Certification.

In Memoriam
Terry Baun,
CPBE, AMD, CBNE
Member #3581
1947 - 2022
Fellow Member
Life Member
SBE President 1995-1997
Certification Committee Chair

CQ

Answer from page 3

The answer is D

A station operator can perform many tasks during a shift. This role should ne be confused with a station chief operator, who has several specific duties.

SBE Certification Achievements

CONGRATULATIONS

SBE CERTIFIED

CERTIFIED PROFESSIONAL BROADCAST ENGINEER (CBPE)

Willie Perez, Scarborough, ON

Applicants 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.

NOVEMBER EXAMS

Certified Broadcast Radio Engineer (CBRE)
Rachel Haggerty, Iselin, NJ - Chapter 15

Certified Broadcast Television Engineer (CBTE)
Jonathan Byrd, West Hartford, CT - Chapter 14

Certified Audio Engineer (CEA)
Jon Brunner, Van Nuys, CA - Chapter 47
Jweetu Pangani, South Bend, IN - Chapter 30

Certified Broadcast Networking Engineer (CBNE)
Adam Beason, Bedford, TX - Chapter 67
Danny Bravo, Riverside, CA - Chapter 131

Certified Broadcast Networking Technologist (CBNT)
William Bullock, Cincinnati, OH - Chapter 33
Andy Levers, Cincinnati, OH - Chapter 33
Jonathan Rickert, Post Falls, ID - Chapter 21
Christopher Wadeson, Fairbanks, AK - Chapter 89

Certified Broadcast Technologist (CBT)
Justin Bowker, Saginaw, MI - Chapter 91
Colin Darschewski, Glendale Heights, IL - Chapter 96
Skyler Miles, Alameda, CA - Chapter 40

Certified Radio Operator (CRO)
Ryan Butler, Vacaville, CA - Chapter 43
Michelle Davies, Raleigh, NC - Chapter 93
Al Dawson, Durham, NC - Chapter 93
Tre Distin, Tucson, AZ - Chapter 32
Aaron Jackson, Baltimore, MD - Chapter 46
Aaron Jesinger, Vacaville, CA - Chapter 43
Becky Meiers, Sitka, AK - Chapter 89

Certified Television Operator (CTO)
Aaron Jackson, Baltimore, MD - Chapter 46

CERTIFIED BY LICENSE

Certified Broadcast Technologist (CBT)
Greg Phillips, Alpharetta, GA - Chapter 5

CERTIFIED RADIO OPERATOR (CRO)

Beau Moore, Igancio, CO

East Valley Institute of Technology
Rileigh Badgett
Kyan Beaton
Justin Brooks
Tyler-Ann Bruce
Nicholas Campbell
Amelia Christian
Jade Corbett
Salmon Esparza
Jayden Falanco
Anthony Fazio
Cadence George
Sean Hegarty

East Valley Institute of Technology (cont.)
Hayden Hotchner-Syllaba
Angela James
Chole Krehbiel
Nicole Lisowski
Rafael Luna
John Mangrum
Gabriel Marciano
Isabelle Mendoza
Anthony Montoya
Enrique Munoz
Brandon Nutter
Grace O'Connor
Moriah Paynes
Jonas Pearson

East Valley Institute of Technology (cont.)
Lily Ramos Thompson
Reece Reichart
Christopher Rodrigeuz
Pedro Rojo Rodriguez
Michael Schmitt
Annaliese Stickle
Macy Taylor
Monika Villaneuva
Christopher Yee
St. Petersburg College
Ethan DeVore, St. Petersburg, FL
Dakota Hayes, St. Petersburg, FL
Christian Perez, Pinellas Park, FL
Rudolph Turner, St. Petersburg, FL

CERTIFIED TELEVISION OPERATOR (CTO)

Jesse Lovett, Oklahoma City, OK
Jennifer Seymore, Virginia Beach, VA
Friendswood High School
Jackson Austin

Luke Banfield
Luke Blain
Steven Faltysek
Erica Howard

Spencer Jones
Jonathan McCoy
Southeastern Community College
Ja'Nayah Frink, Chadbourn, NC

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.

