WbA ON AIR
WISCONSIN BROADCASTERS ASSOCIATION

SBE.

Radio

Television

Engineering: Where the Magic Happens!

IT Networking

Transmitters

Towers

Antennas

Join Us For:

2013 Broadcasters Clinic
and Upper Midwest SBE
Regional Meeting
October 8-10, 2013
Madison Marriott West Hotel

Studio

Repairs

BROADCASTERS CLINIC 2013
Program Agenda
Madison Marriott West Hotel, Middleton
All sessions will be in the Superior Room

SBE.

TUESDAY, OCTOBER 8

7:45 AM: Registration & Continental Breakfast
Tuesday Registration Sponsored by: RCS

**9:00 AM: Speaker: Mary Ann Seidler, Tieline
Moderator: Leonard Charles, Television Wisconsin Inc.**

Audio Compression: Are we Squeezing the Life out of Radio?

This session will examine the growing trend of multiple compression passes, and its effect on audio quality. It will discuss ways to maintain the efficiency benefits of compression technology, while making sure your audio stays pristine throughout the broadcast chain, all the way to your listeners' ears.

**9:45 AM: Speaker: Steve Johnston,
WI Public Radio
Moderator: Keith Kintner, UW-Oshkosh**

Program Associated Data Implementation at Wisconsin Public Radio

The presentation describes the roll-out of Program Associated Data service at Wisconsin Public Radio. Program Associated Data, also known as Program Service Data (PSD), is the metadata related to the audio programming generated for display on the front panels of FM RDS/RBDS receivers, HD Radios, web players, and other test-display devices. This PAD data can be both static (information related to the overall program service) and dynamic (details of the particular program element currently being broadcast).

10:30 AM: Break
Sponsored by: Ross Video

**10:45 AM: Speaker: Bob Surette,
Shively Labs
Moderator: Gary Mach**

Filters, The Building Block of Combiners

This presentation will take the engineers through the basic design of FM coaxial filter cavities. I will start with the definitions and practical aspects of "Q" which is the holy grail of filter design. From there I will discuss the parameters of both band pass and notch filters the building blocks of combining systems.

**11:30 AM: Speaker: Andy Laird,
Journal Broadcast Group
Moderator: Kent Aschenbrenner, Journal Broadcast Group**

IBOC and AM Digital Updates

Topics covered will include:
• World stage for digital audio broadcasting (DAB)
  •• Who is using IBOC
• IBOC receivers availability report
• Recent IBOC activities, FM
• Increased digital levels, -20 to -14 to as high as -10
• Asymmetrical digital levels
• Efficient combining breakthrough
• Enhanced logo support
  ••Artist Experience
•Recent IBOC activities, AM
  •• "Compatibility" mode
• iBiquity AM all digital mode
  •• System testing progress report

12:15 PM: Lunch

1:15 PM: Speaker: Frank Foti, Telos/Omnia
Moderator: Gordon Carter, Professional Audio Services

MPX-Direct: Digital Connectivity for FM-Stereo

The desired goal for the digital interconnect between audio processor and exciter, has been to emulate the older analog method, where the audio processor generates the FM-Stereo MPX signal, and then connect to a wide spectral input on the exciter…a digital BNC-to-BNC connection so to speak. MPX-Direct generates the FM-Stereo MPX signal inside the audio processor, and scales the sampling rate to 192kHz. Through recent firmware developments, the AES/EBU transom can accommodate a sampling rate at 192kHz, making it possible to transport the MPX signal directly from the audio processor to the input of the exciter…MPX over AES.

2:00 PM: Speaker: Chris Crump,
Comrex Corporation
Moderator: Jason Mielke, WCLO/WJVL

Benefits of Migrating the Radio Call In Show to Wideband Audio

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 the Comrex new STAC VIP Call Management system are overviewed.

2:45 PM: Break
Sponsored by: Ross Video

3:00 PM: Speaker: Tony Peterle,
WorldCast Systems
Moderator: Mark Burg, GRANT Media LLC

SNMP in the Real World: An Ancient Protocol in the Modern Broadcast Facility

This session will briefly explain the structure and implementation of SNMP, but will be comprised mostly of real case studies and sharing of knowledge from engineers using SNMP in the field. What equipment were they able to access using SNMP? What has it allowed them to do that they could not accomplish with previous methods? What uses of SNMP do they find most practical?

