



October 2016



## Next Meeting

Wednesday, October 12

### UPPER MIDWEST REGIONAL SOCIETY OF BROADCAST ENGINEERS MEETING

SPECIAL GUEST  
SPEAKER  
JEFF WELTON



Jeff's topic will be "How to take time off from a 24/7 Career." Come and learn the secret!

Dinner — 5:30 to 6:00 PM  
(included with Wednesday's registration)  
Madison Marriott West  
1313 John Q. Hammons Drive  
Middleton, WI

Meeting and Program — 6:00PM  
Visitors and guests are welcome!  
Madison Marriott West  
1313 John Q. Hammons Drive  
Middleton, WI



## Coming Up

Wed., Nov. 16 WMTV New Facility  
Tour  
Tues., Dec. 6 Holiday Party –  
Fitzgeralds in Middleton

## Stage Two Started

>>> by Tom Smith

On September 13, stage two of the Incentive Auction began with the first round of the reverse auction. On September 14, the reverse auction went to two rounds a day and on September 27, the reverse auction went to three rounds a day. Because the reverse auction uses descending bids and is limited to 52 rounds to get to a bid of zero, the reverse auction should end in mid-October and the next forward auction for wireless broadband providers will start to bid on the newly freed spectrum. Should the wireless bidders fail to bid enough to cover the amount owed to TV stations after the reverse auction, the Incentive Auction will go to stage three which the FCC would seek to recover 108 MHz of spectrum.

Since stage three could start sometime in November, it will probably end in early January of next year because of delays due to the holidays. According to a number of articles in various trade publications, it is considered the Incentive Auction will not end before the fourth stage where the auction spectrum starts at the break in the UHF-TV band for space research on channel 37. That would give a natural break between the TV and wireless bands and free 84 MHz for 7 wireless pairs with only one guard band between uplink and downlink channels in the new wireless band.

Should the Incentive Auction go to four stages, the auction would end and the repacking processing could start at the beginning of spring. We now have to wait to see how the auction plays out, but closing the over \$60 billion gap between the reverse and forward auction bids in the first round, it may take a number of stages before the gap gets closed and the auction ends.

## FCC Proposes Repacking Plan

>>> by Tom Smith

On September 30, the FCC released a Post-Incentive Auction Transition Scheduling Plan. The plan ([http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2016/db1003/DA-16-1095A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db1003/DA-16-1095A1.pdf)) proposes a number of steps for broadcasters to transition to new TV channels. Some of the steps are already known as they have been part of the Incentive Auction plan from the start. The main proposal is that the repacking transition be done in ten phases. The reasoning for doing the transition in phases is to aid broadcasters in two ways. One is spreading out the work provided by the equipment manufacturers and the transmitter installation and tower crews. The second reason is to group stations together in a region to transition together in order to avoid interference due to the ripple effect of interference between stations as they move to new channels. When a station moves to a new channel, it could cause interference to nearby stations on that channel who may not have moved to their new channel. By having them make the move together, it will minimize interference within a region.

The sequence of the transition starts with the issuing of confidential letters to stations informing them of their new channel assignment. These letters will be sent during the final stage of the auction and will be sent after the reverse auction

**Repacking** >>> continued on page 6



## In this Issue

Meeting Minutes.....	2
Amateur Radio News.....	3
"No Discount Allowed".....	5



## Chapter Contacts

### Chair

Kevin Ruppert, CPBE, CBNT  
WISC-TV  
W: 608-271-4321  
kruppert@wisctv.com

### Vice-Chair

Richard Wood  
Resonant Results  
W: 608-839-3950  
rwoodsky@frontier.net

### Secretary

Mike Norton, CSTE, CBNE  
ECB  
W: 608-264-9807  
mnorton@ecb.org

### Treasurer & Webmaster

Leonard Charles, CPBE  
WISC-TV  
W: 608-271-4321  
lcharles@wisctv.com

## Committee Appointees

### Program Committee

Steve Paugh, CPBE  
608-277-5139  
spaugh@sbe.org  
*Volunteer for the  
program committee!*

### Membership / Newsletter Editor

Paul Stoffel, CPBE  
608-263-2175  
pgstoffel@gmail.com

### Sustaining Membership

Fred Sperry, CPBE  
608-264-9806  
fred.sperry@ecb.org

### Certification & Education

Jim Hermanson, CPBE, CBNT  
services@jimhermanson.com

### Frequency Coordination

Tom Smith, CPBE  
608-837-2729  
smithtc100@hotmail.com



# Meeting Minutes

from the September 2016 Business Meeting

Chapter 24 of the Society of Broadcast Engineers held their monthly meeting on Thursday, September 22, 2016. The meeting was held at WISC-TV in Madison. There were 13 members present, 7 who held SBE certification.