Richard Parker, Tucson, AZ

Cedar Ridge High School
Caiden Anderson
Parker Broadway
James Cleveland
Craig Combee
Zelen Elwart

Cedar Ridge High School (cont.)
Seth Fuller
Joseph Granier
Jeffrey Hackworth
Lane Jackson
Jackson Holley
Ayden Lovell
Landin Majors

Cedar Ridge High School (cont.)
Isaac Olivares
Brant Ozbun
Jerrit Pectol
Daniel Shelton
Sebastian Spradling
Kira Valezquez

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 Broadcast Technologist (CBT)
Elizabeth Delaquess, Lincoln, NE - Chapter 74
Robert Dunn, River Ridge, LA - Chapter 72
David Festa, Wethersfield, CT - Chapter 14
Peter Fountain, Littleton, CO - Chapter 48
Chris Waldrup, Tracy City, TN - Chapter 103

Certified Radio Operator (CRO)
Elizabeth Delaquess, Lincoln, NE - Chapter 74
David Pelz, Yucaipa, CA

Got your SBE Certification pin?
sbe.org/pins

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 Senior Radio Engineer (CSRE) AM Directional Specialist (AMD)
John Justin Tucker, Charleston, SC - Chapter 107

Certified Broadcast Networking Engineer (CBNE)
Veronica Mazuca, San Marcos, TX - Chapter 79
Francis Obikoya, Riverton, WY - Chapter 129
John Justin Tucker, Charleston, SC - Chapter 107

Certified Broadcast Television Engineer (CBTE)
Veronica Mazuca, San Marcos, TX - Chapter 79
Francis Obikoya, Riverton, WY - Chapter 129
Scott Rohrer, Dayton, OH - Chapter 33

Certified Broadcast Television Engineer (CBTE) 8-VSB Specialist (8-VSB)
John Marcon, North Littlerock, AR

Certified Broadcast Radio Engineer (CBRE)
Vincent Fuhs, Sioux Falls, SD - Chapter 17

Certified Broadcast Networking Technologist (CBNT)
Ann Bruun, Tulsa, OK - Chapter 56
Marc Fenton, Moreno Valley, CA - Chapter 131
Vincent Fuhs, Sioux Falls, SD - Chapter 17
Aaron Kerr, Calgary, AB

Certified Broadcast Technologist (CBT)
Vincent Fuhs, Sioux Falls, SD - Chapter 17
Kevin Lapham, North Port, FL - Chapter 90
Michael Mick, Gurnee, IL - Chapter 26
Kevin Rotz, Tripoli, IA - Chapter 55

Certified Television Operator (CTO)
Marlo Crow, North Richland Hills, TX
Seth Morth, Lebanon, PA

SBE Compensation Survey Launches in April

On April 1, the SBE will post its seventh survey, and we need your help in gathering and supplying the most accurate information.

As an SBE member, you will have free access to the survey results as a member benefit. The survey will tell you if your earnings are in line with other professionals, based on information gathered from many sources.

The Compensation Survey provides practical information to SBE members about individual compensation (salary and benefits) based on multiple demographics. SBE members will have access to the full report. We need every SBE member to participate to provide a large sample base of responses. All responses are anonymous. The surveys continue to provide good information, and strong participation ensures that we can provide the most accurate and useful data. In April, look for a link to the survey in our regular email communications and on the SBE website. The results will be published in July.

The SBE Thanks These Sustaining Members for Sponsoring Events at the NAB Show

MEMBERSHIP MEETING SPONSOR

Blackmagicdesign

MEMBER RECEPTION GOLD SPONSOR

AMERICAN TOWER®

SBE BOOTH SPONSOR

Blackmagicdesign

LINKUP Communications Corporation

NEMAL innovating wavelength connectivity

MEMBER RECEPTION SILVER SPONSOR

BURK TECHNOLOGY

COMREX BROADCAST RELIABLE

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NAB SHOW, continued from p. 1

and updates on the society's plans, programs and government relations efforts. Everyone attending will be eligible to win prizes, including a Blackmagic Design Studio Camera 4K Pro, gift cards and SBE-logo wear. You'll want to get to the meeting early as well, because the first 100 people will receive an SBE tote bag provided by Blackmagic Design.

Following the Membership Meeting, join the SBE for a Membership Reception. Light snacks and drinks are made possible from the generous support of several Sustaining Member sponsors. They are listed on page 8. There will also be prize drawings for those attending.

The SBE will also have a daily booth drawing on Sunday, Monday and Tuesday at the convention. A $200 Amazon gift card will be given away each day.

The SBE Board of Directors will conduct its spring meeting on the morning of April 24. Members are invited to attend as room space allows.

The Certification, Education and Frequency Coordination Committees will meet during the convention. There will also be a meeting of SBE frequency coordinators. The SBE plans to offer SBE certification exams on-site as well. Advance registration to take the exam is required.

Attending the NAB Show on a budget? To get a free exhibits-only pass for the convention, watch the SBE website and SBE-news for the registration code.

