



RADIO WORLD

SEPTEMBER 24, 2014 | The News Source for Radio Managers and Engineers | \$2.50 | RADIOWORLD.COM

INSIDE

HAPPY 50TH, SBE!

• The Society of Broadcast Engineers basks in a golden glow after five decades of education and networking. — Page 12

AES CONVENTION PREVIEW

• Look ahead to the Audio Engineering Society's annual meeting. — Page 18



BUYER'S GUIDE

• Learn about the latest in media asset management: automation, traffic and billing. — Page 22



Radio Balks at Online Public Files

Owners object to burden and question whether the FCC's IT can handle load

BY LESLIE STIMSON

WASHINGTON — Radio draws from a more local advertising pool than does TV, according to many radio owners. They're questioning why the FCC wants to require radio stations to post public files to an online commission database, as television stations now must do.

Smaller stations say the requirement would be a financial and staff burden. Larger owners with experience uploading television online files cite problems with the commission's system; they question whether the FCC's information technology infrastructure could handle the uploading and management of so many documents.

The issue is heating up. The discussion coincides with the 2014 election cycle, though it's unclear how fast the agency could implement any changes.

The commission asked for public input on a petition from three advocacy groups, Campaign Legal Center, Common Cause and the Sunlight Foundation; they had urged the agency to extend the online obligations to satellite and cable television to make media

political advertising purchases more transparent to the public. The FCC itself then asked whether radio should be included, and if so, on what timeline.

Thirty-two initial comments, mostly from broadcasters, then were submitted to MB Docket 14-127. An additional three reply comments were filed by the

early September deadline. What follows are excerpts capturing major themes.

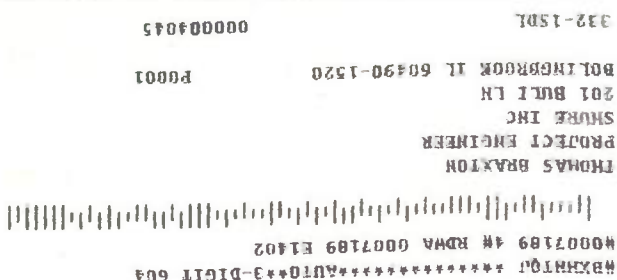
EXTEND RULE TO RADIO

Campaign Legal Center, Common Cause and the Sunlight Foundation:

Statistica found that total spending on political advertising on radio in 2012 ranked third behind broadcast television and cable television. ... Political advertising spending on radio grew from \$552.5 million in 2008 to \$819.2 million in 2012. In comparison, cable television political ad spending grew from \$468 million to \$938.8 million and broadcast television political ad spending grew from \$4.3 billion to \$5.6 billion. ...

Radio provides a particularly attractive advertising platform for political campaigns. It reaches a high percentage of registered voters, including minor-

(continued on page 6)



The Best of Both Worlds

Millenium Hybrid

12 Channels/24 Inputs/Remote Control
Analog + Digital Outputs
Master Clock/Monitoring & Talkback

Lowest price ever offered
\$4,995.00

Call your Radio Systems dealer today
856-467-8000 • sales@radiosystems.com
www.radiosystems.com

FM/HD AUDIO PROCESSING
wheatstone-processing.com

FEEL IT?
YOU WILL...



FM-531HD
AIRAURA X3

1.252.638-7000 | sales@wheatstone.com

 *Wheatstone*
real as real gets

World Radio History

For address changes and subscription renewal, please visit radioworld.com and click on the "Subscription" button. To submit letters or story proposals, to request writer's guidelines, or for other editorial matters, email the editor at radioworld@nbmedia.com.

EDITORIAL STAFF

EDITOR IN CHIEF, U.S. Paul J. McLane
NEWS EDITOR/WASHINGTON BUREAU CHIEF Leslie Stimson
GEAR & TECHNOLOGY EDITOR Brett Moss
TECHNICAL ADVISER Thomas R. McGinley
TECHNICAL EDITOR, RWEE Michael LeClair
PRODUCTION EDITOR, RWEE Karen Lee
CONTRIBUTING EDITOR John Bisset
INTERNATIONAL EDITOR IN CHIEF Marguerite Clark
LATIN AMERICA EDITOR IN CHIEF Rogelio Ocampo
ASSISTANT EDITOR Emily Reigart

EDITORIAL CONTRIBUTORS

W.C. Alexander, Barry Blesser, James Careless, Harry Cole, Ken Deutsch, Mark Durenberger, Charles Fitch, Christopher Friesen, Harold Hallikainen, Craig Johnston, Alan Jurison, Paul Kaminski, John Kean, Peter King, Mark Lapidus, Daniel Mansergh, John Merli, Laura Mir, Jim Peck, Mark Persons, Stephen M. Poole, Carl Lindemann, James O'Neal, Tom Osenkowsky, Rich Rarey, John Schneider, Randy Stine, Richard Strickland, James G. Withers, Tom Vernon

ADMINISTRATION & PRODUCTION

PUBLISHER John Casey
EDITORIAL DIRECTOR Paul J. McLane
PRODUCTION DIRECTOR Davis White
PRODUCTION PUBLICATION COORDINATOR Karen Lee
ADVERTISING COORDINATOR Caroline Freeland

CIRCULATION

GROUP DIRECTOR, AUDIENCE DEVELOPMENT Meg Estevez
CIRCULATION MANAGER Kwentin Keenan
ASSOCIATE CIRCULATION MANAGER Michele Fonville

SUBSCRIPTIONS

Radio World, P.O. Box 282, Lowell, MA 01853
TELEPHONE: 888-266-5828 (USA only 8:30 a.m.-5 p.m. EST)
978-667-0352 (Outside the US) FAX: 978-671-0460
WEBSITE: www.myRWNews.com
EMAIL: newbay@computerfulfillment.com

CORPORATE

NewBay Media LLC
PRESIDENT AND CEO Steve Palm
CHIEF FINANCIAL OFFICER Paul Mastrorandi
CONTROLLER Jack Liedke
VICE PRESIDENT OF AUDIENCE DEVELOPMENT Denise Robbins
VICE PRESIDENT OF DIGITAL MEDIA Robert Ames

VIDEO/BROADCAST GROUP

EXECUTIVE VICE PRESIDENT Carmel King
VICE PRESIDENT / SALES DIRECTOR Eric Trabb

ADVERTISING SALES REPRESENTATIVES

US REGIONAL & CANADA: John Casey, jcasey@nbmedia.com
T: 212-378-0400, ext. 512 | F: 330-247-1288
US REGIONAL: Michele Inderrieden, minderrieden@nbmedia.com
T: 212 378-0400, ext. 523 | F: 301-234-6303
EUROPE, AFRICA & MIDDLE EAST:
Raffaella Calabrese, rcalabrese@broadcast.it
T: +39-02-9288-4940 | F: +39-02-7004-36999
LATIN AMERICA: Susana Saibene, susana.saibene@gmail.com
T: +34-607-31-40-71
JAPAN: Eiji Yoshikawa, callem@world.odn.ne.jp
T: +81-3-3327-5759 | F: +81-3-3322-7933
ASIA-PACIFIC: Wengong Wang, wwg@imaschina.com
T: +86-755-83862930/40/50 | F: +86-755-83862920
CLASSIFIEDS: Michele Inderrieden, minderrieden@nbmedia.com
T: 212-378-0400, ext. 523 | F: 301-234-6303
LIST RENTAL: 914-925-2449, darny.grubert@lakegroupmedia.com

Radio World Founded by Stevan B. Dana

Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by NewBay Media, LLC, 28 East 28th Street, 12th Floor, New York, NY 10016. Phone: (703) 852-4600, Fax: (703) 852-4582. Periodicals postage rates are paid at New York, NY 10079 and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 282, Lowell, MA 01853.

For custom reprints & eprints please contact our reprints coordinator at Wright's Media: 877-652-5295 or NewBay@wrightsmedia.com

Globe graphic ©iStockphoto.com / Edward Grajeda

Copyright 2014 by NewBay Media, LLC.
All rights reserved.
Printed in the USA



Broadcasters: Combine HD Radio Suits

Radio groups asked for trial delay to settle patentability question



iStockphoto.com/papadesign

BY RANDY J. STINE

The focus of a patent infringement suit targeting 14 radio ownership groups and the HD Radio technology they use is shifting to the technology's developer.

The ongoing case took a twist in July when iBiquity Digital Corp. filed suit against Wyncomm and affiliated company Delaware Radio Technologies LLC, claiming that their patents are invalid.

At the same time, radio broadcasters are asking a judge to consolidate the cases against them by Wyncomm and DRT and to delay a trial in order to give iBiquity a chance to settle its patentability question. Some legal observers believe this tactic may succeed.

Broadcasters say iBiquity is the "developer and sole-supplier of the allegedly infringing technology and therefore the party best situated to defend against those allegations," according to the latest filings; and court records indicate iBiquity has agreed to take the lead in defending its HD Radio system.

The two patent-holding companies in August fought back, asking the court to deny the request by broadcasters to consolidate the 14 lawsuits. "Defendants provide no cognizable reason why the cases against the defendants should not proceed," Wyncomm wrote in a court filing.

U.S. District Court Judge Gregory Sleet, who is handling the associated patent infringement suits filed by Wyncomm and DRT, had not ruled on either request as of early September. The broadcasters had until Sept. 15 to reply to the plaintiffs in support of the motion to consolidate and stay their cases.

THE STORY 'TIL NOW

Wyncomm and DRT sued the radio groups in November 2013, claiming that the data and voice transmission technology used for their HD Radio broadcasts violated three patents it owns; those patents have since expired.

The radio groups have repeatedly denied the infringement allegations and argued in court filings that the patents in question were invalid or unenforceable.

The two companies want a jury trial but have not identified specific damages they seek. The patentees want licensing fees and agreements from broadcasters, according to observers familiar with recent developments. Observers said it is impossible to gauge the potential cost to broadcasters should they lose, though the number of defendants suggests it could be substantial.

The broadcasters named as defendants in the federal lawsuit are Beasley Broadcast Group, CBS Radio, Clear Channel parent CC Media Holdings, Cox Media Group, Cumulus Media, Enter-

com, Entravision, Greater Media, Hubbard Radio, Radio Disney, Radio One, Saga, Townsquare Media and Univision.

The two companies contend that these broadcasters are "direct infringers of the patents."

HD Radio technology allows radio broadcasters to broadcast digital audio and data in addition to traditional analog radio signals. There are approximately 2,400 stations using iBiquity's HD Radio technology, according to court documents filed by broadcasters.

Wyncomm and DRT allege the broadcasters are infringing on patents through "transmission of radio broadcasts using HD Radio transmission techniques described in the IBOC Digital Radio Standard."

Wyncomm and DRT say one of the three patents at issue, the '866 patent — "Side-Channel Communications in Simultaneous Voice and Data Transmission" — specifically describes radio transmission techniques used in the IBOC standard adopted by the National Radio Systems Committee in 2005. The suit appears to be trying to tie the NRSC standard to HD Radio specifically, as we've reported, though NRSC-5 describes IBOC as a generic term that could apply to any such system from any proponent, an NRSC source earlier told Radio World.

iBiquity does not comment on active cases, according to spokesman and Senior Vice President Joe D'Angelo. Broadcasters contacted by Radio World previously have declined comment, citing the ongoing litigation; and attempts by Radio World to reach counsel representing Wyncomm and DRT have been unsuccessful.

Little is known about Wyncomm and DRT, observers said. The companies are based in Delaware and are considered patent holding companies, meaning they neither manufacture a product nor provide a service. Separately, Wyncomm and DRT filed a federal suit late last year in U.S. District Court in Delaware alleging that Ford, Chrysler, General Motors, Toyota, BMW and 13 other car companies are infringing. That suit is ongoing.

Attempts to get the broadcast cases to trial have been stalled due to several requests from the radio groups to delay. Some observers detected signs that settlement talks were underway, as we reported in March. Those experts said it's not clear what kind of impact the latest developments could have on any possible settlement talks; and court documents reviewed by Radio World don't

(continued on page 5)

King Lays Out “Critical Steps”

Kintronic Labs President Tom King has suggestions for how the FCC can help revitalize the U.S. AM band; he promoted an “open letter” in which he asks AM broadcasters to speak out. Radio World’s marketing arm helped distribute it; our editorial staff was not involved. I share his comments here as part of our coverage of the AM revitalization issue.

Few tech companies have an investment in AM as longstanding as that of KTL. The company markets itself as the oldest continually operating AM antenna system provider in the U.S. Founder Louis King resigned from RCA as an AM transmitter design engineer in 1949 and established a business as a consultant that grew into Kintronic. For more, read our 2007 profile at www.radioworld.com/article/3934, when the late Louis King received NAB’s Radio Engineering Achievement Award.

Below is Tom King’s open letter:

Kintronic Labs is concerned about the declining position of the AM radio service in the United States, which we reflected in our Reply Comments to the FCC NPRM Docket No. 13-249 on the subject of “AM Revitalization,” issued on Oct. 31, 2013. In the interest of preserving this great national resource for local public media, we have scheduled a meeting with FCC Commissioner Ajit Pai and Audio Media Chief Mr. Peter Doyle, to address what we believe are the critical steps toward putting AM radio on a more competitive basis with FM as follows:

(1) FCC enforcement of regulations relative to the power distribution industry and the consumer electronics industry that are not currently being enforced, resulting in a constantly worsening electromagnetic environment for AM radio service.