3:45 PM: Speaker: Jeff Welton, Nautel
Moderator: Greg Dahl, Second Opinion Communications
General Transmitter Maintenance and Troubleshooting Tips

While transmitters come in all shapes and sizes, from small to big, tube to solid state, there are a lot of things they all have in common, regarding preventative maintenance and practical steps toward troubleshooting problems. There are also certain procedures that should always be followed in the course of performing these tasks. In this session, we will take a look at things we can do to help keep our systems operating at peak performance and reliability. We'll also go into the basics of determining where the inevitable problems might be located and the tools and tests to help us get things back into top form as efficiently as possible.

4:30 PM: Exhibits Open/Reception

7:00 PM: Nuts & Bolts
Sponsored by: Continental Electronics Corporation & Shively Labs

WEDNESDAY, OCTOBER 9

7:45 AM: Registration & Continental Breakfast
Continental Breakfast Sponsored by:
Broadcasters General Store and Tieline

8:30 AM: Speaker: Kevin Trueblood,
Wisconsin Public Radio
Moderator: Leonard Charles,
Television Wisconsin Inc.

IP to/from the Transmitter via
Unlicensed WiFi

It's becoming more of a necessity to extend a station's LAN to a modern transmitter facility, and it's also cheaper and easier than ever to do so. I'll explore different ways to accomplish this using unlicensed microwave equipment, as well as a case study of how this type of gear is being used at WHA-AM as a primary STL.

9:15 AM: Speaker: Mark Allen, Rohn Towers
Moderator: Mark Burg,
GRANT Media LLC

Practical Considerations for
Aging Broadcast Towers

This presentation looks at a host of reasons why towers fail and suggests how to predict and avoid them as best you can.

10:00 AM: Exclusive Exhibit Time

11:00 AM: Lunch
Sponsored by: Comrex

1:30 PM: Speaker: Jeremy Ruck,
Jeremy Ruck & Associates
Moderator: Greg Dahl,
Second Opinion Communications

Translators/LPFM

As the 2003 FM translator window finally draws to a close, and the next LPFM window opens mid-October, we will take a look at how these two services compete for the same spectrum, and how they may affect full-power broadcasters. Topics covered include the allocation procedures for both, as well as some ways to avoid pitfalls.

2:15 PM: Speaker: Steve Lampen, Belden
Moderator: Gary Mach

How Wire Fails

This session focuses on how wire and cable fail and how to prevent it. Starts with resistance, capacitance, inductance, and finally impedance, what they are, how they affect signals running down cables and how that parameter makes cable fail. Included is a short section on fire ratings.

3:00 PM: Break

3:15 PM: Speaker: Jim Klas,
Wisconsin Public
Broadcasting/ECB
Moderator: Jason Mielke,
WCLO/WJVL

Finance for Engineers

Did you know there are two groups of people at your station who like math? There sure are! The two groups who enjoy math are Engineering and Finance. This session will explore the elements of the math of finance and examine a cost benefit analysis.

4:00 PM: Speaker: Dan Ryson,
Cavell Mertz & Associates
Moderator: Mark Burg,
GRANT Media LLC

The Crowded Broadcast
Auxiliary Spectrum

I'll discuss trends and challenges in broadcast microwave. With the industry's increasing demands for bandwidth and off-site production, more is being done with limited amounts of broadcast auxiliary spectrum. While these systems have traditionally been very reliable, increases in modulation complexity can make these systems more susceptible to interference. We'll discuss what can be done to help prevent harmful interference to these vital systems.

4:45 PM: Speaker: Jay Adrick, Harris
Moderator: Matt Sperling, WKBT-TV

Preparing for TV Spectrum Auctions and Repack

The presentation will examine the technology changes in transmission equipment, the realities of making changes to existing equipment and the limitations of industry resources that will drive the approach and decisions that broadcasters will face. With a limited window for compensation, broadcasters need to begin planning now, so that in the event they are selected to move channels, they will be prepared.

5:30 PM: Dinner
Sponsored by: Harris Broadcast

6:00 PM: SBE Meeting
Speaker: Bryan Jones, Telos Alliance (Axia)

SIP/VOIP Addressing, a World Without POTS, with Demo

An interactive presentation and demonstration of a broadcast wireless networking solution from the studio to transmitter locations. Transporting Audio-over-IP, LAN subnets and Voice-over-IP using VLan encapsulation with an Ubiquity wireless bridge and Cisco networking switches. Voice-over-IP platform by Asterisk's open source software.

Engineering: Where the Magic Happens!

7:45 AM: Registration & Continental Breakfast
Continental Breakfast Sponsored by: Harris Broadcast

8:30 AM: Speaker: Paul Briscoe, Harris
Moderator: Leonard Charles, Television Wisconsin Inc.