A complete SBE event schedule will be posted on the SBE website. There you'll also find another helpful resource to plan your convention time: our SBE Sustaining Member Online Resource Guide. With these resources, you'll find details for several committee meetings, the board of directors meeting, SBE certification exams, and the daily booth prize drawing.

Nominations Open for SBE Awards

SBE Engineer of the Year award recipient? SBE Educator of the Year award recipient? It could be you or someone you nominate. The national award nominations need to be submitted to the National Office by June 15.

There are other honors as well. The James C. Wulliman SBE Educator of the Year; the SBE Technology Award; Facility Innovation of the Year; Best Technical Article, Book or Program by an SBE Member; Best Article, Paper or Program by a Student Member; and the Freedom Award are among the accolades. There are also a series of statistical awards.

This will be the tenth year that the Chapter Engineer of the Year award is awarded by SBE Chapters. The chapter honorees are then entered into consideration for the national Robert W. Flanders SBE Engineer of the Year award. Each chapter establishes its own criteria for the chapter award. Individuals can also be nominated directly for the national award.

Of the many awards recognizing chapters that are presented each year, a local chapter or SBE member makes nominations for 10 of them. Many SBE members are highly qualified and deserving of recognition. Likewise, many chapters do an excellent job promoting the ideals and goals of the SBE. Please nominate these members and chapters so they can receive the recognition they deserve.

For information about these and any of the SBE National Awards, please visit sbe.org/awards or contact Megan Clappe at mclappe@sbe.org. Recognition by your peers is the highest honor. Honor your colleagues today.

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

Thanks for the Memories

And a Couple of Last Bits of Advice

Greetings. This will be my last *Signal* column. It has been the greatest professional privilege I have had, to have served the SBE in the capacity of general counsel for the past four decades, and to have served with the SBE's dedicated staff, officers, directors and chapter chairs. I learned a lot from all the SBE members I have worked with, to a person, and I have always thought that to be the best thing you can say about anyone. The SBE's board members and officers use, as a metric for evaluating all policy issues and options, one determination only: "Is this going to be a net benefit for our members or not?" It sounds easy enough to apply, but it is not. It requires a lot of ascertainment of the needs and interests of SBE members collectively, and it requires a lot of creative planning and predictions about the rapidly changing broadcasting industry and the effect of those changes on SBE members.

We haven't, during my association with the SBE, always gotten it right. Heck, one time, late at night during a Board meeting, the Board decided to change the name of the SBE to something that we thought would be more inclusive. We were quickly informed by the membership just how foolish an idea that was, and we steered a corrective course. But even when we have gotten it wrong, the "member benefit" metric was never diverged from, and the collective intention of the SBE has always been to provide education, training, information and advocacy that will directly benefit SBE members.

A good example of that was back in the late 1970s when I first started practicing communications law. Bob Jones was president of the SBE then, and he came to my boss, Bob Booth, and said that the SBE wanted to appeal the FCC's decision to delete the First Class Radiotelephone License. It was the first bit of SBE work I was involved with. At the time, the SBE's Certification program was just beginning in earnest, and the elimination of the First Phone license would (and ultimately did) make the SBE certification program the standard in the broadcast industry for engineering competence. So organizationally, it was in the SBE's best interest for the First Phone license to go away. But the SBE's Board didn't see it that way. They felt that the license, and the exam on which it was based, was a measure of competency for broadcast engineers, and those who held it, earned it, and should have been allowed to keep it. So we did battle with the FCC and lost, but the SBE felt that it did the right thing for its members nevertheless.

A Successful Track Record

SBE's advocacy work over the years relative to broadcast auxiliary spectrum is and has been an effort to protect the fields in which broadcast engineers toil every day. We try to protect the tools and the medium used by broadcast engineers to do their jobs. Protection of broadcast auxiliary spectrum is not getting any easier these days, though the expectations of the listening and viewing public for audio and video feeds in real time from events that interest them is increasing. Every time we turn around, the available spectrum for BAS operations is shrinking or becoming further shared, and the FCC, NTIA and Congress are less and less interested in determining the compatibility of sharing partners in BAS bands. What was that old saw about radio: "it was great until someone found out that money could be made from it"? Well, the same is true about the radio spectrum. We have to stay vigilant.

So, thanks for the memories. And while heading out the door, I wanted to leave you with a couple of bits of advice based on experience. The first is this: do not underestimate the importance of absolute candor in representations and certifications in FCC applications and documents filed with the FCC. If there is the slightest hesitation that you have in a representation in any document filed with the FCC, explain your response to the FCC in a candid, forthcoming exhibit setting forth all facts. This advice applies in all dealings with the FCC. These days, FCC monetary forfeitures are pretty high and getting higher all the time. The FCC will often fine a licensee for a rule violation, even if the violation is timely disclosed. But the situation is far, far worse where information about a rule violation is not disclosed, or not disclosed on a timely basis, or if a representation is false or lacks candor.