(2) The need for parity between AM and FM receivers through the establishment of minimum technical standards for AM receivers that would become effective as soon as January 2016. We plan to demonstrate a comparison of full-bandwidth C-QUAM AM stereo reception with a local FM station and with a typical AM receiver in a popular consumer multi-band receiver. The effects of adjusting the AM bandwidth from 2.5 to 10 kHz in 2.5 kHz steps will also be demonstrated.

(3) The need for FCC authorization of AM synchronous boosters. Unlike FM translators, such on-channel boosters would serve to increase the AM stations’ audiences while concurrently maintaining the future viability of the band. The related technique of wide-area AM synchronization for coverage improvement will also be addressed.

Referring to Step #2, it is absolutely



Tom King

essential that very close to full parity be established for new AM radio receivers vs. their FM radio counterparts. This includes all key AM receiver performance attributes, including:

- **Low internal noise floor**, well below the average AM-band atmospheric noise level. This includes all internal synthesizer and DSP circuitry within the receiver (and in the immediate environment for integrated automotive applications).

- **High overall RF sensitivity, selectivity and dynamic range**, to provide adequate amplification of weak signals, even in the presence of significant adjacent- and/or alternate-channel signals, especially in strong-signal environments. This would incorporate typical advanced, multi-

stage AGC action, with appropriate interaction between the RF and IF AGC control mechanisms to maximize overall receiver dynamic range, including adaptive front-end attenuation for signal-overload protection in very strong-signal areas. Useful typical specs include sensitivity 1 mV for 10 dB SNR; selectivity (adjacent-channel) 25–50 dB (adaptive).

- **Highly effective noise (EMI) rejection**, including staged RF and IF noise blanking, accompanied by appropriate audio blanking and/or expansion when required. Such features were developed and included in Motorola chip sets in the 1990s in the AMAX program, and are easily integrated into modern, high-density AM/FM receiver chips.

- **Full 10 kHz audio bandwidth capability with low detector distortion**. This would obviously incorporate dynamic, signal-controlled bandwidth control (including AMAX-style adaptive 10 kHz notch filtering) as dictated by noise and adjacent-channel interference.

- **Stereo capability**. If the receiver has FM stereo capability, it must have corresponding C-QUAM decoding for AM.

Without fulfillment of the first three requirements (this also includes the associated AM antennas both for vehicles and for home use), basic AM reception will suffer significantly compared with FM. Without the last two, the output sound quality cannot be closely competitive with FM (i.e., 10 kHz full bandwidth on AM vs. 15 kHz nominal for FM).

We therefore petition the FCC to mandate the following minimum allowable performance specifications for all AM receivers that will be manufactured

FROM THE EDITOR

Paul McLane



and installed in new automobiles as of January 1, 2016:

Audio Bandwidth: 10 kHz typical, adaptive, with a minimum nominal bandwidth of 7.5 kHz

Signal-to-Noise Ratio: minimum 55 dB, preferably 60 dB

Sensitivity: –120 dBm for a signal-to-noise ratio (SNR) of 10 dB

Selectivity: 25–50 dB (adaptive filtering, using co-, adjacent-, and alternate-channel detection)

Dynamic Range: 100 dB

Noise Figure: 1–3 dB

Image Rejection: –50 dB

Intermod: IP2, IP3 intercepts +10 to +40 dBm

IF: low with image-rejecting down-conversion, or double-conversion

Stereo Separation: minimum 25 dB

We need the full support and backing of you, the AM radio broadcasters, to be able to communicate with Commissioner Pai and Mr. Doyle how imperative it is that these measures be implemented on a fast approval track without further delay in order to put AM radio in a more competitive position with FM radio. ... Working together, we can restore AM radio to provide the high-fidelity audio reception that the public listening audience demands.

Send Radio World your comments; email radioworld@nbmedia.com with “Letter to the Editor” in the subject line.

NEWSROUNDUP

CC’S NEW NAME: Industry biggie

Clear Channel renamed itself by echoing the moniker of its successful digital platform; it is now iHeartMedia. Encompassed within that name are its 859 radio stations; iHeartMedia Digital; content syndicator Premiere Networks, with 5,500 radio affiliates; the Total Traffic and Weather Network; its live music events and festival business; related companies, including RCS and Katz Media Group; and Clear Channel Outdoor, which will retain that name.

FEES: FCC regulatory fee payments were due Sept. 23; and expanded-band AMs have lost their exemption. The 2014 payments for radio remain the same as 2013. Fees range from \$775 for a Class A in a market of 25,000 or less to \$12,025 for an FM Class B, C, C0, C1 and C2 in the largest markets.

Starting with the September payment, all AM owners, including those on the expanded band, will be expected to pay fees. The commission had been trying to encour-

age movement to that spectrum. Expanded-band owners now are expected to pay a fee, based on class and market size, like other AM owners.

TRAFFIC: Washington-area station WTOP and WTOP.com says it’s the first U.S. radio owner to partner with the Waze Broadcast Program service to supplement their traffic reporting. Waze, owned by Google, is a crowd-sourcing app in which a network of drivers posts traffic issues and better routes for other Waze users to see during their travels. The partnership will allow the WTOP traffic department access to a special version of the app to help reporters identify, capture and report newsworthy incidents in real time, according to the station. In exchange, WTOP will brand Waze user content when the information is incorporated into reports.

GAS: Minneapolis-based AllOver Media purchased Gas Station Radio. Terms were not announced. Gas Station Radio delivers audio advertising, mixed with music, local news and sponsored auto-care tips to gas pump users in the top markets. The acquisition allows for a heightened advertising presence at its network of 50,000 gas station locations in the U.S. and Canada. AllOver Media says it specializes in the hard to reach, on-the-go consumer.

THIS ISSUE

SEPTEMBER 24, 2014

NEWS

- Radio Balks at Online Public Files 1
 Broadcasters: Combine HD Radio
 Suits 3
 King Lays Out "Critical Steps" 4
 News Roundup 4, 5

**10****12****FEATURES**

- Simple Tricks Are the Best 10
 SBE Fetes Busy Golden Anniversary 12
 Q&A: Eric Williams, Sprint 13
 Virtual Roundtable: Trends in
 Microphones 14
 AES Sessions: Dig Deep Into Sound 18

BUYER'S GUIDE

- Tech Updates 22-27
 ENCO Delivers on Upgraded DAD 22
 KUTT/KGMT Depend on
 Pristine CR-7 23
 Wild Radio Is Wild About RCS 24
 RadioTraffic.com Works in
 Abilene 26

OPINION

- Reader's Forum 30

**30****HD SUIT***(continued from page 3)*

give any indication whether settlement talks are moving forward.

CASE CONSOLIDATION

Gregg Skall, a communications attorney with Womble Carlyle Sandridge & Rice LLP, said motions such as the one to consolidate cases typically are granted.

A victory by iBiquity — which, according to the broadcasters' court filings, has indemnified the radio groups against any losses incurred as a result being sued over use of HD Radio technology — would effectively end the broadcasters' suit since "you cannot infringe an invalid patent," said Scott Daniels, an intellectual property attorney with Westerman, Hattori, Daniels & Adrian LLP. "That is what the broadcasters are hoping for with this request."

Daniels believes Judge Sleet is quite likely to consolidate the radio group cases; however, staying those lawsuits to allow the iBiquity case to proceed is more problematic.

"A stay would delay the cases. Delay is bad since judges are often rated on how quickly they move cases to final resolution," Daniels said. "But given the inclination of judges to simplify matters, including judges in Delaware, my bet is that Judge Stark will stay the customers' case."

Bill Ragland, a patent attorney with Womble Carlyle Sandridge & Rice who has followed the Wyncomm case, said the judge's decision on the stay will



Gregg Skall, communications attorney with Womble Carlyle Sandridge & Rice



Scott Daniels, intellectual property attorney for Westerman, Hattori, Daniels & Adrian



Bill Ragland, patent attorney with Womble Carlyle Sandridge & Rice

focus on whether it "will promote efficiency and judicial economy; i.e., is the stay likely to save the parties and the court time and effort?"

"Another issue will be whether the broadcasters will agree to be bound by the results of the iBiquity case," Rag-

land said.

In its suit, iBiquity "seeks a declaration that the standardized HD Radio technology for digital AM and FM broadcasting used by the broadcasters does not infringe the patents-in-suit," according to court documents.

NEWSROUNDUP

CUMULUS: Cumulus Media is putting a new organizational structure in place after it completed integration of Citadel and Westwood One. Chairman/President/CEO Lew Dickey says the company has broadened its scope and has put in place differentiated distribution channels and multiple content development platforms. As part of the changes, Cumulus will eliminate its co-chief operating officer positions, previously held by Jon Pinch and John Dickey. Pinch plans to retire at the end of November, after 45 years in broadcasting and 14 years with Cumulus. Three newly-created executive positions will report to Dickey. An executive search firm is helping the broadcaster look for an executive vice president of radio, a new position. This person will focus on day-to-day operational and strategic leadership of the 460 Cumulus stations. John Dickey, who's been co-COO since 2006, is now executive vice president of content and programming, a new position. Steve Shaw, who has been head of national spot sales for Cumulus' station group, will be president of Westwood One and oversee national and digital sales for Westwood One, the Cumulus station group and Rdio.

M4.2Si TIME LOCK™**Stop Listener Complaints**

DaySequerra

M4.2Si TIME LOCK

AM-FM HD Receiver

89.30

RDS

AUTO

HD Radio™

M4.2Si TimeLock Reports HD Radio® MPS/HD-1 Time Alignment Problems

MPS

HD-1

DaySequerra

www.daysequerra.com

**List Price \$1700.
Call your Favorite Dealer today!**



(continued from page 1)

ities. According to the Radio Advertising Bureau, radio reaches 90 percent of adults 18+ who have registered to vote, including 91 percent of registered African-Americans and 92 percent of registered Hispanics. ... Moreover, radio ads are increasingly used by local and less well-known candidates and issue advocates because of the ads' low cost. ... Because political advertising on radio is playing an increasingly important role in educating the electorate, the public should have online access to the public and political files. ...

In the same way that online disclosure of television public files provides "unquestionably substantial" public benefits, online disclosure of radio public files will accomplish the same goal. The burdens imposed by accessing the physical file are even higher with radio stations than with television stations. With more stations in each market, the public would have to visit many more stations to find the information they are looking for or to get a complete picture of political ad spending in a market.

American Public Media Group:

American Public Media Group is the parent entity of Minnesota Public Radio, Southern California Public Radio, American Public Media and Classical South Florida. ...

We are ... proud of our track record of transparency and openness to the public — including transparency around those that provide financial support to APMG. ... [W]e support the FCC's proposed rule to require that all TV and radio stations post their public and political files to the FCC's online database. Enabling the public to access this information of media organizations would

promote more public trust in media — something that is sorely lacking today.

A handful of filings contained brief supportive statements from commenters who supplied only their names, like this one from Janice Dowling:

I am very much in favor of increasing public access to contract/air purchase information involving political ads.

NO TO RULE CHANGE FOR RADIO

LeSEA Broadcasting Corp.:

LeSEA Broadcasting Corporation is a nonprofit corporation that, with its subsidiaries, is the licensee of three full-power commercial FM radio stations, eight full-power commercial television stations and several low-power television stations. As a radio licensee already experienced with compliance of the commission's online public inspection file rules for commercial television stations, LeSEA is one of a small number of radio licensees that knows the problems and pitfalls of online public files. ...

Online public files make it easier for those national advocacy groups or individuals to review public files in order to file complaints about any rules violation.

— **LeSEA Broadcasting Corp.**

Specifically, in response to a Petition for Rulemaking filed by national advocacy groups seeking, ostensibly, easier access to information about who is paying for political advertising on cable and satellite systems, the commission simply lumped in radio, asking whether they too should upload their public files onto the FCC's system. ...

LeSEA questions the real purpose of having online public files on the commission's website. Who, in fact, does such a requirement benefit? Based on the limits of the technology, broadcast radio listeners are nearly all local, they do not need the FCC's website to find information about their local stations. ...

It therefore appears that the real purpose for creating a public file database is to benefit non-local national advocacy groups and individuals who do not listen to and are not connected to a radio station's local service area in any way. Online public files make it easier for those national advocacy groups or individuals to review public files in order to file complaints about any rules violation. ... Even meritless complaints

delay, and sometimes even prevent, application processing at the FCC.

Blount Masscom Inc.:

Blount Masscom Inc. is the licensee of seven full-power radio stations (five AM and two FM) stations providing coverage throughout New England. ...

Radio online public files are not a foregone conclusion, and the issue should not be an afterthought to a narrow proceeding focused on multichannel video programming distributors.

Radio does not need an online public file requirement, and no rulemaking should be initiated to consider one. ...

Transitioning the public file online, 24/7 opens the station to criticism, inquiries and complaints by individuals or groups anywhere in the world who never listen to the station, do not reside in and have no connection to the communities the station serves, but who may have or confect an axe to grind about station ownership, programming, affiliation, format or a slew of other issues.

Radio stations already comply with an ever-growing and -changing set of FCC regulations. More regulation is not the answer. Blount's AM daytime-

inet in our front lobby, clearly marked. It is available for public inspection to anyone coming into our radio station. We do not think that foundations who are advocating for this docket are interested in our community of service, especially when their address is Washington, D.C. The only political advertising of note is local elections and an occasional state office advertising contract, certainly of no interest to D.C.-based lobbies!

