



## NAB FASTROAD Releases HD Radio EPG Report

NAB's technology advocacy program, NAB FASTROAD, released a report on September 17, 2008 that describes the key business requirements and consumer-use scenarios for various HD Radio-based Electronic Program Guide (EPG) system designs. This release was done in conjunction with the demonstration of a prototype EPG authoring system, on display in the BIA Financial Network (BIAfn) booth during The NAB Radio Show in Austin, Texas ([www.nabradioshow.com](http://www.nabradioshow.com)). The system, an interactive on-screen guide that displays scheduled broadcast programming, is suited to serve the needs of local HD Radio stations.

EPG is seen as many in the radio industry as not just a simple feature extension, but rather as having the potential to fundamentally affect the radio industry and how listeners discover new music and new stations. It can provide significant incentive for digital conversion of stations that have not yet done so, and it can drive substantial new consumer adoption of HD Radio technology. EPG service can also help the radio broadcast medium remain competitive, by satisfying listeners who are becoming more sophisticated in their expectations of the services that accompany their digital media.

The overall goals of this NAB FASTROAD project are to develop the business requirements, system architecture and specifications for an HD Radio-based EPG. The project team—BIAfn, Broadcast Signal Lab (BSL) and Unique Interactive, which has developed similar EPG services for the digital audio broadcast market in Europe—has worked in close cooperation with iBiquity Digital Corporation, developers of HD Radio technology (see the [September 8, 2008 issue](#) of *Radio TechCheck* for additional information on this project).

Implementing an EPG for radio is inherently more difficult than for TV due to a variety of factors, including the mobile nature of radio listening, the lack of an established EPG content-aggregation infrastructure, the wide variation in receiver displays, and the fact that there are so many stations to manage in any given market. Taking these challenges into account, this report presents what the authors believe to be a workable design for a U.S. radio EPG system utilizing HD Radio technology.



Model	Description
<b>Parochial</b>	Each station transmits its own services' EPG data only.
<b>Master Station</b>	One or more stations in the market carry EPG data for all stations in the market. Non-master stations in the market transmit "pointer" identifying the master station(s) carrying their EPG data.
<b>Shared</b>	Every station in the market carries (some or all of) the EPG data of every station in the market.
<b>Network</b>	Stations transmit a pointer to a general EPG resource along with station's location data (and/or receivers use geolocation) to filter localized EPG data from a master database. Delivery of EPG data may be via non-broadcast path (e.g., wireless Internet).

Four possible delivery architectures are presented in the report, accommodating a range of station needs, from each station carrying its own EPG data, to various methods of cross-carriage via cooperation among

station groups, or even an entire radio market (see table). Also noted is the expectation that some stations will use EPG data more than others, and that receivers' EPG capabilities will vary widely, from the earliest and most basic EPG-capable designs, to more advanced models and those expected during the period of EPG service's ultimate maturity (currently available HD Radio hardware does not support EPG transmission or reception).

In addition, the report addresses the issues of EPG parity between AM and FM stations, and how to accommodate stations that are not yet transmitting HD Radio signals (given that HD Radio receivers also pick up analog-only radio signals).

Of particular interest is an Appendix to the report describing a field survey, conducted by Broadcast Signal Lab, which explores the variability of stations that can be received at any given location within and around a radio market. This is a dynamic situation, because there will be different sets of receivable stations in different parts of the same radio market. Indeed, radio stations from adjacent markets often will be added to the list of currently receivable stations at any given location.

For this survey, the Boston market was selected in part because of the proximity of two close adjacent markets (Providence and Worcester). The survey results (included in the Appendix) compare the stations receivable at a reference point (in the center of the Boston market) with the stations receivable at 25 test sites within a 40-mile radius of the reference point. For FM, it was found that on average, 17 of the stations received at the test sites matched those receivable at the reference location; that 10 stations (on average) available at the reference location were not receivable at the test sites; and, that an average of 14 stations were receivable at the test sites that were not receivable at the reference point. These results highlight the difficulties to be dealt with in trying to develop an EPG system that is market-based.

The full text of the HD Radio EPG report and information on the NAB FASTROAD technology advocacy program are available at [www.NABFASTROAD.org](http://www.NABFASTROAD.org).

## **FCC Streamlines Rules for AM Directional Antenna Proof of Performance**

On Friday, September 26, 2008 the FCC released a *Second Report and Order and Second Further Notice of Proposed Rulemaking* regarding the Rules for verifying the performance of AM directional antenna (DA) systems. The Report and Order part of the document substantially reduces the regulatory burdens on AM broadcasters by, among other things, permitting the use of computer-based *Method of Moments* modeling techniques to verify AM directional antenna performance. It also streamlined the Rules with respect to conventional requirements for directional AM stations, reduced the scope of work required for a directional AM proof of performance, and eliminated other obsolete Rules. The Further Notice portion seeks comment on a number of issues regarding restrictions that should be placed on construction of towers near existing AM directional facilities that could distort the DA's pattern.

For more information you can view the complete [Second Report and Order and Second Further Notice of Proposed Rulemaking](#).

## **DEADLINE EXTENDED FOR 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 27, 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](#).



**Register Now!**

**Discounted Registration Rate is only available until 1 October 2008**

The IEEE Broadcast Technology Society  
58th ANNUAL IEEE BROADCAST SYMPOSIUM  
*Managing the Transitions*  
15 - 17 October 2008  
The Westin Alexandria  
Alexandria, VA, USA

Keynote Speakers to include: Richard E. Wiley, Wiley Rein, LLP and Peter Fannon, Panasonic Corporation. Please visit the [Registration](#) page for additional information.



Computer modeling for AM Antenna proof of performance was adopted by the FCC last week. To learn the basics needed to utilize modeling software, such as MININEC and nodal analysis – used for designing performance-optimized AM directional antenna phasing and coupling systems and proving the performance of directional antenna patterns – plan on attending NAB's AM Antenna Computer Modeling Seminar in Washington, D.C. November 20 and 21.

**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!

**Broadcast Towers: A Step-by-Step Guide to Making Money on Vertical Real Estate**  
Expert advice on tower ownership, tower leasing, creating a new profit center Buy at [NABStore.com](#)

**NAB EUROPEAN CONFERENCE 2008**  
*The Changing Landscape of Audio and Video Broadcasting*