LipSync/AFD

LipSync: This presentation offers a brief history and overview of the problem, both from technical as well as psycho-perceptual points of view. Current solutions are examined and why the problem has not been solved is discussed. Finally, the work underway at SMPTE to develop an interoperable standard is explored, with a detailed discussion of the technology being used and the solution space it addresses. AFD: With the explosion of screen formats used in media, there exists vast opportunities for errors in the presentation of one aspect ratio on a screen of a different shape. This presentation investigates the nature of the problem and discusses the solutions available using the SMPTE Active Format Description (AFD) standard.

9:15 AM: Speaker: Steve Smith,
Broadcast Technology Consultants
Moderator: Leonard Charles, Television Wisconsin Inc.

Factors Impacting Your DTV Service Area During the FCC Incentive Auction Repack

The following subjects will be covered:
• Quick Overviews of the FCC process
• Comparison of OET 69 and Proposed FCC TVStudy software and any compromise if achieved
• FCC admitted omissions and errors in the allocation software and process
• How will the industry transition: Justification for Flash cut and what will be needed.
• The impact of Beam Tilt and other system design parameters
• Real world Service Model considerations
• Economic factors and justification for FCC compensation
• Some cautions and recommendations.
• Check list before the auction starts

10:00 AM: Break

10:15 AM: Speaker: Perry Priestley, Comark
Moderator: Bill Hubbard, UW-Green Bay

Improving Transmitter Efficiency

This paper compares testing of recently released transistor and vacuum tube power amplifier devices and their consequent efficiency when operating in the real world. The conclusion discusses the expected results and compares the cost trade-offs of performance, complexity, capital and operating expenditure and forecasts future developments to yet further improve efficiency.

11:00 AM: Speaker: Gary Sgrignoli, Meintel, Sgrignoli, & Wallace
Moderator: Kent Aschenbrenner, Journal Broadcast Group

ATSC A/153 (Mobile DTV Coexistence in the Terrestrial Stream)

This presentation provides a brief history and current status update on the ATSC A/153 mobile standard and its deployment by broadcasters, particularly in the form of the two mobile groups (Mobile Content Venture and Mobile 500 Alliance). This is followed by a *basic* overview of the legacy A/53 8-VSB transmission system and the backwards-compatible A/153 mobile system that describes how the two standards work together using the same infrastructure and RF spectral characteristics, the tradeoffs made for compatibility, and the techniques that allow robust bursted mobile reception by battery-powered consumer devices.

12:00 PM: Lunch
Sponsored by: Nautel

1:00 PM: Speaker: Larry Thorpe, Canon
Moderator: Keith Kintner, UW-Oshkosh

Large Format digital Acquisition for Broadcast Television - Friend or Foe

In 2008 an upstart new hybrid DSLR rocked the larger world of digital program origination. A full frame 35mm image sensor having high sensitivity and a very shallow depth of field combined to help this low-cost HD camcorder infiltrate into moviemaking, television production, and television commercial production. Its shortcomings, however, soon became apparent. But, that mini-revolution in digital imaging did spur development of more serious large-format single-sensor HD camcorders that are now playing an increasing role in multiple program genres. This presentation will review the evolution from that first hybrid DSLR to contemporary single-sensor HD/ 2K/ 4K cameras. The merits and demerits of these production tools for television broadcasting will be discussed.

1:45 PM: Speaker: Dr. Richard Cabot, Qualis Audio
Moderator: Matt Sperling, WKBT-TV

Implementing and Managing 5.1 Audio, Avoid the Pitfalls

In this session Dr. Cabot will explore the technical issues in capturing, processing and delivering surround audio and offer practical suggestions about what those responsible for each step in the process can do to provide all viewers with the best experience.

2:30 PM: Speaker: Allan Pepper, Ross Video
Moderator: Bill Hubbard, UW-Green Bay

A Social Media Workflow for Broadcasters

Social media continues to grow in importance for broadcasters, as its uses in news, live events, promotions and advertisements expand. Managing how and when content appears is vital to creating an online brand, and is key to audience engagement. Learn how to implement a strategy that ties multiple social media platforms to production and digital media to create compelling on-line content.

THANK YOU TO OUR SPONSORS
(as of 7/22/13)

Tuesday Reg.	Tuesday Breaks	Nuts & Bolts
Sponsored By:	Sponsored By:	Sponsored By:
RCS Sound Software	ROSS Live Production Technology™	Continental Electronics / Shively Labs® A Division of Howell Laboratories, Inc. Bridgton, Maine 04009 USA

Wednesday Breakfast	Wednesday Lunch	Wednesday Dinner
Sponsored By:	Sponsored By:	Sponsored By:
Broadcasters General Store / Tieline The Codec Company	COMREX	Harris Broadcast Deliver the moment.

