Who will the next SBE Engineer of the Year award recipient be? It could be you, it could be someone you nominate. This will be the seventh year that the Chapter Engineer of the Year award is nominated by SBE Chapters. The chapter honorees are then entered into consideration for the Robert W. Flanders SBE Engineer of the Year award. Each chapter can establish its own criteria for the chapter award. Individuals can also be nominated directly for the national award. For the national award, nominations need to be submitted to the National Office by June 14.

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.

Of the 13 awards recognizing chapters that are presented each year, a local chapter or SBE member make 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.

The 2019 NAB Show is packed with exhibits, sessions and plenty of opportunities to meet with manufacturers, vendors and colleagues. As you plan how you will spend your time at the convention, be sure you include the many SBE events on your convention calendar. While the Ennes Workshop and the SBE at PBS TechCon highlight the SBE’s educational offerings on Saturday, the highlight for SBE members is the annual Membership Meeting, which will be followed by a reception.

The Membership Meeting will be held on Tuesday, April 9, at 5:00 p.m. in room N234. The Membership Meeting brings you up to date on all the SBE activities and programs, and it includes a milestone-service recognition of SBE chapter certification chairs, and updates on the society’s plans, programs and government relations efforts. Everyone attending will be eligible to win prizes, including an URSA Broadcast camera (courtesy of the Membership Meeting sponsor Blackmagic Design), a $250 Amazon gift card, and three restaurant gift cards.

You’ll want to get to the meeting early as well, because the first 125 people in attendance will receive an SBE-logoed commemorative coin.

The Membership Reception starts immediately after the meeting.

SBE Events, Sessions Highlight NAB Show

The SBE Membership Meeting (left) and Member Reception highlight the SBE events at the NAB Show.
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NAB BOOTH N6806
wheatstone.com/sbe-nab-2019
Attend the 2019 Leadership Development Course August 6-8

Make your plans today to attend the 2019 Leadership Development Course, Aug. 6-8 in Atlanta. The SBE is proud to continue its offering of the SBE Leadership Development Course, an SBE tradition since 1997.

The three-day course is specifically designed for broadcast engineers who have or aspire to have management responsibilities. The SBE Leadership Development Course is to help technically adept people acquire and develop skills for sound leadership, supervisory and management skills. The course is equally beneficial for those who are already in management and for those without prior management or supervisory experience.

The 2019 SBE Leadership Development Course will again be taught by Rodney Vandevere, professional leadership and management trainer and professor of organizational leadership and supervision at Purdue University.

The three-day event challenges attendees to refine leadership skills and better understand and improve interaction with others. Broadcast organizations may want to consider sending a group of employees to the course to share the experience of this highly interactive event. Registration includes all course materials, experience of this highly interactive event.

Attend the 2019 Leadership Development Course, Aug. 6-8 in Atlanta.

The Leadership Development Course class of 2018.

Breakfast and afternoon snacks. SBE Members receive a discount on registration.

It will take place Aug. 6 through Aug. 8 at the Hyatt Place Atlanta Airport South, 1899 Sullivan Rd., College Park, GA. A special room rate of $118 is available for Leadership Conference attendees. The cost of the conference is $670 for SBE Members and $725 for non-members.

Register at sbe.org/ldc. Questions? Contact Education Director Cathy Orosz at 317-846-9000 or corozs@sbe.org.
March is here, and we are looking how the first quarter is wrapping up. I am pleased to say that SBE WEBxtra, our chapter of the web, is going better than expected. One of the strategic directives was to develop alternative ways to reach and attract new members. Some members do not have a local chapter within driving distance to attend our local chapter meetings, while others cannot get away from the station or family obligations for an evening meeting. This addresses those situations. Board Member Kirk Harnack has been our lead on this project. His employer, the Telos Alliance, has allowed him to work with Member Communications Director Chriss Scherer to take this from an idea and we just completed our third episode. They are posted on our YouTube channel so you can watch when you have the time. The last concept of this idea is to have subject matter experts who do not travel to SBE local chapter meetings present at an SBE WEBxtra for a deep dive in their areas of expertise. Being web-based, we can spend the time necessary to ask those questions. Go to the SBE website for more information, and watch it at sbe.org/youtube. Thank you to Kirk for his tireless efforts.

The next subject I want to announce is that for more than two decades, the SBE has been a partner with the NAB Show. This continues in a few weeks, and we look forward to seeing you there. We also have partnered with PBS TechCon this year for a full day event that is open to everyone, not just PBS station employees. Registration is required. Go to the SBE website for registration information. Put in your calendars to stop by the SBE Spring Membership Meeting and Member Reception at the NAB Show. Tuesday April 9, at 5 and 6 p.m. respectively. Special recognitions, giveaways and prizes at the meeting; prizes, food and beverages at the reception. I will be there, so please come up and say hi.

