



CHAPTER TWENTY NEWS

society of broadcast engineers
pittsburgh chapter

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Next Meeting

ATSC M/H

John Humphrey
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The next SBE/SMPTE meeting will be held at 6:30PM on March 29th. Our meeting host is WPXI television, Evergreen Rd (just off I279). Thanks to Otto Schellin for making the Community room available.

The short title for the topic is: ATSC M/H. This topic encompasses a wide variety of applications for the delivery of rich media to handheld devices.

Karl Paulsen of Diversified Systems will introduce workflow ideas and concepts.

Mark Aitken of Sinclair will be doing a history of the DTV Mobile/Handheld (M/H) efforts.

Richard Schwarz of Axcera will bring a localized demo of M/H. Mark Rushton of Roundbox will go over the ESG portions, system/middleware implementation and how to be "production ready".

Bios for the speakers are found farther down in the newsletter.

Find out how M/H will be implemented, what devices will receive the ATSC M/H transmissions. And most importantly, how will this technology play out in the competitive business of today's fast-moving market place.

Ennes Workshop: Volunteers Needed

The Ennes Workshop is coming to Pittsburgh Wednesday, June 15, 2011. It will be held at the WPXI Community Room.

The Ennes Workshops were created in 1991 through the Ennes Educational Foundation Trust in an effort to bring affordable education to SBE members locally. This workshop is a joint project of the National SBE and Chapter 20.

For many years, the Ennes Educational Foundation has offered periodic workshops and seminars throughout the United States. This is the first time the Ennes Workshop has come to Pittsburgh. Chapter 20 is excited about the opportunity to host the event here in western PA. Harold Ennes was a noted author who wrote ten textbooks on radio, TV and digital technology.

The programs will be one day in length (9:00 AM - 5:00 PM) and are very affordable. Presentations are non-commercial and focus on technology. In addition, part of the day is devoted to separate seminar tracks for television broadcast and production topics. More details and the agenda will follow when available.

Volunteers are requested to help with publicity, planning the agenda and organizing this event. Please contact John Humphrey if you are willing to help with this important full-day workshop. john.humphrey@digitaltelevisionssolutions.com



Christmas Parties Come But Once a Year

Next Meeting

Date: March 29, 2011

Time: 6:30 p.m.

Topic: ATSC Mobile/Handheld

Place: WPXI-TV11
Evergreen Rd.
Pittsburgh, PA



Chairman's Corner

NAB: The Annual Gathering of the Clans

John Luff
SBE Chapter 20 Chairman
Television Technology Consultant
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NAB, the annual gathering of the clans, is upon us again. It seems like only a few weeks ago that I returned from "Lost Wages," but then I guess that was the Fall trip for my daughter's wedding (a different crowd than NAB, no engineers...). I may have said before I sometimes wonder how relevant major trade shows are in an age where 50 Mb downloads are common, air fares exorbitant, and hotel costs through the roof unless you are an astute purchaser of travel bennies. Some trade shows have moved to the "virtual world," with sales and engineering personnel essentially on the other end of an all day webinar, ready to chat on line or on the phone. It is certainly less costly for everyone, but probably not easy to get the street buzzing about a new product.

Personally, I am not sure there is a substitute for being able to cruise between competing manufacturers in a few minutes, asking pointed questions while details are still fresh in your mind. The days when Chief Engineers walked around with a briefcase full of purchase orders are of course long gone, though commitments are still often made on the NAB floor. Tagging along with the CE these days is almost certainly his CFO (minder) and maybe the GM, or News Director. You might even see the Multimedia Coordinator (or title du jour).

The attraction for a lot of engineering folk at the annual clan gathering is as much social as anything else. But the real value is in the papers given. SBE runs a first rate program on Saturday (Ennes Broadcast Workshop), but also has lots of other events that are well worthwhile, some open, some not.

Saturday, April 9

Ennes Workshop
SBE Frequency Coordination Committee Meeting
SBE Certification Committee Meeting.

Sunday, April 10

SBE Board of Directors Meeting,
SBE Education Committee Meeting

Tuesday, April 12

SBE Certification Exams
SBE Frequency Coordinators
SBE Spring Membership Meeting

My intent is to represent all of us at the Spring Membership meeting as I did last year. I'll report to all of you at our post NAB wrapup meeting, described elsewhere in this issue.

Certification Exams

The deadline is quickly approaching for the 2011 exams held during the NAB show. The exams will take place on Tuesday, April 12th from 9AM-Noon at the Las Vegas Hilton.

If you are interested in taking a certification exam during this exam time, please fill out the appropriate application and send it in to the national office for approval. See below for the application cut-off date and other exam opportunities.