Pizza and soda were provided prior to the meeting, courtesy of the presenter of the evening's program. The meeting was called to order at 7:01pm by Chapter chair Kevin Ruppert. The secretary's report of the last meeting minutes, as published in the September *Newsletter* were approved without changes.

Presenting the treasurer's report, Leonard Charles listed a deposit from Token Creek Mobile Television for its sustaining membership renewal. The chapter bank account continues to hold a positive balance.

Program Committee chair Steve Paugh noted that the October program would be held in conjunction with the Broadcasters Clinic on Wednesday, October 12. The title is *'How To Take Time Off From a 24/7 Career,'* and will be presented by Jeff Welton of Nautel. The Chapter is also looking for a few volunteers to staff the SBE booth during the Broadcasters Clinic.

The next opportunity to sit for an SBE exam session begins November 4. Certification chair Jim Hermanson reminded everyone that the deadline to submit an application to the SBE National office for the upcoming session is September 30. Jim also congratulated Britny Williams from Wisconsin Public Radio for earning the Certified Broadcast Networking Technologist certification.

With a SBE National report, Leonard Charles announced the upcoming SBE live webinar *"Update on ATSC 3.0: What it will Mean to Broadcasters"* will happen on October 4 from 1 – 2:30pm. To get more information and to register, visit the Education page of the SBE website. Also, the SBE Annual Membership Meeting will be presented as a live webcast on October 28 from 3 – 4pm.

There were no old business items, but Kevin Ruppert brought up an item of new business. He mentioned a suggestion for the local chapter to consider partial reimbursement to members wanting to buy the SBE Broadcast Engineering Handbook. He asked members to think about the idea, and that discussion could happen at a future meeting. On a related topic, Fred Moore asked if anyone had input comparing the new SBE Broadcast Engineering Handbook to the NAB Engineering Handbook.

As a professional announcement, Steve Paugh noted that Ramsey Electronics had ceased operation earlier in the year. It was also mentioned that Damian Fry was a new member to Chapter 24.

The meeting adjourned at 7:08pm. Via webcast from his home in California, Bob Orban gave a presentation on audio processing and loudness management for radio, television, and streaming. Following his detailed presentation, he also held a question and answer session.

*Submitted by Mike Norton, Secretary*



# Amateur Radio News

compiled by Tom Weeden, WJ9H

- Recalling the earlier efforts of the FCC and telecommunications and utility interests to roll out “Broadband over Power Line” (BPL) technology, the Amateur Radio community has been buzzing with questions about AT&T’s just-announced “AirGig” BPL plan to make broadband available via apparently similar technology. The American Radio Relay League’s earlier anti-BPL campaign, and market forces, eventually led to the demise of the prior BPL initiative. ARRL Laboratory Manager Ed Hare, W1RFI, who spearheaded the earlier effort to quantify BPL’s threat to Amateur Radio’s HF spectrum and remains the resident expert on the subject, said this newest BPL incarnation should not pose an interference issue for radio amateurs.

“This technology uses millimeter-wave RF signals (30 GHz to 300 GHz) coupled onto the surface of power lines to transmit the signal along the line with relatively low losses,” Hare explained. “After looking at this technology, it looks nothing like the type of HF and VHF BPL that caused us so many problems years ago. The sky is not falling.”

Hare added that it is not likely that the AT&T technology will even use Amateur Radio bands, so there is little reason for concern even among those amateurs who use spectrum above 24 GHz.

According to AT&T’s September 20 announcement, the company is “deep in the experimentation phase” of the developing technology, which it says would be “easier to deploy than fiber, can run over license-free spectrum, and can deliver ultra-fast wireless connectivity to any home or handheld wireless device.” AT&T said its initial — and continuing — testing at AT&T outdoor facilities “has been positive,” and initial field trials are set to begin in 2017.

Hare said the League will keep an eye and ear out for interference problems, but he believes that the frequencies involved and the fact that these signals should not propagate far from the lines will pose little risk to the Amateur Radio Service.

