



The Society of Broadcast Engineers

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

August 2017

Like us on FaceBook -facebook.com/sbe80

Our website sbe80.org

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Our next SBE Chapter 80 meeting will be at The Out o Town Club Tuesday August 22 at noon **one week later than usual**. Frank Grundstein from Logitek will be presenting a program at our August meeting on a review of the IP Protocols and proposed standards for audio and video.

Coming up:

- 2017 ETRS Form One on or before August 28, 2017
- On or before 11:59 p.m., September 27, 2017, EAS Participants must submit any updates or corrections to their 2017 Form One filings and must file the "day of test" information sought by ETRS Form Two.
- nationwide test of the EAS on September 27, 2017 at 2:20 PM EDT
- On or before November 13, 2017, EAS Participants must file the detailed post-test data sought by ETRS Form Three.
- 2017 Broadcasters Clinic Upper Midwest SBE Regional Meeting October 10-12, 2017. See brochure later in this newsletter

Our thanks to WLUK for hosting our annual site picnic at the Packer Party house.. Steve K was awarded the Chapter 80 Engineer of the Year award at our July meeting.



CHAPTER 80 ELECTED AND APPOINTED OFFICERS

Chairman	Mark Hoenecke	WPT	715-845-1319	Mark.Hoenecke@ecb.org
Vice Chairman	Stu Muck	Muck Broadcast Services	920-960-0045	mbsfdl@yahoo.com
Past Chairman	Steve Konopka	WPNE TV/FM	920-336-3541	skonopka@ecb.org
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Frequency Coord. > 1 GHz	Bill Hubbard	UW Green Bay	920-465-2510	hubbardw@uwgb.edu
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Certification Chairman	Jim Sams	Retired	920-822-5951	jsams@netnet.net
Chapter 80 Webmaster	Mike Steele	WHBY	920-831-5605	msteele@wcinet.com
EAS Coordinator	Steve Konopka	WPNE TV/FM	920-336-3541	skonopka@ecb.org
Board of Dirs/SBE Liaison	Mike Hendrickson			mhendrickson@sbe.org

The FCC and OSHA have produced a booklet on tower safety. A free download, you can get it here.
http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0601/DOC-345150A1.pdf (*theBDR.net*)

Broadcasters Clinic 2017

In this newsletter you will find the 2017 full color brochure for the Broadcasters Clinic. The program committee has worked very hard to put together another session line up that is reflective of the technology that we all work with or hear about every day. Our goal, and why the Clinic exists, is to give you the tools to help you do the best job you can for yourself and the stations under your care.

Let me tell you a little about the committee. It is made up of a cross section of Radio and TV engineers from across the upper Midwest representing all four Wisconsin SBE Chapters and beyond. Their volunteerism toward this task is humbling to me as their leader. Planning meetings are spent dissecting our industry and profession to insure we are covering the subjects of most value to you as an attendee. We take pride in what we do because we take pride in what you do. We truly are all in this together.

One thing is for sure, broadcast technology doesn't stand still, and neither can you. It is our hope that you will find the time in your busy schedule to attend the Clinic this year. I am confident that you will return recharged and ready to make the future happen. Linda Baun and the amazing staff at the WBA stand ready to accept your registration and save a seat for you at the 2017 Broadcasters Clinic. Once you have browsed the brochure please make the commitment to join us. We'll be glad to see you in October.
(Leonard Charles SBE24)

Nationwide EAS Test

The Federal Emergency Management Agency (FEMA), in collaboration with the FCC, will conduct a nationwide test of the EAS on September 27, 2017 at 2:20 PM EDT. If conditions on the day of the test require the rescheduling of the test, a secondary test date is scheduled for October 4, 2017.

All EAS Participants must complete the 2017 ETRS Form One on or before August 28, 2017. Each EAS Participant should file a separate copy of Form One for each of its EAS decoders, EAS encoders, and units combining such decoder and encoder functions.



On or before 11:59 p.m., September 27, 2017, EAS Participants must submit any updates or

corrections to their 2017 Form One filings and must file the “day of test” information sought by ETRS Form Two.