More from the SBE and the NAB Show

It is not too late to renew your membership in the SBE and retain your membership benefits. Those in the Member, Senior, Student, Associate and Fellow membership categories may 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. The system automatically generates a receipt, sent to your email address. You will need your member number and website password to access the renewal system. If you have forgotten your number or password, there is an automated retrieval system available to you on the renewal page.

When renewing, consider joining the more than 900 members who chose the SBE MemberPlus option. For $175, the SBE MemberPlus option provides all of the benefits of traditional membership, plus, access to all archived SBE webinars and all new SBE webinars produced through March 31, 2020. That’s more than 80 webinars covering a broad range of broadcast/media technology, regulatory and safety topics. It includes our current series on ATSC 3.0, the popular eight-part RF101 and five-part (and growing) RF201 series, five-part Fundamentals of IP Networking series and many more.

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 Street, Suite 150, Indianapolis, IN 46260; or by fax at 317-846-9120. Please note: an unfortunate error in production of the SBE membership cards caused the membership expiration date to read March 31, 2019, instead of March 31, 2020, on many cards. If you would like a corrected card, please contact Scott Jones at the SBE national office at kjones@sbe.org or 317 846-9000.

Still Time to Renew Your SBE Membership

The SBE is conducting its fourth (and ongoing) compensation survey now. The SBE launched this annual effort to provide practical information to SBE members about individual compensation (salary and benefits) based on the type of broadcast or multimedia involvement (beyond just radio and TV), market size and years of experience. SBE members will have access to the full report.

The 2018 survey enjoyed a successful response rate, but as with any survey, a larger sample pool will provide more reliable results.

We encourage every SBE member to participate to provide a large sample base of responses. All responses are anonymous. With your help we can provide a useful and practical resource to SBE members. Find the survey link in email communications and on the SBE website.

Highlights of the survey will be reported in The Signal. The full report will be available for download to members from the SBE website.

Participate in the 2019 SBE Compensation Survey
How does an SBE chapter go about seeking technology professional development and the CBNT certification for 30 or so of its members? Chapter 48 Denver turned to the SBE Technical Presenters Group. As a result, I had the honor and pleasure to spend a day in Denver last month with members of SBE Chapter 48 and the SMPTE Rocky Mountain Section.

Broadcast engineers are well aware of the rapid changing technology occurring in the broadcast engineering field. IP networking is one of those areas that has become a must for the broadcast engineer. You know you need to know, but what exactly do you really need to know?

My approach to understanding networking begins with the Open Systems Interconnection or OSI Model and specific emphasis on the first four layers, the Data Flow Layers. The OSI Model is an abstract model that defines how a network host communicates across a network with another host device. The practical result is that the model provides the terminology found in networking, whether Internet Protocol (IP)-based or not, as the model was developed in a multi-protocol environment long before Ethernet and IP dominated the industry.

The Physical Layer (layer 1) represents the electrical aspects of the network, the physical aspects whether wired or wireless, and how bits as the Physical Data Unit (PDU) are represented.

The Data-Link Layer (layer 2) defines how bits are packaged into frames as the PDU and how the frames are created. Error correction is also implemented at this layer to correct any malformed bits passed from layer 1 by a cyclic redundancy check (CRC) process. The Ethernet switch is the fundamental building block of an Ethernet network and operates at layer 2. The physical address of a host device is defined at this layer by the Media Access Control (MAC) address. The Ethernet Carrier-Sense Multiple Access with Collision Detection (CSMA/CD) algorithm within the Ethernet standard may be invoked at layer 2 when required.

The Network Layer (layer 3) defines how packets are created from frames and how packets are interconnected between networks. The IP router is the fundamental network device found at layer 3 and is the fundamental device providing inter-routing or IP packet forwarding between networks. The virtual address of a host device is defined at this layer or the Internet Protocol (IP) address address whether version 4 or version 6 (IPv4 or IPv6).

The Transport Layer (layer 4) controls how data is sent between hosts devices or how much data is transferred. The Transport Control Protocol (TCP) is implemented at layer 4 and provides the guaranteed data transfer capability of IP. The non-guaranteed data transfer provided by the User Datagram Protocol (UDP) is also implemented at layer 4. Applications executed on the host device are also indexed based upon port numbers implemented at this layer and can be TCP or UDP numbered.

CBNT Preparation
What more do you need to know for the SBE CBNT certification? Based on the recommended study resources shown on the SBE website, you need an understanding of cable type designators, their appropriate use, and their proper installation techniques whether utilizing twisted-pair copper or fiber cabling. You need a practical understanding of circuit-switched Wide Area Network (WAN) circuit types such as ISDN, Sonet, and T-carrier or DS-carrier telco circuits often found in broadcast application use. And network connectivity troubleshooting is often a fundamental responsibility of the broadcast engineer. I use the term “CBNT Study Topics” to address these specific areas of knowledge for those seeking certification.

