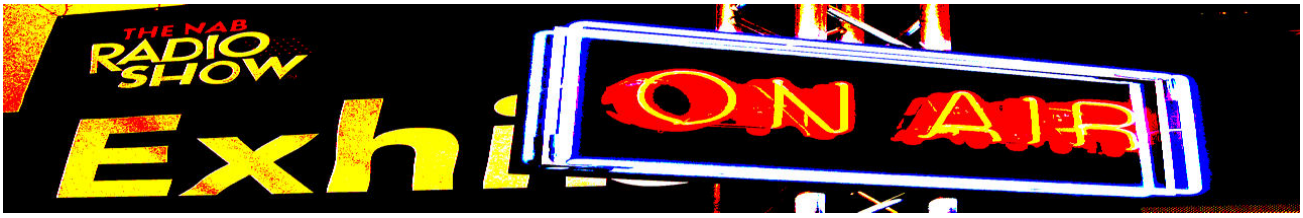
NAB Radio TechCheck

The Weekly NAB Newsletter for Radio Broadcast Engineers

September 22, 2008

Radio Technology Showcased at 2008 NAB Radio Show

Last week's NAB Radio Show in Austin, Texas (www.nabradioshow.com) was a showcase for some exciting new radio technology developments both on the exhibit hall floor and in the session rooms. Some highlights from this three-day event are given below.



HD Radio Measurements Workshop –The "HD Radio Measurements Workshop" presented by David Maxson, managing partner of Broadcast Signal Lab (Medfield, Mass., www.broadcastsignallab.com) was held on Thursday, Sept. 18. In this two-hour session, David focused on how to best measure AM and FM IBOC signals for RF mask compliance, including a live demo for the discussion on AM, consisting of a 1 kW AM transmitter, an "antenna simulator," and a number of measuring instruments. Shown in the photo are David (at right) along with his guest presenter Grady Moates (at left) of LOUD & Clean Broadcast Science (Hyde Park, Mass., www.loudandclean.com). One of the equipment racks for the demo can be seen to Grady's left. Their setup consisted of the following:

- Orban 9400 processor;
- BE ASi-10 IBOC generator;
- BE AM-1A transmitter;
- 1 kW Kintronic Labs tunable antenna simulator, which uses the same components and design techniques as actual phasors and tuning units, terminated in a 1 kW dummy load;
- Anritsu 2721A portable spectrum analyzer;
- Array Solutions PowerAim 120 vector impedance analyzer.

Shown on the projection screen in the photo is a spectrum analyzer display which includes the AM RF mask (green line, as specified by the NRSC-5-B Standard) and the measured AM performance (dim yellow trace). During the demo, the transmitter was intentionally mis-tuned so that David and Grady could instruct attendees on the proper procedure for bringing the unit into compliance with the mask. David is one of the principal contributors to the National Radio Systems Committee (NRSC) Guideline document on RF mask compliance measurement (currently under development) which is targeted for adoption by the NRSC's Digital Radio Broadcasting (DRB) Subcommittee in January 2009.

Radiolicious – a prototype system for aggregating and enhancing the streaming signals of radio stations called “Radiolicious” was debuted at the Show. Radiolicious is powered by mySimBook (http://www.mysimbook.com), a new company owned by Global Security Systems (GSS, Lafayette, La., http://www.gssnet.us), developers of the AlertFM RDS-based mobile alerting network.

Radiolicious is a native iPhone application that allows broadcasters to stream their stations’ live content via EDGE or 3G networks to iPhone and iPod touch users throughout the U.S. According to representatives at the Show, the iPhone version of Radiolicious will be available soon from the iPhone “App store” (available directly from the iPhone or through iTunes) free-of-charge. Radiolicious is also currently being developed for Windows Mobile and Google Android platforms.

Radiolicious will be available for all broadcasters to play their stations’ current stream to the iPhone, and for stations not currently streaming, Radiolicious will set them up with streaming hardware and software so they can utilize this service. The application is both analog and HD Radio digital radio compatible. Users can search for stations via geo-location data or a more generic search. For example, shown in the photo at left is the result for a search of local stations being streamed to Radiolicious; the inset shows the display for a single station, which can include advertising.

Users can also place stations in a “favorites” section for easy access, and can interact with radio stations by sending song requests, leaving comments, entering contests, and more. For more information on Radiolicious visit http://www.mysimbook.com/radiolicious.

ESPN Radio HD – ESPN Radio, with partners Cumulus, Bonneville, and Red Zebra, announced at the Show the launch of an expanded line-up, and 24/7 on-demand options for FM HD multicast sports channels that makes use of an innovative Web-based scheduling tool.

Participating stations, including the initial markets of Houston, Seattle and Dallas, customize their own ESPN-branded multicast channel by using a specialized Internet network appliance. Programs offered on this new service will include ESPNEWS, SportsCenter, Best of Mike and Mike in the Morning, The BS Report, Baseball Today, Around the Horn, college football studio programming, Sports Reporters, First Take, and play-by-play including college football, WNBA, Indy Car Racing, U.S. men's soccer, MLS, and NHRA.

