



# 60

YEARS OF  
DOIN' IT OUR WAY



2016 Broadcasters Clinic  
Upper Midwest SBE Regional Meeting  
October 11-13, 2016  
Madison Marriott West



# TUESDAY OCTOBER 11

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

**7:45 a.m.**  
REGISTRATION & CONTINENTAL BREAKFAST

**8:50 a.m.**  
OPENING REMARKS

**9:15 a.m.**



**BENEFITS OF LIQUID COOLING FOR HIGH POWER FM DIGITAL TRANSMITTERS**

*TIMOTHY ANDERSON, CPBE, GATESAIR*

This session will discuss the advances in RF power systems and modern liquid cooling techniques being employed to reduce both operational cost and the carbon footprint of high-power FM digital transmitters.

**10 a.m.**



**μMPX: NETWORK FM-STEREO COMPOSITE CONNECTIVITY**  
*FRANK FOTI,*

*TELOS ALLIANCE*

This presentation will

offer an explanation of μMPX, an innovative method in which the MPX signal can be carried over a data link of 320KB/s.

**10:45 a.m.**  
BREAK

**11 a.m.**



**THE FCC'S AM REJUVENATION; CAN REDUCED PROTECTION BE A GOOD THING?**

*DOUG VERNIER, V-SOFT*

Would the proposed reductions in protection result in greater flexibility for AM stations to improve their signals? Or would they merely increase inter-station interference? Would the net effect be beneficial or harmful to AM broadcasters and listeners?

**11:45 a.m.-1 p.m.**  
LUNCH

**1 p.m.**



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

*STEVE DOVE, WHEATSTONE*

A lighthearted romp through why some things sound the way they do—deflating some conventional wisdoms, and highlighting some surprising insights.

**1:45 p.m.**



**OPTIMIZING COMBINED AM ANTENNA SYSTEMS**

*KURT GORMAN,*

*PHASETEK INC.*

With the increase in AM radio stations sharing antenna sites, filtering circuitry can be used in conjunction with new/existing phasing circuitry to increase both pattern and impedance bandwidth. Older systems can also be improved with these techniques.

**2:30 p.m.**  
BREAK

**2:45 p.m.**



**ADAPTIVE MULTI-RATE AUDIO STREAMING**

*KIRK HARNACK,*  
*TELOS ALLIANCE*

What problems does Adaptive Streaming solve for us and for listeners? How does Adaptive Streaming work? How does one configure an Adaptive Streaming encoder? What other infrastructure is needed to support Adaptive Streaming?

# WEDNESDAY OCTOBER 12

3:30 p.m.



**BUILDING  
THE  
ULTIMATE IP  
AUDIO NETWORK**  
*TONY PETERLE,*

*WORLDCAST SYSTEMS*

Redundant Streaming for reliable transport of content, distributed Intelligence for monitoring, backup and on-demand connections, packet forwarding for backup audio sources and subnet distribution. The components can be used in combination or selected a la carte to create the audio cloud suited to the broadcast application, budget and IP network availability.

4:15 p.m.-7 p.m.

**EXHIBITS OPEN—EXHIBITORS  
RECEPTION**

*WISCONSIN/MICHIGAN ROOMS*

7 p.m. **Beer & Brats**



**NUTS & BOLTS  
SESSION: AN  
EVENING WITH  
SPARKS AND  
WIRES**

*RICHARD SPARKS*

If you aren't laughing,  
check your pulse.



**NUTS & BOLTS  
SESSION: FIFTY  
YEARS IN AUDIO  
AND VIDEO**

*STEVE LAMPEN*

What more can we say, it's  
Steve Lampen!

7 a.m.

**REGISTRATION & CONTINENTAL  
BREAKFAST**

*LOBBY*

8:30 a.m.



**TELEVISION  
SPECTRUM  
REPACK—A RADIO  
PERSPECTIVE**

*RICHARD*

*REDMOND, GATESAIR*

While much focus has been placed on what the spectrum repack means to TV broadcasters, there has been little discussion about the potential impact to the operations of potentially thousands of FM radio broadcasters who will also be affected. This session will look at that.

9:15 a.m.



**TODAY'S REMOTE  
CONTROL AND  
SNMP**

*TOM BOSSCHER,  
CORNERSTONE*

*UNIVERSITY RADIO WCGS*

While "Simple Network Monitoring Protocol" has been around in the IT field for a long time,

it has just recently found its way into today's broadcast remote controls. This session is a case study of one broadcaster's implementation of SNMP for remote control.