The day in Denver ended with the Certified Broadcast Networking Technologist (CBNT) exam administered for those seeking certification. I hope that everyone found the day to be beneficial and everyone was successful in achieving the CBNT certification.

If you find your chapter or your state broadcaster’s association conference in need of professional development technology presentation or tutorial, consider bringing a member of the SBE Technical Presenter Group to your event. Speakers are available to speak on a wide variety of broadcast engineering topics. For more information on this program, or to arrange a presentation for your group, contact SBE Education Director Cathy Orosz (corosz@sbe.org) at the National Office.

Webinar Watch
As 2019 is underway, look for the continuing ATSC 3.0 webinar series as well as the Advanced RF series of webinars. A new “Introduction to Networking for ATSC 3.0” webinar series begins next month. Your SBE MemberPlus membership gives you access to the latest SBE webinars as well as the entire webinar on-demand library at no additional cost. If you failed to select the SBE MemberPlus option when you renewed, you can upgrade your membership at any time. 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.
ATSC 3.0 Specialist Certification Nears Completion

In May 2018, the SBE and the ATSC announced a cooperative effort to develop a new Specialist level of SBE certification that will benchmark an individual’s proficiency in the ATSC 3.0 System standard. Since then, select members of the SBE Certification Committee have been diligently working with participants from the Technology Group on ATSC 3.0 (TG3) standards to develop both the ATSC 3 Specialist Certification and appropriate SBE CertPreview questions. The groups have met monthly since June 2018 to discuss the scope and categories of suitable questions for the exam (multiple-choice and essay) and CertPreview.

Shortly, the SBE Certification Committee will conduct beta exams of the questions to ensure the exams match the stated goals of the ATSC 3.0 specialist certification exam. The specialist certification will concentrate on the Physical Layer up to the STL including security. The current plan is for CertPreview to be rolled out in the second quarter of 2019, and the exam is tentatively scheduled for release during the August 2019 exam period.

The SBE ATSC Specialist exam will be composed of 50 multiple choice questions (open book and internet allowed) and one essay question (closed book) requiring a written response. Examinees have three hours to complete the exam.

Recognizing Service

The strength of the SBE Certification Program exists in the volunteer efforts of the local chapter certification chairs and the members of the national Certification Committee. These SBE members will be recognized for their service at the SBE Membership Meeting held during the NAB Show, but I also want to thank them for their service here. Locally, some are new to their positions, and one has reached an amazing milestone. Regardless of tenure, everyone’s efforts with SBE certification are valuable. Thank you for all you do.

SBE Is All About Education in Las Vegas

The SBE presents two educational events on April 6.

**ENNES SBE Ennes Workshop**

9 a.m. – noon, LVCC N262

As it has for 25 years, the SBE presents the Ennes Workshop program at the 2019 NAB Show on Saturday, April 6. The morning session runs from 9 a.m. to noon at the Las Vegas Convention Center.

*Business as Usual: Constant Change* is the focus of the presentations. The presentations cover a range of topics, but they have one thing in common: Broadcast technology is changing, and you need to keep up with it.

Each presentation examines a different aspect of broadcast technology. Topics include: What is the Future of our Business?; Displays: Bigger, Better, Cheap; Artificial Intelligence in Media; Strategies in Replacing Retiring Staff - Doing More with Less; ATSC 3.0 Update; Ensuring End-to-End Video Quality at Facebook; and Understanding Future Data Center Design Concepts.

NAB Show conference registration required. nabshow.com

**SBE @ PBS TechCon**

9 a.m. – 5 p.m., Flamingo Las Vegas Hotel

ATSC 3.0 and the rapid launch of NextGen Broadcast are the drivers behind the first-ever SBE/PBS TechCon collaborative tutorial day. It’s open to anyone eager to learn what ATSC 3.0 means for the future of broadcast, not just PBS station employees.

Periodically, broadcast goes through an extensive revamp. The launch of TV, FM, DTV - and now NextGen Broadcast - are pervasive and swift. Several dozen NextGen stations take to the air this year, and the pace is likely to pick up. Broadcast engineers need to understand the potential of ATSC 3.0 and see what’s under the hood: the architecture, equipment, configurations, and options that go into NextGen.

This program track is where you as a broadcast engineer will learn what to do with NextGen Broadcast. There will only be one big launch technical program, and this is it.

Advance registration required. bit.ly/SBEatPBS
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.

**LIFE CERTIFICATION**

Certified Professional Broadcast Engineer (CPBE)
- Paul Back, Pleasant Hill, VA - Chapter 40
- Michael Hendrickson, Lakeville, MN - Chapter 17
- William Hubbard, Green Bay, WI - Chapter 80
- Gary Penritz, Stone Mountain, GA - Chapter 5
- Thomas Wixon, Lancaster, CA - Chapter 47

Certified Professional Broadcast Engineers and certified senior broadcast engineers who have maintained SBE certification continuously for 20 years, are at least 59½ years old and are current members of SBE may be granted Life Certification if so requested. All certified who have retired from regular full-time employment and are at least 59½ years old may be granted Life Certification if they so request. If the request is approved, the person will continue in his/her current level of certification for life.

