



# The Society of Broadcast Engineers

**Fox Valley Wisconsin SBE Chapter 80**  
**PO Box 1519**  
**Appleton, WI 54912-1519**

**July 2012**

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The July meeting of SBE chapter 80 will be held at Mark Heller's new WGBW Transmitter Site outside of Green Bay on Tuesday July 17<sup>th</sup> at noon.

Chairman's Corner

Welcome to our eNewsletter!

The July meeting of Chapter 80 will be our annual Site Picnic, on Tuesday, July 17, 2012. This year's picnic is an encore picnic at Mark Heller's new WGBW Transmitter Site outside of Green Bay at the intersection of Pleasant Road and Zander Road, just south of Denmark. Coming from the north on Hi-Way 43 take the Denmark Exit (HiWay 96). Turn left, proceed East to Cty R. Right on Cty R proceed south on Cty R two miles to Pleasant Road and turn right. Look for the four towers.

Mark your calendars now and plan to attend this great annual event. The food and fellowship is always fantastic. To RSVP, email or call John Pfankuch at [jpffankuch@hvs-inc.com](mailto:jpffankuch@hvs-inc.com), (920) 893-6748 or Tim Laes [tim.laes@mwcradio.com](mailto:tim.laes@mwcradio.com) (920) 621-9499. Please give your name, phone number, email address, and whether or not you will be bringing a guest. Please bring a \$5.00 donation to help cover the great food.

We are also asking for a \$5.00 contribution to the Don Borchert Fellowship Fund.

Our June meeting of Chapter 80 was held on Wednesday, June 20, 2012 at The WBA/SBE Summer Engineering Clinic at the Radisson La Crosse, WI Our thanks to the WBA and the committee for another outstanding event !

Upcoming events:

Tuesday, August 21, 2012 – SBE Chapter 80 – TBD

Tuesday, September 18, 2012 – SBE Chapter 80 - TBD

Tuesday, October 9 thru Thursday, October 11, 2012 – SBE/WBA Broadcasters Clinic, Madison Marriot West Middleton, Wi. Details and registration: [www.wi-broadcasters.org](http://www.wi-broadcasters.org) Early Bird Registration deadline August 17, 2012.

I look forward to seeing you on Tuesday, July 17, 2012 at the Chapter 80 Site Picnic at Mark Heller's new WGBW Transmitter site. Don't forget please RSVP by Friday, July 13.

Best Regards,

Timothy Laes

## CHAPTER 80 ELECTED AND APPOINTED OFFICERS 2011-2012

Chairman	Tim Laes	WGEE WIXX WNCY WROE	920-435-3771	tlaes@new.rr.com
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Chapter 80 Webmaster	Jim Jensen	Retired	920-850-2633	jim@bjensen.net
EAS Coordinator	Steve Konopka	WPNE TV/FM	920-336-3541	skonopka@ecb.org
Past Chairman	Keith Kintner	UWO	920-424-7357	kintner@uwosh.edu
Board of Dirs/SBE Liaison	Keith Kintner	UWO	920-424-7357	kintner@uwosh.edu

Still need to renew your SBE membership? Renew now using our easy [automated SBE renewal system](#).

### Don Borchert Broadcasters Clinic Fellowship

Applications are now being accepted for the 2012 Don Borchert Broadcasters Clinic Fellowship. This Fellowship will provide all expenses to attend the Clinic enabling someone who would not have otherwise been able to attend. The program is possible through the financial support of all four Wisconsin SBE Chapters and independent donors. In addition the WBA will provide complimentary Clinic registration.

If you or someone you know might benefit from this Fellowship please go to <http://www.sbe24.org> and click on the "Broadcast Clinic" button. There you will find an application form.

### Certification Exam Session Dates

Exam Dates	Location	Application Deadline
August 3-13, 2012	Local Chapters	June 1, 2012
November 2-16, 2012	Local Chapters	Sept 14, 2012
February 8 - 18, 2013	Local Chapters	Dec 31, 2012

The Signal, SBE's bi-monthly publication, gives readers a wealth of knowledge of everything SBE.

In case you have missed it, here are a few certification articles that are worth reading.