SBE 2011 EXAM DATES	LOCATION	APPLICATION DEADLINE
April 12, 2011	LVH at NAB	March 25, 2011
June 3-13, 2011	local chapters	April 15, 2011
August 5-15, 2011	local chapters	June 3, 2011
November 4-14, 2011	local chapters	September 16, 2011

If you have any questions, please contact the Certification Director, Megan Clappe at national or Tom Skubel at WTAE

Digital File Summit

by John Humphrey

About a year ago, a survey was sent to members of SBE asking about the most important issues of the day. The number one issue reported was interchanging file formats from production to TV stations. Dozens of formats are requested and delivered to TV stations by local production houses. Additionally, file delivery from an ever-expanding list of companies like DG Systems, etc. adds to the number of file formats that must be flipped by Telestream type systems at the production houses and at TV stations.

The SBE/SMPTE chapter hosted a closed meeting between selected TV stations and the Production houses to discuss the issues and attempt to find a common file format for commercial and program interchange within the Pittsburgh market and Western PA region. Thanks to Production Masters for hosting the meeting.

1. The two compression systems in use in the Pittsburgh area were determined to be MPEG-2 and H.264 (also known as MPEG-4 part 10 and AVC). Both formats are long GOP. No play out servers use H.264 currently, although variants are used by commercial and program delivery services.

2. ProRes 422 HD QuickTime format wrapper is common for editing output. The files are up to 220Mbps and are single frame GOP files for editing, not used by commercial playback servers.

3. Closed Captions (CEA-608 and CEA-708 compatibility) present current and future problems.

4. Aspect ratio issues include center cut by Comcast for SD delivery.

5. Headers, slates, black frames present issues in the delivered file format.

6. Transcoding seems to be used two ways: It may mean something as simple as a file re-wrap or as involved as a decode and encode cycle

7. Audio Dialnorm (typically -27) is an issue that will become more important as the FCC begins enforcing the CALM act. Both production and TV stations must control audio loudness.

8. A possible solution to the plethora of file formats is XDCAM HD. This family of file formats includes a MPEG-2 4:2:2 50 Mbps MXF file format that is tightly controlled and standardized by SMPTE.

9. XDCAM HD will be tested with the help of Glenn Przyborski who will receive spots from the various production houses in Pittsburgh. He will receive encoded XDCAM HD files and create a compilation DVD of XDCAM HD test spots that will be delivered to the TV stations for off-air testing.

Results of the testing will be made available to members and non-members of SBE20/SMPTE in western PA on the website SBE20.org and the SBE20 Yahoo Groups site (Yahoo membership required).

Some of the people pictured are (L to R) Glenn Przyborski, Nathan Wadding, Mark Etzi, Harold Hawk, Otto Schellin, Joe Dumas, Ed Fraticelli, Dave Dumas, David Case, Tom McDonough



Attendees: (in no particular order)

John Luff - SBE Chapter 20 Chairman

John Humphrey - SBE Chapter 20 Vice-Chairman

TV Stations:

KDKA: Mark Etzi, DOE. Staff Engineers; Harold Hawk, Paul Callas, Brian Check

WPXI: Otto Schellin, Director of Engineering

WPGH: Dave Dumas, Engineering

Production houses:

Production Masters Inc: Ed Fraticelli, Engineering.

David Case, President

Euphoria Post: Ray Tragesser - Editor/Engineering

Przyborski Productions; Glenn Przyborski - Owner

Animal: Allan Stallard

Mind Over Media: Nathan Wadding, Sean Dolinar

Interested Parties:

Tom McDonough: Ascent Media, Consultant

Joe Dumas: Contract Engineer



FCC Update

Spectrum Allocation, is the FCC Planning a Gift or Trojan Horse?

Paul Byers
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WQED
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On February 1, the FCC published in the Federal Register the Notice of Proposed Rulemaking in its “Innovation in the Television Bands” proceeding. It established deadlines of March 18, 2011 for comments and April 18, 2011 for reply comments.

The proceeding stems from the FCC’s initiative to find additional spectrum for the wireless broadband industries. Depending on how it develops and your point of view, it may also hold promise for changes that could be of value to television licensees in the relatively near term.

The broad changes envisioned by the FCC in its National Broadband Plan (NBP), and in particular the reallocation of 120 MHz (20 6 MHz channels) of television spectrum for broadband purposes are not the immediate subject of this rulemaking. Rather, this Notice is described as “the first in a series of actions” necessary for the eventual enactment of the NBP spectrum policy. Future rulemaking proceedings will consider the “repacking” of DTV stations in a reduced TV band; the process of returning spectrum or entire licenses to the FCC; and, if authorized by Congress, receiving money in exchange through an “incentive” auction process (the promise of money would be the incentive to yield spectrum); and the eventual service rules and licensing procedures for any repurposed spectrum. Whether or when these further actions based on the NBP take place may well depend on actions by Congress, and on possible changes in administrations and hence the Commissioners serving on the FCC. However, broadcasters should be keenly aware that their spectrum is under intense scrutiny with a view toward its possible repurposing for other uses.