On or before November 13, 2017, EAS Participants must file the detailed post-test data sought by ETRS Form Three.

ETRS Login

The following links provide access to ETRS new user registration, login, password reset and user profile updates:

- **Log In:** https://fccprod.service-now.com/login_with_sso.do?glide_sso_id=10db4616dbb07200f2f2f6531f9619de&fcc_portal_link=etrs
 - **New User Registration:**
<https://apps2.fcc.gov/fccUserReg/pages/createAccount.htm>
Note: All EAS Participants must register a FCC Username in the Commission’s CORES system. EAS Participants can no longer use ETRS-specific accounts that they created in 2016.
 - **Password Reset:** <https://apps2.fcc.gov/fccUserReg/pages/reset-passwd-identify.htm>
 - **Profile Update :** <https://apps2.fcc.gov/fccUserReg/pages/login.htm>
-

ETRS – Description

The ETRS is the online system in which EAS Participants must file identifying information, day-of-test data, and post-test data related to a nationwide test. ETRS provides several new features that ease the data-entry burden on EAS Participants, encourage timely filings, and minimize input errors.

For additional information about or assistance with ETRS, please contact us at ETRS@fcc.gov

Nationwide EAS Test Releases

- Nationwide Test of the Emergency Alert System Scheduled for September 27th
Public Notice: [Word](#) | [Acrobat](#)
- Public Safety and Homeland Security Bureau Provides Instructions for 2017 ETRS Registration Using CORES
Public Notice: [Word](#) | [Acrobat](#)

ETRS Frequently Asked Questions

- [ETRS FAQs](#)

Public notice: https://apps.fcc.gov/edocs_public/attachmatch/DA-17-708A1.doc

Videos: <https://www.fcc.gov/general/eas-test-reporting-system>

New EAS Operating Handbook: <https://www.fcc.gov/general/eas-test-reporting-system>

RF101: Broadcast Terrestrial Transmission Systems Course Continues Thursday, August 24 Module 7: RF Test and Measurement

The eight-part SBE RF101: Broadcast Terrestrial Transmission Systems continues Thursday, August 24 at 2 p.m. for Module 7 - RF Test and Measurement. The live webinar will cover signal generators, power measurements, AM Field Strength measurements, RF voltage and power, modulation characteristics, network analyzers, spectrum analysis and spectrum analyzers, noise figure and noise figure measurements and spectral regrowth.

This webinar continues the eight-part series that is targeted to those with minimal or no background in RF and/or are relatively new to the field. This multi-module course will present an overview of RF needed to understand the basics and make informed decisions.

It's not too late to take advantage of the entire series! Modules 1 through 6 are now available on demand. All modules will be available on demand after the LIVE presentation. The cost is \$57 for members or SBE and \$87 for non-members.

Instructing the SBE RF101 course is Dennis Baldridge, CPBE, 8-VSB, AMD, DRB, CBNT, a veteran of the broadcast engineering field for more than 30 years. Baldridge is a Senior member of the SBE, holds an FCC Lifetime General License (formerly a First Class FCC License) and Amateur Radio Extra Class License (K0DB). He also holds a M.A.E. and teaches science courses for Upper Iowa University. As owner of Baldridge Communications, LLC, he works as a contract engineer and has also authored articles for Radio Guide. Baldridge serves as an inspector for the FCC Alternate Inspection Program of the Wisconsin Broadcasters Association.



Take advantage of the complete eight-part series of the SBE RF101 Webinar Series Course Modules:

1. Introduction to Radio Frequency (RF) - On Demand
2. Transmission Lines - On Demand
3. Towers, Antennas, and Transmission Systems - On Demand
4. Antenna Gain - Feed-line Loss - On Demand
5. Modulation Fundamentals - On Demand
6. AM, FM, TV RF Propagation - On Demand
- 7. RF Test and Measurement- August 24, 2017, 2 p.m.**

© FCC Regulations - September 22, 2017, 2 p.m.

