NAB 2010 is a Showcase for New Radio Technology

Last week's 2010 NAB Show (April 10-15, 2010, Las Vegas, NV, www.nabshow.com) was a showcase for new radio technology both in the session rooms and on the exhibit floor of the Las Vegas Convention Center (LVCC). Below are some highlights from this annual industry event.

RadioDNS – for the first time, the RadioDNS project had a booth at the NAB Show, giving broadcasters in the U.S. an opportunity to learn about this exciting and innovative technology which can link a radio broadcaster's over-the-air signal to its web page without sending any additional metadata. Shown here in the exhibit are newly-elected RadioDNS chairman Nick Piggott (on left) and secretary James Cridland.

RadioDNS, a non profit organization based in the U.K., allows radio broadcasters to seamlessly enhance their existing analog or digital broadcasts with IP delivered services. The project uses a simple technology based upon the existing DNS (Domain Name System) to allow IP-connected radios to automatically locate the servers of the station the radio is tuned into. It's an open project, with members and supporters from all over the world, including Australia, Germany, the United Kingdom and the United States. NAB recently became a member, and NAB Senior Director, Advanced Engineering David Layer was recently elected to serve on the RadioDNS Steering Board.

Shown in the RadioDNS booth was the PURE Sensia radio, which is the first connected radio device to use the technology, enhancing radio broadcasts with rich visual information acquired over IP. The radio performs a simple lookup in DNS to translate a domain-name based on the radio station's RDS or HD radio information, into the broadcaster's own domain name. From then on, the radio can find out what IP services the broadcaster supports, and provide them to the listener. The same approach can be used by cellphones with built-in FM or HD Radio functionality. Visit the RadioDNS web page at www.radiodns.org for additional information.

HD Radio Emergency Alerting – iBiquity Digital Corporation, developers of HD Radio in-band/on-channel digital radio technology, had two exhibits at the show. The first, in the convention center grand lobby, consisted of a Ford truck and Volvo SUV which come with HD Radio receivers as standard equipment. In their main booth, located in the central hall, iBiquity was showing a host of portable, automotive and home receivers as well as a demonstration of a new datacasting technology iBiquity has developed for emergency alerting.
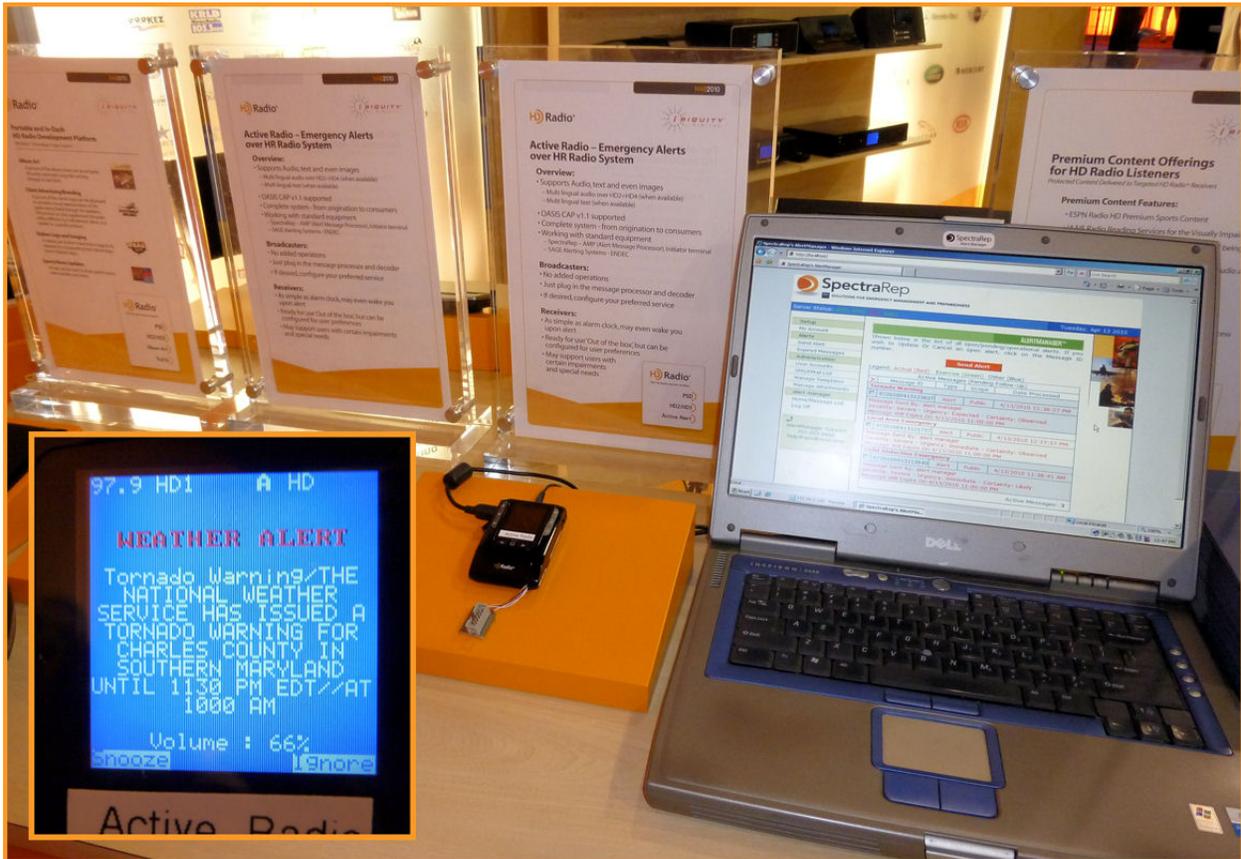
Called "Active Radio," this new feature can "actively" (that is, whether the listener's radio is in use or not) alert the public to life-threatening situations. This feature may be supported by any FM or AM radio station broadcasting with HD Radio technology and utilizes HD Radio system built-in capabilities. An HD Radio receiver with Active Radio technology can detect Alert information, even when turned "off" (but in a standby mode) – an example of an alert sent using this technology is shown in the inset in the figure above. This demo alert was generated in the iBiquity booth using software developed by SpectraRep (www.spectrarep.com), seen on the laptop computer in the photo. Both audio and data messages are supported.