Therefore, we respectfully request the FCC to continue to require stations such as ours, especially AM stations, to maintain a local public file, so that people who are truly interested in our radio station and people in our listening area can come to the station and see what is in the file, but to dismiss the idea of online public files for radio.

A PHASED-IN APPROACH?

National Association of Broadcasters:

As of June 30, 2014, there were 15,425 licensed AM, FM commercial and FM educational stations. This is over seven-fold the number of full-power and Class A television stations that already have placed their public inspection files online. Thus, the sheer number of radio and television stations, along with cable and DBS, could place a strain on the commission's existing database, particularly during high volume filing times. ...

Indeed, during peak political seasons, such as the upcoming fall mid-term election, many radio and television stations are taking advertising orders (and modifying existing orders) on a daily basis until the Nov. 4 election. For the past two years, television broadcasters have faced congestion bandwidth in uploading files during peak periods. For this reason we urge the commission to (1) consider increasing its online capacity to accommodate the significant increase in network traffic; and (2) consider ways to stagger filings as well as utilize a phase-in approach for broadcast radio stations ... to relieve network congestion.

Any possible Notice of Proposed Rulemaking should also consider that among the 15,425 licensed full-power radio stations, the level of station staffing and access to the necessary resources to manage and maintain an online public file varies dramatically from station to station, market to market. Differences include, but are not limited to: number of employees; whether a station has automated its advertising traffic services; whether it has in-house computing resources; whether the station has in-house broadband capacity; and, importantly, whether the station facility is located in an area that even has Internet access. ...

(continued on page 8)



Your callers
have never
been closer.



STAC VIP brings your callers closer to you in three invaluable ways. First, it allows you to take wideband calls from SIP computer and Smartphone apps. This gives your show HD Voice quality making calls sound better thereby increasing listener TSL, loyalty and ratings. It's especially easy to set-up. Just send your regular contributors a web link and before you know it, STAC VIP will put you well ahead of the competition. Secondly, STAC VIP allows your callers to connect via their legacy medium of choice - there are no barriers. There is full integration to your IP PBX and POTS, ISDN or T1 gateways.

Thirdly, there is the fully integrated, intuitive and elegant web-based graphical user interface. STAC VIP provides a superior level of caller management. Screener and host can view caller details, exchange notes, chat and of course, connect, hold, drop or air calls as the host requires - even from a remote site. *Contact us for more.*

STAC VIP
VoIP TELEPHONE TALKSHOW SYSTEM



(continued from page 6)

The commission should seek comment on a ... phased-in approach for the public file generally, and political file particularly, to allow small- and medium-market radio stations, as well as smaller radio station groups and single-owner stations, additional time to transition.

Missouri Broadcasters Association and the California Broadcasters Association:

The Associations' [television] members' experience with online public files so far has not been as easy as had been hoped. The problems will be significantly greater if extended to the far more numerous and smaller-staffed radio industry. Support hosting services that could lighten the burden have not been able to launch due to problems with the FCC's own API-based online public file system. ...

As envisioned by the NAB and the FCC, a hosting service would better enable broadcasters to devote their human resources to public interest activities, including broadcast programming. But problems arose. ... [N]ecessary functions still do not work, due to two remaining bugs in the FCC API that have been a problem for nearly two years. Many small television stations that had to go online this past July had planned to reduce their staff burden ... but were unable to do so, and had to retool their compliance strategy. ...

[W]e take notice of the points made in a contemporaneous filing with other state broadcaster associations that questions whether the commission's online public file database is capable of smoothly handling the uploading of what would be tens of millions of pages of new documents onto its online database. Granted, the commission has worked to make its system more reliable, but it has recognized its own vulnerability by requiring that broadcasters maintain their own separate backup of the political file in the event that the commission's system breaks down. ...

In sum, extending the online public file requirements to radio is vastly premature, at least at this time.

Joint comments of local and regional small radio broadcasters:

Local Girls and Boys Broadcasting Corporation, MBC Grand Broadcasting Inc., North County Communications, LLC, Texas Public Radio and United Ministries (collectively, the "Local and Regional Small Radio Broadcasters") ... are small independently owned radio station operators. ...

Despite all the compelling reasons that the commission should, in a separate rulemaking proceeding, postpone consideration of any expansion of online public files to any radio station until

steps generally to make its systems more resilient in response to technical failures or when its systems are simply overwhelmed by the number of filings in a particular time frame, but such technical obstacles continue to be inherent in the commission's aging filing systems. ...

Accordingly, before commencing a Notice of Proposed Rulemaking regarding an online radio public inspection file requirement, the state associations encourage the FCC to ... expend the necessary resources to beef up its filing systems to minimize technical problems for the massive influx of documents that

Will the commission's online public file database be capable of smoothly handling the uploading of what would be millions of pages of new documents onto its online database?

— 50 State Broadcasters Associations

after the next election cycle, if the commission should decide to prematurely drag radio into a proceeding that is more properly focused on cable and DBS operators, it should ensure that the expansion does not result in undue regulatory burdens on small radio stations.

The commission should provide adequate notice, of at least a year, to radio stations before any online requirements become mandatory. With at least a year's notice, stations could incrementally align their budgets for the increased costs that will be associated with online public files. ...

In any event, the commission should also announce that it will provide radio broadcasters with a waiver of any online public file requirements upon a showing that maintaining an online public file would impose an unreasonable burden on a station due either to undue economic hardship or as a result of technical impediments.

50 State Broadcasters Associations:

Given the quantum difference between, on the one hand, having 1,800 television stations upload the contents of their main studio-based public inspection files onto the commission's online public file database, and, on the other hand, having more than 15,000 radio stations do so, the question asks itself: Will the commission's online public file database be capable of smoothly handling the uploading of what would be millions of pages of new documents onto its online database, on top of the ongoing filings by television stations and the pay-TV providers? We recognize that the commission has continued to take

would be involved. ... [T]he FCC may want to adopt broader filing windows to at least reduce the number of filings flowing through the electronic front door of the commission *on any one day*.

HELP AM FIRST, OR MAKE CHANGE VOLUNTARY

Entertainment Media Trust:

It is unclear why there appears to be a greater urgency is about implementing an online filing system for radio public files, which would only further burden already struggling radio broadcasters, versus addressing the very real problems encountered by radio broadcasters, in particular AM broadcasters, that the Revitalization NPRM proposes to address. It is respectfully submitted that the commission should first look to assist radio station licensees to secure better economic footing through proceedings like the Revitalization NPRM and ensure a robust and stable radio broadcasting environment before imposing new procedural obligations on broadcasters who are ill-equipped both technically and financially to meet these additional obligations. ...

Should the commission determine that it is technically and financially feasible for it to host radio stations' public files online in the same manner as television stations, then such a provision should be either be voluntary or should provide for exemption by small broadcasters, in the similar manner as other rules have exemptions for such small broadcasters.

EXEMPT NCE STATIONS, PROTECT DONOR INFO

Educational Media Foundation:

While it has been EMF's experience that the public file of its stations are rarely if ever accessed, and thus there does not appear to be a great public demand for the public file of radio stations to be placed online, if rules are in fact adopted for broadcast radio licensees regarding online public file obligations, these rules need to be phased in over time so that stations with the fewest resources to comply with such rules be given the longest period in which to establish their compliance. In light of the recognized financial limitations of noncommercial broadcasters, NCEs should be the last stations required to maintain online files. ...

In addition, the FCC must recognize the unique information provided in the public file of NCE stations and, just as it did when the obligations were adopted for television broadcasters, it should craft exemptions to the online public file requirements for noncommercial stations where such obligations could impede on the privacy of supporters of noncommercial broadcasting. The rules require that NCE stations place in their public file lists of donors who provide support to particular programs. Just as those who submit letters to the public inspection file of television stations may not expect that their names be made available on the Internet, donors to specific programs on NCE stations may not expect that the fact of their donations will be available to anyone anywhere in the world with an Internet connection.

Native Public Media:

If the commission should decide to hastily drag radio stations into a proceeding that is more properly focused on cable and DBS operators, the commission should exempt NCE radio stations from online public file requirements on grounds that the burden on the often limited human and technical resources available to NCE radio stations far outweigh any resulting public benefit.

Although the petition argues eloquently in favor of the public benefits that come from political advertising transparency, these benefits are entirely inapplicable to NCE radio stations because they are prohibited from selling political advertising. Consequently, requiring online public file obligations for NCE radio stations would not advance the goal of the petition. An NCE station's political files would not contain any information about political spending or political advertising rates.

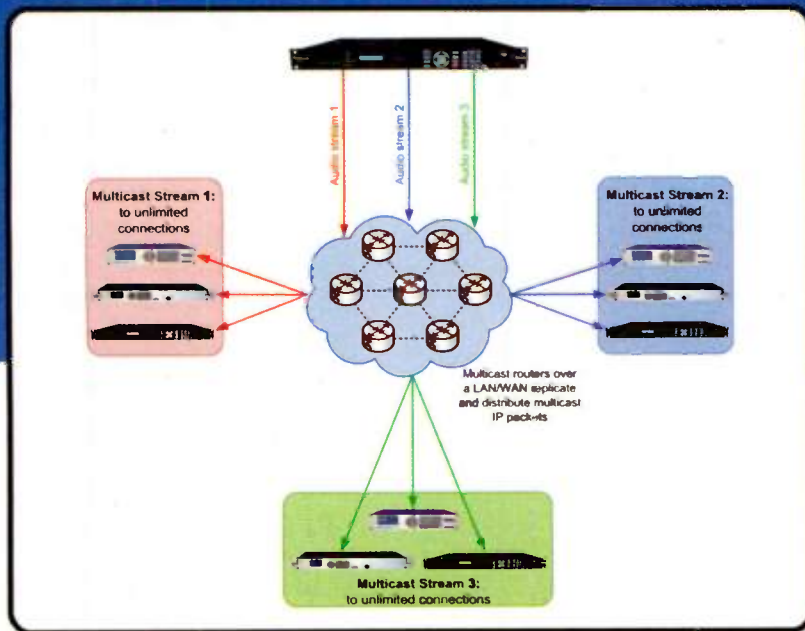
What do you think? Email radioworld@nbmedia.com with Letter to the Editor in the subject field.

Expand your Network with...

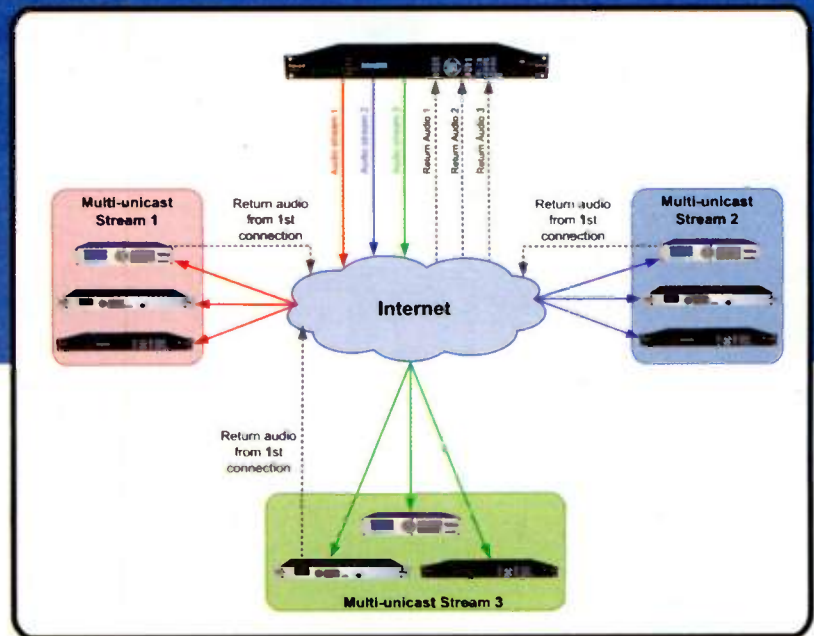


Latest FREE firmware update includes new program sharing options

3 Simultaneous Multicast Audio Streams



3 Simultaneous Multi-unicast Audio Streams (up to 50 endpoints in total)



Call: 1-317-845-8000

Tieline[®]
The Codec Company

www.tieline.com

Simple Tricks Are the Best

Here are some oldies but goodies to get you out of a bind

WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

Broadcast veteran Andy Butler has been using a trick, illustrated in Fig. 1, for so long that he has no idea whether he borrowed the idea from someone or just came up with the solution out of sheer desperation.

Andy writes, "This one is so simple and obvious, I'm almost ashamed to submit it."

I'm glad Andy sent it along. I've never seen the idea, but it's a great solution when you need a third hand.

Andy was using the pliers to hold the wire bundle so he could slit the shrink wrap without slicing his finger. One of his colleagues asked where he learned the trick; Andy had to admit that he really didn't remember but sent it along so it might help somebody else.

Yes, I guess a pair of Irwin brand Vise-Grips would work, but we don't always have those in our toolbox. So grab some rubber bands and wrap them around the handle of your pliers. That way, they'll always be handy.

Reach Andy Butler at abutler@pbs.org.

Larry Schropp has been providing contract technical services for broad-



Fig. 1: A few rubber bands turn a pair of pliers into a simple third hand.

cast stations since 1982.

He saw our writeup about the Franklin Lightning Sensor evaluation kit and wanted to pass on some additional infor-

mation about these devices.