Case in point: the FCC recently assessed a significant monetary forfeiture for incorrect certifications in a renewal application. The licensee had certified in the renewal application that (1) during the preceding license term, there had been "no violations by the licensee of the Communications Act of 1934, as amended, or the rules or regulations of the Commission;" and (2) that the station had "not been silent (or operating for less than its prescribed minimum operating hours) for any period of more than 30 days" during the preceding license term. Those certifications may or may not have been correct when made, but while the renewal application was still pending, the station went silent due to a transmitter failure, and the licensee did not timely file a silent station STA application. Neither did it amend the pending renewal application to report the changed circumstances. So, based on a complaint from a competitor, the FCC levied a big forfeiture on the licensee. The lesson is this: Technical rule violations timely reported: small fine. Technical rule violations not reported, or certifications which became false and not amended or which were false when made: huge fine. The choice is simple: 'fess up and fix the problem. Honesty and candor is clearly the best policy every time in dealing with the FCC at all levels.

Lastly: trust the Commission staff; especially the engineers: the Salt of the Earth, every one of them. They have a spirit of public service that will make you look good to your employer, because they want to help you. An engineer in the Office of Science and Technology gave me some good advice a few weeks ago about amending a pending experimental license application I had filed. I thanked him for the good advice and told him he made me look good in the eyes of my client. He replied that a good application was good for the FCC as well as good for my client and me. He viewed it as a win/win.

When I was in law school in the mid-1970s, I asked one of the law professors, whom I knew owned radio stations, if he would sponsor an independent study for me in communications law, because my law school did not at the time have any communications law classes. He said no, he wouldn't. When I asked him why, he said that in his experience, there was no such thing as communications law. He said, "It is all a matter of knowing who to call at the FCC." It took me awhile to adjust to that rather cynical statement, but I later realized that there was a lot of truth in it. The FCC staff is a wealth of knowledge, which is most of the time happily shared. Trust them.

See you folks down the log. 73 de W3KD.

FOCUS ON THE SBE

By James Ragsdale
SBE Executive Director
jragsdale@sbe.org

Help Me Get To Know You Better

As I complete my first year as a part of the Society of Broadcast Engineers, I have been so impressed with the members of the Society and their influence throughout the broadcasting industry. For so many years, you have provided great service to the viewers and listeners, as well as volunteered your time to serve the art of broadcast engineering.

Much of this volunteer time happened through the initiatives of your local chapters. As a chapter draws from those located in a small geographical area, it makes possible local meetings and activities. The local meetings provide education, social and fraternal contacts, and enhance the broadcast engineers' image within the wider broadcasting industry and with the public.

As I make plans for the coming year, one thing I have struggled with is identifying what our members needs are. It seems evident that the certification and education efforts address many member needs, but I want to know if there are areas of education and certification that we haven't thought of yet. This year I would like to survey our members, increasing the input that we have as we consider establishing goals for the future. Specifically, we want to refresh our strategic plan that was written in 2018, but need additional input to do it.

In addition to increasing input through a member survey, I am going to seek input from members though an open Zoom monthly meeting. I will establish a time, reserved for the purpose of member communication with the National Office, and publish the connection information to chapter chairs. I want that time to be without an established agenda, leaving time for chapter leaders and members to ask questions. If I don't know the answer, I will commit to finding the answer and sharing it in the next Zoom monthly meeting. I want this meeting to be a time for respectful dialogue. I hope to learn more about what we as an organization can do to further the profession of broadcast engineering. I look forward to hearing from many of you.

I would also like to hear from you about ongoing educational efforts to develop new broadcast engineers. Recently I heard from a college where there is a desire to develop a student chapter within an academic broadcasting program. We are also contacted by high schools where broadcasting classes are being held and they want to include technical components. I want to hear about similar programs, whether they are in high schools, colleges, or technical schools and finds ways that we can support these efforts.

I want to especially applaud the committees at the national level that work on mentorship, certification, and education. These committees meet regularly to develop the programs in their area of responsibility. They are creative in their thinking and pay close attention to the broadcasting industry in their areas of influence to understand the developing needs of our members. I encourage you to join into those efforts if you have the opportunity. It is rewarding work.

I hope to gather more input from our members at the Membership Meeting at the NAB Show in April. I know that if you are attending this it is a very busy time for you, but I want to encourage you to stop by our booth and introduce yourself to me if at all possible. I want to hear from you about your ideas for the future of the SBE.