**How is a certification exam with an essay scored?**  
[The \(not-so-\) daunting essay question](#) by Joe Snelson, CPBE, 8-VSB

**What does an essay question look like? What is expected out of an answer?**

[Senior Certification Essays](#) by Ralph Hogan, CPBE, DRB, CBNT

**Why should I keep my certification?**  
[SBE Certification: Get it and Keep it.](#) by Doug Garlinger, CPBE, 8-VSB, CBNT  
 and  
[Economy requires standing out to employers](#) by Doug Garlinger, CPBE, 8-VSB, CBNT

**How does a certification exam come to be?**  
[The art of composing SBE Certification exams](#) by Terry Baun, CPBE, AMD, CBNT

To check out other certification articles of interest visit the [SBE website](#).

Please visit the SBE website or contact the Certification Director, [Megan Clappe](#), for more information.

Do you have a questions regarding SBE Certification? Visit the [Frequently Asked Questions](#) certification page.



If you have any additional questions, please contact the Certification Director [Megan Clappe](#).

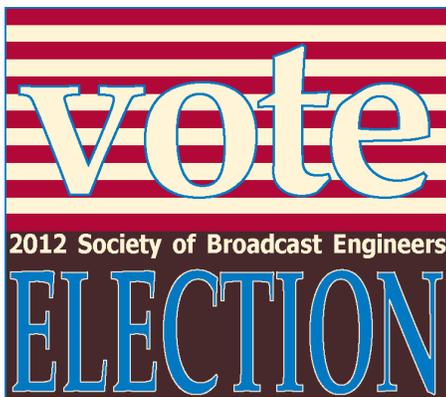
## FCC designates coordinator for national political events

The FCC recently announced through a public notice that it has designated Louis Libin, Chairman of the Frequency Coordinating Committee for the 2012 Political Conventions ("POLCOMM-2012") to be the single point of contact for coordinating operations during the Republican National Convention (RNC), Democratic National Convention (DNC), and the 2013 Presidential Inauguration.

In the release, the FCC said, "Political conventions and inaugurations attract extensive broadcast coverage, and consequently require extensive use of wireless equipment. The broadcast networks and other major content distributors require major wireless communications infrastructures, along with spectrum to support their video and audio transport."

The Republican National Convention will be held August 27 - 30, 2012 in Tampa, Florida. The Democratic National Convention will be held September 2 - 5, 2012 in Charlotte, North Carolina. The Presidential Inauguration will be held in Washington, D.C. from January 20 - 26, 2013. Members of the SBE who work at stations with news operations that anticipate using wireless equipment to cover these events should be sure that the appropriate station personnel are aware of the coordination requirement and to contact Libin well in advance.

Libin is a member of the SBE and serves as one of two SBE frequency coordinators for Chapter 15 in New York City. The complete [text of the FCC Public Notice](#) is available at FCC.gov.



### Watch for special SBE pre-election email

Voting members of the SBE are receiving a pre-election email message. The purpose of the message is to alert you that the annual election of the national board of directors will

begin in three weeks. The message will also explain the simple process that will be used for online voting.

This will be the first year that the SBE has used electronic voting. The system will be more convenient, secure and quicker than the traditional paper ballots. It will also be less costly for the society to conduct. Voting members, which include the categories of Member, Senior, Fellow and Life members as well as the voting representative of each Sustaining Member, will receive another email on July 26, that opens the election. The election period will end on August 28.

## SBE conducts board elections via the Internet

The SBE, for the first time, will be conducting its annual election of officers and directors using the Internet. The election will be conducted from Thursday, July 26 through Tuesday, August 28. Voting members will receive an election email on July 26 with a unique link to the election webpage.

Members will be able to review the background of the candidates, the voting history of the current board, and cast their ballots.

An important email will also be sent to voting members on July 5, three weeks prior to the opening of the election, to alert members that the election will take place later that month. Voting members whose email addresses fail, who have opted out of electronic balloting during membership renewal time, or who don't have email addresses listed with the SBE, will receive paper ballots through the mail.

Conducting the election process via the Internet will reduce the society's expenses and the board anticipates an increase in participation, as the process will be quick, easy and secure.



Jerry Massey, Jim Leifer, and Joe Snelson are inducted into the SBE Board of Directors. The induction took place during the 2011 fall membership meeting in Columbus, Ohio.

## SBE operator handbooks now available in digital format

The Society of Broadcast Engineers has published handbooks for radio and television operators for more than 15 years and now they are available in digital format. The [SBE Television Operators Handbook](#) and the [SBE Handbook for Radio Operators](#) can now be purchased through [Amazon.com](#) and [BarnesAndNoble.com](#). They can be read using those companies' popular Kindle and Nook capable devices and apps.