The American Radio Relay League Contest Update Newsletter recently mentioned a couple of lightning detectors used by ham radio astronomers working on the very large array antennas in New Mexico. The article mentioned the AcuRite Portable Lightning Detector (approximately \$45 from www.acurite.com), which estimates distance of lightning to 25 miles, as well as counting strikes. The story also listed a model called StrikeAlert (approximately \$65 and available at www.strikealert.com).

Larry decided to try the AcuRite unit, and found it to work pretty well. He has used it when he has tower climbers on a client's site and when working in transmitter buildings during lightning season. Larry concluded that the detector is a simple, inexpensive safety item to have on hand.

Larry and his son Jim handle contract work for stations primarily in the Carolinas, but also special project work east of the Mississippi. If you have a need, email Larry at Larry@schroppsvcs.com.

The ARRL is the equivalent of SBE for radio amateurs in the United States. You can find out more at www.arrl.org.

Project Engineer Dan Slentz, a fellow RW contributor, was installing a 60 kVA UPS system. He normally likes to use Visio or AutoCAD to prepare his "as built" drawings, but neither was available to him during this project.

Previously Dan has mentioned www.draw.io for preparing signal flows and networking diagrams. This website prepares those types of drawings well; however, draw.io isn't a good choice for floor plans.

If someone is trying to "paper fit" equipment in a room, including transmitters or other big cabinets, Dan found that www.floorplanner.com is ideal. It comes with a ton of pre-drawn cabinets, along with measurements that can be customized to exactly match a rack mount, transmitter, power supply, etc. This is a great tool to bookmark for someone's workbench computer.

Another nice element of [floorplanner.com](http://www.floorplanner.com) is that it isn't downloaded as software, but works off the website. This makes the drawings and the software accessible anywhere you can tap into the Internet, and you don't have to worry about any downloads hogging memory space. Thanks, Dan, for sharing such useful tools.

Reach Dan at dan.slentz@yahoo.com.

With the colder weather creeping up on us, it's a good time to make sure passages into and out of our buildings and tuning sheds are sealed properly.

The big openings are easy to spot, but how about the smaller crevices? You may have sealed your openings, but the sealing putty can shrink, and this leaves you open for visitors.

Fig. 2 shows seal shrinkage for an air conditioning compressor line that needs to be corrected.



Fig. 2: Inspect sealed entries for shrinkage, which opens the door to pests.

Oh, and note the gravel around the building perimeter. A layer of gravel over landscape fabric will discourage weeds, as well as snakes and rodents, who prefer the cover of grass or weeds.

Even though you're *positive* everything is sealed properly for the season, take a look around. Just for grins.

Reading Workbench is like taking a college course in hands-on radio problem-solving. Contribute your ideas, help your fellow engineers and qualify for SBE recertification credit. Send tips to johnbisset@gmail.com.

John Bisset has spent 44 years in the broadcasting industry. He handles West Coast sales for the Telos Alliance. He is SBE certified and is a past recipient of the SBE's Educator of the Year Award.



AcousticsFirst.com
Materials to Control Sound & Eliminate Noise.™

Look as good as you sound.



Toll-Free Number:
888-765-2900



INTRODUCING

AARON 650

FM REBROADCAST RECEIVER



For Challenging Reception Scenarios.



OFF AIR PROWESS

Our unique Software Defined Radio (SDR) front-end delivers unparalleled sensitivity, selectivity, and RF shielding. And with Composite-Regeneration mode snuffing out unwanted baseband noise, you get cleaner audio in locations you never thought possible.



RECEPTION TOOLS

Zoom in on frequency issues with the built in BandScanner™ and MPX FFT, or use Active and Manual reception processing for total control over Bandwidth, Blend, Multipath Mitigation and more.

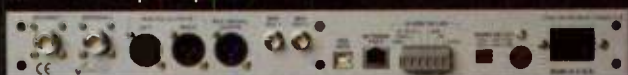


AUDIO PROTECTION

Whether you utilize 'Hijack' prevention, SD Card or Web Stream Audio Failover, you'll never have dead air. Plus with remote Web listening, Email/SMS notifications and SNMP you'll know (and be able to verify) immediately when things go wrong.

Live **YouTube** demo @ www.inovonicsbroadcast.com/model/650

More in/output options:



SBE Fetes Busy Golden Anniversary

The years have rolled on, but priorities remain the same



Photos courtesy of Paul's Vegas Photography



Above: James C. Wulliman, CPBE, Charter Member and SBE's sixth president (1973 to 1975) addresses the crowd at the SBE 50th Anniversary Spring Membership Meeting.

Left: SBE President Joe Snelson, CPBE 8-VSB, addresses the crowd during the Spring Membership Meeting.

Below: A timeline depicts 50 years of major events and accomplishments of the SBE.

ENGINEERING

BY SCOTT FYBUSH

Broadcast engineering can be a lonely profession. Whether it's the chronological isolation of working on projects or tackling emergencies at hours when more sensible station staffers are at home or asleep, or the physical isolation of a remote transmitter site, or the meta-physical isolation of knowing that too often the work goes underappreciated and underpaid, radio and TV engineers need the boost that sometimes comes from comparing notes and sharing ideas with colleagues around the country.

That was the idea back in 1964 when John Battison proposed the organization that became the Society of Broadcast Engineers. As the group marks its 50th anniversary, it's still a guiding principle.

The SBE's anniversary year includes two big national gatherings. In April, members convened at the NAB Show in Las Vegas. On Oct. 8 they'll hold their annual meeting in Verona, N.Y., as part of the annual expo sponsored by the SBE's Chapter 22 in central New York.

In Las Vegas, the celebration included honors for the founders of the group. While Battison died in 2012 at age 96, his daughter and son-in-law were present for a tribute that included clips of a video interview, in which Battison talked about the SBE's early days. Charter member Jim Wulliman, namesake of the SBE's Educator of the Year award, was on hand to be recognized for his half-century with the society.

From the beginning, the SBE has

been built on the work of local chapters that now number 114 worldwide. The first, though, was in Binghamton, N.Y. Founding member Gino Ricciardelli has been named SBE Fellow, an honor he'll receive in person in Verona.

PRIORITIES

In its anniversary year, the SBE's priorities are organized around education, certification and government relations.

On the education front, the SBE administers the Ennes Educational Trust, which provides traveling seminars hosted by local SBE chapters as well as a full-day workshop that makes up the opening day of the engineering sessions at the NAB Show, co-produced by the NAB and the SBE. At its NAB Show gathering, the SBE recognized Ennes trustee Fred Baumgartner for his extensive work organizing Ennes seminars around the country for many years.

"The goal of SBE remains the same," said President Joe Snelson, "the education of the broadcast engineer."

Conscious of the graying of the field, SBE leaders are trying hard to bring younger engineers into the fold. The anniversary year includes a push for new members to bolster an existing membership of some 5,300 engineers in all 50 states and 29 countries.

The society has also been active in promoting management training for engineers. Its most recent Leadership Development Course was held Aug. 13-15 in Atlanta, sponsored by Turner

(continued on page 13)



Q&A: Eric Williams, Sprint

NEWS MAKER

One of a series of Radio World interviews with industry newsmakers.

What is your role at Sprint in relation to hybrid radio and the NextRadio project?

I work in the product development department, and I manage the daily operations for NextRadio at Sprint.

What are the benefits to Sprint of "hybrid radio"?

NextRadio brings diversity to Sprint's music portfolio. NextRadio, along with HD Music track (Flac)-compatible phones, Sprint Music Live and Sprint Music Plus, offer a diverse set of options for Sprint customers enjoying music on the go.

Since Sprint and Emmis/NextRadio began working together, what has been your observation about market reaction and consumer interest?

(continued from page 12)

Broadcasting.

The SBE's certification program continues to expand to take in new areas that are part of the broadcast engineer's skill set, including the recent addition of a certification in digital radio broadcasting.

While the SBE's headquarters are in Indianapolis, the group maintains an active voice in Washington by way of General Counsel Chris Imlay. In Las Vegas, he updated members on several policy issues the society is involved in, including the continued fight to save broadcasters' use of a portion of the crowded 2 GHz spectrum for broadcast auxiliary service use. Despite increasing demand for the spectrum from military and broadband users, Imlay says the SBE has kept broadcasters in the mix.

"We've made the very, very best of a bad situation," Imlay said.

The SBE's 50th anniversary celebration will culminate in Verona with a national awards dinner. The event will recognize members who have made contributions to the society and the industry, including Engineer of the Year Jim Dalke of Seattle and Educator of the Year Norman Portillo of Baltimore. The dinner will wrap up with a keynote speech from Sam Matheny, new executive vice president and chief technology officer at the NAB.

The feedback has been very positive. NextRadio really bridges the gap from traditional radio in the car and streaming music app features — bringing them together in one place for the mobile device.

Are there other kinds of hybrid radio out there, other than NextRadio, in which Sprint is participating?
No.

In your view, how can radio broadcasters make their content more available in, or more prominent on, your devices?
Now is the perfect time for broadcasters to fully integrate with NextRadio through TagStation. As its website states, "TagStation provides broadcasters with an easy-to-use, standardized and cost-effective way to deliver the kind of Artist Experience and Ad Experience today's consumers expect, whether it's in the

dashboard or on a smartphone."

The NextRadio app is preloaded on all new Android devices that are launched at Sprint — this is prime real estate and gives broadcasters a great opportunity to not only participate in displaying album art and metadata through TagStation, but it also gives them a brand-new line of revenue with synchronized advertising.

What else should we know?

Please visit <http://tagstation.com/tagstation/> or reach out to Paul Brenner to find out how to participate.

RADIO ON-AIR by Lawo



the new crystal
AUTOMAGIC RADIO MIXING CONSOLE



ALSO NEW: crystal CLEAR – Virtual Radio Console ### JADE Studio – Revolutionary Newsroom Workflows

www.lawo.com








VIDEO



AUDIO



NETWORKING



RADIO ON-AIR



COMMENTARY

**Michael Edwards**
Audio-Technica**Chris Nighman**
Audio-Technica**Rick Belt**
Electro-Voice**Bob Heil**
Heil Sound**Joseph Wagoner**
AKG

Virtual Roundtable: Trends in Microphones

It's the first link in your air chain.
We ask manufacturers what's next

Radio World Gear & Technology Editor Brett Moss asked representatives of several leading microphone manufacturers about the state of the broadcast microphone industry and what might be in the future.

How strong is the microphone industry overall and, more specifically, the broadcast microphone industry?

Joseph Wagoner, AKG: The microphone industry shows its strength organically by how many new names show up each year and the success of small boutique microphone companies that continue to thrive. The broadcast category is a special segment and requires special application considerations. It used to be centered on traditional product types like shotgun mics, lavaliers, in-studio wireless, ENG and movie production wireless. Today, with all of the reality shows, music and talent contest shows, the microphone selection and requirements have greatly broadened, which has increased the demand in this segment.

Rick Belt, Electro-Voice: Industry health data points indicate the wired microphone business has slipped just a little (maybe down 2 percent) over the past 20 months, but rest assured, it's still a huge and healthy industry. With the marketplace applications of traditionally broadcast-oriented microphones on the rise, we're seeing demand for broadcast-type microphones growing more than ever before.

Bob Heil, Heil Sound: It would appear to be very healthy for those manufacturers who are building serious, high-performance products. Heil Sound is up in sales for the 10th year in a row. Based

on what we see with dealers who sell to the broadcast market, it is also strong. Formats for broadcast evolve, but a microphone is still a basic "must have" component. Thankfully!

For dedicated on-air studio radio broadcast, is there really any trend beyond what's already out there and has been out there for decades?

Rick Belt, Electro-Voice: The most notable trend is that the once "heard-but-not-seen" radio personality has their own webcast or podcast presence, thereby putting a face to their sound. They have become webvision celebrities with their own fan base and Web channel — and the look of things is quite important.

When it comes to gearing up the productions, there seems to be two camps (schools of thought based on needs) which have taken shape: those users who need and choose traditional XLR interface with professional-grade audio processing, and those users who rely upon direct microphone-to-computer interface (i.e. USB). But neither camp has changed their expectation level for quality and ease of use. All users continue aspiring to achieve and maintain the well-established classic sound of the AM or FM radio voice ...

Joseph Wagoner, AKG: I see variants to the approach in some on-air studios: there is more opportunity for use of large-diaphragm condensers for voice talent, and some use of boomset mics that incorporate the mic with the headphones. This approach provides the talent with the opportunity to move about with headphones on and always have the mic in the same relative position to the voice, like with the HSD and HSC boomsets from AKG.

Bob Heil, Heil Sound: There is no "trend" as I see it. Everyone still looks for a clean signal.

Can the Electro-Voice RE20 ever be dethroned as the king of radio?

Bob Heil, Heil Sound: I would argue that, for many broadcasters, it already has been dethroned. One of our West Coast distributors reports that the Heil PR 40 is their leading selling microphone.

Michael Edwards and Chris Nighman, Audio-Technica: I don't know if it can be "dethroned" as such, but many broadcast studios are now choosing side-address LDC condenser microphones in addition to dynamics.

Joseph Wagoner, AKG: Old habits are hard to break, and the advantage of the RE20 is the reduced proximity effect, which allows the talent to move about with the proper use of compression/expansion on the mic and the listener hears little change. I believe it will be the search for better audio or a different sound that will continue to drive the use of some large diaphragm condensers as well as the boomset approach.

Rick Belt, Electro-Voice: Never! ☺ Challengers come, and challengers go, but we're delivering more RE class (RE20, RE27N/D and the new RE320) microphones into the market than ever before. We see that as reassuring proof that 80 percent or more of the industry professionals will not settle for anything less than the established sound and user experience ...