**FEBRUARY EXAMS**

Certified Broadcast Radio Engineer (CBRE)
- John Bracken, Montebello, CA - Chapter 47
- Chris Stevens, Broken Arrow, OK - Chapter 56

Certified Broadcast Television Engineer (CBTE)
- Emzy McClure, Ill., Ottawa Hills, OH - Chapter 104

Certified Broadcast Networking Technologist (CBNT)
- Muthana Al-Waziri, Springfield, VA - Chapter 60

(CBNT cont.)
- Connor Crockshank, Bonney Lake, WA - Ch. 16
- Jeffren Dela Cruz, Tacoma, WA - Chapter 16
- Jonathan Hollon, N. Richland Hills, TX - Chapter 67
- Mason Jennings, Cave City, KY - Chapter 10
- Emzy McClure, Ill., Ottawa Hills, OH - Chapter 104
- Elias Sanders, Atlanta, GA - Chapter 5
- John Tiesi, Albuquerque, NM - Chapter 34

Certified Broadcast Technologist (CBT)
- David Clark, Phoenix, AZ - Chapter 9
- Kim Brickman, Alameda, CA - Chapter 40
- Zeb Navarro, Oceanside, CA - Chapter 36
- Stephen Pavlik, Austin, TX - Chapter 79

Certified Broadcast Operator (CRO)
- John Tiesi, Albuquerque, NM - Chapter 34
- John Skiba, Astoria, NY - Chapter 15
- John Pooley, Burlington, WA - Chapter 24

**SPECIAL PROCTORED EXAMS**

Certified Broadcast Television Engineer (CBTE)
- David Jackson, Magnolia, TX - Chapter 105

Alabama Broadcasters Association
- Certified Broadcast Technologist (CBT)
  - Brian Dougherty, Carthage, IL - Chapter 49
  - Billy Sheen, Kosciusko, MS

**SBE CERTIFIED SCHOOL COURSE COMPLETION**

DINFOS
- Certified Broadcast Technologist (CBT)
  - Mahair Grant, Ashburn, VA - Chapter 37

**CERTIFIED PROFESSIONAL BROADCAST ENGINEER (CPBE)**

Robert Hageny, Oswego, NY - Chapter 22
- Collin Leedy, Milledgeville, IL
- Evan Matsler, Rancho Cordova, CA
- Matt Pacini, Roselle, CA
- Valerie Rostkowski, Brooklyn, NY - Chapter 15
- John Skiba, Astoria, NY - Chapter 15
- Anthony Timmons, Easthampton, MA
- Kelvin Tsao, Rancho Cordosva, CA
- Anthony VanHok, Sacramento, CA

Certified Broadcast Radio Engineer (CBRE)

Certified Broadcast Television Engineer (CBTE)

Certified Broadcast Networking Technologist (CBNT)

Certified Broadcast Networking Technologist (CBNT cont.)

Certified Broadcast Operator (CRO)

Certified Broadcast Television Operator (CTO)

**CERTIFIED RADIO OPERATOR (CRO)**

Certified Professional Broadcast Engineer (CPBE)

Certified Professional Broadcast Engineer (CPBE 8-VSB Specialist 8-VSB)

William Maglifocco, Atlanta, GA - Chapter 5

Certified Senior Broadcast Engineer (CSTE)

Certified Broadcast Radio Engineer (CBRE)

Certified Broadcast Television Engineer (CBTE)

Certified Broadcast Networking Technologist (CBNT)

**CERTIFIED TELEVISION OPERATOR (CTO)**

Certified Broadcast Networking Technologist (CBNT)

Certified Broadcast Operator (CRO)

Certified Broadcast Television Operator (CTO)

**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.

**CONGRATULATIONS**

**SBE Certification Achievements**

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

**Show your certification**

Order your SBE Certification pin today.

sbe.org/pins
SBE Event Schedule

Saturday, April 6
- SBE @ PBS TechCon .............. 9 a.m.-5 p.m.
  Session registration required
  Flamingo Hotel Las Vegas
- SBE Ennes Workshop ............ 9 a.m.-12 p.m.
  NAB Conference registration required
  LVCC N262/264
- SBE Certification Committee Meeting 6:30-11 p.m.
  Westgate Conference Room 7

Sunday, April 7
- SBE Board of Directors Meeting
  ........................................ 8:30 a.m.-12 p.m.
  Westgate Conference Rooms 7/8
- SBE Education Committee Meeting
  ........................................ 3-4 p.m.
  Westgate Executive Board Room
- SBE Frequency Coordination Committee
  Meeting ..................................... 4:15-5:15 p.m.
  Westgate Executive Board Room