<[http://about.att.com/newsroom/att\\_to\\_test\\_delivering\\_multi\\_gigabit\\_wireless\\_internet\\_speeds\\_using\\_power\\_lines.html](http://about.att.com/newsroom/att_to_test_delivering_multi_gigabit_wireless_internet_speeds_using_power_lines.html)>

- “The bill is passed without objection.” With those words, Amateur Radio history was made on September 12, when the US House of Representatives approved the Amateur Radio Parity Act, H.R. 1301, on a voice vote under a suspension of the rules. The focus of the campaign to enact the legislation into law now shifts to the US Senate.

The House victory culminated many years of effort on ARRL’s part to gain legislation that would enable radio amateurs living in deed-restricted communities to erect antennas that support Amateur Radio communication. The measure calls on the FCC to amend its Part 97 rules “to prohibit the application to amateur stations of certain private land-use restrictions, and for other purposes.” While similar bills in past years gained some traction on Capitol Hill, it was not until the overwhelming grassroots support from the Amateur Radio community for H.R. 1301 shepherded by ARRL that a bill made it this far. The legislation faces significant obstacles to passage in the US Senate, however.

“This is huge step in our effort to enact legislation that will allow radio amateurs who live in deed-restricted communities the ability to construct an effective outdoor antenna,” ARRL President Rick Roderick, K5UR, said. “Thanks to everyone for their help in this effort thus far. Now we must turn our full attention to getting the bill passed in the Senate.”

As the amended bill provides, “Community associations should fairly administer private land-use regulations in the interest of their communities, while nevertheless permitting the installation and maintenance of effective outdoor Amateur Radio antennas. There exist antenna designs and installations that can be consistent with the aesthetics and physical characteristics of land and structures in community associations

while accommodating communications in the Amateur Radio services.”

During the limited debate, the House bill’s sponsor, Rep Adam Kinzinger (R-IL), thanked ARRL and the Community Associations Institute (CAI) for reaching an agreement to move the bill forward “in a bipartisan and very positive manner.” He pointed out to his colleagues that Amateur Radio antennas are prohibited outright in some areas.

“For some this is merely a nuisance,” Kinzinger said, “but for others — those that use their Amateur Radio license for life-saving emergency communications — a dangerous situation can be created by limiting their ability to establish effective communication for those in need.”

Kinzinger said that in emergencies, hams can provide “a vital and life-saving function” when conventional communication systems are down. He also praised the Military Auxiliary Radio System (MARS), a US Department of Defense-sponsored program, comprised largely of Amateur Radio volunteers, that also supports communication during emergencies and disasters.

(Excerpts from the American Radio Relay League’s <[arrl.org](http://arrl.org)> web site)



<http://www.sbe.org/sections/SBEUniversity.php>

**SOUND DEVICES**

Portable, Professional Audio

Sound Devices, LLC  
E7556 State Rd. 23/33  
P.O. Box 576  
Reedsburg, Wisconsin 53959  
[www.sounddevices.com](http://www.sounddevices.com)  
Phone: (608) 524-0625  
Fax: (608) 524-0655



**WMTV**  
MADISON

615 Forward Drive  
Madison, WI 53711  
608-274-1515  
[www.nbc15.com](http://www.nbc15.com)

## SBE Chapter 24 Certification News

>>> from Jim Hermanson, Chapter 24 Certification Chair

### 2016 - 2017 Exam Schedule:

<u>Exam Dates</u>	<u>Location</u>	<u>Application Deadline (to SBE National Office)</u>
February 3-13, 2017	Local Chapters (Madison Area)	December 31, 2016
April 25, 2017	NAB Show (Las Vegas)	March 17, 2017
June 2-12, 2017	Local Chapters (Madison Area)	April 21, 2017
August 4-14, 2017	Local Chapters (Madison Area)	June 5, 2017
November 3-13, 2017	Local Chapters (Madison Area)	September 25, 2017

When you are ready to take an SBE exam, please fill out the appropriate application and send it into the SBE National office (see address below). You will be notified once your application has been approved. Approximately 3 weeks before the exam time, your local certification chairman will receive a list of applicants in his/her area. He/she will then contact those applicants to schedule a date, time and place for the exams. The exams will be mailed back to the National office for grading. The pass/fail grades will then be mailed directly to the applicants.