Is the old dynamic interview microphone dead as the dodo?

Michael Edwards and Chris Nighman, Audio-Technica: Depending on the specific application, we feel there is still a place for dynamic interview

**Electro-Voice RE20****AKG C414B-XLS**

microphones. Not only have audio quality and handling noise improved over the past few years, but when durability is a factor ... there is no other option.

Joseph Wagoner, AKG: Let's just say that networking of audio and remote control are becoming more available and desirable every day.

Rick Belt, Electro-Voice: Unlikely, considering demand for Electro-Voice RE and 635 class dynamic interview mics is on the increase.

Bob Heil, Heil Sound: The dynamic interview mic isn't necessarily dead, but nobody has done anything to improve on 45- to 50-year-old technology, that's for sure. Add to that how many manufacturers have their mics assembled and final-tested offshore, seemingly without regard for how they sound. I don't believe in that one bit.

By comparison to the air studio, on the production side there's great deal of activity. We've seen cheaper and better mics, with a bifurcation of affordable large diaphragm and good-sounding lav/minimics for mobile devices, and USB connections. Have we entered a Golden Age of high-quality, inexpensive production microphones?

Rick Belt, Electro-Voice: Changes in technology as well as methods of gathering and delivering sound have somewhat diversified the acceptable quality baseline expected of sound capture tools. However, the fundamental technologies and sound exclusive to Electro-Voice RE class studio and field production mics cannot be

**Audio-Technica AT4047/SV**

HD Radio Ahead
Digital AM & FM

On the road to HD Radio broadcasting?
Nautel has you COVERED.

nautel.com/HDradio

emulated or synthesized by DSP. As with any portion of the production gear economy, "you get what you pay for" in microphones is still a baseline reality.

Michael Edwards and Chris Nighman, Audio-Technica: It's important to remember there are always tradeoffs. Although it is now more possible than ever to get a decent microphone at a great price, often times this means sacrifices in quality and consistency.

Joseph Wagoner, AKG: I think the key word here is "mobile." What is driving this more than the "microphone" is the complete solution with a palm-sized digital recording device that has built-in microphones or interchangeable microphones. These devices can be used for everything from an interview, to recording a live stereo track. Some of the most current offerings even have multitrack capabilities. When it comes to sophisticated productions, that game is still the same and the song remains the same ... Quality products are needed for a quality result.

Rick Belt, Electro-Voice: At Electro-Voice, we believe (and are never seriously challenged on the topic) that in order to achieve the best results, you have to start with the best quality source signal. There are myriad sonic characteristics which collectively contribute to what is perceived as good sound, and most of them cannot be put back in a deficient signal if they were never there to begin with.

reveal any secrets, what's an interesting next step for a broadcast industry microphone? An Ethernet connector with power over Ethernet that can communicate directly with WheatNet, Livewire, Ravenna? A mic with a built-in codec? A USB mic with built-in digital processing?

audio trend continuing for other markets as well.

Joseph Wagoner, AKG: Let's just say that networking of audio and remote control are becoming more available and desirable every day.

Rick Belt, Electro-Voice: The future is ripe with opportunities to serve the signal transfer revolution.

Comment on this or any story. Email radioworld@nbmedia.com with "Letter to the Editor" in the subject field.

What's in your skunkworks? Or rather, because you won't want to



Heil Sound PR 40

With quality audio processors readily available, is microphone quality that important? Can't mediocre audio be fixed in production?

Bob Heil, Heil Sound: Quality will always be important. In my opinion, it all starts at the microphone and it can't be "fixed" by a processor. Keep in mind, too, that at its heart, broadcast is one person with a particular "voice," one microphone and a set of headphones. That mic needs to sound great at the beginning of the audio chain.

Michael Edwards and Chris Nighman, Audio-Technica: Capturing quality audio at the source is still very important. Not only does this speed up the workflow downstream, it also ensures the highest quality content. It's difficult to fix things like transient response and self-noise in post-production. Frankly, why "fix it in the mix" if you can get it right at the source?

NEW...
THE AM...

DIGILINK~HD

- Single station to Multi-site Group
- VPN Remote Voice tracking
- Your Music scheduler or ours
- Multi-sound card Console interface
- Live & Automated Games with Rain delay
- Share audio files across the hall or continent



ARRAKIS SYSTEMS INC.
מחשבים ותוכנות

Scalable, high speed Radio Automation for Multistudio, Multisite Applications



Digilink-HD (DHD) is designed from the ground up for today's fast paced, distributed content, single station or multi-site Group. It empowers local and remote talent to collaborate to deliver exciting content, build your audience share, and increase sales. DHD has the tools to enable you to work faster, work smarter, and do more. For On Air, DHD supports live on air, live assist, hard disk automation, satellite automation, and Games automation. DHD supports multiple sound cards for interface to a console and live crossfading. Audio files can be shared across the station or across the planet. To create live sounding automation and facilitate flexible use of talent, DHD features a powerful segue editor, voice track recorder-editor, and remote voice tracking over a VPN (virtual private network). The voice track recorder-editor supports complete control plus the ability to assign a music bed under the voice track with ducking. DHD supports any kind of programming and any size market or multi-site group.

4 On Air Station cluster only \$500 / month

www.arakis-systems.com

970.461.0730



THE INTELLIGENT NETWORK

The screenshot displays the Wheatstone Blade-3 software interface, which is a multi-track audio mixing console. It features several tracks, each with a name and a set of meters. The tracks are:

- Wheatstone Blade-3 (DIGITAL ENGINE BLADE)
- Wheatstone Blade-3 (DIGITAL ENGINE BLADE)
- Wheatstone Blade-3 (DIGITAL ENGINE BLADE)
- AURAS
- Wheatstone Blade-3 (DIGITAL ENGINE BLADE)
- Wheatstone Blade-3 (DIGITAL ENGINE BLADE)

At the bottom of the interface, there are several sections of controls and meters:

- PGM A, PGM B, PGM C, PGM D:** A grid of meters for each program.
- CB, NEPH, STU 1, STU 2:** A grid of meters for each channel.
- IN, OUT:** A grid of meters for input and output.
- WHEATSTONE DIGITAL ENGINE BLADE:** A grid of meters for the digital engine.

On the right side of the interface, there are several vertical labels: "NAVIGATE ABOUT EVERY", "NAVIGATE ABOUT EVERY", "NAVIGATE ABOUT EVERY", "NAVIGATE ABOUT EVERY", "NAVIGATE ABOUT EVERY".

BLADE-3

DELIVERING ON THE PROMISE OF IP AUDIOSM

INN14.wheatstone.com



everything you need to put music on the air... all the way from audio input to your transmitter, in a single box.

When we invented modern radio audio networking, we vowed to build the first truly intelligent IP audio system. One where every interface held the DNA of the entire system for recovery. A system with true Gigabit connectivity. One that required only a single CAT-6 cable to interface any network piece – to carry audio AND control information. A system that could actually be up 24/7/365 and handle everything you need yet so simple to interface as to be virtually foolproof. Well, here ya go...

• Gigabit Connectivity

All BLADE-3s use Gigabit Ethernet. This makes all the difference in network capacity, near-zero latency, throughput, reliability – in short, everything.



• Virtually All Audio Formats

BLADEs are built to handle and convert native analog, microphone, AES/EBU, SPDIF, AOIP, MADI, SDI and AES67.



• Two 8x2 Utility Mixers

Each BLADE has two 8x2 utility mixers that can be configured in many different formats. Two 8x2, four 4x1, etc. These internal mixers are full featured and include panning, channel ON/OFF, fader levels, and access to any source signal in the system. They also include a full ACI (Automation Control Interface) allowing remote control, ducking, auto fade, channel on/off, levels, source assign, etc.

• Audio & Control Routing Matrix

• Source & Destination Control

Each BLADE has the ability to route any system source to the destinations on that BLADE.

• Front Panel Logic Indicators*

• 12 Universal GPIO Ports

• 128 Software Logic Ports*

Used to interface with software switches, indicators, and control functions throughout the system.

• Built-in Audio Clip Player*

• Silence Detection

• Dual OLED Displays*

• LIO/SLIO Logging*

• Aliases*

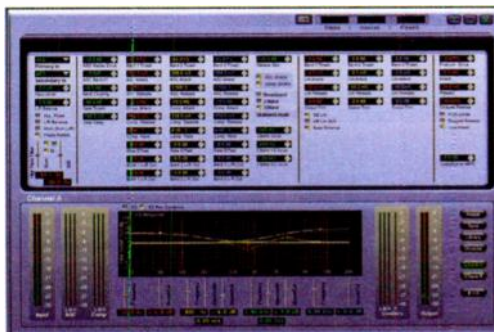
Allows the same source to be identified by different names. Multiple aliases can be used so different operators can share logic functions, source feeds, routing, etc.

• Auto Mono Summing

• Signal Splitting

• Gain Control on Every Input & Output

• Balance Control

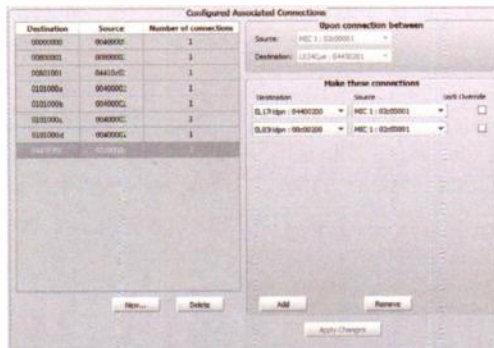


• Stereo Audio Processor*

Each BLADE-3 has a stereo multiband processor with the following: 4-band parametric equalizer, 3-way cross-overs, 3 compressors, 3 limiters, and a final lookahead limiter. This is a "routable processor," meaning it is not limited to the local I/O on the BLADE – it can be considered a network resource.

• Onboard Intelligent OS

Each BLADE has its own intelligence/operating system that allows it to be a powerful standalone router, part of a larger system or control the entire routing system.



• Associated Connections*

This is a great feature in BLADEs for callers, codecs, networks, remote broadcast & live talk shows that require a mix-minus. You can create a predetermined back haul, IFB feed or mix-minus for each device based on its location in the system or on a fader. If you have a shared resource connected to your system, such as a codec, the software will "automagically" give the proper return feed to the codec based on its destination. When a base connection is made, up to ten additional connections can be made. This significantly helps streamline studio routing, phone and codec selection.

• 44.1 or 48K Sampling Rates

• Flexible Signal Configuration

Signal can be defined as up to 16 mono, 8 stereo or any combination of mono and stereo totaling 16 channels.

• AES67*

Ability to support AES67 compliant devices. Allows WheatNet-IP system to synchronize to IEEE1588 from a PTP grandmaster clock and ingest/stream AES67 compliant packets.

• 44.1, 48K, External Sync or AES67 Operation*

• Clock/Sync and Alarm Indicators*

• Automation Control Interface

This is a "tool box" that every BLADE has that allows full control of the BLADE's functions such as routing, ducking, panning, full logic control, mixing and silence detection. Each BLADE supports up to 20 ACI connections which can be used with devices like Talent Stations, GP panels, SideBoards, etc. It also allows control of our partners'/third party equipment.

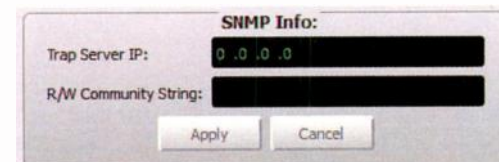
• Front Panel Headphone Jack and Source Selection

• Salvos/Macros

• Studio Bypass

• Front Panel Input and Output Metering

There is metering for every input and output on the system – 12-segment, multi-color LEDs that can be used for metering inputs and outputs as 8 pairs or 16 mono signals.



• SNMP

SNMP gives you centralized monitoring over large distributed systems. You can configure alarms and set thresholds to get notified if and when a problem occurs. The instant alarms and notifications help you take quick corrective actions through e-mail, SMS, and executing custom scripts.

• Connection Choices

Has both DB25 to make transitional wiring easy for existing BRIDGE TDM customers and RJ45 – Studio Hub compatible RJ connectors for input and output.

• Full Info Screen

Each signal has a new info screen allowing the user to add text to signals such as wire numbers, termination locations, etc.

• LIO Test

• Automatic Backup

• Alarm Notification

• NTP

• Front Panel Locking

• Version Checker

• Crosspoint Save

• Debugging Tools

• No Cooling Fans Needed



* indicates features available only in BLADE-3s

AES Sessions Dig Deep Into Sound

All-star panels look at the loudness dilemma and how to process audio

AESPVIEW

BY BRETT MOSS

The 137th International AES Convention is next month, Oct. 9–12, in Los Angeles. Chairman of the Broadcast and Streaming sessions David Bialik has provided a gaggle of interesting sessions.

Two sessions guaranteed to be of interest to radio broadcasters attending are Oct. 9's "Loudness for Streaming and Radio" and "Understanding Audio Processing — How to Use the Audio Processor" on Oct. 11.

LOUDNESS

Radio is famous for its "loudness wars," or battles between stations processing their outputs to "sound" louder than the next station. But it has rarely come under the scrutiny that television has for seemingly uneven levels between stations, programming and commercials.

Now, as Internet streaming has become a bigger part of consumers' audio diet, the topic is more under the microscope. Adding to the dilemma is the "hypercompression" of much of the material used to stream. With inconsistent source material, unpredictable bandwidth and bitrates and varying ISPs at delivery and reception, Internet audio can be more than a little uneven.