Monday, April 8
- Frequency Coordinators Meeting
  ........................................ 1:30-3 p.m.
  Westgate Conference Rooms 11/13
- Fry’s Gift Card Daily Booth Giveaway
  Courtesy of Nemal Electronics

Tuesday, April 9
- SBE Certification Exams .......... 9 a.m.-12 p.m.
  Westgate Conference Rooms 9/10
  (Advance registration required)
- Fry’s Gift Card Daily Booth Giveaway
  Courtesy of LinkUp Communications
- SBE Spring Membership Meeting ...5-6 p.m.
  Blackmagic URSA Broadcast camera,
  plus other prizes
  LVCC N234/236
- SBE Member Reception ................ 6-7 p.m.
  Multiple prize giveaways
  LVCC N239/241

Wednesday, April 10
- Fry’s Gift Card Daily Booth Giveaway
  Courtesy of Blackmagic Design

SBE Booth Schedule
- SBE Booth @ NAB Show .......... Booth LN4
- SBE Booth Hours
  - Sunday: 2 p.m. - 4 p.m.
  - Monday: 10 a.m. - 6 p.m.
  - Tuesday: 9 a.m. - 4:30 p.m.
  - Wednesday: 9 a.m. - 6 p.m.
  - Thursday: 9 a.m. - 2 p.m.

SBE Booth Hours
- Sunday: 2 p.m. - 4 p.m.
- Monday: 10 a.m. - 6 p.m.
- Tuesday: 9 a.m. - 4:30 p.m.
- Wednesday: 9 a.m. - 6 p.m.
- Thursday: 9 a.m. - 2 p.m.

SBE Booth Sponsorship Levels

- Reception Gold Sponsor
  American Tower

- Reception Silver Sponsor
  Comrex
  Drake Lighting
  JAMPRO
  Shively Labs

- Reception Bronze Sponsor
  CALREC
  Comark
  Dielectric
  DVEO
  INOVONICS
  PI
  Potomac Instruments, Inc.

- Membership Meeting Sponsor
  Blackmagic Design

SBE Event Sponsors

Frequency Coordinators Meeting
- T-Mobile

Westgate Conference Rooms

- Executive Board Room
- Hotel Conference Rooms 1-14
- Westgate Ballrooms
- Westgate Hotel
- LVCC North Hall
- North Hall Meeting Rooms
- LVCC South Hall Upper
- LVCC Central Hall
- LVCC South Hall Lower
- Renaissance Hotel

- Outdoor/Mobile Media
- South Hall Meeting Rooms
- Silver Lot

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Reception Gold Sponsor

American Tower

Reception Silver Sponsor

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Drake Lighting
JAMPRO
Shively Labs

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CALREC
Comark
Dielectric
DVEO
INOVONICS
PI
Potomac Instruments, Inc.

Membership Meeting Sponsor

Blackmagic Design

SBE Booth Sponsors

Blackmagic Design
LINKUP Communications Corporation
Nemal Electronics
Shively Labs

SBE Event Sponsors

T-Mobile

Westgate Conference Rooms

- Executive Board Room
- Hotel Conference Rooms 1-14
- Westgate Ballrooms
- Westgate Hotel
- LVCC North Hall
- North Hall Meeting Rooms
- LVCC South Hall Upper
- LVCC Central Hall
- LVCC South Hall Lower
- Renaissance Hotel

- Outdoor/Mobile Media
- South Hall Meeting Rooms
- Silver Lot

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The Society of Broadcast Engineers, Inc. completed 2018 with net revenue from all operations of -$124,671. Gross income from all sources was $675,668 while expenses were $800,339. The value of SBE savings and investments as of Dec. 31, 2018 were $958,086. Total SBE assets as of Dec. 31, 2018 were $990,623, a decrease of $124,702 over 2017. Long-term investment loss totaled $139,843.

A percentage breakdown of SBE income from program operations and expenses is depicted in the accompanying charts. A financial statement will be published in the June issue of The Signal, following completion of the Society’s annual financial audit.
The Mid-Band Battle Rages

In mid-February, the SBE filed comments in response to the Notice of Proposed Rulemaking in Docket 18-295. The FCC proposes to allow unlicensed mobile broadband in the 5.925-7.125 GHz (6 GHz) band “while ensuring that the licensed services operating in the spectrum continue to thrive.” The FCC said that expanding the use of this spectrum “will advance the Commission’s efforts to make broadband connectivity available to all Americans, especially those in rural and underserved areas.” The notice would allow, in the 6.425-6.525 GHz and 6.875-7.125 GHz BAS bands, operation of indoor unlicensed devices at low power, but without automated frequency control. The FCC said that the itinerant nature of mobile services makes the use of AFC impractical. The combination of lower power and indoor operations would, it says, protect licensed services operating on these frequencies from harmful interference.