Purchase of the digital version of either book does not include the corresponding SBE operator certification exam. The [exam can be purchased](#) separately through the SBE website. The combined cost of the digital book and the separate exam is the same as the cost for the traditional [paper book](#) that includes the exam.

"These two handbooks represent the first of many digital books and other educational material the SBE plans to publish going forward," said SBE President, Ralph Hogan, CPBE, DRB, CBNT. Hogan also said, "Publishing in digital form helps to meet the needs of our members who want educational material available in traditional and digital versions. Providing both will offer options to the broadcast engineer who routinely uses electronic devices in their daily jobs."

The digital versions of the operator handbooks provide the added value of convenience and mobility. The digital

editions have exactly the same content as the current paper editions and include practice questions at the end.

## **WISCONSIN PUBLIC RADIO'S 2012 EAS SCHEDULE**

### **DAY/DATE TIME COMMENT**

W 4 Jul 0850 Routine Monthly Test initiated by NOAA  
R 12 Jul 1259  
M 16 Jul 1459  
T 24 Jul 1059

W 1 Aug 2350 Routine Monthly Test initiated by WEM  
R 9 Aug 1459  
M 13 Aug 1059  
T 21 Aug 1259  
W 29 Aug 1459

W 5 Sep 0850 Routine Monthly Test initiated by NOAA  
R 13 Sep 1059  
M 17 Sep 1459  
T 25 Sep 1259

W 3 Oct 2350 Routine Monthly Test initiated by ECB  
R 11 Oct 1059  
M 15 Oct 1459  
T 23 Oct 1259  
W 31 Oct 1059

W 7 Nov 0850 Routine Monthly Test initiated by NOAA  
R 15 Nov 1059  
M 19 Nov 1259  
T 27 Nov 1459

W 5 Dec 2350 Routine Monthly Test initiated by WEM  
R 13 Dec 1459  
M 17 Dec 1259  
W 26 Dec 1059

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**Greg Bell**  
VP Broadcast/General Manager

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The SBE Chapter 80 Newsletter is published monthly. Members are welcome to contribute articles or ideas. Please have your submissions in by the 4<sup>th</sup> of the month to Dave Driessen or Bill Tessman



# BROADCASTERS CLINIC

October 9-11, 2012

Madison Marriott West Hotel



## AGENDA

### TUESDAY, OCTOBER 9

**7:45 AM: Registration & Continental Breakfast**

**9:00 AM: SPURS (Inter-modulation products) Your fault or not!**

**Speaker**



**Bob Surette**  
Shively Labs

If you are told by your owner that he has just purchased one or more stations in the area and wants them all consolidated onto one site. What do you do besides run!

This session will go through some basic concepts of putting a multi-station transmitter site together with respect to inter-modulation products. Surette will talk about how much filter you need for what type of antenna system you are going to use. He will discuss how intermodulation products are formed, how to measure them, how to mitigate them and finally, what to do about 'RITOE'.

**Moderator**



**Leonard Charles**  
Television  
Wisconsin Inc.

**9:45 AM: Migrating Radio Call-in Shows to Wideband Audio**

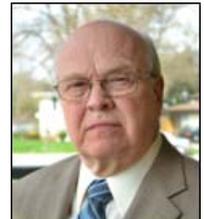
**Speaker**



**Chris Crump**  
Comrex

As the title implies, Comrex has been working on new methods to improve the on-air call quality and listener experience of call-in talk shows. With the advent of VoIP technology, smart phones and Skype™, we are no longer limited by traditional POTS lines and the thin, grating narrow bandwidth audio that those circuits produce. We'll discuss the ways that broadcasters can now put callers on the air that are full bandwidth, wideband voice calls that sound more natural, are easier to understand and less fatiguing to listen to. Use of smart phone apps, HD Voice and Comrex' new STAC VIP Call Management system are overviewed.

**Moderator**



**Gordon Carter**  
Professional Audio  
Services

**10:30 AM: Break**

**Sponsored By:**



## 10:45 AM: Radio Automation Evolved: Create your very own “cloud”

### Speaker



**Patrick Campion**  
ENCO

For 20 years the basic footprint of a radio automation system has remained largely the same: workstations, sound cards, relay peripherals, KVM systems, lots and lots of wiring, etc.