Thursday Breakfast	Thursday Lunch	Attendee Gift
Sponsored By:	Sponsored By:	Provided By:
Harris Broadcast Deliver the moment.	nautel	RCS Sound Software

Equipment	Projector	
Provided By:	Provided By:	
FULL COMPASS PRO AUDIO | VIDEO | AV | LIGHTING MUSICAL INSTRUMENTS	SONY make.believe	wba ON AIR WISCONSIN BROADCASTERS ASSOCIATION Wisconsin Broadcasters Association

THANK YOU'S

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

Leonard Charles
Chair
Television
Wisconsin, Inc.

Kent Aschenbrenner
Journal Broadcast Group

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

Magic Clinic Committee

Bill Hubbard
UW-Green Bay

Keith Kintner
UW-Oshkosh

Gary Mach

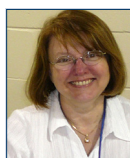**Jason Mielke**
WCLO/WJVL

Matt Sperling
WKBT-TV

Kevin Ruppert
WISC-TV

Tom Smith

Michelle Vetterkind
CAE,
WBA President and CEO

Linda Baun
WBA Vice President

Mandy Endicott
WBA Administrative Assistant

EXHIBITORS

(as of 7/23/13)

*The Broadcasters Clinic Committee and the Wisconsin Broadcasters Association
wishes to extend our gratitude to:*

AJA Video Systems

Alpha Video & Audio, Inc.

Broadcast Electronics/
Commotion

Broadcasters General Store,
Inc.

Clear-Com

Cobalt Digital

Comrex

Continental Electronics
Corporation / Shively Labs

DoubleRadius Inc.

ERI-Electronics Research,
Inc.

Evertz Microsystems

Full Compass

Gorman-Redlich MFG. Co.

Harris Broadcast

Hitachi Kokusai Electric
America

Logitek

Nautel

RAM Systems

RCS

SBE

Sony

Sound Devices

Tieline, The Codec
Company

Tightrope Media Systems

V-Soft Communications

Vislink

Vizrt, Inc.

Wave Communications

WorldCast Systems, Inc.

(List is subject to change. See Exhibitors Map in your Attendee Packet for up-to-date listing.)

Broadcasters Clinic Word Search

```
e r m n w j g k h f n m n h i j s e e r e f e r v c s x n c
m z f i f z n m z h w u p d l z r o w r g d e t u r x f a o
g u b t g p i v p o n x d u h h o b v z b i d p e h q s n u
n o r d s y b g g p w z w s a a t g d f t r i i o v b t k n
c q a t a m m k e y k w m l y n a y y a q t f m b c i x l s
z e d p c z u r e o k r r y v y l t e j c i c p y c v d i e
e f i k d e l j x r n x t f w g s r q n l j u h h z h t e l
e x o d o y p b l x o v r y q i n i r p g s e c n a n i f o
m q a x g j s s e i n h p y o f a y m q p i i g k n f y p r
l r a z h c g f d i t k o x p j r a d f w m n f s y c c o t
g h e v s m t a j o j u g f z s t q v f x m f e t h s s d m
h a i c z w n o k h q g j l n c t u b x h i g i e g r t t u
p i o v e t m e c h a n i c p f c k h t u p r v a r e r e a
r d q n e i h g s k m l t m x o u q r n c u h p r e w s h q
i h t n a e v f d y n y s d q x e z n l c c e e p l o c f n
t t n m n r u e m o d u l a t o r s i e k n h d z b t g v i
x a d y u l b b r c v j k x r x u p s z q v w p n i j g l e
s e z u q l h s r s o c v a e j s b s d m v d a x w i t g q
s y y f d a r i j e a f z a m y g q z e s a r p g g v b j x
i o d q a z p p h p t y x k n e p a z o s c u f w r t e l v
x f c s a y w v e t p t w c e p m x n a p r j k q m x x f s
p u p o g g k r y w k f i z n i v e h g t r e j t f q r o c
g i k i m w c m p h a m k m m s w h b s z z e n u n b w h p
h i v m k u b e h j y y f a s h b c m k g b f u u q s h t n
a q a z v o g n z n r s i l d n z q f j t c x g p t i x j e
x q e y s i y i p q o k l v s c a k b t a r k k f z y o s y
f p h p h n p p q r m d t e w o g r r c w s j x u a h p r c
a u d i o m j s x i f g e r l m o x t r r q e u w q j r x p
q v a b f e u l e m o d r i b v r n c k f n m j b x z k y q
q x c p c a r h r l b f s w b y s c f p x n g r f y y u r f
```

