



## NAB Broadcast Engineering Conference Sessions Now Online

This year's NAB Broadcast Engineering Conference (BEC), held from April 10-15, 2010 in Las Vegas Nevada as part of the 2010 NAB Show, was jam-packed with interesting technical presentations and lively panel discussions. Even though the conference is now over, a large portion of the content presented is available in the NAB BEC Proceedings (available online at [www.nabstore.com](http://www.nabstore.com)), as well as online from the NAB Online Learning Center (<http://nab.sclivelearningcenter.com/index.aspx>). Online sessions include an audio recording of the presentation synchronized with the PowerPoint slides used (screen capture at right shows user interface). Listed below are all of the sessions from the BEC and within each session, which presentations are available either online and/or in the Proceedings.

To use the Online Learning Center, here are some helpful tips:

- A number of complimentary sessions are accessible from the Online Learning Center home page. Selecting a complimentary session will immediately take you to the user interface so you can experience how the presentations have been captured for Online access (you must LOGIN to access these complimentary sessions – see below).



- If you previously purchased access to the Online Learning Center as part of your 2010 NAB Show package, you should have received an email that contains your username and password. Use those to LOGIN to the Online Learning Center.

- For new subscribers, look for “CREATE ACCOUNT” on the left-hand side of the home page, click on this link, and set up an account (no charge to do so). Then you can use the LOGIN link which is the first step in either accessing sessions (if you have already purchased access, or to access complimentary sessions) or purchasing access.

- Access to BEC sessions is obtained by purchasing an Online Access Package. Clicking on the PURCHASE NOW link in the center of the page (after you have logged in) will place the Online Access package into the “cart.” Note that this will also give you access to all of the other conferences available in the Online Learning Center which includes the Broadcast Management Conference, Broader-Casting Conference, Digital Cinema Summit, Info Sessions, Military & Government Conference, and Post Production World Conference.

- Once you have purchased access to the sessions, click on “Broadcast Engineering Conference” under the 2010 RECORDINGS heading on the right. You will then see an alphabetical list of the available presentations. Once you have located the presentation you wish to view, click on the presentation title, then click on SESSION CONTENT (near the top center of the page), and finally, on the icon under “Watch Now” to start playback.

Saturday, April 10, 2010

## SBE Ennes Workshop - Continuing the Digital Transition

**Moderators:** Frederick Baumgartner, SBE Education Committee, Andy Butler, PBS

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Considerations for Adding Mobile DTV to a Broadcast Station</b> Richard Chernock, Triveni Digital	X	
<b>SMPTE Update</b> Peter Symes, SMPTE	X	
<b>Impacts of 3D Television on Video and Broadcasting</b> Dan Holden, Comcast Media Center	X	
<b>Reorganization of Broadcast Workflows</b> Greg Doyle, Diversified Systems Inc	X	

Sunday, April 11, 2010

## NAB Broadcast Engineering Conference Opening Session

**Moderator:** Lynn Claudy, NAB

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>A Path for Restoring the Lofty Status of Broadcast Engineers</b> Barry Blesser, 25-Seven Systems and Radio World	X	

Sunday, April 11, 2010

## Mobile Television: Part I

**Chairperson:** James Kutzner, Public Broadcasting Service

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>OMVC Testing Program</b> Victor Tawil, Association for Maximum Service Television	X	
<b>Field Testing of ATSC M/H Mobile DTV</b> Dennis Wallace, Meintel, Sgrignoli, & Wallace	X	
<b>A Revenue Model for Mobile DTV Service</b> Aldo Cugnini, Vimionix, Louis Libin, Vimionix	X	X

Sunday, April 11, 2010

## Digital Radio: Advancements in Technology

Chairperson: Michael Cooney, Beasley Broadcast Group, Inc.

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>AM IBOC Update From iBiquity</b> Jeff Detweiler, iBiquity Digital	X	
<b>When and How Will Terrestrial Radio Go Digital Radio in Europe?</b> Markus Ruoss, Ruoss AG	X	
<b>Electronic Program Guide Field Trial: How HD Radio EPG Works</b> David Maxson, Broadcast Signal Lab	X	X
<b>Laboratory Test Results of Digital Radio Technologies, DAB, DAB+, T-DMB Audio and HD Radio</b> Yong-Tae Lee, ETRI	X	X
<b>Digital Power Enhancement for DRM</b> Christian Hörlle, Transradio		X