You may mail, email or fax your applications to:

Megan E. Clappe  
 Certification Director  
 9102 N. Meridian St. Suite 150  
 Indianapolis, IN 46260  
 317-846-9120 Fax  
 mclappe@sbe.org



[http://www.sbe.org/sections/cert\\_exam\\_prep.php](http://www.sbe.org/sections/cert_exam_prep.php)



## SBE Bookstore

Browse books by title at:  
[http://www.sbe.org/sections/store\\_books\\_listings.php](http://www.sbe.org/sections/store_books_listings.php)

## SBE Launches Mentor Program from SBE.org

The Society of Broadcast Engineers, the association for broadcast and multimedia technology professionals, has begun its first Mentor Program. The Mentor Program is designed to provide broadcast engineers who are new to the field a means to gain insight and work with a seasoned broadcast engineer who can share his or her acquired knowledge. The SBE accepted applications for mentors and mentees from SBE members through September. Mentees were paired with mentors based on mutual experiences and career interests.

Participants are asked to have regular communication by voice or video at least every other week. In all but a few pairings, mentors and mentees are not in the same city, but this should not impair the interaction of the participants. Officially, the mentoring will last one year, but the professional relationship can certainly continue.

The inaugural launch of the program attracted 32 mentees and 18 mentors. Many mentors are working with more than one mentee. The SBE Mentor Committee is cochaired by SBE board members Jeff Keith, CPBE, and Eric Schechter, CBRE.

On the launch of the program, SBE President Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT, said, "This program provides a fast-track for those SBE members who are new to broadcast engineering to gain practical insight and knowledge from some of our more experienced SBE members. Through this, we are able to tap the knowledge resource to grow an engineering talent resource. I extend a personal thanks to the volunteer mentors who are participating in the SBE Mentor Program."

The SBE is still accepting applications for new mentors and mentees. As new mentors and mentees apply, new partners will be matched.



<p><b>Joseph ELECTRONICS</b>  <small>A Riva Technologies Co.</small>  <i>Broadcasters One Stop Shopping</i>                  Connecting Quality, Experience and Value  <a href="http://www.josephelectronics.com">www.josephelectronics.com</a></p>	Christopher Annella
	6633 W. Howard St. Niles, Illinois 60714-3305
	Phone: 847-588-3800 800-323-5925
	Fax: 847-588-3300 800-446-8366
	Cell: 847-501-1584 chrisa@josephelectronics.com

	5727 Tokay Boulevard Madison, Wisconsin 53719
	(608) 274-1234
	Fax: (608) 274-9514

# No Discount Allowed

>>> by Tom Smith

On August 24, the FCC adopted a rulemaking ([http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2016/db0907/FCC-16-116A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0907/FCC-16-116A1.pdf)) that eliminated a rule called the UHF Discount. The UHF Discount was adopted in 1985 as an aid to promote the growth of UHF stations at a time when it was more expensive to build and operate a UHF station and had inferior coverage compared to VHF stations. As an attempt to provide a more level playing field between UHF and VHF stations and to get more viewing choices for the public, the FCC declared that coverage of a UHF station would be considered to be half of that of a VHF station in the same market. Coverage of a station is computed by counting the number of homes served in a market. An example would be a market that has one million homes. All one million homes would be counted against the VHF station, but only a half million homes would count against the UHF stations. When the FCC went to setting the national ownership limit by the number of homes served as 39% of the homes in the nation, this allowed the ownership of UHF stations to exceed the limit by up to twice the limit. How much one could exceed the limit would depend on the number of VHF and UHF stations an entity owned. If one only owned UHF stations, an entity could have reached 78% of the nation's homes. There are only four station groups that will exceed the 39% limit which will be grandfathered. The TV broadcast groups that will exceed the 39% limit are ION, Univision, Tribune, and Trinity broadcasting groups. Under the new rules, if these groups were to be sold, the new owners would have to divest a number of the newly-purchased stations to get down to or under the limit.

The FCC decided to eliminate the UHF Discount because UHF stations now make up about 75% of the full-power stations and are now considered to be technically superior to VHF stations particularly low-band VHF stations. There was a proposal that VHF stations should be granted a discount of homes served because of some reception issues that VHF stations have including interference caused by electrical and RF noise. This proposal was rejected

as it was considered that the FCC had taken steps to help station improve their signal by allowing power increases and that VHF stations are not as inferior to digital UHF stations as analog UHF stations were to analog VHF stations.