The SBE has a different perspective. We argued that the compatibility of these unlicensed devices operating at the parameters proposed in the same bands as incumbent, mobile Part 74 broadcast auxiliary (BAS) stations, Part 101 Local Television Transmission Service (LTTS) licensees, and Part 78 Cable Television Relay Service (CARS) licensees, is not adequately addressed in the notice. Nor, the SBE said, does the Commission have sufficient information about the potential aggregate effect of the proposed, unlicensed broadband devices on the incumbent users in what the FCC refers to as the U-NII-6 (6.5 GHz) and U-NII-8 (7 GHz) BAS bands. The SBE urged the FCC to defer the addition of unlicensed devices in either of the two BAS bands, pending the development and evaluation of compatibility studies.

We noted that the 6.5 and 7 GHz bands are used intensively by broadcasters for ENG daily in all markets. The 7 GHz band is increasingly used for mobile ENG (as well as fixed BAS facilities) due to the severe overcrowding (and now difficult sharing arrangements with non-broadcast services) in the 2 GHz band, and the difficult, high-noise environment of the 2.5 GHz band. We also noted that the 7 GHz band is shared now with fixed wireless backhaul. All of this makes any additional unlicensed mobile broadband operation exceptionally difficult, given the itinerant mobile character of broadcast ENG operation and the reliability called for in operation from unpredictable locations.

The specific problems noted were these: (1) The power level proposed for indoor unlicensed devices is too high; (2) There is no duty cycle limitation for mobile broadband devices proposed. (3) The out-of-band emission limits proposed for devices in the entirety of the 6 GHz band are insufficient; and (4) There is no possibility that unlicensed broadband mobile devices, indoors or outdoors, can sense a temporary receive location in a stadium or other indoor location. There is a “hidden transmitter effect” that makes this spectrum sharing plan ineffective. Finally, (5) who is going to do enforcement in this band? Certainly not the FCC, which hasn’t the enforcement resources to police the deployment of these new Wi-Fi devices (or any other Part 15 devices for that matter). The bottom line with any unlicensed device is that if unauthorized deployment or unauthorized device configuration cannot be addressed prior to the point of sale, the rule is not enforceable at all when the devices are deployed by consumers.

Based on Assumptions

One of the principal assumptions in the FCC proposal is that there is no difference in interference potential to incumbent services between: (a) a single unlicensed broadband device in the band, and (b) the aggregate effect of millions of these devices operating simultaneously in a given environment. That is a specific assumption that the FCC says it made. The only authority for that premise, however, is an engineering study commissioned by Apple, Broadcom Corporation and others, which makes the claim without explaining the study’s methodology. Even if that study’s unsupported conclusions about aggregate interference are correct, the study assumed a duty cycle of each unlicensed mobile transmitter of 0.5% (over an unspecified period of time), while the Commission’s proposed rules permit a continuous duty cycle at full power output for these devices all of the time. In point of fact, the Commission has no idea what the RF noise floor is in the 5.925-7.125 GHz band, in any RF environment.

The assumption that there is no difference between a single emitter and millions of aggregate emitters is counterintuitive; but worse, it is “flying blind.” The Commission gets only one bite at the apple here: once the unlicensed mobile broadband devices are authorized and deployed by consumers, they cannot be regulated thereafter. Nor can they be regulated in indoor venues such as football stadiums, arenas, and other event venues where ENG and video production is ongoing.

The SBE concluded with specific suggestions: (1) the FCC would be in full compliance with its legislative obligations if it made available only 5925-6100 MHz for unlicensed mobile broadband. This would eliminate the adverse interaction between BAS, LTTS and CARS operation at 6.5 GHz and 7 GHz. (2) The power level should be reduced. The proposed limit of 250 milliwatts for access points in the 6.5 and 7 GHz bands is far too high. (3) There should be a duty cycle limit of 0.5% measured over a period of one second. Finally, the out-of-band emission mask proposed in the Notice, -7 dBm/MHz is too high. The SBE suggested that a realistic limit is -61 dBm/MHz to encourage spectrum efficiency and frequency re-use. (4) Finally, indoor operation of these devices calls for a reliable means of ensuring against interference to receive locations than is proposed. The SBE suggested the use of registered beacon fence devices. These would allow commercial users to transmit (on already used control channels) a signal that informs access points in their fence area, so that the access points will not transmit or allow transmission. This is especially urgent in sports stadiums, performance arenas, and other areas to preclude interference to ongoing entertainment productions and video production at indoor news events.

LEGAL PERSPECTIVE

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

Put These Webinars by SBE on Your Calendar
April 17: RF201: Module 6
May 2: RF Safety 2019
sbe.org/webinars

Read the FCC Notice
This Year’s NAB Show Week: A Lot to Choose From

For those of you making your way to Las Vegas for the annual NAB Show this month, you’ll find even more educational offerings than usual. The NAB Broadcast Engineering and Information Technology Conference (BEITC) will offer its usual extensive array of speakers and topics over a six-day period. The SBE is pleased to be a producing partner with the NAB once again on the BEITC, now for the 25th consecutive year. The NAB Show website has a complete rundown of all the sessions and speakers that will fill a few North Hall session rooms of the Las Vegas Convention Center.