Sunday, April 11, 2010

## Mobile Television: Part II

Chairperson: James Kutzner, Public Broadcasting Service

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Enhancing DTV Coverage: Implementing Vertical Polarization for Existing Broadcast Antenna Systems</b> Kerry Cozad, Sr., Dielectric Communications	X	
<b>Mobile DTV Service Guide and Data Services</b> Peter Mataga, Roundbox	X	
<b>Practical Applications to the Installation of ATSC-MH</b> Don Tenhundfeld, Harris Corporation	X	
<b>Perceived Video Quality and Bit Rate in the ATSC M/H DTV Standard</b> Filippo Speranza, Communications Research Centre Canada		X

Sunday, April 11, 2010

## FM Digital Radio

Chairperson: Michael Cooney, Beasley Broadcast Group, Inc.,

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Planning for the Increase in Digital Power for FM HD Radio Signals</b> Michael Troje, Continental Electronics Corp	X	
<b>Extending Your HD Radio Footprint</b> Geoffrey Mendenhall, Harris Communications Division	X	X
<b>Practical Tools for HD Radio including HD Power Boost, Increased Sideband Levels and More</b> Hal Kneller, Nautel	X	
<b>HD Radio, The Way Forward</b> Henry Downs, Mega Industries LLC	X	
<b>Translators and Boosters - What You Need to Know</b> Tim Bealor, Broadcast Electronics, Inc	X	
<b>Putting the IBOC Quality Metric to the Test</b> Philipp Schmid, Nautel		X

‡ 2010 NAB BEC Proceedings BEST PAPER award winner

Monday, April 12, 2010

## Radio Facilities

Chairperson: Jeff Smith, Clear Channel Radio – NYC

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>The Smart Site: Integrating Intelligence into all Facets of the Broadcast Facility</b> Tony Peterle, WorldCast Systems Inc	X	X
<b>Reducing Operation Costs with Better Monitoring and Control of Transmitter Facilities</b> Kevin Rodgers, Nautel	X	X
<b>Radio in a Cloud</b> Andrew Janitschek, Radio Free Asia	X	X

Monday, April 12, 2010

## DTV Transmission and Reception Issues

Chairperson: Joe Snelson, Meredith Broadcast Group

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Enhancements on 8VSB Transmission Technology</b> Henry Rodrigues, Linear Industries	X	X
<b>What We Learned About VHF DTV Reception Problems</b> William Meintel, Meintel Sgrignoli & Wallace	X	
<b>An 8VSB SFN Distributed Translator System</b> Steve Kuh, Ktech Telecom	X	X

Monday, April 12, 2010

## IEEE-BTS Tutorial: Audio Technology for Television

Chairperson: Yiyang Wu, Communications Research Centre Canada

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Broadcast Loudness and Loudness Range</b> Thomas Lund, TC Electronic A/S,		X
<b>Establishing Convenient Loudness Monitoring and Control Within Existing Broadcast Workflows</b> Carl Dempsey, Wohler Technologies		X
<b>Managing Audio Loudness within Large-Scale Advertising Insertion Systems</b> Ivan Larsen, Time Warner	X	
<b>Audio Video Synchronization</b> Patrick Waddell, Harmonic Inc	X	
<b>Lip Sync - Solutions Are in Sight!</b> Graham Jones, NAB	X	

Monday, April 12, 2010

## IP Audio for Radio

Chairperson: Jeff Smith, Clear Channel Radio - NYC

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>LANs, and Drivers, and Fares - Oh my!</b> Al Salci, Sierra Automated Systems	X	
<b>Extending AoIP to the Transmitter</b> Kirk Harnack, Linear Acoustic	X	
<b>Beyond Automation - Intelligent Software Design For Live Assist Applications</b> Patrick Campion, ENCO Systems, Inc	X	X
<b>VoIP In The Broadcast Studio</b> Steve Church, Axia Audio, Michael Dosch, Axia Audio	X	X
<b>Going National: Special Considerations for Large Scale Deployments of Audio over IP</b> Greg Massey, WorldCast Systems	X	X
<b>Point to Point Audio Distribution: Its Not Just Satellite Anymore</b> Rolf Taylor, WorldCast Systems Inc	X	X

Tuesday, April 13, 2010

## Radio Data Services

Chairperson: Dom Bordonaro, Cox Radio, Inc.