[Click here to register](#) for **Module 7, RF Test and Measurement THURSDAY August 24.**

If you have questions regarding this webinar, contact Education Director [Cathy Orosz](#) or by phone at 317-846-9000.

Look ahead at upcoming opportunities to take a [certification exam](#) in your area with the local chapter.

If you would like to take an exam but are not able to make it during these sessions, please contact Megan Clappe to ask about special proctoring.

Certification Exams The deadline to apply to take the SBE certification exam at your local chapter in June is April 21. Register today at sbe.org/certification.

Below is the upcoming certification exam schedule

Exam Dates Location Application Deadline

August 4-14, 2017	Local Chapters	June 5, 2017
November 3-13, 2017	Local Chapters	September 25, 2017

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

2017 RF Safety Course - RESCHEDULED for November 9

Mark your calendar and plan on participating in **The 2017 SBE RF Safety Course NOW RESCHEDULED for Thursday, November 9 starting at**

1 p.m. ET. This course is approximately three and a half hours long and provides an updated overview of RF radiation issues and practices for broadcasters, including:

- Proving compliance at a broadcast site
- Biological effects of RF radiation and the distinct differences between RF radiation and ionizing radiation
- FCC and OSHA regulations - what they are and what you need to do to comply
- Workplace hazards
- Transmitter sites
- SNG and ENG trucks
- Remote operations (where news personnel can find problems such as on rooftops)
- The unique issues at AM stations
- RF hazard protection equipment - you may not need it but your contractors probably will
- Signs - what they mean and what you need

The course is designed for broadcast station personnel, including chief and assistant chief engineers, transmitter site engineers, ENG and SNG maintenance personnel and management who need to have an understanding of RF safety issues and regulations. Noted RF safety expert, Richard Strickland of RF Safety Solutions, instructs the course. Strickland founded RF Safety Solutions in 2001 after 10 years as Director of Business Development for Narda Safety Test Solutions, the world's leading supplier of RF safety measurement and monitoring products.

It is recommended that persons taking the SBE RF Safety Course have at least a basic knowledge of electronics and understand the concept of frequency. The cost is \$95 for SBE members and \$150 for non-members. The completion of this course qualifies the participant for one credit identified under Category I of the Recertification Schedule for SBE Certifications.

Space is Limited. **[Click here](#) to make your reservation TODAY!**

Need more information, contact Cathy Orosz, Education Director at 317-846-9000 or at corosz@sbe.org.
(sbe.org)

SBE Election is Underway

This year's [election](#) of the national SBE Board of Directors and officers of the Society began Monday, July 24, when most voting members received a special email from Intelliscan with a link to the ballot. The link is unique to each member to ensure that a member only votes one time. Voting members who do not have a valid email on file with the SBE national office or who opted out of online voting were mailed a ballot on July 24. The election runs through Wednesday, Aug. 23. If you have not voted yet, you received a

reminder message from Intelliscan today with the link to your ballot.

Fundamentals of IP Networking Continues August 29

Join us for the fifth and final part of the IP Networking series on The Fundamentals of IP Networking series on Tuesday, August 29, 2017. Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE presents **Cybersecurity Fundamentals & Securing the Network**.

Part 5 includes an understanding of the conceptual aspects of network security and practical structured implementation steps. Practical implementation practices will focus on "defense in depth" tactics that includes the creation of a security policy, physical security, Ethernet switch security, and layer 3 security approaches. The webinar will run from 2:00 to 3:30 p.m. ET.