Thomas Lund, CTO for Broadcast and Production at TC Electronic, is



Cbl627/Wikimedia Commons / CC-BY-SA-3.0

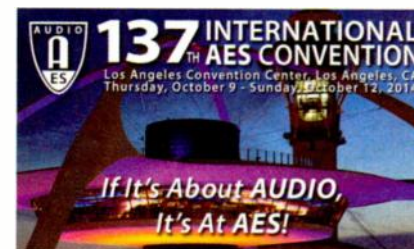
moderating the loudness session. He says, "Today it's difficult for the average consumer to access audio of even the quality we were used to from the cassette 30 years ago. Last month, TC's switchboard operator, a woman in her 40s, heard a Bonnie Raitt CD track played in our studio. Even from a distance, she commented on the audio quality she hadn't heard in a long time."

He adds, "Sadly, there is a loudness problem in most streaming. However, there are also good guys that have been working to help turn the tide. Apple has been admirable, designing a decent loudness normalization system early.

Add to that a well-chosen target level plus a reasonable audio infrastructure with digital optical coming out of most devices."

Lund also notes, "Other relevant streaming initiatives are also emerging now, e.g. Tidal, but most are still audio-ignorant: YouTube, Spotify, Pandora, Google etc. Plus, of course, the immense amount of crappy-sounding Internet 'radio' stations broadcasting at a completely insufficient headroom of maybe 8–10 dB."

Panelist Frank Foti, Omnia founder and head the Telos Alliance, has a thought-provoking angle: "This topic



IF YOU GO

What: 137th AES Convention

Where: Los Angeles Convention Center, Los Angeles (left)

When: Oct. 9–12

More: www.aes.org/events/137

has been on the AES slate for a few years now. Loudness has become a topical debate over the last decade or so, due to the amount of hypercompression used in music production and mastering. The misnomer is that 'loudness,' per se, is getting a bit of a bad rap, in my view. The reason is that loudness is not the issue. It's the 'how' it got to be loud that's the challenge or annoyance. Audio can be loud *and* pleasing, believe it or not."

In television, where the "loudness" problem has become a major issue, it is most readily apparent with commercials that appear to be much louder than the programming segments they are inserted between.

Also on the panel is fellow audio processing guru Bob Orban, who says, "A well-processed stream will not have the 'loud commercial problem.' The audio processor will equalize the loudness of the commercials and program elements so that they are well-balanced with each other and comfortably listenable. Radio broadcasters have used audio processing for this purpose pretty much forever."

But, he adds, "Two main problems can arise. The first, underprocessing, can arise from purism or idealism, but in practice can result in annoying inconsistencies in loudness between program elements in a given stream. The second is large loudness inconsistencies when one switches between streams, although in well-processed streams, this requires that listeners readjust their volume controls only when they have switched streams, so it's much less annoying than incessant loudness inconsistencies between program elements in a given stream."

Orban notes that differing program/content sources may be part of the problem as they may process their material differently. "Another frequently encountered pitfall occurs in a 'commercial replacement and insertion' environment,

(continued on page 20)

YOUR ULTIMATE SUPPLY & SERVICE SOLUTION



From our Facility to yours



Design & Integration



Repairs & On-Site Service Calls



LIGHTNER ELECTRONICS www.lightnerelectronics.com

Toll Free 1-866-239-3888 | Shop online www.broadcastavsales.com

DON'T WASTE \$\$ ON SATELLITE CHARGES

Save Money on your Network Distribution using GatesAir IP Codecs-No more Uplink Charges



The Flexiva NetWave™ networkable digital audio system delivers the extensive features, operational flexibility and robust construction needed for standalone operation in both on-air and production studios, while the slim, desktop styling makes it perfect for news booths, voice tracking and portable applications.



The Flexiva™ air-cooled FM solid-state transmitter family provides today's broadcaster with a single transmission platform capable of analog and digital operation. Incorporating field-proven GatesAir technology, Flexiva transmitters deliver world-class performance, reliability and quality.



The Intraplex® IP Link family of IP audio codecs provides high-end features at an affordable price.

Offering an array of audio coding options, the IP Link codecs are suitable for use in Studio to Transmitter Links (STLs) as well as audio contribution and distribution networks. Support for IP multicast and multiple unicast streams enables one encoder to feed multiple decoders.



New IP Link™ codec features enhance how broadcasters can cost-effectively move audio between one or more points, including flexible studio-to-transmitter, remote broadcast and internet delivery architectures.

New built-in Intraplex® SynchroCast™ technology for the IP Link enables precision-timed on-air program delay for content delivery across large single-frequency networks. Ideal for broadcasters and network operators covering large areas and difficult terrains, where many low-power transmitters cover widespread populations.

Call SCMS for more information

1-800-438-6040

www.scmsinc.com



Latin America
760-650-1427
Lily Massari

West Coast
818-398-7314
Doug Tharp

Central
315-623-7655
Bernie O'Brien

North Central
573-478-3737
Pam Leffler

Southern Gulf
866-205-6905
Andy Cole

Mid-West
844-436-4327
Chuck Maines

North-East
315-623-7655
Jim Peck

Mid-South
877-391-2650
Bob Mayben

Pro Audio/South-East
877-640-8205
Ric Goldstein

Bradley Division
800-732-7665
Art Reed /
Bob Eburg

AES

(continued from page 18)

where the inserted commercials may be processed differently than the surrounding program material. This can be fixed by processing the inserted material separately so that it has the same target loudness as the main program, or by inserting the commercials into the unprocessed program before the main audio processing is applied."

LEGISLATION

Some might call for legislation, but Foti is skeptical.

"Legislation? C'mon, there's no need for that! We already have it with TV in the U.S.A. with the CALM Act, and parts of Europe employ the ITU BS-412 MPX power limit on FM. I don't feel a need for an industry group would be beneficial."

He warns, "Most of those get mired down in bureaucracy and politics. I'm not sure there's an efficient process that can be implemented to govern, if you will, something subjective as loudness. The marketplace can easily self-police

AES BROADCAST AND STREAMING SESSIONS

Thursday, Oct. 9

- "Facility Design: To Move, or Not to Move? Contrasting Solutions — Two West Coast FM Stations Address Shifting Listener Needs," 10:45 a.m.–12:45 p.m.
- "Loudness for Streaming and Radio," 2:15–4:15 p.m.
- "Routing Audio in a Broadcast Facility," 4:30–6 p.m.

Friday, Oct. 10

- "Audio Issues for 4k and 8k Television," 9–10:30 a.m.
- "The Streaming Experience," 11:15 a.m.–12:30 p.m.
- "Listener Fatigue and Retention," 2–3:30 p.m.
- "MPEG-DASH — What about Audio?" 3:30–5 p.m.
- "Audio Issues and HTML5," 5–6:30 p.m.

Saturday, Oct. 11

- "Sound Design and Storytelling: How to Create the Environments and Sounds Needed to Enhance Any Tale," 9–10:30 a.m.
- "Compliance with CALM Act/PLOUD," 10:30 a.m.–12 p.m.

- "SBE/Troubleshooting and Maintenance of Equipment," 12–1:30 pm
- "Understanding Audio Processing — How to Use the Audio Processor," 2–3:30 p.m.
- "Audio Issues for Live Television — Overcoming the Challenges of Live Television Broadcast in Today's Wild, Wild World," 3:30–5 p.m.
- "Telephony and IP Codecs: How to Choose What Is Best for You," 5–6:30 p.m.

Sunday, Oct. 12

- "Troubleshooting Software Issues," 10:30 a.m.–12 p.m.
- "Society of Broadcast Engineers Exams," 2–5 p.m.

There will also be interesting and topical sessions for broadcasters in many of other session tracks, notably the Networked Audio and Recording & Production tracks. There will also be some guilty pleasure sessions such as those found in the Game Audio track. Check out www.aes.org/events/137.

itself."

Orban agrees to some extent, "I don't believe that legislation is practical because to be effective, it would have to be obeyed worldwide by netcasters in a heretofore unregulated environment.

There would be an enormous amount of pushback against it, and it would be unenforceable. The only thing that the industry can do is to develop voluntary standards for target loudness."

But he has seen some constructive moves: "The PLOUD group in Europe has already done a great deal of work on standardization of loudness practices, so a new group does not need to be formed."

Lund concludes, "Because of the loudness wars, time has actually gone backwards, rendered recent music heritage for more than a decade more or less unlistenable. That's how this point in time will be looked back at. As professionals, we have an obligation to speak up because it's happening right here, right now — on our watch."

They will be joined by John Kean of National Public Radio, Tom Box of DTS and Scott Norcross of Dolby Labs.

A real treat is to be had at 2–3:30 p.m. on Oct. 11, when CBS Radio's Tracy Teagarden gathers together Bob Orban, Frank Foti, Greg Ogonowski of Orban, Tim Carroll of the Telos Alliance, Jean-Marc Jot of DTS and Sunil Bharitkar of Dolby Labs for "Understanding Audio Processing — How to Use the Audio Processor."

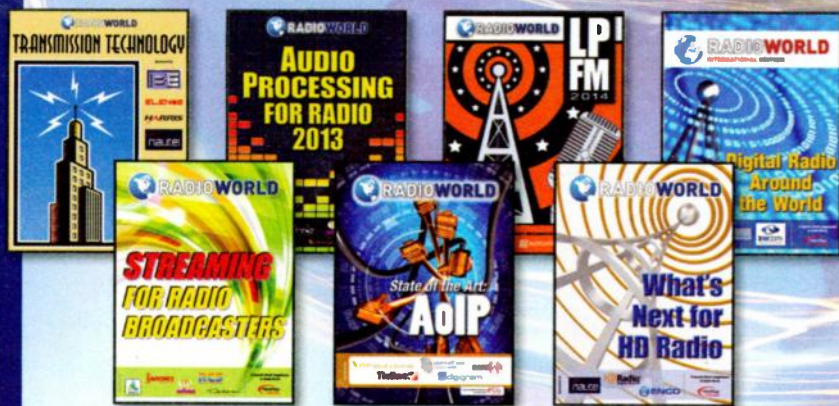
Foti says of the discussion: "Audio processing will always be a water cooler discussion, and loaded with subjectivity. In today's marketplace, there's a need for added education in the art. Seems to me, gone are the days, where a radio station could afford to have 'someone' spend a few weeks to tweak a station's sound, or really get to know what a product is all about during an evaluation. Today, if the out-of-the-box experience doesn't do the trick in the first 15 minutes, then everyone loses. Most notably the end-user, as they're probably writing off a product without truly knowing what the possibilities are."

Orban gets specific: "The most fundamental purpose of an audio processor is to control peak levels to prevent overloading the transmission channel. Well-designed audio processors can also ensure source-to-source consistency, both spectrally and in terms of loudness, and can make the broadcast or netcast sound polished, 'produced' and big-time. However, there are some things that in-line audio processors cannot do reliably."

Asked to name the most frequent error made by radio stations with processing, Foti says, "Not taking the time to understand their own processing desires, and then how to apply a product to achieve them. Audio processing for broadcast requires thought. Dependent upon the audience demographic, and what signature sound that audience needs, is very critical. Present generation processors offer presets that will setup the system and offer a 'ballpark' reference point, but it's critical from that point forward. Understanding the art form of processing is vital."

Orban points out that "in some modern music the 'smashed and hammered' sound is part of the style and desired by the producer and artist. Is it our place to second-guess the creators of the material? Not all art is bland, smooth, and easy to listen to." But, he adds, "Some processing needs to be left for the production studio, and even there, nothing can replace clean source material that has not been totally smashed in mastering. If there is a light at the end of the tunnel, it is probably Apple Computer's 'mastered for iTunes initiative,' which calls for a target loudness of -16 LUFS and hence permits natural-sounding peak-to-average ratios without peak limiting artifacts — competent peak limiting for this loudness level is light and inaudible. Online audio processors respond well to -16 LUFS material."

eBooks: Tools for Strategic Technology Decision-Making



Radio World's growing library of eBooks can assist you in maximizing your investment in an array of platforms and tools: licensed transmission, online streaming, mobile apps, multicasting, translators, podcasts, RDS, metadata and much more. The eBooks are a huge hit with readers. They help engineers, GMs, operations managers and other top radio executives — radio's new breed of digital, cross-platform decision-makers — understand this new world and thrive in it.