This presentation focuses on applying virtual workspace techniques commonly available in other IT sectors to radio automation systems. How much time, money, maintenance, wiring, etc. would you save if you could replace five, 10 or 20 workstations with just two servers? And how much more flexible would your environment be if functionality wasn't tied to one workstation, one studio or even one physical plant?

The answers to these questions are here along with other benefits that you gain such as more robust redundancy and fail over models.

### Moderator



**Keith Kintner**  
UW-Oshkosh

## 11:30 AM: The Benefits and Pitfalls of Social Media

### Speaker



**Jim Roberts**  
Broadcast  
Electronics

Have you noticed that the more involved in social media your station becomes, the further your listeners get pushed away from your station's site? Once listeners leave the station's website for Facebook, Twitter or another social network, they're probably not coming back soon. And once they get in the habit of interacting with your station through other portals, they may never return to your site.

In this presentation, Jim Roberts will discuss why the dependence upon social media is both beneficial and dangerous to radio. He'll also look at how you can effectively engage your listeners through social media, but still maintain control over the listener experience with ways to keep social content on the station's website or mobile app. He will outline how to interact with listeners across all social media channels and mobile devices and give examples of stations that are hosting their own social media activities on the station domain. He will provide practical tips for managing and moderating social media for promotional gain, and wrap up the discussion with insights on how to successfully leverage social media for your advertisers.

### Moderator



**Greg Dahl**  
Second Opinion  
Communications

## 12:15 PM: Lunch

### Sponsored By:



## 1:15 PM: FM Stereo Transmission using Single Sideband Suppressed Carrier (SSBSC) Modulation

**Speaker**



**Frank Foti**  
Omnia/Telos/Axia  
Systems

The biggest technical annoyance to FM radio listening is multipath. There are many variables that generate and affect multipath. One of them is the manner in which FM-Stereo content is transmitted using double sideband suppressed Carrier (DSBSC). This paper will express, in detail, a method utilizing single sideband suppressed carrier (SSBSC) modulation of the stereophonic subcarrier within the FM multiplex baseband signal, which reduces the sensitivity to multipath. This technique is compatible with existing radio receivers. There are multiple overall benefits to the broadcast signal, which are perceivable to the listener. These are: a reduction in multipath induced distortion, additional protection to the spectrum used for RDS, SCA signals, and HD-Radio content - thereby improving data robustness in the receiver. Also, there is a separate benefit in the receiver, as it is possible to improve the signal-to-noise floor when SSBSC is transmitted, and the receiver is designed to only decode the SSBSC spectrum.

The FM-Stereo transmission system employed in worldwide broadcasting has been in place since 1961. The rules governing stereophonic performance have not been altered since the mid 1980's (in the USA) when they were modified to allow an additional 0.5% total modulation (maximum of 110% total), for every 1% of SCA modulation, when an SCA was utilized. The rules governing the requirements of the FM-Stereo baseband signal are quite explicit, and leave little - if any - room for improvement of the stereo transmission system.

The method has been deployed, under experimental authorization from the FCC, it is presently being tested in the lab, and in the field. The presentation will provide technical and aural findings of this ongoing work.

**Moderator**



**Gary Mach**

## 2:00 PM: HD Radio™ Broadcast System – 4th Generation

**Speaker**



**Timothy Anderson  
Harris**

As HD Radio has achieved commercial acceptance, broadcasters are demanding more features in simpler, more robust and cost effective transmission solutions. Advances in Digital Signal Processing technology are enabling developers and manufactures to reduce the cost, size and complexity of the HD Radio Broadcast system while providing increased flexibility, advanced features and zero-defect, mission-critical reliability.

Anderson will discuss the past, present and future HD Radio system roadmap along with the state of development, challenges and solutions for providing the next-generation HD Radio Broadcast System Architecture.

**Moderator**



**Steve Brown  
Woodward  
Communications**

**2:45 PM: Break**



**3:00 PM: Radio Engineer – 2030**

**Speaker**



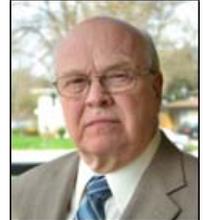
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**Diana Stokey**  
RCS

Radio broadcasters must harness the latest technologies to make better sounding content across all the mediums radio may now be found on. Learn how this is possible and where the radio engineering position is headed.

Learning Objectives: Where radio automation is headed and why the ride will be wild.