[Click here to register for Part 5.](#)

The five-part series serves as an introduction to an intermediate level of exposure on the topic IP networking. The series allows attendance at an individual presentation of interest or the entire five-part series as a "crash" course in IP Networking. Take advantage of the whole series, Parts 1-4 Now Available ON DEMAND:

Part 1 - Intro to IP Networking Standards & the Physical Layer - Now Available ON DEMAND

Part 2 - Ethernet Switching Fundamentals and Implementation - Now Available ON DEMAND

Part 3 - IP Routing and Internetnetworking Fundamentals - Now Available ON DEMAND

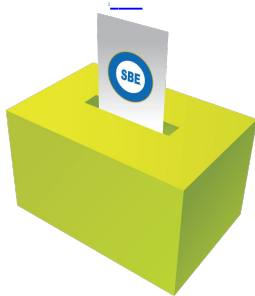
Part 4 - Building a Segmented IP Network Focused On Performance & Security - Now Available ON DEMAND

Part 5 - Cybersecurity Fundamentals & Securing the Network

August 29- 2 p.m. - 3:30 p.m. ET

[Click here to register](#) for the complete five-part series \$228 for members and \$348 for non members. This special offer reflects a 20 percent discount on the individual session pricing. These prices only apply to complete five-part package purchases.

SBE Compensation Survey Available This Week




The [SBE Compensation Survey](#) results are now available to SBE members free of charge at the SBE website. Members will need their website login to access the page. The PDF report is also password protected. The password is noted on the download page.

The survey provides information on salary levels and employee benefits among broadcast and media technology engineers. The published report includes demographic data on market size, job category/title, age, years working in broadcasting, salary, benefits received and a comparison of salaries by those with, or without, SBE certification.

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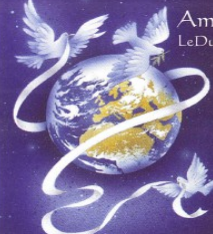
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Cell: 920.217-7598
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Fax: 920-617-7021
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The background of the entire page is decorated with various autumn-themed elements. Numerous maple leaves in shades of red, orange, and yellow are scattered across the top and bottom. In the center-right area, there are several broadcast-related icons: a green television set, a radio tower with signal waves, a red car with signal waves, and a series of four vertical bars of increasing height representing a signal strength indicator.

2017 Broadcasters Clinic

Upper Midwest SBE
Regional Meeting
October 10-12, 2017
Madison Marriott West



All sessions and activities are in the Superior Room unless otherwise noted.

**TUESDAY
OCT. 10**

**7:45 A.M.
REGISTRATION & CONTINENTAL
BREAKFAST**

**8:50 A.M.
OPENING REMARKS**

**9 A.M.
AM BROADCAST FACILITIES**



**BEN DAWSON,
HATFIELD &
DAWSON
CONSULTING
ENGINEERS, LLC**

This session will discuss

possibilities for cost-effective changes in the AM plant; the cost-effectiveness of diplexing or tri-plexing; how to plan for facilities changes like frequency swaps or turning off a potential restricting station; what AM revitalization technical changes might arise; and how to configure your antenna to allow a moment method proof and when you should avoid one even if legally permissible.

**9:45 A.M.
VIRTUAL RADIO: REAL
APPLICATIONS**



**BILL BENNETT,
LAWO, INC.**

IT's influence on radio broadcasters is strong, and awareness

of hardware virtualization and the "glass cockpit" is growing fast. We'll look at what you can do today, and where things may go in the future, exploring the ways broadcasters can reap operational and monetary gains from IT's R&D investment.

**10:30 A.M.
BREAK**

**10:45 A.M.
MAKING METADATA MATTER**



**DON BACKUS,
ROHDE &
SCHWARZ**

Metadata is "data about data," but smart

broadcasters know it's so much more than that: It's information listeners want and use; it's material that engages audiences, enhances the radio experience and benefits advertisers; and, it's ultimately a way of turning data into dollars. We'll discuss the technical side of delivering and monitoring metadata and how you can help develop a winning strategy for your stations to make metadata a revenue center that matters.

**11:30 A.M.
THE AUTOMOTIVE DASHBOARD
INITIATIVE**



**DAVID LAYER,
SENIOR
DIRECTOR,
ADVANCED
ENGINEERING,
NAB**

The automobile dashboard has historically been a stronghold for the AM/FM radio receiver, but 21st century technology is providing consumers with more and more dashboard options. A big part of this change is driven by the ever-greater availability of mobile broadband services and the ubiquitous smartphone. Despite this, radio listening remains the dominant form of audio entertainment. In this presentation, Layer will offer a survey of the most popular digital dashboard technologies and discuss how radio broadcasters can use these to their best advantage. He will also consider the linkage between the growth of so-called "hybrid radio" services in smartphones (which use both wireless broadband and over-the-air signals) and how this can translate into increased listenership in vehicles.