10 a.m.

*WISCONSIN/MICHIGAN ROOMS*  
**EXCLUSIVE EXHIBIT TIME**

11 a.m.

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

1:30 p.m.



**ENGINEERING  
MICROWAVE LINKS**  
*JEREMY RUCK &  
ASSOCIATES, INC.*

This presentation will delve into the last mile problem from an RF perspective. We will look at the engineering behind microwave links for television and radio. As part of this, we will also perform a review of the pertaining rules.

**JOIN US ONLINE**



[TINYURL.COM/J8YWKEV](http://TINYURL.COM/J8YWKEV)



[#WBABC16](https://twitter.com/WBABC16)



**2:15 p.m.**



**TECHNICAL REGULATORY UPDATE AND CYBER SECURITY FOR BROADCASTERS**

*KELLY WILLIAMS, NAB*

There's more than the Spectrum Auction to pay attention to. This session will look at recent and proposed changes in FCC regulations as well as explore the results of their Cyber Security effort.

**3 p.m.**  
BREAK

**3:15 p.m.**



**ADVANTAGES OF ALUMINUM TRANSMISSION LINE**

*MANUEL SONE, ELECTRONICS RESEARCH INC.*

The performance of co-axial four inch aluminum transmission lines with an aluminum outer conductor and a copper inner conductor will be investigated. A comparison to an all copper transmission line will be presented as well as the historical use of aluminum RF components.

**4 p.m.**



**ADVENTURES IN 4K**  
*STEVE LAMPEN, BELDEN*

Everyone knows 4K is coming, but how will you integrate it into your facility? Also, there is talk about coming technologies that would revolutionize not just broadcasting, but all communications. It's just that they don't exist yet and you can't buy them. Steve will explain.

**5:30 p.m.**  
DINNER

**6 p.m.**



**SBE ALL CHAPTER MEETING AND PROGRAM: HOW TO TAKE TIME OFF FROM A 24/7**

**CAREER**  
*JEFF WELTON, NAUTEL*

With today's engineering staffing levels it's difficult to break away and take a break. This session will explore that challenge and suggest ways to make it possible.

**7:45 a.m.**  
REGISTRATION AND CONTINENTAL BREAKFAST

**8:30 a.m.**



**ATSC 3.0 IN THE REAL WORLD**  
*MICHAEL GUTHRIE, HARMONIC*

ATSC 3.0 offers a new set of compelling features that bring TV broadcasting into the 21st century with an increase in bitrate and/or with the robustness for mobile and portable reception. HEVC encoding will support UHD, HDR, and/or higher program counts. Transition models from ATSC 1.0 will also be discussed.

**GARY MACH, GEMCOM**  
**THANK YOU FOR 32 YEARS OF SERVICE TO THE BROADCASTERS CLINIC**



**9:15 a.m.**



**ATSC 3.0 AND  
FUTURE ANTENNA  
TECHNOLOGIES**

**JOHN SCHADLER,  
DIELECTRIC**

As the ATSC 3.0 standard and SFNs are developed, it is important to keep in mind how the technical components of broadcasting could change. Each new system will require overlapping coverage areas within the original contour of a station. This paper will address the criteria and design techniques required to support ATSC 3.0 and SFNs as the next generation of the broadcast industry.

**10 a.m.  
BREAK**



**10:15  
a.m.**

**THE SPECTRUM  
REPACK, IS THERE  
A MOVE TO VHF IN**

**YOUR FUTURE?**

**WILLIAM  
AMMONS, MICRONETIX  
COMMUNICATIONS**

The spectrum repack may find many stations looking at the possibility of moving to high band VHF, or even low band VHF. This presentation will discuss what worked back in the analog days and what is needed to

succeed in the digital era, including with ATSC 3.0.

**11 a.m.**



**TELEVISION  
SPECTRUM  
AUCTION AND  
REPACK UPDATE**

**JAY ADRICK,**

**GATESAIR**

This presentation will include a detailed review of the current auction and repacking timeline and look at the status of efforts to optimize the repacking process given the constrained resources and extremely short implementation time.

**12 p.m.**

**LUNCH**

**MENDOTA ROOM**

**1 p.m.**



**STATUS OF ATSC  
3.0**

**JERRY WHITAKER,  
ATSC COMMITTEE**

The next-generation digital television system promises to provide broadcasters with new features and services and consumers with robust mobile, immersive audio, UHD TV images, and personalized interactive services. This presentation will review the status of work within ATSC and provide some thoughts on implemen-

tation considerations for broadcasters.