Many of the major broadcast groups and the NAB issued statements against the ruling. The FCC stated that they had made it known that the discount would end after the DTV transition, but the broadcasting industry has used the UHF discount to consolidate into larger and larger station groups. Expect broadcasters to go to Congress to get the national ownership limits to be raised or to court to get the ruling overturned. The notice was released on September 7.

## Society of Broadcast Engineers



The Association for Broadcast and Multimedia Technology Professionals

November 2016 Chapter 24  
Newsletter Deadline:  
Thursday, November 3, midnight  
[pgstoffel@gmail.com](mailto:pgstoffel@gmail.com)  
*edited using Adobe InDesign CC*

Thanks to Leonard Charles for maintaining the Chapter 24 web site and to Steve Paugh for mailing the meeting reminder postcards.



**Heartland Video Systems**  
Heartland Video Systems, Inc.  
1442 Pilgrim Road  
Plymouth, WI 53073  
Tel (800) 332-7088  
(920) 893-4204  
Fax (920) 893-3106  
[mbart@hvs-inc.com](mailto:mbart@hvs-inc.com)  
[www.hvs-inc.com](http://www.hvs-inc.com)  
[www.hvs-dtv.com](http://www.hvs-dtv.com)

Mark Bartolotta

**DIGITAL SOLUTIONS**  
Broadcast/Professional



**7847 BIG SKY DRIVE**  
**MADISON, WISCONSIN 53719**  
**(608) 833-0047 • FAX (608) 833-5055**



Shane Collins  
Clark Wire & Cable Sales  
Unit A  
408 Washington Blvd  
Mundelein, IL 60060-4401  
(800) CABLE-IT  
(847) 949-9944  
Fax: (847) 949-9595  
e-mail: [sales@clarkwire.com](mailto:sales@clarkwire.com)  
[www.clarkwire.com](http://www.clarkwire.com)



**WISC-TV**  
MADISON



**alpha video**  
BROADCAST SYSTEMS GROUP

**Bryan Nelson**  
System Sales Executive

7690 Golden Triangle Drive  
Eden Prairie, MN 55344

Direct: 952.841.3304  
Mobile: 612.819.7213

[bryan.nelson@alphavideo.com](mailto:bryan.nelson@alphavideo.com)  
[www.alphavideo.com](http://www.alphavideo.com)

twitter: @alphavideoaudio  
facebook.com/alphavideo



**ROSS**  
Live Production Technology™

**Brian Stumpf**  
Regional Sales Manager -  
Midwest USA

1266 Gils Way  
Cross Plains, WI USA  
53528-8837

Tel: (608) 798-9578  
Cell: (608) 345-2544  
Fax: (608) 798-9577

[bstumpf@rossvideo.com](mailto:bstumpf@rossvideo.com)  
[www.rossvideo.com](http://www.rossvideo.com)



**BELDEN**  
SENDING ALL THE RIGHT SIGNALS

**John C. Purvey**  
BAV Specialist  
Broadcast & AV Solutions

[john.purvey@belden.com](mailto:john.purvey@belden.com)  
PHONE: 815.441.5298

447 Hampshire Lane  
Crystal Lake, IL 60014

[www.belden.com](http://www.belden.com)



5201 Femrite Drive  
Madison, WI 53718  
p 608.221.8888 f 608.221.9252  
w [avisystems.com](http://avisystems.com)

**Tom Sibenaller**  
Systems Sales Specialist  
CTS, CSTE

e [tom.sibenaller@avisystems.com](mailto:tom.sibenaller@avisystems.com)  
d 608.807.1860 c 608.386.2611