12:15 P.M. - 1 P.M.

LUNCH

GENEVA/MENDOTA ROOMS

1:15 P.M.

VIRTUAL TALKSHOW AND SPORTS PRODUCTION



**KIRK HARNACK & JOE TALBOT,
THE TELOS ALLIANCE**

Convenient connections create compelling content. Telecom technologies like SIP/VoIP are becoming more ubiquitous and less mysterious. Along with fast Internet and VPNs, they not only enable flexible workflows, they enable alternatives to single-studio or expensive remote solutions. This presentation demonstrates some clever implementations in-use now, as well as previews strategies and techniques for achieving efficient and effective talkshow and other radio production workflows.

2 P.M.

HD RADIO: HOW TO IMPROVE LISTENER EXPERIENCE WITH PROPER TIME/LEVEL ALIGNMENT



**MIKE PAPPAS,
ORBAN**

Since the first generation of HD Radio systems were installed back in 2004 maintaining diversity delay time alignment between the analog FM and the HD radio digital signal

has been a challenge that continues to this day. System drift is still an issue and directly impacts the user experience. So what are the best practices to monitor and correct this issue? How best to implement them? What to look out for?

2:45 P.M.

BREAK

3 P.M.

HD SINGLE FREQUENCY NETWORKING



**JEFF WELTON,
NAUTEL**

This presentation won Best Engineering Paper for the NAB show. It discusses a practical case study using HD single frequency networking to seamlessly set up on channel coverage boosters with no interference zone. The presentation goes into both the theory involved in developing a solution and the practical implementation of the solution.

3:45 P.M.

TRANSPORT ROBUST AND SECURE FM COMPOSITE MULTIPLEX SIGNALS IN AN IP STL



**DAVE AGNEW,
GATESAIR
MASON, OH**

The emergence of high bandwidth IP network

connections is an enabler for the transport of the FM composite multiplex (MPX) signal in a Studio-to-Transmitter Link (STL). This session will present use cases to illustrate differences between all analog, all digital, and dual domain FM MPX STLs and the tradeoffs they present with respect to compatibility and network bandwidth, scalability, and delay.

4:30 P.M.-7 P.M.

EXHIBITS OPEN-EXHIBITORS RECEPTION

WISCONSIN/MICHIGAN ROOMS

7 P.M.

NUTS & BOLTS SESSION: SNMP PLUGFEST



**TONY PETERLE,
WORLDCAST
SYSTEMS, INC.**

A wireless network will be setup in this session over which attendees can connect with their own personal laptops. Attendees will be provided a USB key containing the installer for the iReasoning MIB browser (a popular tool for SNMP exploration). Using many SNMP devices in the room attendees will learn how to use the MIB browser to connect to the devices, poll for information and exercise control with SET commands.



**WEDNESDAY
OCT. 11**

7 A.M.

**REGISTRATION & CONTINENTAL
BREAKFAST
LOBBY**

8:30 A.M.

**REAL WORLD RESULTS FOR A
SIGNAL MEASUREMENT DRONE**



**JOHN KEAN,
CAVELL MERTZ &
ASSOCIATES, INC..**

Development of drones has proceeded

quickly for video production in the broadcast industry. Applications for engineering study are beginning to catch up. Cavell Mertz & Associates developed the nation's first signal measurement drone for broadcast antenna systems and has been gathering substantial field experience with real-world antennas. This presentation will provide the results of studies for digital television stations and FM radio stations in both analog and digital mode, illustrated by charts and photographs.

9:15 A.M.