Kicking off the BEITC on Saturday, April 6 is the Ennes Workshop, presented by the SBE. This year’s program is organized by Tom Mikkelsen and Stan Moote, both veterans of the industry. Tom is recently retired as president of National Teleconsultants in Glendale, CA and Stan is CTO of IABM, the international association that represents broadcast manufacturers and is based in Toronto. Tom and Stan have pulled together five excellent presentations that fill the morning, among them, Ioannis Katsavounidis from Facebook, talking about how they ensure end-to-end video quality, and John Footen, managing director at Deloitte Consulting, on strategies in replacing retiring staff and doing more with less.

Also on Saturday, April 6, just a few blocks away at the Flamingo Las Vegas Hotel, PBS will hold its annual technical conference in the days leading up to the NAB Show. In conjunction with PBS TechCon, the SBE is presenting a full-day tutorial on ATSC 3.0, NextGen Broadcast, organized by SBE Fellow Fred Baumgartner. Fred is director, Next Gen Broadcast Implementation at One Media - Sinclair Broadcast.

Fred has put together the most comprehensive program on ATSC 3.0 this industry has seen to date. If your station has ATSC 3.0 in its future, you will not want to miss this. It’s open to anyone, not just PBS station engineers. The deadline to register was April 1, but if you are eager to learn what ATSC 3.0 means for the future of broadcast, it may not be too late. It’s affordable at $95 for SBE members and PBS member station employees and includes lunch. Register through the SBE at bit.ly/SBEatPBS.

It’s unfortunate that these two sessions are opposite each other as none of us can be in two places at once. We couldn’t avoid that, so we humbly suggest that you bring two from your facility and cover them both!

The Ennes Workshop is a part of the NAB BEITC and requires NAB Conference registration to attend. Register at the NAB website and NABshow.org.

I hope to see many of you in Las Vegas during the show. Be sure you include the SBE Spring Membership Meeting (LVCC N234/N236) and the member reception (LVCC N239/241) that follow in your schedule. They will be held at 5 p.m. and 6 p.m. respectively on Tuesday, April 9.

In Memoriam
Robert Goza, CPBE
Member #6028
1941 - 2019
Fellow
Past National Treasurer
Past Board Member
Business Etiquette for Engineers

Often, tech people get a (sometimes deserved) reputation for being awkward in business situations. We let our intellect get in the way of proper interactions in the office. As a manager, it surprises me how often I see emails from the technical department with spelling, grammar, and punctuation errors, or are simply poorly written. Fair or not, we’re judged by those impressions. It takes a little effort to make a good impression, but it pays dividends. I’ve come up with some tips to help you along the way.

First, don’t be a machine! Empathy goes a long way. Try not to “talk down” when describing technical things to non-technical people. It’s easy to make people feel stupid when we bombard them with technical jargon. You end up not getting your point across and making the other person feel bad for not understanding you. Also, remember that when someone comes to you with a problem, it’s their biggest problem in their day, even if it’s number 127 in yours. Treat each person’s problem as if it’s your highest priority. Communicate often, and assure them that they made the right choice trusting you to solve their problem.

Speaking of communication, communicating to co-workers, vendors, and peers is something we do all the time, but often think nothing about. Unfortunately, nothing kills credibility faster than poorly written email, or angry phone calls. Always proofread your email. Write once, and read three or four times. Use spell-check. Ask yourself, "Is this clear and concise?" Remember that email lives forever, so anything you send can become part of your “permanent record.” Never send email or make phone calls when you’re angry. Take a deep breath and relax. Set your message aside and re-read it later before sending. Try taking a short walk before making that phone call.

Another important part of proper business conduct is face-to-face interaction. It’s important to have a good working relationship with your co-workers. It’s not hard to do if you remember a few things. Humans by nature are defensive. We tend to strike back when we feel attacked. That’s why it’s important to put yourself in the other person’s position before speaking. Remember that sometimes it’s just better to be helpful than to be right.

Yes, perhaps that person shouldn’t have clicked on that link. They probably feel bad. There’s no reason to beat that dead horse! Instead, be helpful and get them back in business. Praise publicly, criticize privately – there’s no need to air your dirty laundry in public.

No Wrong Answers
As the people that others come to for help, it’s sometimes hard to admit that we don’t have the answer to a question. We feel like people will think less of us if we don’t have immediate answers. Avoid falling into the trap of handing out a wrong answer, just to prove you have one. There’s nothing wrong with saying “I don’t know the answer, but I will find out for you!” Then actually follow-up! People will respect the fact that you took the time to research and come back with the right answer to their question, and you learn in the process.