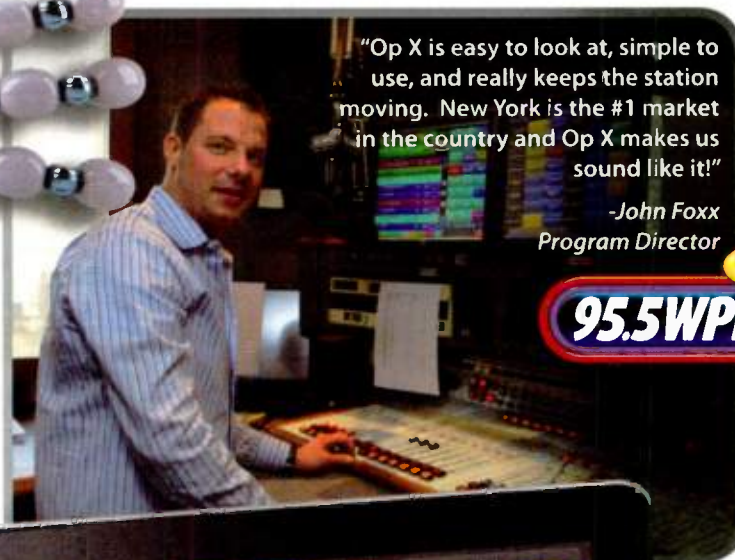
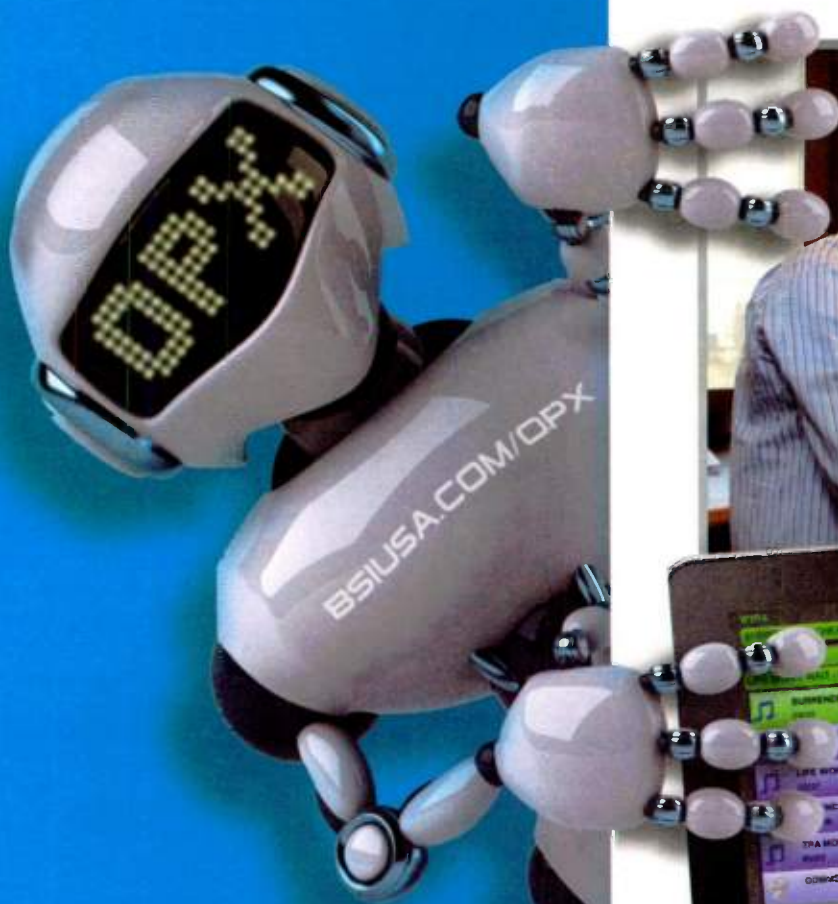
Visit radioworld.com/ebooks



Charter sponsor
of Radio World's
Free iPad/iPhone
edition now at iTunes!

OP-X AUTOMATION

SIMPLE • POWERFUL • REDUNDANT



Ask us about
our iPad
app!

- Modular Operation in Op-X allows for a tiered system at a fraction of the cost of its competitors.
- Each studio client is capable of accessing all Audio Server modules on the network.
- Remote voice-tracking allows for creation of content for remote studios also running Op-X.
- The revolutionary design of Op-X's clock builder turns the previous task of scheduling satellite programming into a few simple clicks.
- Share serial devices from any machine using the Op-X Serial Server.
- Importing logs now gets its own module that takes confusion out of the process.
- Engineers will enjoy Op-X because it's easy to install, maintain, and has automatic backup features.

iPad app Features

- Live show real-time control from almost anywhere
- A powerful tool for remotes or voice tracking
- Take a show on the road
- Start, stop, copy and paste functions from the log
- Insert audio items into the log
- Initiate audio playback from hot buttons
- Run macro command from hot buttons
- Secure access to your system



**Broadcasters
General Store**
352-622-7700
www.bgs.cc



RADIO AUTOMATION SOFTWARE

ENCO Delivers on Upgraded DAD

Helpful features include Enconveyor utility

USERREPORT

BY WALT PALMER
Director of Broadcast Operations
and Engineering
WGMD(FM)

REHOBOTH BEACH, DEL. — When I became the chief engineer at WGMD (FM), a Class A station in this coastal resort community, the station employed one of the original versions of ENCO Systems Digital Audio Delivery system.

Broadcasting a news-talk format, the DAD was straining due to a combination of live and syndicated satellite delivery utilizing 8-plus-year-old computers with hard drives topping out at 85 percent capacity. Former program directors had filled the drives with hundreds of hours of mistimed commercial loads, which caused DAD to ask the processors to work overtime, resulting in extended and nerve-racking on-screen “Please Wait” notices and caused numerous nagging minor errors.

UPGRADING

When signs of impending hardware failures began raising their heads, it was time to begin seriously researching a new automation system.

The search included four major software systems, including updating our ENCO DAD. Part of the bidding process included hardware. I could have purchased hardware from others but elected to have the ultimate winner provide computers, therefore eliminating unwanted variables should there be a

support issue.

After several months of research, I elected to upgrade to a new ENCO DAD system. Several reasons guided me to my decision: ENCO software features; customization to meet our station needs



and flexibility; robust hardware system backed up with manufacturer warranty; superior ENCO customer support; staff familiarity of the software; cost; and installation schedule.

A few weeks after placing my purchase order with ENCO, the DAD equipment arrived and was set up for testing and burn time. My initial test installation was completed over the phone remotely with ENCO support. The workstations were loaded with Windows 7 Pro 64-bit OS, 8 GB RAM, dual 1TB SATA drives

for the audio/data. ENCO DAD v14.0c and AudioScience soundcards. My basic installation utilizes two workstations: on-air and production.

Shortly thereafter, ENCO tech Shawn MacDonnell arrived to provide first-class assistance to install and change over from old to new. The new instal-

lation took place during business hours, on-air with minimal disruption, but most importantly, without commercial loss. After his completion of on-site installation, the system was on the air. I have since added two additional workstations to ease workload.

ENCO allows DAD the capability to be customized for any size market station. It is powerful enough to handle the most complex down to the most simple station environments. With that in mind, there are challenges that can be faced

when replacing the infrastructure of the station and configuring DAD to execute exactly what the station needs.

Along with ENCO's robust operating system, it features many utilities to assist in the automation process and remove human error out of the picture.

I couldn't live without the Enconveyor utility. It allows the software to fetch files, such as weather, traffic, third-party audio, etc., from FTP or website and ingest the cut directly into DAD through ENCO's Dropbox utility. It saves time and manpower. DAD also uses the flexibility for “Priority Play” buttons allowing the DAD to be remotely fired from multiple locations, such as news or production studios.

Some of the challenges that I faced were details with building “events” and “clocks,” allowing for specific cuts to have active hours during the “active and “kill” date range, creating onscreen notifications before “branch events” and time calculations to the fraction of the second rather than whole.

A feature I love about ENCO is their extraordinary customer service and support. One phone call resolves most issues. Off-hours emergency support is superior. By having ENCO provide hardware and install the system, if there is an issue, the ENCO techs know what they are dealing with, so there is no finger-pointing between hardware and software vendors.

ENCO also offers both onsite installation and remote installation. When changing your current automation system to ENCO or performing a major hardware and software upgrade, I would recommend including this in your package. ENCO's development team is constantly working to upgrade and improve their products to meet and exceed the changing demands of this industry. With the ease of having an experienced ENCO tech at your side to assist in customizing DAD to your station, it helps to tie up loose ends and make your station sound great.

Last, ENCO openly accepts ideas and suggestions for feature requests. They listen to the needs of the client and adapt their software accordingly with program updates throughout the year. I feel that this important because it creates a long-lasting partnership with the company and that we are working together to achieve the same result.

On a side note, I did take the liberty of adding one luxurious pleasure to my new installation, a 42-inch plasma monitor, HDMI-fed; those of us who are visually challenged can now read the screen from the parking lot.

For information, contact Aaron Johnson at ENCO Systems in Michigan at (248) 827-4440 or visit www.enco.com.

TECHUPDATE

BSI RE-ENGINEES SIMIAN

Simian 2.3 is the latest evolution of the BSI's Simian radio automation software program. Among the new features are a new audio engine and integration with third-party hardware, including Axia and GatesAir.

Support for Windows 7, 64-bit and Windows 8, 32-bit and 64-bit is made possible by the new audio engine.

Simian 2.3 retains the option to use the previous audio engine functionality for existing users who have not transitioned from Windows XP yet.

Integration with the GatesAir Oasis console allows Simian to use the available USB multichannel audio interface card for audio playback and channel on/off GPI control. Axia integration features include channel on/off GPI control from the Axia Multi-Channel PC Audio Driver (shown), GPIO Node control for up to four GPIO nodes and Simian user interface integration with the Smart Switch programmable switch module available on many Axia consoles.

For information, contact Broadcast Software International in Oregon at (541) 338-8588 or visit www.bsiusa.com.



KUTT/KGMT Depend on Pristine CR-7

Small-market station says automation system "takes a lot of work off our staff"

USERREPORT

BY RANDY BAUER
Program Director
KUTT(FM)

FAIRBURY, NEB. — KUTT(FM) and KGMT(AM) have been using the Pristine Control Room-7 system in both control rooms and in our main production room for over two years, and it has served us well.

We have a fairly typical small-market operation, and CR-7 takes a lot of work off our staff.

cient at the tasks we ask them to do. If you can point and click, you can run this system.

Installation is simple, and your engineer will be able to talk with the company in advance if he has any questions. George, Kevin and the staff at Pristine Systems are easy to work with, accessible and know the CR-7 inside out.

USEFUL TOOLS

There are some features on CR-7 we don't use: a quick call will get you more information on voice-tracking, music scheduling, time scaling, time/temperature announce, remote control, back-



We have our FM using six networks and our AM using five; CR-7 handles all of them easily. We also do live block broadcasting, and with the features that CR-7 has, it makes us sound professional. When it comes time to broadcast local sports CR-7 also works seamlessly. Most traffic and billing systems are compatible with CR-7, and our spot sets load with just a few mouse clicks.

LEARNING CURVE

Another great thing about the Pristine Control Room-7 system is its gentle learning curve. Even "non-computer people" can learn CR-7 quickly. We have part-time announcers who learn the system in less than an hour and, after a few shifts, become profi-

ground recording and a host of other useful tools that CR-7 has built into it.

In trying to keep this short and precise, we depend on the Pristine Control Room-7 system, and it hasn't let us down. It's always running 24/7, and checking to make sure everything ran as it was intended is easy with "audit log."

While our employees are selling and producing commercials, tracking down news and sport stories or out doing remotes CR-7 is loading the spot sets, playing the commercials, background recording news and farm markets and making the station money.

For information, contact Kevin Loper at Pristine Systems in California at (310) 831-2334 or visit www.pristinesys.com.

TECHUPDATE

ARRAKIS CUSTOM TAILORS AUTOMATION

Arrakis Systems says that when you purchase a suit, you get it tailored; it says radio automation should be the same. The company says it focuses on solutions that can be tailored to fit station needs without unnecessary complexity.

Arrakis provides systems that can support a range of operations from single Internet stations to radio groups. Its New-Wave system is a solution for a smaller station with hard disk needs. As a package for Internet radio, the software can be free with a Securenet subscription package.

A step up is the Digilink-Xtreme. It can be used by one- or two-station groups that want to play satellite broadcasts, create timed records or play ball-games. Digilink-HD is a feature-rich flagship automation system for medium to large groups. It can connect multiple studios to an entire network.

Arrakis also provides remote access solutions for its systems. Contemporary stations often need to connect to a studio to add a track; give an emergency announcement; or connect a DJ, who is out of the state, to do voice tracks to make shows more dynamic. These can be customized to a client's needs.

For information, contact Arrakis Systems in Colorado at (970) 461-0730 or visit www.arrakis-systems.com.



MUSIC 1 OFFERS VERSION 7

The Music 1 Windows-native music scheduling software. Its latest version, Version 7 includes the Traffecta traffic and billing module.

A built in auditioning player has been added allowing a music director to click-and-hear any song in Music 1. The player is incorporated into the Music 1 scheduler itself and is not dependent on any automation system.

The company says that Music 1 can schedule everything: including jingles, liners, links, voice tracks, long form programs and automation system commands. The nonmusic scheduling functions are incorporated into M1.

Music 1 is networkable and portable. Music and program directors can install it on their laptops (no additional fee) and can take it with them on the road, do their scheduling from anywhere and then email or FTP the automation playlists back to the station.

A single install of M1 is capable of scheduling any number of stations, channels or streams from the one computer, the company says and it has built-in interfaces for most of the widely used automation systems in the world.

Music 1 says it also sells and support Music 1 SE, a lower-cost scheduling software for Internet radio. According to the company, SE is based on the source code of the full Version 7 with some scaled down functionality, the company says, thereby providing webcasters with an advanced and efficient scheduling tool that meets all their needs at an affordable, buyout price.

SE is an option for broadcasters' HD channels or standalone webstreaming stations.

For information, contact Music 1 in Texas at (512) 392-2415 or visit www.music1.pro.



Wild Radio Is Wild About RCS

Ben Wild says he can now "sit in my back garden sipping a cold beer while adjusting my schedule on my iPad"

USERREPORT

BY BEN WILD
Owner
Wild Radio

NORTHUMBERLAND, ENGLAND — I started in radio when I was 13. My mum spoke to officials at my school at the time and made it possible for me to leave my last lesson at school to get to my radio show in time. I am now the owner and station director of Wild Radio, an online dance and urban station webcasting from my uber high-tech home studios.