A participating station will be provided a unique Internet portal that will allow the scheduling and control of its network appliance. Shown in the photo at above is the user interface (on the PC screen) as it was being demonstrated in the HD Radio exhibit on the Show exhibit floor. Using this interface, stations can select from a wide array of compelling differentiated sports content. A station will also be able to specify the dates and times content will air on its HD-2 and HD-3 multicast

channels. This set of content tools is designed as a platform to help stations meet the sports interests of the local communities they serve.

In addition to providing conventional audio content, the appliance will also provide stations unique sports datacasting abilities, such as bottom-line data, clock and score information, and other non-audio services specifically designed for HD Radio broadcasts. To test drive ESPN Radio HD, visit www.espnradioHD.FM.

NRSC Debuts Reports Archive – at the September 17, 2008 meeting of the NRSC, held in Austin, an online compilation of technical reports was unveiled that represents an important new resource for the broadcast engineering community. All of the reports and evaluations done by the NRSC since the early 1980's are now indexed and accessible, and available for downloading free-of-charge. In addition to detailed technical documentation relating to NRSC Standards, such as the NRSC's evaluations of in-band/on-channel (IBOC) digital radio, studies on AM and FM audio quality, receiver performance in the presence of noise and interference, and more recent studies on reduced AM bandwidth and surround sound options for FM broadcasters are all available. At present, there are 25 reports available on the Web page.

Milford Smith, Vice President, Radio Engineering with Greater Media and NRSC Chairman, said "The NRSC and its sponsoring organizations have been leading the radio broadcasting industry with important technical work for over 20 years, but until now there has never been a comprehensive and accessible archive of all this material. I expect the NRSC and others will benefit from this online resource as future technical challenges arise."

The NRSC Reports Web page is located on the Internet at www.nrscstandards.org/Reports.asp. Additional information about the NRSC, including information on becoming a member, is also available on the Web site.

63rd NAB BROADCAST ENGINEERING CONFERENCE CALL FOR PAPERS

NAB Show will host the 63rd NAB Broadcast Engineering Conference on April 18 – 23 at the Las Vegas Convention Center in Las Vegas, Nevada.

The NAB Broadcast Engineering Conference is a highly technical conference where presenters deliver technical papers ranging over a variety of topics relevant to the broadcast and allied industries. We invite you to submit a proposal to present a technical paper at our conference. The deadline for submitting your proposal is **October 17, 2008**.

To submit a technical paper proposal, click here and complete the electronic form. If you have questions regarding the NAB Broadcast Engineering Conference, please contact John Marino.

2009 NAB Broadcast Engineering Conference Committee

The 2009 NAB Broadcast Engineering Conference Committee (BEC) met at NAB headquarters to begin the process of planning the 2009 BEC Conference sessions. Shown in the photo to the left are (front row) Jeff Smith, Clear Channel Radio, Lew Zager, LZ Solutions and SBE Ennes Workshop coordinator; Dom Bordonaro, Cox Radio Connecticut; (back row) Michael Cooney, Beasley Broadcast Group, Inc.; Joe Snelson, Meredith Broadcasting Group and NAB BEC Committee Chairman; John Poray, SBE Executive Director and Andy Laird, Journal Broadcast Group. Committee members not pictured are Michael Doback, The E.W. Scripps Station Group, David Folsom, Raycom Media Inc., and Thomas Hankinson, ABC.

NAB AM ANTENNA COMPUTER MODELING SEMINAR

NAB AM Antenna Computer Modeling Seminar
November 20-21, 2008
NAB Headquarters
Washington, D.C.
Computer Modeling Seminar

Don't miss this opportunity for broadcast engineers to learn the basics needed to utilize modeling software such as MININEC and nodal analysis for designing performance-optimized AM directional antenna phasing and coupling systems and proving the performance of directional antenna patterns.

You will learn about:

- Moment Method Modeling Basics
- DA Proofing Using Moment Method Modeling
- Overcoming Limitations of Using Field Strength Measurements for DA Proofs
- State of the Art in Phasing System Design Nodal Analysis of AM DA Phasing and Coupling Systems
- Pattern Design Considerations for Optimum Performance

AM antenna experts Ron Rackley and Ben Dawson, along with antenna modeling software specialist Jerry Westberg, will lead the seminar demonstrating how moment method modeling makes analysis of actual tower current distributions possible and how a model can be used to proof an array provided the proper criteria are considered. All instructors are well known in the radio industry as experts in the field of directional antenna design and maintenance. Their decades of experience offer station engineers an opportunity to learn techniques, tips and tricks that can be immediately useful.

Seminar fee: $395.00 (NAB members) and $495.00 (non-members). For more information on the curriculum, how to register or housing go to AM DA Seminar on the NAB Web site or call Sharon Devine at (202)-429-5338. Register now for the NAB AM Antenna Computer Modeling Seminar!

NAB EUROPEAN CONFERENCE 2008

The Changing Landscape of Audio and Video Broadcasting