Finally, I am making the effort to attend as many state broadcast association and chapter meetings as possible to hear from you. If you are present at these meetings and have any ideas about the needs of our membership, please pull me aside and share them with me.

This year you will have several opportunities to provide input to the national office, through your chapters, the open Zoom monthly meeting, the national membership meeting, and various industry meetings around the country. Please use these opportunities to let me know what you think members need.

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PRESIDENT, from p. 4

nications to first responders are further prioritized to allow for distribution at the very highest speeds.

For its K-12 use case, IEI has integrated with Google Classroom and Canvas to allow educators to work in their typical learning management systems, without having to learn a new technology. Educators are able to select content for the entire class, or for individual learners within that class, and as mentioned above, only content curated for that class or individual will be cached on their home gateways. For the public health touch screen kiosks, content addresses issues ranging from vaccine hesitancy and chronic illness to nutrition and addiction. With incarceration facilities, services include literacy, GED programs, and workforce training.

Future ATSC 3.0 Roadmap

With ATSC 3.0, additional spectrum will become available to broadcasters to deliver an ever-larger number of asynchronous datacasting services to its community across these use cases. And with ATSC 3.0 – especially when single-frequency networks are used – deep indoor reception will further improve, making these services nearly ubiquitous across a DMA. National content producers are beginning to create interactive and gamified content that leverages ATSC 3.0's internet backchannel. This will open new opportunities for content producers as they leverage the NextGen standard to better engage with their audience and improve pedagogical outcomes for learners: real-time assessments, artificial intelligence to alter questions based on responses, links to additional content, support for different languages, etc.

Unlike large technology and telecommunications companies, broadcasters are innately local in nature. By applying new technology to datacasting, broadcasters are re-imagining how their spectrum can be repurposed to deepen and solidify a station's role and relationship with its community.

By Michael Cassara
Broadcast Engineer (Student) at University of Pittsburgh
Recipient, 2021 Ennes Educational Foundation Trust Greenberg Scholarship
michael@cassara.tech

Designing Television Studios for Education

As the world interacts in more and more digital formats, many educational institutions are seeking to expand the ways in which they can educate their students on the digital world. During my time working at Wilton Public Schools in Connecticut, there were frequent administrative discussions about just that. One avenue they took to pursue this was to build out television studios in each of their schools, of which I was partially responsible for the design, build-out, and maintenance of these studios.

One of the biggest lessons I learned while viewing how these studios were managed and integrated into curriculum was the vast scale of projects for which they were being used. At the high school level, there was a live-to-tape weekly news show, a series of video production courses offered out of the studio, and the studio's control rooms and equipment were also being utilized for sports productions and biweekly board of education meetings. Each use case came with a different set of requirements and goals, meaning that the space had to be rapidly transformed to support different shows, sometimes multiple times a day. While a traditional broadcast trailer or facility is often designed to handle a relatively static set of requirements, school facilities need to be designed to be as flexible as possible. Not only do signal paths need to be routable, which most modern broadcast facilities have, but so does the personnel count required to produce a show out of one of these facilities.

The control room Michael built for Wilton Public Schools.

Since the facilities are primarily staffed by volunteer students, the number of students available could dramatically change show to show. For instance, the school news or sports shows attract a larger crew of volunteer students than a board of education meeting because those shows are objectively "cooler" to them and have a more convenient schedule requirement that students can meet. This means that there will be a filled control room with dedicated operators for each position for some shows, and then other shows may just have one or two people to run them.

As built, the control room at the high school was designed for one person to be able to operate everything except audio by mounting everything vertically in a single rack. One of the biggest upgrades that I performed was to redesign the control room to instead place that equipment on table-top racks arranged across a long table. The specific floorplan enabled a single operator to have access to the more frequently used equipment next to them while only being a few steps away from less frequently operated positions, but also allowing those positions to be staffed with dedicated crew.

Working With Constraints, Meeting Demands

The arrangement and upgrade was limited by physical room and budget constraints preventing it from instead being a more traditional multi-bench control room with an attached audio suite, however it proved to be a formidable means to enable large amounts of flexibility in crewing. A similar effect could be reached in a more traditional control room by moving a smaller audio console to the director's position next to the TD and converting computers to instead be accessed through KVMs so that a single operator can access most systems via KVM from the TD position and still have control over audio next to them.

Another important consideration I learned during my time at Wilton Public Schools was to keep the target audience in mind. During one project, I was building a smaller facility at a school that serves students in grades three through five. The initial build was a switcher to switch between a single camera source with a green screen and a laptop running some form of graphics that than ran into a recorder. Ultimately, the students were more amazed by the green screen than anything else, and additionally found it annoying to operate the rest of the equipment.