**1:45 p.m.**



**HIGH EFFICIENCY  
IN MODERN SOLID  
STATE UHF/VHF  
TV TRANSMITTERS**

**WALT GUMBERT,**

**ROHDE & SCHWARZ**

Solid State transmitters have historically been inefficient. This session will look at various methods of improving their efficiency with Doherty, including case studies showing the energy savings realized with the technology.

**2:30 p.m.**



**DEMYSTIFYING  
VIDEO OVER IP**

**VALERI NZEYANG,  
SENIOR**

**APPLICATIONS**

**ENGINEER FOR COMPRESSION  
SYSTEMS AND IP TRANSPORT,  
EVERTZ**

This session will compare SMPTE 2022-6, ASPEN, and TR-03 as well as highlight the benefits and challenges of each format. In addition, we will investigate how each format handles Ultra HD and the available tools to help maintain and manage your facility with each format.



**COMMITTEE CHAIR LEONARD CHARLES**  
*TELEVISION WISCONSIN*



**KENT ASCHENBRENNER**  
*E.W. SCRIPPS COMPANY*



**STEVE BROWN**  
*WOODWARD RADIO GROUP*



**DENNIS BALDRIDGE**  
*BALDRIDGE COMMUNICATIONS*



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



**GREG DAHL**  
*SECOND OPINION COMMUNICATIONS*



**BILL HUBBARD, UW-GREEN BAY**



**KEITH KINTNER, UW-OSHKOSH**



**GARY MACH, GEMCOM**



**MATT SPERLING WKBTV**



**TOM SMITH**



**KEVIN RUPPERT, WISC-TV**



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



**LIZ BOYD**  
*NCSA/PEP COORDINATOR*



**MICHELLE VETTERKIND**  
*WBA PRESIDENT & CEO*



## HOTEL INFORMATION

The 2016 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 Sept. 19, 2016, and the discounted rate is \$119. Reservations can be made online at [wi-broadcasters.org](http://wi-broadcasters.org). To register by phone, call 888-745-2032 and mention WI Broadcasters group code BROBROA to receive the discounted 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, 2016. The WBA will need to guarantee meal counts with the hotel, therefore the WBA will NOT refund any cancellations made after Sept. 15, 2016. The WBA will also invoice for all "no-shows."

## CONTACT

For further conference or exhibit information contact: Linda Baun  
608-729-1480  
[lbaun@wi-broadcasters.org](mailto:lbaun@wi-broadcasters.org)

**MARK YOUR  
CALENDARS**

**OCT. 10-12, 2017**

## EXHIBITORS

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

25-SEVEN  
ALPHA VIDEO  
AXIA AUDIO  
BROADCASTERS GENERAL STORE  
BSW  
CANON  
CLEAR-COM  
COMREX  
DAVICOM, A DIVISION OF COMLAB  
DIELECTRIC  
DOUBLERADIUS  
ENCO  
EVERTZ  
FOR-A CORPORATION OF AMERICA  
FULL COMPASS  
GATESAIR  
GORMAN-REDLICH MFG.  
JAMPRO  
JOSEPH ELECTRONICS  
KATHREIN  
LINEAR ACOUSTICS  
LOGITEK  
MINNETONKA AUDIO  
NAUTEL  
OMNIA AUDIO  
RESONANT RESULTS  
ROHDE & SCHWARZ  
ROSS VIDEO  
SHIVELY  
SONY  
TELESTREAM  
TIELINE THE CODEC COMPANY  
THE TELOS ALLIANCE  
TELOS SYSTEMS  
UTAH SCIENTIFIC  
V-SOFT COMMUNICATIONS  
WHEATSTONE CORPORATION

*Exhibitor list is current as of Aug. 12, 2016. The most up-to-date list is in the attendee packet.*

TUESDAY REGISTRATION



TUESDAY BREAKFAST



TUESDAY LUNCH



NUTS & BOLTS CO-SPONSOR



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WEDNESDAY BREAK



WEDNESDAY BREAKFAST



WEDNESDAY LUNCH  
CO-SPONSOR



WEDNESDAY EXHIBITOR COFFEE BREAK



WEDNESDAY LUNCH  
CO-SPONSOR



TECHNICAL EQUIPMENT



MONITORS & SCREEN



STATE OF THE ART PROJECTOR



BROADCASTERS CLINIC  
UNDERWRITER