New AM IBOC Configuration – in a radio technology session on Sunday, iBiquity's Director, Broadcast Business Development Jeff Detweiler unveiled a new, optional AM IBOC configuration which reduces the digital bandwidth and increases the analog bandwidth of the AM IBOC hybrid signal. Shown in the figure are spectral representations of the original configuration ("NORMAL MA1") and the new configuration ("MODIFIED MA1"). iBiquity has created this new configuration to address concerns from some AM broadcasters regarding so-called "host interference" from the secondary and tertiary sidebands into the analog audio signal.

This new configuration is made possible in part by advances in audio coding technology which allow for good quality monaural or "parametric stereo" audio in a 20 kbps audio stream. While the normal MA1 configuration uses 36 kbps for audio, the modified configuration uses these new 20 kbps streams, with the choice of monaural or parametric stereo being decided by the broadcaster. With this new configuration, iBiquity expects nearly all analog radios to experience a signal-to-noise ratio (SNR) improvement from 6
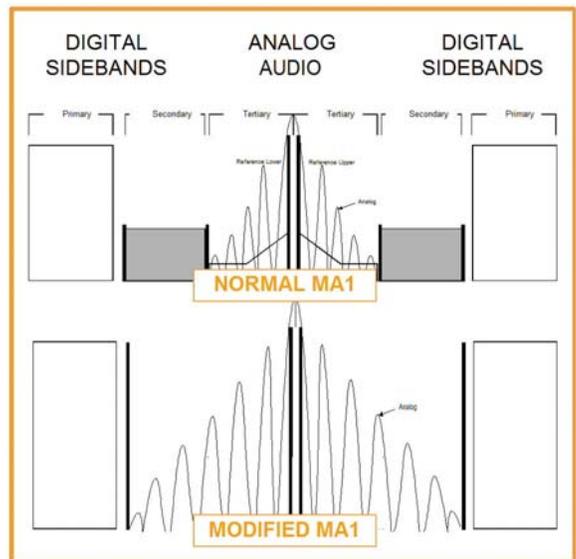
to 10 dB. Another benefit of the modified configuration is elimination of the enhanced-to-core digital audio blending which exists in the normal, 36 kbps multi-stream configuration.

Android-based Remote – in the Comrex booth, an Android phone-based wideband audio "app" was being shown (see photo). The ACCESS Reporter Codec, or ARC, is a simple utility that allows select Android-based mobile phones to make wideband audio calls to Comrex ACCESS and BRIC-Link codecs. Once installed on an approved phone, the app displays the familiar ACCESS interface and outgoing call listing. ARC makes an IP call over the phone's 3G or WiFi channel to your ACCESS or BRIC-Link codec in the studio providing a full-duplex, wideband high-quality audio channel between the two devices. Features include: familiar Comrex ACCESS interface, simple touch screen functionality, provides for full-duplex, wideband, voice quality audio, connects to Comrex ACCESS or BRIC-Link via WiFi or 3G, works on Comrex-approved Android phones. This app was being demonstrated in the booth on a Google Nexus One phone.