WEBRTC FOR BROADCASTERS



**CHRIS CRUMP,
COMREX**

WebRTC technology is already dramatically changing

the way we communicate with online retailers, and each other. Web browsers such as Google Chrome, Mozilla Firefox, Opera and, in the near future, Microsoft Edge and Safari, all have audio and video codecs built in. We will discuss the open source Opus algorithms, provide an overview of WebRTC and discuss ways of utilizing this transforming technology in a broadcast environment.

10 A.M.

**WISCONSIN/MICHIGAN ROOMS
EXCLUSIVE EXHIBIT TIME**

11 A.M.

**WISCONSIN/MICHIGAN ROOMS
LUNCH ON EXHIBIT FLOOR**

1:30 P.M.

THE SPECTRUM AUCTION REPACK



**PATRICK
MCFADDEN,
ASSOCIATE
GENERAL
COUNSEL, NAB.**

The auction is over but the Repack is just beginning. The NAB has been studying the process and polling members to identify

bumps in the road before they become potholes. This session will reveal the data, reaction, and future efforts surrounding the Closing and Change Reassignment Public Notice. The majority of TV stations and many FM stations will be impacted in different ways.

2:15 P.M.

AN FCC UPDATE

**DAVID OXENFORD, WILKINSON
BARKER KNAUER LLP; MICHELLE
VETTERKIND, WBA PRESIDENT**



What is the FCC up to? How will it affect your station? Let's find out.

3 P.M.

BREAK

3:15 P.M.

**WHY 0.01% DISTORTION
SOMETIMES MATTERS AND 30%
SOMETIMES DOESN'T**



**STEVE DOVE,
WHEATSTONE**

This session is a lighthearted romp through why some things sound the way they do, deflating some conventional wisdoms, and highlighting some surprising insights.

4 P.M.

12 GHZ CABLE



**STEVE LAMPEN,
BELDEN**

When will copper fail us? When 4K and other high

data rate services first appeared it seemed only fiber could handle the bandwidth. Now cable has been developed to handle the speed. This presents some installation and connection challenges. This session will cover cables and interconnection in the 12Ghz world and what is likely to be the technology for the next generation.

5:30 P.M.

DINNER

6 P.M.

**SBE ALL CHAPTER MEETING AND
PROGRAM: AUTOMATED VEHICLE
TESTING**



**PETER
RAFFERTY,
WISCONSIN
AV PROVING
GROUNDS,
UW-MADISON**

Things at

the Proving Grounds with automated vehicles (AVs) have been taking off since January. This session will generally introduce Automated Vehicles, briefly explain what they are and aren't, how they work (or don't work, yet), address

common questions and allay common misconceptions. Ideally it will leave the audience with a better understanding of where we are and where we're headed.

EXHIBITORS

The Broadcasters Clinic Committee and the Wisconsin Broadcasters Association extend their gratitude to the Broadcast Clinic exhibitors and prize donors.

25-SEVEN

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YELLOWTEC USA, LLC**

Exhibitor list is current as of July 19, 2017. The most up-to-date list is in the attendee packet.



**THURSDAY
OCT. 12**

9:15 A.M.**SCTE-104/35 AND BEYOND: A LOOK AT AD INSERTION IN AN OTT WORLD****JACOB KINSEY,
COBALT DIGITAL**

Ad Insertion is a very important part of many video

delivery systems because it generates revenue! With Over-The-Top (OTT) video delivery on the internet, the holy grail of advertisement is finally achievable. It is technically possible to send individual, personalized ads to each viewer. Such systems are based, in part, on the traditional ad insertion workflows that use the SCTE-104 and SCTE-35 standards as their starting point. This session will show how a traditional ad-insertion workflow at the programmer side can be used as a basis for an OTT system.

**10 A.M.
BREAK****10:15 A.M.****BROADBAND ANTENNA AND FILTER TECHNOLOGY FOR REPACK AND ATSC 3.0****CHRISTINE ZUBA,
DIELECTRIC**

To date, broadband antennas have been

largely designed with large panels and high windload.