**Repacking** >>> continued from page 1 ends, but before the forward auction ends. This would have to happen after the bidding in the forward auction passes the total amount of the final bids in the reverse auction. By sending the letters, it will give the stations an early start in planning their equipment purchases and setting up their construction crews. After the auction ends, the FCC will issue a public notice closing the auction and releasing the new channel assignments. At that point the FCC will use a program called the Phase Assignment Tool that will group stations and their markets together to transition together to avoid interference due to the ripple effect between stations. The FCC will then assign stations to the ten phases to make transition to the new channels. After the stations are assigned to their phase group, the FCC will run a program called the Phase Scheduling Tool which will assign the stations in each phase group to one of the ten phase deadlines. The scheduling tool sets the deadlines by allowing for spreading out each phase's deadline to allow for manufacturers time to supply equipment and tower crews to move from site to site. The first phase deadline is 69 to 70 weeks after the public notice is issued ending the auction and releasing the new channel assignments. The deadlines for the second phase will be 34 or 35 weeks later with each of the remaining nine phases ending 4 to 21 weeks apart, depending on the bandwidth baseline scenario. The last phase will end by the 39-month repacking deadline the FCC has set. The times vary depending on how much spectrum is to be cleared

and the number of stations that are needed to be repacked. The FCC used as baseline examples the clearance of 114 MHz which is the amount of spectrum in the current bidding stage and 84 MHz which many feel could be the true point were the reverse and forward auction totals may start to come together. In the notice most of the charts are for the 84 MHz target.

Other proposals in the notice include seeking comments on allowing interference to a station of up to 2% of a stations coverage area during the repacking transition, coordinating testing of new facilities with existing facilities and allowing stations temporary channels. The FCC does not plan on giving temporary channels, but still would like comments on the possibility.

Comments are due on October 30 and reply comments are due on November 15. The FCC reminded stations that they are still under the gag order to not reveal their bidding plans when making their comments. The information in this notice gives a good view of what the repacking transition will entail and includes many graphs and figures including illustrations of how extensive the ripple effect is when a station moves to a new channel. This notice should be part of a TV station's repacking planning files.



# CHAPTER 24 SUSTAINING MEMBERS

## Recent Renewals:

WMSN-TV 47

## Thanks to all our Sustaining Members:

Alpha Video

AVI Systems

Belden, Inc.

Clark Wire and Cable

Full Compass Systems

GEPCO International, Inc.

Heartland Video Systems

Joseph Electronics

Resonant Results, Ltd.

Ross Video

Sound Devices, LLC

Token Creek Productions

WISC-TV 3

WMTV-TV 15

WKOW-TV 27

© 2016 by SBE Chapter 24, Inc. Views expressed herein do not necessarily reflect the official positions of the Society, its officers, or its members. SBE Chapter 24, Inc. regrets, but is not liable for, any omissions or errors. The Chapter 24 Newsletter is published twelve times per year. Other SBE Chapters are permitted to use excerpts if attributed to the original author, sources, and SBE Chapter 24.



**Token Creek**  
**MOBILE TELEVISION**

**John Salzwedel**  
President

501 Moravian Valley Road, Waunakee, Wisconsin 53597  
Phone: (608) 849-4965 Fax: (608) 849-4035 Cell: (608) 235-9632  
Web Page: www.tokencreek.com E-Mail: john@tokencreek.com

**GEPCO**  
BRAND

Gepco International, Inc.  
114 South Greenwood Avenue  
Palatine, IL 60074  
Tel: 1-630-496-0486  
www.Gepco.com

**Matt Hayes**  
Inside Sales  
mhayes@generalcable.com

**Antenna System Specialist**

TV  
FM  
AM

Troubleshooting  
Sweep Testing  
Infrared Testing

www.ResonantResults.com  
Richard Wood (608)839-3950

**FULL COMPASS**  
PRO AUDIO | VIDEO | A/V | LIGHTING

8001 TERRACE AVE. | MIDDLETON, WI 53562  
p: 608.831.7330 | f: 608.831.6330  
order line: 800.356.5844  
fullcompass.com

**KEVIN PECKHAM**  
Product Manager  
Ext. 1356  
peckham@fullcompass.com

PRO AUDIO VIDEO A/V LIGHTING



# 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 SOME-  
TIMES MATTERS,  
AND 30% SOME-  
TIMES 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*



CLIF GROTH  
*NEW RADIO GROUP*



BILL HUBBARD, *UW-GREEN BAY*



KEITH KINTNER, *UW-OSHKOSH*



GARY MACH, *GEMCOM*



KEVIN RUPPERT, *WISC-TV*



MATT SPERLING *WKBT-TV*



TOM SMITH



MICHELLE VETTERKIND  
*WBA PRESIDENT & CEO*



LINDA BAUN  
*WBA VICE PRESIDENT & EMAIL QUEEN*



LIZ BOYD  
*NCSA/PEP COORDINATOR*



## 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



NUTS & BOLTS CO-SPONSOR



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