**Moderator**



**Gordon Carter**  
Professional Audio  
Services

**3:45 PM: Getting the Most Out of Your Wireless Mics**

**Speaker**



**Dave Mendez**  
Shure Incorporated

As more changes happen to spectrum we have to share it with more users, proper selection of frequencies and system setup will become more crucial. This session will cover best practices for transmitter usage, antenna selection and placement, RF gain structure, and frequency coordination as well as briefly explore some of the newer technologies and tools being developed and offered to make your wireless usage more successful.

**Moderator**



**Jason Mielke**  
WCLO/WJVL

**4:30 PM: Exhibits Open/Reception**

7:30 PM: Nuts & Bolts – Featuring: What Is It?

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**John Bisset**  
**ELENOS USA**  
**Workbench Tips You Can Use**



**Mary Ann Seidler**  
**ELENOS USA**



**Wink Efitall**  
**Your Host for the Evening**



**Gary Mach**



**Bob Surette**



**Lana White**  
**aka Linda Baun**

## WEDNESDAY, OCTOBER 10

**7:45 AM: Registration & Continental Breakfast**

**8:30 AM: Care and Feeding of Solid State Electronic Equipment**

**Speaker**



**Jeff Welton  
Nautel**

This session looks at long term maintenance and support of solid state electronics (focused primarily on transmitters, but applicable to any solid state electronics, including studio equipment, office computers, your kids' PS3, etc.). Welton will cover the effects of operating temperature on reliability and life span, efficiency of cooling systems, basic grounding and transient protection and shielding considerations to prevent RF interference on audio signals. He will also look down the road, as more and more microcontrollers, DSPs and computer based devices become part of the airchain – and at things that can be done now to “future proof” the facility, with respect to planning an environment that will ensure equipment survives all the slings and arrows that the environment can throw.

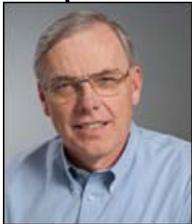
**Moderator**



**Leonard Charles  
Television  
Wisconsin Inc.**

**9:15 AM: Transmission System Total Cost of Ownership**

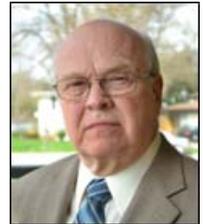
**Speaker**



**Geoffrey  
Mendenhall, P.E.  
Harris**

There is high interest among broadcasters and RF network operators to reduce their overall transmission facility cost of ownership. The Total Cost of Ownership (TCO) includes much more than the initial cost, energy consumption, and maintenance of the transmission equipment. The acquisition, maintenance, operating, and training costs of all the other required systems in the transmission facility must also be considered to arrive at lowest TCO. This paper investigates a new evaluation process and analysis tool to design a transmission facility for lowest TCO. Besides the reduction in direct operating costs, the benefits of reduced TCO include a reduction of carbon footprint in support of green technology. The comprehensive analysis includes the tradeoffs between air and liquid cooling system impact on the overall facility, floor space requirements, size, and the thermal efficiency of the transmitter building.

**Moderator**



**Gordon Carter  
Professional Audio  
Services**

**10:00 AM: Exclusive Exhibit Time**

**11:00 AM: Lunch**

**Sponsored By:**

**COMREX**

## 1:30 PM: Keynote Address: National Association of Broadcasters

**Speaker**



**Kevin Gage**

Executive VP and Chief Technology Officer, NAB

**Moderator**



**Leonard Charles**

Television Wisconsin Inc

## 2:00 PM: Interference To Broadcast Facilities

**Speaker**



**Jeremy Ruck, P.E.**  
Jeremy Ruck &  
Associates, Inc.

Ruck will look at the interference that occurs to AM, FM, TV, and Microwave facilities. He will discuss the quantification of the interference, some potential remediation techniques, and then how the FCC regards the interference.

**Moderator**



**Bill Hubbard**  
UW-Green Bay

## 2:45 PM: Break

**Sponsored By:**



## 3:00 PM: Planning a Microwave Link; It's Not Just Line of Sight!

**Speaker**



**Ben Evans, P.E.**  
Evans Engineering  
Solutions

In this presentation, Evans will discuss the technical considerations that must be taken into account when planning a fixed microwave link for an STL station, intercity relay, or whatever other use the broadcaster intends.