Newer technologies such as waveguide slot-cavity antennas have been introduced within the last 12-18 months. Additional New Broadband Slot Antenna techniques are becoming available. The television channel repack not only means the need for broadband antenna applications, but additional filter considerations for closely spaced channels, and a future ATSC 3.0 environment. This paper will examine the latest in antenna and filter design techniques and specifications in a more crowded television band, anticipating future ATSC 3.0.

11 A.M.**ADOPTING VOIP TO IMPROVE LIVE COVERAGE WORKFLOWS WHILE SLASHING EXPENSES****KIRK HARNACK,
JOE TALBOT,
MARTIN DYSTER,
THE TELOS ALLIANCE**

Live coverage televi-

sion is rife with difficulties and pitfalls, and every TV facility is looking to cut expenses. More TV stations are discovering VoIP/SIP service

7:45 A.M.**REGISTRATION AND CONTINENTAL BREAKFAST****8:30 A.M.****THE IP BASEBAND MIGRATION****TOM HARMON,
UTAH SCIENTIFIC**

As the IP revolution sweeps through the broadcast industry,

there's little doubt that most video operations will be driven by IP technologies in the not-so-distant future. The good news is that the industry is making great strides in developing and adopting open IP standards and methodologies, the most important being SMPTE 2022-6 and TR-03/04, (SMPTE 2110 draft). This session will cover the history of IP technology and standards, the SMPTE 2022 family of standards, potential strategies for your conversion to IP, and IP islands and their role in your transition.

along with the modern studio equipment that makes it effective. From instant IFB connections to great-sounding severe weather spotter reports, VoIP/SIP technology and equipment is improving audio quality both behind the scenes and on-air. This presentation demonstrates how TV stations are improving in-the-field reporting while saving hundreds to thousands on their telecom costs.

12 P.M. LUNCH

1 P.M. ATSC 3.0: CHARACTERISTICS AND TRANSMISSION REQUIREMENTS



**MARTYN
HORSPOL,
GATESAIR**
ATSC 3.0
promises to
bring with
it many ad-

vanced features and capabilities which will enhance the future of over-the-air television. The differences between OFDM-based modulation and the current ATSC 8-VSB modulation are apparent. Some of these differences will impact the ability of existing transmission equipment to successfully and reliably perform their intended tasks. This presentation will dig into some of the key areas that need to be investigated

and provide some insight as to how to be prepared for the transition to ATSC 3.0 transmission.

1:45 P.M. ATSC 3.0: THE BIG PICTURE



**FRED
BAUMGARTNER,
NEXT GEN TV
IMPLEMENTATION,
ONE
MEDIA/
SINCLAIR**

BROADCAST

This session will engage the audience in challenging the long held assumptions of “what is Broadcasting?” and provide new insight into the unique opportunities to establish relevance in today’s rapidly converging digital IP world with “BaaS (Broadcast as a service), positioning and developing Broadcasting’s central role in the emerging 5G world.

2:30 P.M. ATSC 3.0 PANEL



**JAY ADRICK,
BROADCAST
CONSULTANT/
CHAIRS ATSC
ADVANCED
EMERGENCY
ALERTING**

**IMPLEMENTATION TEAM; FRED
BAUMGARTNER, NEXT GEN TV
IMPLEMENTATION, ONE
MEDIA-SINCLAIR BROADCAST;
MARTYN HORSPOL, GATESAIR;
JERRY WHITAKER, ATSC;
CHRISTINE ZUBA, DIELECTRIC**

With the ATSC 3.0 standards process almost complete, this panel of experts will delve into what it will take to bring the technology to your market, and your station. This session will be highly interactive with the audience.