I often joke that I have an address book of people smarter than me. Over time I’ve built up a list of trusted colleagues that have different strengths, and I’m not afraid to call on them if I need help with a problem. Conversely, they have no problem at all calling on me if there’s a problem I can help them out with. We offer our advice and help to each other freely, and it really helps when I get into a jam. It’s all about networking, and it’s something that is critically important to do. We may think we have all the answers, but the truth is, we don’t and that’s okay.

Also, be prepared to hear another side to a solution or problem. We all like to believe that since we’ve “been there, done that” that our solutions are the best ones. There may be a better way than your way. More than once, someone who was far removed from the problem came up with a better solution, simply because they had a more objective view than mine. It really helped my relationship with that person, since they felt good about finally helping me!

Really, business etiquette revolves around respect. Respect for people’s time, intellect, emotions, ideas, and experience. If you are mindful and respectful of other people, your actions will show that, and you will find that you will be shown plenty of respect in return.

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Earn Your Diploma at Home!
Member Spotlight: Jade McClelland

Member Stats
SBE Member Since: 2015
Chapter: 90 Southwest Florida
Employer: WOKE-LP
Position: Program Director (by day), Broadcast Engineer (by night)
Location: Fort Myers, FL
I'm Best Known For: Being the only woman in the room! Also pioneering the market’s first urban LPFM radio station in Fort Myers, FL, WOKE-LP.

Q. What do you value most about your SBE involvement?
A. The mentorship and networking. I’ve learned more in the past three years at SBE meetings than I ever could on my own (sorry, Google)!

Q. What got you started in broadcast engineering?
A. Growing up watching my dad fix and solder almost everything under the sun, I’ve always been technically inclined. But after starting my radio journey in programming at WBTT-FM and spending about four years in an editing bay with RCS’ NexGen – I ended up becoming absolutely obsessed with radio automation. Fast forward a few years later, my next employer picked up on this – and offered me a position in the engineering department. The rest is history!

Q. Who do you consider to be a mentor?
A. In radio programming, Scrap Jackson was my mentor. On the engineering side, I’ve been blessed with several: Steve Sauer, John Demshock, Hal Kneller, and Kevin Trueblood.

Q. When I’m not working...
A. I’m one of THOSE people; the kind that never stops talking shop. I guess it’s because I’m living what I love. When I’m not working, I’m talking, tinkering, or thinking about “work” – or something not far from it.

Q. What’s your favorite gadget?
A. Without a doubt, my little Progressive Electronics 200EP “audio sniffer” (or, a signal probe/tone generator, as they’re more commonly called).

Nominations Committee Seeks Board Candidates

By Vinny Lopez, CEV, CBNT

The SBE Nominations Committee work has begun. Members of this committee include: Roz Clark, CPBE, CBNT, of Clearwater, FL; Kirk Harnack, CBRE, CBNE, of Nashville; Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT, of Greenville, SC; and chairman Vinny Lopez, CEV, CBNT, of Syracuse, NY.

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, not only as a member of the board, but through service as a national committee chair or member. Members of the Board are “at large,” meaning they represent all members, not any one specific region, state, city, or chapter.

Members of the Board are expected to attend two 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 2019 as will all four officer positions. The SBE By-laws limits the number of terms of elected members of the Board. Directors may serve three consecutive terms. The secretary and treasurer may serve up to four consecutive terms and the president and vice president may serve up to two consecutive terms. The maximum number of years anyone may serve on the board is ten consecutive years.

Members interested in offering their candidacy and serving on the national Board if elected are encouraged to contact the chairman of the SBE Nominations Committee, Vinny Lopez, CEV, CBNT, at valopez@sbgtv.com or 315-477-9423. A slate of nominees will be assembled by the committee by May 1. Other qualified members may be nominated by members in good standing no later than July 12.

The election takes place from July 26 through Aug. 28. Those elected will be installed into office during the SBE National Meeting in Madison, WI, on Oct. 16.
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Members on the Move

Mark Richer will retire as the president of the ATSC later this year.

Tom Casey has been promoted to vice president of engineering and technology for the Meredith Local Media Group. He takes over the position from Larry Oaks, who held the position since 2008 and retired in March.

Richard T. Reyes, CBT, CBNT, CTO, is the media operations engineer at the University of Nevada, Las Vegas.

Matt Saplin, CBTE, is chief engineer at WMHT-TV/FM, WEXT-FM and WRHV-FM, Altamont, NY.

Joe Tymecki, CPBE, is VP engineering and technology at Vermont Public Radio.

In honor of Barry Thomas, Denver-based KSE Radio Ventures has named its employee of the month award the Barry Thomas Employee of the Month Award. Barry, an SBE Fellow and past president, was the director of engineering for KSE.

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

Mark Your Calendar

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- Jeff Nelson, News Director

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