WORDS TO FIND:

1. amplifiers
2. antennas
3. atsc
4. audio
5. counselor
6. dtv
7. engineer
8. filters
9. finances
10. fm
11. iboc
12. lipsync
13. mechanic
14. modulators
15. plumbing
16. radio
17. receivers
18. referee
19. repack
20. rf
21. security
22. spectrum
23. towers
24. translators
25. transmitter
26. tv
27. tuners
28. video
29. voip
30. wire

Engineering Fellowship Grant

Keeping current in Broadcast Engineering involves an investment of time and money in learning new technologies and practices. As our industry evolves, so must our understanding of how to implement new media transmission. Unfortunately, busy schedules and tight budgets for most engineering departments often do not permit engineers to learn new skills and acquire understanding of new technology. How are broadcast engineers able to keep up to date so that our industry thrives? The Wisconsin Broadcasters Association and Wisconsin Broadcasters Association Foundation would like to provide an answer by offering Engineering Fellowship Grants. This program is meant to provide a stipend for "Senior" Broadcast Engineers serving Wisconsin member stations to acquire continuing education in broadcast engineering. Want to take of advantage of one of five $1,000 grants being offered? Check out our website at: www.wi-broadcasters.org and click on Careers.

Engineering Internship Grant

Would you like to have an engineering intern but don't have the budget for it? This program will connect "future" engineers to Wisconsin broadcasters by funding a "Summer Engineering Intern" position right in your workplace! Up to five grants at $2,500 for a two-month internship will be awarded to cover internship stipend and expenses. Internships are to run from June 16-August 15, 2014. The Wisconsin Broadcasters Association and Wisconsin Broadcasters Association Foundation know there is a shortage of people seriously interested in becoming qualified broadcast engineers, and we want to help develop such talent throughout Wisconsin by helping you to initiate an Engineering Internship at your station. More information available at: www.wi-broadcasters.org and click on Careers.

Join Us Next Year For The 2014 Broadcasters Clinic October 21-23, 2014 Madison Marriott West Hotel

BROADCASTERS CLINIC REGISTRATION FORM
October 8-10, 2013

Days Attending (please check all that apply): ❏ Tuesday ❏ Wednesday ❏ Thursday

I will attend (please check all that apply): ❏ Tuesday Breakfast ❏ Tuesday Lunch

❏ Nuts & Bolts   ❏ Wednesday Breakfast ❏ Wednesday Lunch ❏ SBE Dinner

❏ SBE Meeting   ❏ Thursday Breakfast   ❏ Thursday Lunch

Registration Fees: ❏ $130 (Any **two** days)   ❏ $150 (All **three** days)

Name: _____

Company: _____

Address: _____

_____

Phone: _____   Email: _____

Mail this form and your check by September 24, 2013 made payable to Broadcasters Clinic:
Broadcasters Clinic • Attn: Linda Baun • 44 E. Mifflin Street, Suite 900 • Madison, WI 53703

To pay by credit card please complete the following:

Card Type: ❏ VISA or ❏ MasterCard   Name on Card:_____

 Credit Card # _____

Expiration Date:_____   3 Digit Security Code:_____

Card Billing Address: _____

_____

Daytime Phone:_____   Amount charged: $ _____

Card Holder Signature: _____

GENERAL INFORMATION

Hotel Information: The 2013 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. Please call 1-608-831-2000 to make your hotel reservations. The hotel deadline is **September 23, 2013** and the discounted rate is $116.00. Please tell the hotel when making reservations that you are attending the 2013 Broadcasters Clinic.

Registration Fees: $130 - Any two days $150 - All three days: Fee covers program materials, continental breakfasts, luncheons and dinners as indicated, refreshment breaks, and an evening reception with hot hors d'oeuvres (cash bar). Vegetarian meals can be requested by calling the WBA office at 1-800-236-1922, by **September 24, 2013**. The WBA will need to guarantee meal counts with the hotel, therefore the WBA will NOT refund any cancellations made after **September 24, 2013**. The WBA will also invoice for all "no-shows".

Information: For further conference or exhibitor information please contact: Linda Baun at 1-800-236-1922 or by email at lbaun@wi-broadcasters.org.

REGISTRATION IS ALSO AVAILABLE ONLINE AT: WWW.WI-BROADCASTERS.ORG