After a year, the switcher, camera, and recorder were all replaced with tripods capable of holding iPads, which the students were already accustomed to using in the classrooms. This allowed the program to instead focus on enabling students to make their own movies quickly using intuitive apps and having access to a green screen with proper lighting. This ended up inspiring a passion for video production as a whole in the students, who at that point didn't care about video quality or production value but just wanted to see themselves do something cool on a screen.

Designing television studios for educational institutions is different from traditional broadcast. Not doing enough research to find what its use cases will be, and designing for those use cases with expansion in mind will lead to it ultimately falling unused and neglected. With a well-designed system however, it could inspire future generations of broadcast professionals.

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

American Tower Corporation • 2000
Tiffany Yu 603-930-9091
Development/Construction/Management

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

Barnfind-USA, Inc. • 2021
George Gonos 919-748-7373
Fiber Transport Solutions

Belden Electronic Division • 1991
Rose Lockwood 203-500-4743
Fiber and Copper Cabling Infrastructure

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
Tim Jobe 305-281-7540
TV, Satellite, Radio, IP

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

Broadcast Electronics Inc. • 1978
Perry Priestley 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
Jim Alinwick 978-486-0086 x7404
Transmitter Facility Control Systems

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

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

Crawford Broadcasting Company • 2021
Cris Alexander 303-481-1800
Media Company

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

Cumulus Media, Inc. • 2021
Conrad Traumann 212-419-2940
Audio Media Company

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

Dialight Corporation • 2006
David Jennings 732-919-3119
FAA Certified Obstruction Lights

Dielectric • 1995
Cory Edwards 207-655-8131
Radio & TV Antenna Systems and Monitoring

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
George Cernat 443-539-4334
HD Radio Technology

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

The Durst Org. – 4 Times Square • 2004
Tom Bow 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
Samantha Bortz 248-827-4440
Playout and Automation Solutions

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

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

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

Indiana Broadcasters Association • 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 541-879-2312
Antennas for Broadcasting & Communications

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

latakoo • 2021
Paul Adrian 214-683-0791
Media Workflow Automation

LBA Technology Inc. • 2002
Jerry Brown 252-757-0279 x228
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

MaestroVision • 2021
Claude Turcotte 888-424-5505
Broadcast Automation Software

Markertek • 2002
Adam June 845-246-2357
Specialized Broadcast & Pro-Audio Supplier

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

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

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

MultiCAM Systems • 2020
Mary Ann Seidler 207-776-5338
Fully automated live video production

MusicMaster • 2014
Jerry Butler 352-231-8922
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
Michael Katzenoff 212-450-2368
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

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

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

NEW SUSTAINING MEMBER

Televes

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MaestroVision

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

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

SuiteLife Systems • 2019
Nigel Brownett 310-405-0839
Manage. Monitor. Control

Sutro Tower Inc. • 1989
Raul Velez 415-681-8850
Broadcast Tower Leasing

Synthax Inc. • 2020
Brittany Hilton 754-206-4220
Audio Codecs and Converter Solutions

Technical Broadcast Solutions, Inc. • 2018
Robert Russell 302-414-0055
Engineering and Consulting Services

Televes USA, LLC • 2021
Andy Ruffin 937- 475-7255
Antennas Transmitters Measurement Distribution

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

WideOrbit • 2012
Jim Hammond or Brad Young 415-675-6700
Radio Automation and Playout

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

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Member Spotlight: Chris Lapp

Member Stats
SBE Member Since: November 2019
Certifications: CBT
Employer: Cisco Systems, Inc.
Position: Technical Solutions Architect, Media & Entertainment
Location: Chatham, ON
I'm Best Known For: The ability to pass on knowledge of complex topics, such as networking for uncompressed media, regardless of the level and ability of the audience.

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

A. The ability to share knowledge, regardless of physical location, employment, and background, with others. The broadcast industry is so small and fascinating, and the SBE helps bring that together.

Q. *Who was your mentor or who in the industry do you admire?*

A. My very first broadcast engineering mentor was John Heij, who previously worked at Corus Entertainment. John helped me navigate the early days of my education and career and got me set on the path to succeed.

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

A. When I was in high school I had a teacher who turned me to the idea of being a tech in the media industry, as It was a natural progression of the work I was doing with AV for the school plays and other events.

Chris hiking though a conservation area in Rondeau Park with his oldest daughter, Winry.

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

A. I enjoy that I help customers understand their technology better, and be able to make better educated architecture decisions based on global technology trends.