For a robust microwave link, it's not enough to have a clear shot from the transmitting antenna to the receiving antenna (i.e., line of sight). Other factors that must be considered include: Fresnel Zone Clearance, Fading, Bandwidth, Reliability, Receiver threshold and Selection of transmitting/receiving equipment. Among the main topics to be discussed are: Terrestrial and atmospheric conditions that affect microwave links and steps to developing and installing a successful microwave link. Modern software technology and other tools used to design & display links will also be explored.

**Moderator**



**Mark Burg**  
GRANT Media LLC

### 3:45 PM: Hacked... Surviving a WEB Attack

**Speaker**



**Karl Voss**  
KAET Phoenix

The world does not end if your station's WEB server is hacked. But how you deal with the aftermath of the attack can affect how fast you can recover and provide confidence to both your internal users and viewers/listeners. Learn what went well, what didn't go so well and how you can plan to minimize the effects of an attack on your WEB server.

**Moderator**



**Keith Kintner**  
UW-Oshkosh

### 4:30 PM: Here Comes Ethernet®!

**Speaker**



**Steve Lampen  
Belden**

Ethernet has been around since 1973. And you're probably aware of many companies who have struggled to make it work for audio and video applications. But those are proprietary systems where often Box A can't talk to Box B. So IEEE, which owns the Ethernet standard, has been working on a re-write of the Ethernet standard called 802.1BA AVB, and the AVB is for audio and video bridging. Finally, a system may herald a new way to design, install and operate audio and video facilities.

**Moderator**



**Gary Mach**

But, really, Ethernet AVB is taking off. This seems to be one technology that will have a very short start-up time, so the Clinic audience should be aware it is coming. This may prove to be a game-changing option for audio and video control, storage and transmission.

### 5:30 PM: Dinner

### 6:00 PM: Upper Midwest Regional SBE Meeting – The Tube Sound: Fact or Fiction?

**Speaker**



**Jerry Whitaker**  
ATSC

The latest trend in audio is actually a very old trend. The evolution of high-end audio from vacuum tubes to solid state to integrated circuits to digital technologies is coming full circle as the vacuum tube amplifier stages a comeback. If you look at the top end of audio today, among the things you will find are vacuum tubes and vinyl records. So, while we are all focused on the future of digital video and audio, it is worthwhile to spend a few minutes looking at the other end of the spectrum. This presentation revisits the attributes of vacuum tubes for audio applications and seeks to answer the question - are vacuum tube amplifiers better or just different? The related issue of source material -in particular vinyl records -will also be examined in the presenter's quest to bring back "appointment listening." Prepare for a deep dive in the vacuum between the cathode and plate!



## THURSDAY, OCTOBER 11

**7:45 AM: Registration & Continental Breakfast**

**8:30 AM: New Digital Correction Techniques**

**Speaker**



**Perry Priestley**  
Thomson Broadcast

In the early days of ATSC TV transmitter implementation it was the conventional belief that digital television coverage would not be significantly improved if the transmitter's SNR (MER) was raised above 27 dB. However, this number was based on a perfect link between transmitter and receiver. In the real world where the transmission link is less than perfect a significant improvement in coverage would materialize if the SNR/MER was increased to at least 32dB. Since the implementation of digital TV, there have been some dramatic developments in 8VSB signal technology such as specialized algorithms for nonlinear pre-correction, device memory effects compensation and crest factor reduction.

**Moderator**



**Leonard Charles**  
Television  
Wisconsin Inc.

**9:15 AM: TV Technical Regulatory Rundown**

**Speaker**



**Kelly T. Williams**  
Senior Director  
Engineering and  
Technology Policy  
NAB Technology  
Department

Calm Act, White Spaces, Video Description, internet captioning, spectrum actions and repacking. Join Kelly Williams, NAB's Senior Director of Engineering & Technology Policy, for an informative overview of these and other important issues and for what you need to know to be prepared for the evolving technical regulatory landscape ahead.

**Moderator**



**Leonard Charles**  
Television  
Wisconsin Inc.

**10:00 AM: Break**

**10:15 AM: ATSC Update: New Technologies for Today and Tomorrow**

**Speaker**



**Jerry Whitaker**  
ATSC

Work is well underway in the ATSC on several major new technologies of importance to broadcasters. Collectively known as "ATSC 2.0" this collection of features is intended to move DTV broadcasting into a new connected and interactive world. Among the services under this umbrella is the new Non-Real-Time (NRT) Standard, just published by ATSC, for delivery of a wide range of innovative services to consumers. This presentation will update attendees on work underway in ATSC to help broadcasters meet today's challenging marketplace, and report on the rollout of important new services such as ATSC Mobile DTV. In addition, work now underway on planning the next generation of broadcast TV services will be outlined with a focus on what it means to broadcasters and how your input can help shape ATSC 3.0.