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TUESDAY REGISTRATION



TUESDAY BREAKFAST



TUESDAY BREAK



**Broadcasters
General Store**

TUESDAY LUNCH



WEDNESDAY BREAKFAST

THE TELOS ALLIANCE®

Telos®

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AXIA®

LJ LINEAR ACOUSTIC®



M MINNETONKA AUDIO

NUTS & BOLTS



WEDNESDAY EXHIBITOR COFFEE BREAK

THE TELOS ALLIANCE®

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M MINNETONKA AUDIO

WEDNESDAY LUNCH CO-SPONSOR



WEDNESDAY LUNCH CO-SPONSOR



TECHNICAL EQUIPMENT



MONITORS & SCREEN



*In memory of Al Clark, engineer
with WITI for 45 years.*

STATE OF THE ART PROJECTOR



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**STEVE BROWN
WOODWARD RADIO
GROUP**



**DENNIS BALDRIDGE
BALDRIDGE COMMUNICATIONS**



**MARK BURG
WLAX-DT/WEUX-DT**



**GREG DAHL
SECOND OPINION
COMMUNICATIONS**



**CLIF GROTH
NEW RADIO GROUP**



**BILL HUBBARD, UW-
GREEN BAY**



**KEITH KINTNER,
UW-OSHKOSH**



GARY MACH, GEMCOM



**KEVIN RUPPERT,
WISC-TV**



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WBA PRESIDENT & CEO**



**LINDA BAUN
WBA VICE PRESIDENT &
EMAIL QUEEN**





**The 2017
Broadcasters Clinic
is dedicated to
Leonard Charles
for his many years
of service
to the WBA
and the
Broadcasters Clinic**



HOTEL INFORMATION

The 2017 Broadcasters Clinic sessions are being held in the Superior Room at the Madison Marriott West Hotel, which is located at 1313 John Q. Hammons Drive in Middleton. The hotel deadline is 5 p.m.,

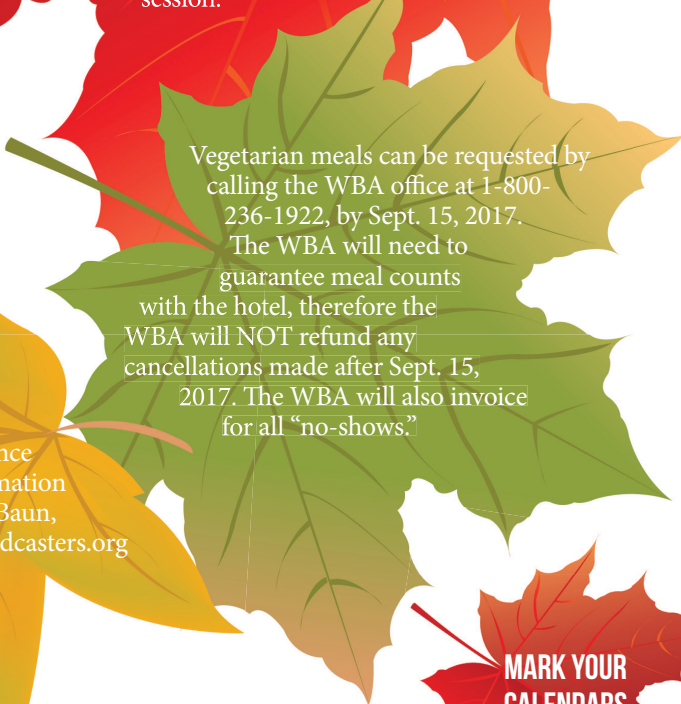
Sept. 18, 2017, and the discounted rate

is \$124. Reservations can be made online at wi-broadcasters.org. To register by phone, call 888-745-2032.

Mention you are with the WBA Broadcasters Clinic to receive the \$124 rate.

REGISTRATION INFORMATION

Registration fee covers: program materials, continental breakfasts and luncheons as indicated, refreshment breaks and an evening reception with hot hors d'oeuvres (cash bar) and Beer and Brats at the Nuts and Bolts session.



Vegetarian meals can be requested by calling the WBA office at 1-800-236-1922, by Sept. 15, 2017.

The WBA will need to guarantee meal counts with the hotel, therefore the WBA will NOT refund any cancellations made after Sept. 15, 2017. The WBA will also invoice for all "no-shows."



CONTACT

For further conference or exhibit information contact: Linda Baun, lbaun@wi-broadcasters.org 608-729-1480



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CALENDARS
OCT. 9-11, 2018**