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

A. ...Spend time with my daughters, play video games, rock climb or run crazy obstacle course races.

Q. *What's something people don't know about you?*

A. I am a senior pyrotechnician and fireworks display supervisor in Canada, and have worked on many concerts, stage performances, and fireworks displays around Canada, and still do in my spare time.

Q. *Do you have a nickname?*

A. Clapp. While it is also the slang name of a venereal disease, it also happens to have been my email for the majority of my career (until recently). I had just grown to accept it and own and eventually, it became a namesake at many large broadcast organizations.

Nominate a Member for SBE Fellow

There is still time to recognize a broadcasting peer who has contributed to the success of an SBE chapter or broadcasting. The membership grade of SBE Fellow is the highest in the society, and it honors those who have exhibited a dedication to the advancement of the broadcast engineer, the field of broadcast engineering and the Society of Broadcast Engineers itself. To date, 88 members have been recognized with the honor in the society's more than 55 years of existence.

To nominate a member, candidates must be proposed in writing by a voting SBE member to the Fellowship Committee. The nomination must include a comprehensive professional history of the nominee and an explanation of why the candidate is deserving of this honor. The nomination must also include the written endorsements of at least five other voting SBE members. Nominations are confidential. No others besides the nominators and the members of the Fellowship Committee should be aware of the nomination. The nominee should not know that he or she has been nominated.

Nominations for 2022 must be received no later than March 15, 2022, for consideration. The Fellowship Committee will bring the names of nominees to the Board of Directors for consideration and election at the April 2022 meeting. The SBE secretary will notify those elected. Recipients will be recognized at the SBE Awards Dinner on Sept. 29 during the 2022 SBE National Meeting to be held during the 2022 SBE22 Broadcast & Technology Expo in Syracuse.

Submit your nominations in a single package to: Fellowship Committee Chair Troy Pennington, CSRE, CBNT; 6156 Hampton Hall Way; Hermitage, TN 37076; or to tpennington@sbe.org.

WELCOME TO THE SBE

NEW MEMBERS

Philip Alverson - Pensacola, FL
Megan Amoss - Baltimore, MD
Samuel J. Angello - Garfield Heights, OH
Gregory T. Brown - Lancaster, PA
Alan Castro - Orlando, FL
Bentt J. Chea - Philadelphia, PA
Keith M. Davis - Louisville, KY
Ben Dolinky - Marietta, GA
Kristopher A. Drew - Akron, OH
Bruno G. Gonzales - San Antonio, TX
Lita Gregory - Conroe, TX
Glenn Heath - Weymouth, MA
Stavros Hilaris - Washington, DC
Thomas Jennings - Helena, MT
Phil Larsen - West Jordan, UT
Matthew Marino - Odenton, MD
Dylan T. Martin - Columbia, MO
Cameron Mathews - Duluth, MN
Marty McAlpine - Minneapolis, MN
David Neff - Wexford, PA
Daniel M. Nimmo - Nashville, TN
Micah A. Pace - Fruita, CO
Dorian J. Page - San Antonio, TX
David J. Pelz - Yucaipa, CA
Wesley E. Phipps - Burnsville, MN
James C. Rehberg - Macon, GA
Michael R. Sprowls - Sperry, OK
Kristin G. Stevens - Charlotte, NC
Victoria Stuart - Greenville, VA
Marcus Troupe - Portsmouth, VA
Jonathan A. Walsh - Brookpark, OH

NEW STUDENT MEMBERS

Grace Contreni Flynn - Gorham, ME
Ryan B. Cox - Bonney Lake, WA
Chase W. MacDonald - Central, SC
Shayna Sengstock - East Islip, NY
Richard Spagnola - Babylon, NY

NEW ASSOCIATE MEMBERS

Robert L. McKay - Commerce Township, MI
Keith R. Paglia - Elk Grove Village, IL

RETURNING MEMBERS

Matthew D. Boughton - Central Point, OR
John D. Freberg - Chicago, IL
Daniel J. Gonzales - Simi Valley, CA
Jaime D. Gonzalez - Fresno, CA
Kit R. Haskins - Woodland Park, CO
Michael C. Johnson - Palmdale, CA
Byron J. Johnson - Tallahassee, FL
Richard Kemp - Renton, WA
Mark R. Kordash - Spokane, WA
Nicholas R. Morin - Dallas, TX
Michele I. Muller - San Mateo, CA
Alexandre Rukashaza - Phoenix, AZ
Joshua M. Rule - Myrtle Beach, SC
Alvin B. Upson - Jacksonville, FL

Keep Your Member Benefits and Renew Now

As the pandemic continues, communication remains a challenge. Developing professional relationships is even harder. By maintaining your SBE membership you can do both. Annual membership renewal for Member, Associate, Senior, Student and most Fellow members of the SBE is underway. Renewal letters and membership cards are in the mail. The due date for membership renewal is April 1.