**Moderator**



**Kent**  
Aschenbrenner  
Milwaukee Public  
Television

## 11:00 AM: Mobile DTV Update

**Speaker**



**Jay Adrick  
Harris**

**Speaker**



**Wayne Luplow  
Zenith**

Adrick and Luplow will cover mobile EAS, mobile digital signage, the two commercial rollouts (MCV and M-500) and the status of mobile system enhancements that are being worked within the OMVC and ATSC. Session may also include active demos of the MEAS and mobile digital signage systems.

**Moderator**



**Matt Sperling  
WKBT TV**

**Noon: Lunch**

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**Live Production Technology**

## 1:00 PM: Media Accessibility and Content Creation Workflows

**Speaker**



**Bob Craig  
Avid**

Media companies face many operational challenges as they complete the transition to file-based workflows, HD broadcast, and web and mobile delivery. With the advent of the 21st Century Communications and Video Accessibility Act of 2010, media companies must also make their content accessible to audiences in new ways. In this talk, we will explore these industry trends and their impact on content creation workflows, with special emphasis on closed captioning. The talk will include an overview of captioning and ancillary data technologies, as well as a demonstration of typical production workflows in practice today. We will then present a vision for future workflows that could significantly reduce the overhead associated with increased accessibility.

**Moderator**



**Bill Hubbard  
UW-Green Bay**

## 1:45 PM: Using the ITU BS.1770-2 and CBS Loudness Meters To Measure Loudness Controller Performance

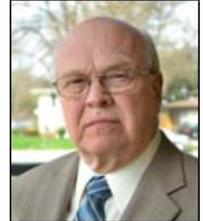
### Speaker:



**Bob Orban  
Orban**

This engineering report compares the performance of the ITU BS.1770-2 loudness meter algorithm with that of the Jones and Torick (Jones, Bronwyn L.; Torick, Emil L., "A New Loudness Indicator for Use in Broadcasting," J. SMPTE September 1981, pp. 772-777 ) when both meters are used to monitor the performance of an automatic loudness controller using the algorithm originally developed by Benjamin Bauer and co-workers at CBS Laboratories, refined by Jones and Torick at CBS Technology Center, and further refined by Robert Orban. It discusses the limitations of the BS.1770 meter's minimalist psychoacoustic model (a frequency weighting filter followed by a wideband power detector), particularly when measuring program material having low peak-to-RMS ratios. It concludes that while the BS.1770-2 is useful for measuring the integrated loudness of typical broadcast material having typical peak-to-RMS ratios, the Jones and Torick meter is better able to measure the loudness of a program's "anchor element" (typically dialog) when the anchor element's loudness is held constant while other program elements (like sound effects or underscoring) are added to the mix.

### Moderator



**Gordon Carter  
Professional Audio  
Services**

## 2:30 PM: Advanced RF Design and Measurement Tools

### Speaker



**John Schadler  
SPX  
Communication  
Technology**

The days of slotted lines, VSWR meters, scale modeling, far field testing and plotting on paper Smith charts are long gone. The presentation will take a "fun" historical look at broadcast antenna design and testing tools and bring the audience up to speed as to the methods used today. Focus will be placed on designing in a virtual environment with electromagnetic simulation as well as the benefits of indoor and outdoor near field testing.

### Moderator



**Kent  
Aschenbrenner  
Milwaukee Public  
Television**

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OCTOBER 8-10, 2013  
MADISON MARRIOTT WEST HOTEL**

**The Wisconsin Broadcasters Association would like to express its  
deepest appreciation to the Broadcasters Clinic Committee:**

*Leonard Charles, Chair Television Wisconsin, Inc.*

*Kent Aschenbrenner, Milwaukee Public Television*

*Steve Brown, Woodward Communications, Inc.*

*Mark Burg, GRANT Media LLC*

*Gordon Carter, Professional Audio Services*

*Greg Dahl, Second Opinion Communications, Inc.*

*Clif Groth, New Radio Group*

*Bill Hubbard, UW-Green Bay*

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*Kevin Ruppert WISC-TV*

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*Mandy Endicott, WBA Administrative Assistant*

**We look forward to seeing you at this year's  
Broadcasters Clinic October 9-11, 2012!**