The subjects of the present rulemaking are:

- Adding a Flexible Use Allocation to the Television Bands

The FCC would permit flexible use of the television spectrum by adding “mobile” as an allocation in the Table of Frequency Allocations (Part 2 of the FCC rules). This type of dual permissible use has existed for years in the lower UHF television band at Channels 14-20 in certain markets. It would be expanded to the entire band except for Channel 37, which is used for radio astronomy and medical telemetry.

- Broadcast Television Channel Sharing.

The Commission proposes a licensing scheme by which two or more television licensees (including TV translator and LPTV licensees) could voluntarily share a single six MHz channel, reduce operating costs by sharing transmission equipment, and surrender spectrum for auction. The FCC notes that such shared licensing exists in other services, such as the Mobile Satellite Service and Private Land Mobile Service.

- Improving Reception of VHF TV Stations.

The third area of consideration in this NPRM concerns possible steps to overcome the reception problems of VHF licensees. The Commission has concluded that it cannot solve the essential problem of the increased “noise level” in the VHF band from a variety of consumer electronics devices. Rather it hopes to develop proposals for incremental improvements.

Current SBE University Courses

8-VSB · SBE Members: \$99 Non-Members: \$139

The purpose of the SBE 8-VSB course is to give the student an overview of the 8-VSB system from end to end, providing all the basic information he or she will need to understand the nature of 8-VSB modulation and to recognize deficiencies in the transmitted signal. This information will be invaluable in installing, maintaining and operating a digital television transmitter facility.

AM Antenna Computer Modeling · SBE Members: \$99 Non-Members: \$139

This course will take the student through the modeling and measurement process specifically for AM broadcast antennas, providing a general understanding of the process and procedures as well as operation of the recommended software.

AM Antenna Systems · SBE Members: \$65

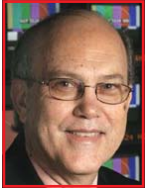
Non-Members: \$85

This course takes the student through every facet of AM antenna systems in all their forms, dealing with each element or variation separately and pulling the elements together to show how they are used in concert.

Broadcast Audio Processing · SBE Members: \$80 Non-Members: \$105

This course, intended for the intermediate-to-experienced broadcast engineer, takes a practical, real-world approach to audio processing. Topics include loudness and the human ear, gain control, limiting and clipping, adjusting a wideband processor for voice and multi-band processing.

More courses listed on page 5



InsideOutsideBroadcasts

Remote Broadcasting - the busy season

George Hoover
Chief Technology Officer
NEP Broadcasting
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The first quarter of the year is one of the busiest in the world of remotes. Every major sport is in play, including baseball with spring training. Throw in the NFL playoffs, Super Bowl, the NBA All Star, NHL All Star, Pro Bowl and the Daytona 500, and it's a pretty amazing time for those of us working in remote television. But wait- there's more- don't forget the SAG Awards, Golden Globes, Grammy's and the big daddy of the awards shows, the Oscars. Oh, and the Sony Open in 3D live from Hawaii.

The Oscars rivals the Superbowl in terms of complexity of the television production - we have the red carpet (Pre-game) awards ceremony itself (the game) and the post game (Ophra Winfrey). In addition there is the red carpet show for E, TV Guide, KCAL and others, along with dozens of international broadcasters and news networks.

Each network's red carpet show has fourteen or so cameras, produced much like golf, with seamless transitions between near live interviews with celebs. The actual "game" itself has three production switchers, main air control, screens control and projection control. This year's set had over 60 video projectors, double stacked, fed by over 60 Hippo servers creating the virtual set. There is a separate audio truck to handle the orchestra mix, along with a half dozen EVS servers playing back the actual video segments and award winner clips. (Yes, no one on the crew, including the producer and director, knew who won till the envelope was opened.)

This year saw a major innovation- separate multi-camera webcasts. ABC produced OSCARS Backstage Pass with over 30 cameras between the red carpet, awards and behind the scenes. Watching the webcast you had a choice of cameras to watch, based either on a floor plan with camera locations to click on, or a virtual monitor wall, allowing you to be your own director. There were also prebuilt features you could watch on the stars and movies nominated. The Academy itself provides a webcast on OSCARS.com which had separate hosts and the ability of the viewer to pan / tilt and zoom the camera they selected. All the signals were compressed and fed by fiber to the AEG digital facility at LA Live where the composited webcasts were streamed out to the web via an OC12 circuit.

Backstage Pass was available as an I-Phone or I-Pad app via ABC's excellent streaming service for a \$0.99 fee.

Expect to see more complementary webcasts for all these big events. The Oscars demonstrated it can be done well and not intrude or negatively impact the main program. Isn't technology amazing!