Membership dues for the SBE MemberPlus option remains at $175 and includes all of the benefits of traditional membership, plus access to all archived SBE webinars and any new webinars the SBE presents during the membership year (through March 31, 2023), at no extra charge. That's more than 100 technical broadcast and media webinars available to you 24/7/365.

Traditional membership dues for Member, Senior, Associate and Fellow members remain at $85. Student membership stays at $25. SBE Student Members may choose to take the SBE Student MemberPlus option for $90 when they join or renew. Traditional SBE membership provides discounted education, certification programs and member services as well as opportunities for member interaction in local chapters and with members across the United States and in 18 other countries. The SBE network of 114 SBE chapters provides opportunities for education, local SBE certification exams and professional and social interaction with local technical media professionals. Traditional membership also affords members the opportunity to take part in the SBE Mentor Program, and access to the annual SBE Compensation Survey results, SBE social media and the SBE WEBxtra monthly online meeting.

The fastest way to renew your membership is online at sbe.org. Click on "Renew Membership" at the top of the home page. The online system is secure and accepts Visa, MasterCard and American Express. Your membership can also be renewed through the mail, using the renewal form and return envelope mailed to you.

While the SBE By-laws allow for a grace period if dues are not paid by April 1, SBE MemberPlus benefits expire April 1 if not renewed. Membership will revert to traditional membership during the grace period.

SBE Life Members (who traditionally pay no dues) have the opportunity to take the SBE Life MemberPlus option and receive access to all Webinars by SBE for $90. To sign-up for SBE Life MemberPlus, contact Scott Jones at the National Office at 317-846-9000 or kjones@sbe.org.

SBE members who are at least 65 years of age, are fully retired from broadcast engineering work and have been an SBE member for at least 15 consecutive years at the time of applying for Life member status may be eligible for Life membership. There is a one-time $85 application fee ($175 if opting for Life MemberPlus). Life MemberPlus is renewed annually.

If you have questions about your membership renewal, please contact Scott Jones at the SBE National Office at 317-846-9000 or kjones@sbe.org.

Attend the SBE Leadership Development Course

Save the Date: August 3-5, 2022

The SBE has presented the SBE Leadership Development Course since 1997, but its roots go back to 1965. This intense course is designed specifically for broadcast engineers who have or aspire to have management responsibilities.

The course will be held in Atlanta. Registration covers the course and materials, a light breakfast each day, classroom beverages, and access to the Leadership Development Webinar Series of three webinars.

Bring a team and share the experience of this highly interactive event. Come, enjoy, learn and have some fun growing as a leader in the process.

Designed to take technically adept people and instill in them sound leadership, supervisory and management skills, the SBE Leadership Development Course is equally beneficial for those who are already in management and for those without prior management or supervisory experience.

Topics covered include understanding the dynamics of leadership; discovering your leadership and behavioral style; communications; effective motivation techniques; building winning teams; responsible management; insights into generational differences; leadership as an attitude; and managing conflict, counseling and discipline

Take the course to enhance your leadership style in communication, team dynamics, motivation, conflict management and generational issues.

Register now and get more info online.

sbe.org/ldc

Members On The Move

David Jackson, CBTE, is a radio project engineer with Moody Radio, The Woodlands, TX.

Geoff Graves is now chief engineer at WBUR-FM, Boston.

Roz Clark, CPBE, CBNT, a member of the SBE Board of Directors, received the Radio World Excellence in Engineering Award for 2021-22.

Fred Engel, CPBE, chair of SBE Chapter 93 Raleigh/Durham/Chapel Hill, NC, and **James DeChant** of Bend, OR, were elected to the ATSC Board of Directors to serve three-year terms.

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

SBE Certification Exams Feb. 4-14, 2022 *Application deadline closed*	*Local Chapters* sbe.org/certification
SBE WEBxtra Feb. 21, 2022	*online* sbe.org/webxtra
SBE Membership Drive Begins March 1, 2022	sbe.org
SBE Dues Renewal Deadline April 1, 2022	sbe.org/renew
SBE WEBxtra March 21, 2022	*online* sbe.org/webxtra
SBE WEBxtra April 18, 2022	*online* sbe.org/webxtra
2022 NAB Show April 23-27, 2022	*Las Vegas* nabshow.com
SBE Membership Meeting April 25, 2022	*NAB Show*