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Emerging Bonded Meta Data Applications Accessible Radio Services</b> Mike Starling, Public Radio Satellite System	X	X
<b>Saving Lives with FM Radio-Based Mass Notification</b> Matthew Straeb, Global Security Systems, LLC	X	X
<b>The Benefits of Using FM RBDS Data in Integrated Public Alert and Warning</b> Bill Marriott, viaRadio	X	
<b>Do More With RDS Data</b> Jim Roberts, The Radio Experience (TRE)	X	X
<b>Providing Media-Rich Content Using Digital Radio</b> Tim Anderson, Harris Corporation	X	X

Tuesday, April 13, 2010

## Shared Services for Television

Chairperson: David Folsom, Raycom Media, Inc.

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Reconsidering Centralized Multi-Station Operation</b> John Wadle, OmniBus Systems Inc.	X	X
<b>Centralization of Master Control</b> Philip Wilton, Snell Group	X	

<b>Centralization - It's Back!</b> Chris Simons, Harris Corporation	X	X
<b>The Virtual TV Station Broadcast Operations as a Hosted Service</b> Jan Weigner, Hollywood	X	
<b>Beating the Budget Crunch - Building an Enterprise News Production Platform in a Down Economy - NBC and NY1 Case Studies</b> Thomas Zugmeyer, Dalet Digital Media Systems		X

Tuesday, April 13, 2010

## Radio Case Studies

Chairperson: Andy Laird, Journal Broadcast Group, Inc

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Satellite Distribution of HD Radio and Analog FM using HDC</b> Mike Pappas, KUVU Radio	X	X
<b>Maximizing the Reliability of STL links for Radio</b> Paul Shulins, Greater Media	X	X
<b>Indoor Noise Conditions in the FM Broadcast Band</b> Steve Johnston, Wisconsin Public Radio	X	
<b>Case Study: PRSS Next Generation Content Delivery</b> Pete Loewenstein, NPR	X	
<b>Radio Living in a Multimedia World</b> Andrew Janitschek, Radio Free Asia	X	X
<b>Detuning in the MOM Era</b> John Warner, Clear Channel Radio	X	
<b>Telephones in Your Studio or Newsroom: Big Changes Coming</b> Joseph Talbot, Citadel Broadcasting San Francisco	X	
<b>Power Quality in Communications Facilities</b> David Brender, Copper Development Association Inc	X	

Tuesday, April 13, 2010

## Television Workflow and File Management

Chairperson: Glenn Reitmeier, NBC Universal

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Automating Workflows: Where's the ROI?</b> John Pallett, Telestream, Inc.	X	X
<b>Broadcast Media File Interchange: Strategies and Pitfalls</b> Todd Roth, Harris Corporation	X	X
<b>Case Study: File Based Workflow From Acquisition to Air</b> Michael Foti, WGBH Boston	X	
<b>Using RFID to Create Efficiencies and Savings in a Broadcast Environment</b> Stephen Pumple, AZCAR	X	X
<b>Captioning Challenges in the Modern Workflow</b> Sam Pemberton, Softel	X	X
<b>Compression in a 3G Workflow</b> Are Olafsen, Grass Valley	X	
<b>A Strategy for Production and Delivery of Multiplatform On-Demand Content</b> Jim Alexander, Ericsson		X

<b>Building Workflows to Support Multiplatform Content Delivery</b> Alan Hoff, SeaChange International	X	X
---	---	---

Wednesday, April 14, 2010

## Disaster Preparedness, Recovery and Security

Chairperson: Andy Laird, Journal Broadcast Group, Inc.

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Are You Prepared for a Disaster?</b> Steve Fluker, Cox Radio	X	X

Wednesday, April 14, 2010

## Television Case Studies

Chairperson: Michael Dolan, TBT, Inc.

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Workflow and Asset Management Challenges in Multichannel Broadcast Operations</b> Michael Walter, AZCAR Technologies, Inc.		X
<b>Media Asset Management ROI</b> Paul Koopmann, Versus	X	
<b>New Studios for Real-Time Closed Captioning: Their Configuration and Operation</b> Muneki Ikeuchi, Japan Broadcasting Corporation (NHK)	X	X
<b>Launching MediaCityUK</b> Carol Owens, Ascent Media, Mark Harrison, BBC	X	
<b>Enterprise MAM - What is the Real Benefit for Broadcasters?</b> Thomas Zugmeyer, Dalet Digital Media Systems	X	
<b>Skype HD Video Calling for Broadcasters: The Evolution of Video Calling over the Internet</b> Julian Spittka, Skype	X	