Current SBE University Courses

Computer Networking for Broadcast Engineers · SBE Members: \$99 Non-Members: \$139

The purpose of this course is to give the student an introduction to the fundamental concepts of computer networking. This course will assist the broadcaster in passing the SBE Certified Broadcast Networking Technologist exam.

FM Transmission Systems · SBE Members: \$80 Non-Members: \$105

This course will help the student understand the proper design, installation and maintenance of an FM transmission system and how its components and variables related to those components impact the performance of an FM station.

Matching Networks and Phasing · SBE Members: \$80 Non-Members: \$105

The purpose of this course is to give the student a good overall understanding of the various types of networks used in an AM transmission system, the situations in which each might be used and calculating the leg values thereof. It also discusses the phase budget for a phasing and coupling system and the use of power divider and phasing networks therein.

Voice Telco Networks and Studio Interface Systems · SBE Members: \$65 Non-Members: \$85

The course provides the student with a working understanding of how a signal gets from end to end, how to troubleshoot telco problems and how to properly interface broadcast equipment to the telco world. This course will benefit individuals in either television or radio station facilities.

Chapter Twenty News
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Next Meeting Bios

Mark Aitken currently chairs the U.S. Advanced Television Systems Committee (ATSC) Specialist Group responsible for the standardization of broadcast mobile digital television. Mobile TV is a very important and exciting means for broadcasters to reach viewers on the go.

Mr. Aitken joined Sinclair Broadcast Group in April 1999 and currently serves as Director of Advanced Technology, where he focuses on technology requirements for the Company's 58 television stations.

Mark Aitken is the Chairman of the ATSC TSG/S4 specialist group responsible for standardization of Mobile/Handheld standards. He is a member of the AFCCE, IEEE and SMPTE. As well, Mr. Aitken is a member of the Executive Board of the Open Mobile Video Coalition (OMVC) and the Mobile 500 Alliance, serving in technical capacity in both organizations. He is the author of many papers dealing with innovative RF product developments, advanced digital television systems design and related implementation strategies, and holds patents for various RF devices.

Karl Paulsen is Diversified Systems Inc. Senior Technologist and Consulting Engineer. Karl provides technology driven engineering services for projects related to media asset management, advanced digital video systems, workflow, and media storage technologies. Actively involved in television operations and engineering management for over 35 years; Karl held positions as CTO, VP and Director of Engineering for broadcast television stations, CGI and post production, and for the past 15 years as a senior manager for three Systems Integration firms.

Karl is a SMPTE Fellow and SMPTE Standards Committee participant, SBE Lifetime Certified Professional Broadcast Engineer (CPBE), a member of the Hollywood Post Alliance, and an IEEE member. He is a recognized SMPTE award winning author and industry technologist having publishing over 150 articles for TV Technology magazine in his continuing feature column series 'Media Server Technology' which focuses on video servers, storage, file-based workflow and media management. His books include 'Video and Media Servers: Applications and Technology' (First and Second Editions, Focal Press), and a forthcoming book on storage for video media applications 'Moving Media Storage Technologies' (also Focal Press due at NAB 2011). Karl has held SMPTE manager and chair positions for the Pacific Northwest Section, and is active in the SBE Pittsburgh Chapter 20.

Richard Schwartz is the Vice President of Engineering and Product Management for Axcera. Richard has been employed in the television/RF industry for over 25 years in various capacities, from technical support to engineering, sales, marketing and management. During college, he worked summer relief in the projection rooms at WPXI and KDKA. In 1991 he joined ITS Corporation, which is now Axcera. He has held positions of Sales Engineer, Sales Manager, VP of Marketing and most recently Vice President of Marketing and Product Management. Axcera, offers complete RF solutions to the broadcast industry.

Richard holds undergraduate Bachelor's degrees in both Electrical Engineering Technology and Electrical Engineering, as well as a Master of Business Administration.

Mark Rushton is the Senior Director, Broadcast Sales for Roundbox, responsible for overseeing the company's engagement with broadcast television stations, networks and industry strategic and tactical partners. Roundbox is the leading provider of mobile broadcast software for broadcasters, mobile operators, and device manufacturers. Roundbox's award-winning product suite empowers its customers to deliver innovative mobile broadcast applications, enabling them to increase revenue, enhance competitive differentiation, and improve the user experience.

At Roundbox, Mark background brings a into focus years of experience in digital television. His deep working knowledge of ATSC A/65C PSIP and its recommended practice A/69 lend itself to the eight part ATSC Mobile DTV Standard, A/153.

Prior to Roundbox, Mark work for Triveni Digital. For seven years, he serviced the commercial and public broadcasters as they built-out their DTV infrastructure. Mark holds a bachelor's degree in film from Bard College, an alumni of The Lawrenceville School and is a member of SBE, SCTE, and SMPTE.