

November 14, 2011



# Radio TechCheck



The Weekly NAB Newsletter for Radio Broadcast Engineers

## Maintaining Streaming Audio Quality

Many radio broadcasters now offer streaming audio versions of their on-air signals to listeners. In an interesting presentation at this year's [Radio Show](#), Clear Channel Radio's EVP of Engineering & Systems Integration Jeff Littlejohn (shown in photo) talked about the "Care and Feeding of Streaming Audio," highlighting Clear Channel's efforts to ensure that their streaming audio products are as reliable as are their over-the-air signals.

It's not surprising that Clear Channel would be focusing on this, given their strong commitment to streaming as evidenced by the "iHeartRadio" streaming platform. Clear Channel recently released a new version of iHeartRadio on September 23 at the [iHeartRadio Music Festival](#) in Las Vegas, Nevada. Currently, iHeartRadio features over 800 live broadcast and digital-only radio stations from 150 cities, and now includes support for user-created "custom stations." According to Clear Channel, iHeartRadio has 50 million listening hours a month and there have been 34 million downloads of iHeartRadio mobile apps allowing users to listen to streaming audio over WiFi and mobile broadband services.

During his presentation, Jeff said that a significant number of technical issues arise with streaming technology for both radio stations and users, including such things as encoder problems, temporary loss of Internet service (for both stations and listeners), and missing or incorrect metadata (including information on song title, artist and album). According to Jeff, outage problems have proven to be more of an issue with online listeners than with over-the-air listeners, and that even short outages can lead to "listener abandonment." In 2009, Clear Channel embarked upon a "live streaming improvement plan" to realize "24 x 7" operation of their streams, in effect deciding to treat streaming systems like the main transmitters at their stations from a reliability point of view.



Jeff spent the latter part of his presentation discussing Clear Channel's Emergency Operations Center (EOC) which is now responsible for 24 x 7 x 365 monitoring of all their streaming media and which has helped them dramatically reduce the number and frequency of streaming outage occurrences. Some of the key points Jeff touched on include the following:

- The EOC is staffed continuously and serves as the "eyes and hands" for local technical personnel. The goal is to "monitor everything" and the EOC performs monitoring and alerting for encoder PC health, metadata accuracy, content data network (CDN) egress points, stream connection testing, stream silence monitoring, streaming encoder monitoring;
- Clear Channel has patented ([#7,966,393](#)) software for audio stream monitoring which allows the EOC staff to rapidly assess the status of a variety of parameters (screen capture shown here);

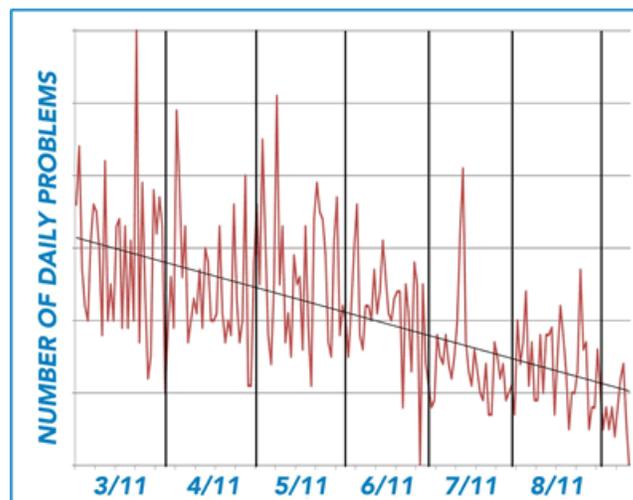
## Audio Stream Monitor : Streaming Meta Data Errors

[Markets](#)
[Static Streams](#)
[Dynamic Streams](#)
[Current Errors](#)
[Current Meta Data Errors](#)
[Logout](#)

Start Time	Last Sample Time	Down Time	Error Type	Market	Station	Stream Name	Recidivism (7 days)
2011-09-11 08:59:38	2011-09-11 09:24:12	00:24:34	blank	<a href="#">NORFOLK-VA</a>	<a href="#">WVMA-FM</a>	WVMA-FM,The New MAGIC 105.3, icecast (4900)	1
2011-09-11 08:12:49	2011-09-11 09:23:10	01:10:21	blank	<a href="#">YOUNGSTOWN-OH</a>	<a href="#">WKBN-AM</a>	WKBN-AM,NewsTalk 570 WKBN, icecast (1869)	5
2011-09-11 07:54:26	2011-09-11 09:22:50	01:28:24	blank	<a href="#">ALBANY-NY</a>	<a href="#">WGY-AM</a>	WGY-AM,News Talk 810/103.1 WGY, icecast (1413)	6
2011-09-11 07:54:26	2011-09-11 09:24:20	01:29:54	blank	<a href="#">WESTPALMBEACH-FL</a>	<a href="#">WZZR-FM</a>	WZZR-FM,94.3 FM WZZR, icecast (725)	1

- A standard configuration for streaming encoder hardware has been developed and implements across all of Clear Channel's streaming platforms. This configuration includes high quality "server class" hardware, hardware-based encoders, "plenty of RAM," and hot spare hard drives. These machines are set up with a common image and automatic updates are disabled.

Jeff's final slide was an illustration showing how the number of daily incidents decreased over a six-month period of time, a testament to the effectiveness of their improvement plan.



## NAB Accepting Nomination for 2012 NAB Engineering Achievement Awards

NAB is currently accepting nominations for the 2012 NAB Engineering Achievement Awards. Established in 1959, the NAB Engineering Achievement Award is presented each year to an individual for their outstanding accomplishments in the broadcast industry. In 1991, NAB began giving awards separately for achievements in radio and television. The award winners will be recognized at the Technology Luncheon at 2012 NAB Show on April 18 in Las Vegas, Nev.

Additional information and a nomination form are available on NAB's [website](#). The deadline for nominations is January 23, 2012.

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