Wednesday, April 14, 2010

## Spectrum Issues for Broadcasters

Chairperson: Steve Davis, Clear Channel

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Leveraging White Spaces and an Introduction to the New Networks Being Built With Them</b> Rick Rotondo, Spectrum Bridge	X	
<b>Wireless Microphone Testing For White Space Proceeding in Midtown Manhattan</b> Louis Libin, BroadComm, Inc.	X	
<b>What Wireless Mic Users Need To Know About White Spaces and the 700 MHz Band</b> Christopher Lyons, Shure Incorporated	X	
<b>Radio Communications In Today's Complex RF World</b> Tom Turkington, CoachComm	X	
<b>Broadcast Operation and Co-existence in the White Space Era</b> Bruce Franca and Victor Tawil, MSTV	X	X

Wednesday, April 14, 2010

## New Technologies for Television

Chairperson: William Miller, Miltag Media Technology

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>The Benefits for Media Operators of Smooth Streaming and Adaptive Streaming over HTTP</b> Mark Darlow, Harris Corporation		X
<b>Doubling the Number of ATSC HD Channels</b> Jean-Louis Diascorn, Grass Valley	X	X
<b>Mixed Signals: Broadcast and Broadband Hybrids</b> William Cooper, informitv		X
<b>Migrating from MPEG-2 to MPEG-4 AVC</b> Matthew Goldman, Ericsson	X	
<b>Live TV Program Production by Using a Millimeter-wave Wireless Hi-Vision Cameras</b> Shinichi Suzuki, NHK (Japan Broadcasting Corporation)	X	X

Thursday, April 15, 2010

## Green Technologies for Broadcasters

Chairperson: Dom Bordonaro, Cox Radio, Inc.

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Sustainable Facilities and LEED Certification a Broadcaster's Guide</b> Antonio Argibay, Meridian Design Associates Architects	X	X
<b>Building a LEED, WEEE, and RoHS Facility</b> Tom Axtell, General Manager, KLVX-DT, Las Vegas, NV, USA	X	
<b>Hollywood East: Home of Sustainable Production</b> Stephen Newbold, Gensler	X	X
<b>Best Practices for the Design Facilities: How Better Design, Better Acoustics, and New Media Impacts the Cost of Operations</b> Christopher Pollock and Robyne Hamilton, Shen Milsom & Wilke, Peter Bloomfield, Bloomfield + Associates	X	
<b>HD Quality Energy Efficient, Low Heat Broadcast Lighting</b> Mark London and Dennis Size, The Lighting Design Group	X	

Thursday, April 15, 2010

## Television Test and Measurement

Chairperson: Joe Snelson, Meredith Broadcast Group

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>DTV Video over IP Quality Assurance: Assessment and Troubleshooting</b> James Welch, IneoQuest Technologies	X	X
<b>Broadcast Service Quality Monitoring Strategies</b> Ralph Bachofen, Triveni Digital Inc.	X	X

<b>Grade-1 LCD Monitors</b> Goran Stojmenovik, Barco	X	X
<b>The Role of End-to-End Quality Assurance Testing for Video and Audio in Meeting Viewer Satisfaction</b> Dave Higgins, Comcast Media Center	X	X

Thursday, April 15, 2010

## Television Production

Chairperson: Joe Snelson, Meredith Broadcast Group

PRESENTATION	ONLINE LEARNING CENTER	BEC PROCEEDINGS
<b>Trends in Video and Audio Compression Standards: What to Use When</b> Bryan Willson, International Datacasting Corporation	X	
<b>Surround Sound for Broadcast: Capturing the Future</b> Jonathan Godfrey, Holophone	X	X
<b>Technical Challenges of Audio Routing and Processing in All-Embedded Applications</b> Mark Sizemore, Harris Corporation	X	
<b>Video over IP: SMPTE 2022 vs. Ethernet AVB</b> Ben Runyan Xilinx, Inc.	X	
<b>†Video Bonding: Aggregating Multiple Connections for Enhanced Newsgathering Bandwidth</b> Brian Smith, WAAV, Inc.	X	
<b>Development of a Compact Microwave Transmitter with Built-in No-Delay MPEG-2 Encoder Using Intra-Column Structure Coding</b> Tsukuru Kai, Nippon Television Network Corporation	X	X



Proceedings of the  
**NAB Broadcast Engineering Conference**

A compendium of technical papers from the NAB Broadcast Engineering Conference, held at the 2010 NAB Show. Topics include mobile television, spectrum issues for broadcasters, digital radio, television loudness and lip sync, and more!

**Book with CD:**  
Regular Price - \$142  
NAB Member Price - \$120

**BUY NOW!**

**NAB STORE**