My previous job was a PD for a station in Ireland; however after the birth of a daughter, who has brain complications, and with my mother falling ill with two strokes, we decided to move back to the U.K. and I would have a go at working full-time from home. I invested all my "rainy day" money and created Wild Radio.

Wild Radio is a fully functioning studio, from where I can connect to any station in the world and present shows in real time. Wild Radio was set up to demonstrate to PDs the possibilities of working from

home. My station has become popular and is creating a huge and rapidly growing fan base, so now this chain of events has driven me to run this station on a full-time basis.

The best part of my job is waking up every morning knowing I made this ... It's walking in to my studio and looking around at the entire thing and thinking, "Wow, I did this!" I love turning on the radio in the kitchen and hearing some amazing tunes and thinking, "Wow, I programmed that, and it sounds huge."

There are three main reasons behind the epic station sound: the Klotz digital desk, my BW Broadcast DSPX processor and RCS software.

When I started, there really was no doubt in my mind, I needed the best of everything and for software it had to be RCS. RCS Selector 15 and Master Control have always been my favorite playout systems. They are just brilliant. When I got offered the chance to upgrade to Zetta and GSelector, I jumped at the chance. I have high-spec machines that weren't being used to their full potential with Master Control and after learning that I could sit in my back garden sipping a cold beer while adjusting my schedule on my iPad, well, how could I say no? The whole thing is faster and so powerful, the possibilities are endless.



I really thought I would struggle, especially when I realized that this wasn't just an upgrade, it was an entirely different set of programs, however the RCS U.K. Support team are just amazing — so patient and so good at what they do. They have spent time with me to make me understand all aspects of the new system. I was involved in the installation, which made it easier to understand and what I need to do should anything ever go wrong.

I am so pleased I made the change to Zetta. It has changed the station and made the whole site more modern and up-to-date than many of the biggest local commercial stations.

For information, contact Neal Perchuk at RCS in New York at (914) 428-4600 or visit www.rcsworks.com.

TECHUPDATES

WINMEDIA STRENGTHENS RADIO OFFERING

WinMedia Radio covers the news and music production chain and facilitates content delivery to multiple devices.

This solution manages multimedia content including audio, video, images and texts, and allows broadcasters to operate radio, TV and digital production within a single system. The company says it streamlines the digital production chain.

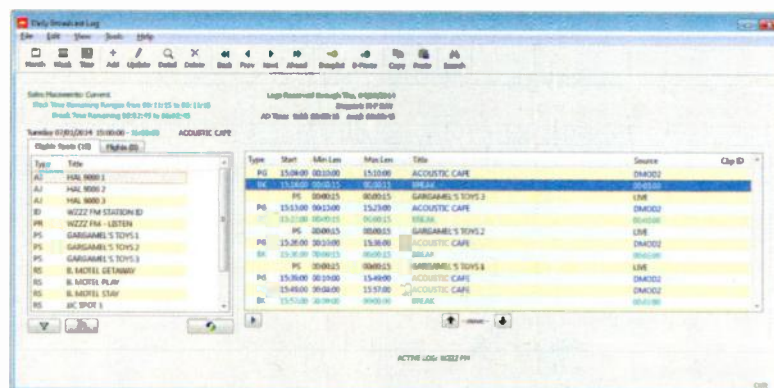
Two new modules will enable broader, more complex applications.

WinPublish is for streamlining content publishing on RDS using the UECP protocol, as well as on social networks. The

module provides setup options such as live text display. The integrated workflow engine automates processes in the background to facilitate distribution. WinMedia says WinPublish adds an interactive dimension to radio programs by managing social media content. As well as a way to publish content on social networks, WinPublish integrates user-generated content into workflows by allowing broadcasters to select posts to be used on their website.

The new WinSales platform is designed to optimize business management and real-time online ad booking across media, including Web and mobile. Account executives remotely access data for clients, build a proposal with real-time access to the station inventory, and present it to the advertiser. Integrated with WinMedia Radio, WinSales also streamlines billing operations through automatic reconciliation and third-party integration with accounting systems. It supports single-station to multi-station or multi-location broadcast groups centrally in one system; the company says it allows users to increase productivity, revenues and facilitate ad workflow organization while providing broadcasters with tailored customer relationship management and business visibility.

For information, contact WinMedia in Canada at (514) 704-7069 or visit www.winmedia.org.



MYERS' PROTRACK COVERS THE BASES

Myers Information Systems says that its ProTrack is a comprehensive broadcast management solution for media facilities that need to produce, acquire, monetize and distribute content.

As a core software platform for independent multimedia organizations, ProTrack integrates with systems up and down the broadcast chain to drive workflows across programming, scheduling, sales, traffic, IT, engineering and accounting departments.

The company says ProTrack serves as a "metadata epicenter" for TV, radio and online content distributors — where vast amounts of content, its metadata and associated contractual obligations are processed daily. ProTrack enables users to manage, schedule, distribute and repurpose media assets.

Functionality highlights of the ProTrack System include end-to-end program management; master schedules; advanced formatting for programs and breaks; management of sales contacts and contracts; sales inventory tracking, encompassing reporting; scheduling and tracking of spots; integration with automation; and invoices and affidavits.

For information, contact Myers Information Systems in Massachusetts at (413) 585-9820 or visit www.myersinfosys.com.

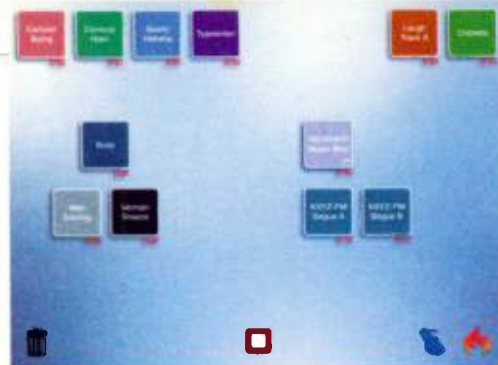
TECHUPDATES

WIDEORBIT HIGHLIGHTS NEW OFFERINGS

Broadcast business automation developer WideOrbit has new versions of its automation and traffic software products.

Version 3.7 of the Automation for Radio suite adds "a new MusicMaster widget [that] allows on-air announcers ... the necessary privileges to make intelligent choices about the songs played on the air," the company says.

It explains that with the widget, shown below, "announcers can get real-time information about a song's



CASSARA'S HAWTIE CREATES CLIP PLAYER

Cassara Software says its Hawtie app for iOS allows users to import drops, stingers, music beds and other show elements into an iPad and assign them an on-screen button for playback. Button text, color and position onscreen are user-definable, allowing the jock or talk show host to customize the interface to suit their preferences. Multiple drops can be triggered to play simultaneously by tapping on them sequentially or all at once; buttons can be configured to loop automatically.

Cassara says that the interface is no-frills, free from meters and dials, and that interaction with the app is straightforward. Buttons can be moved using the repositioning mode, automatically arranged by swiping up on the screen or deleted when dropped over the trashcan icon. The app works independently of the user's iTunes library using iTunes Files Sharing, and does not require a companion piece of software running on a desktop computer. Price: \$4.99.

For information, contact Cassara Software at www.cassarasoftware.com.



137TH

AUDIO ENGINEERING SOCIETY INTERNATIONAL CONVENTION

**LOS ANGELES CONVENTION CENTER,
LOS ANGELES, CALIFORNIA, USA
CONFERENCE: OCT. 9 – 12, 2014
EXHIBITION: OCT. 10 – 12, 2014**

If It's About LIVE SOUND, It's At AES!

Whether you are in the hot seat as **FOH engineer** mixing to a crowd of thousands, in an intimate local club mixing your favorite band, or handling the audio for a house-of-worship facility, the upcoming **AES137 Convention in Los Angeles** is your one source for all things audio.

With three days of exhibits, the **Live Sound Track**, and the **NEW Live Sound Expo**, plus four days of workshops, technical papers and program content tailored to the current audio and communications landscape, once again, the **AES Convention** will be **THE** audio event of the year and cannot be missed.

Our new **Live Sound Expo** at the **137th Convention** offers expert advice for the broad spectrum of live sound engineers (some 25% of Convention attendees) with an emphasis on the practical, bringing professionals with decades of experience to the stage to inspire and educate attendees.



Topics in the Live Sound Track and Live Sound Expo include:

- Loudspeaker Set-Up And Configuration
- Line Array Modeling Versus Performance
- Networks and IT—The Basics
- Understanding the Mystery of Mixing for In-Ear Monitors
- Miking Fundamentals For The Stage
- Installed Sound—Reflection Control, Fidelity and Intelligibility
- The Small Venue Monitor Mix

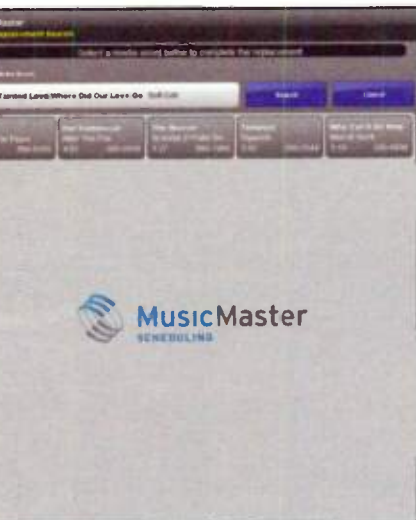
So rather than simply reading about it, sign up for your **FREE Exhibits-Plus Badge**, which gets you into the **AES Exhibition, Special Events, Live Sound Expo, Project Studio Expo** and more.

If It's About AUDIO, It's At AES!

For more information and to sign up for your **FREE Exhibits-Plus Registration**, visit our website at: www.aesconvention.com/137NB



Photo courtesy of ATK Audioteck (top) and Christian Heilman (bottom).



play history and other information needed to determine whether a song is eligible for airplay based on rules defined in MusicMaster." The information will appear on the on-air screen. The MusicMaster database will be updated in real time as necessary.

WideOrbit also has a new version of WO Traffic, the company's traffic and billing module. Upgrades include "a more streamlined process for importing Lockbox payments, improved log status tracking, station-defined order separation defaults for advertisers and more flexible format scheduling across stations with time offsets," the company explains.

In addition, "Digital tools allow users to manage spot and digital orders from a single order, from order entry through to invoicing and reconciliation," it adds. Mobile support of iPad and Android devices is now integrated.

For information, contact WideOrbit in North Carolina at (828) 252-8891 or visit www.wideorbit.com.

RadioTraffic.com Works in Abilene

Station owner finds Web-based service cuts costs and simplifies operations

USERREPORT

BY DAVID KLEMENT
President
KABW(FM), KORQ(FM)

ABILENE, TEXAS — I have been working in radio for 35 years, about 20 of those in small markets and 15 in Dallas as a sales manager. Small-market radio was a great training ground for me, as it provided me with knowledge on most aspects of radio station operation.

One of which was traffic and understanding how it was supposed to work.

I left Dallas radio in 2013 to pursue my dream of station ownership. This was when I was introduced to RadioTraffic.com. My first thought before any investigation was I wanted something familiar. However I also knew of Dave Scott and his pioneering approach to radio, so I jumped in and learned about the program. I needed to learn about the program from the ground up, to give me a good sound basis on what I was going to be managing.

When I first took over, I hired a full-time traffic manager. Then I switched to using a contract person after three months, which was 20 percent of the cost of the full-time person. After two



months of using a contract person, I switched to doing it myself. I had to learn it quickly and thoroughly. The team at RadioTraffic.com was accessible and offered assistance whenever I needed it. Plus, they listened to my suggestions.

It takes me about 30 minutes a day to do two radio stations using RadioTraffic.com.

Along with that, it emails spot times to all of our clients and makes everything seamless for me. Reports are incredibly simple. Billing is a snap. I simply follow a laid out workflow to process all billing, including co-op.

Also, there is a feature that allows me to have invoices and statements sent automatically via email. This greatly improves collection times.

Another great feature during this process is that RadioTraffic.com gives me the option to automatically apply all prepayments before billing.

The new EZ Net feature has taken countless hours of work off my week when managing my network schedules. I click one button and all my network orders are imported from the various websites, scheduled and assigned cart numbers. There are no more orders to input or assign cart numbers to. The

The new EZ Net feature has taken countless hours of work off my week when managing my network schedules.

system handles all of this for me. Prior to the addition of EZ Net, managing the network schedules was chaos. Now I have time to see clients and I manage the logs at the end of each day. In addition, I work from the road a lot. So doing traffic remotely is a breeze.

RadioTraffic.com is a Web-based program so I never have to be tied down to the office to get logs done. I guess to sum it up, RadioTraffic.com was designed for simplification. Working the logs is not a complicated process. The system manages almost all of it for me. If my inventory gets tight, moving spots is a simple drag and drop or click a dropdown to reschedule. Make-goods are just as simple.

All in all, the ease, simplicity and power of RadioTraffic.com are saving me about \$30K per year in payroll. As an owner, the price is right and the cost savings alone make the product great.

For information, contact Dave Scott at RadioTraffic.com in Texas at (866) 500-0500 or visit www.radiotraffic.com.

TECHUPDATE

MATRIX PREMIUM PROVIDES CRM AND SALES INTELLIGENCE

Matrix Premium is a Web-based, hosted customer relationship management and sales intelligence platform that integrates with traffic and billing software systems to create a back-office workflow from sales to revenue reconciliation.

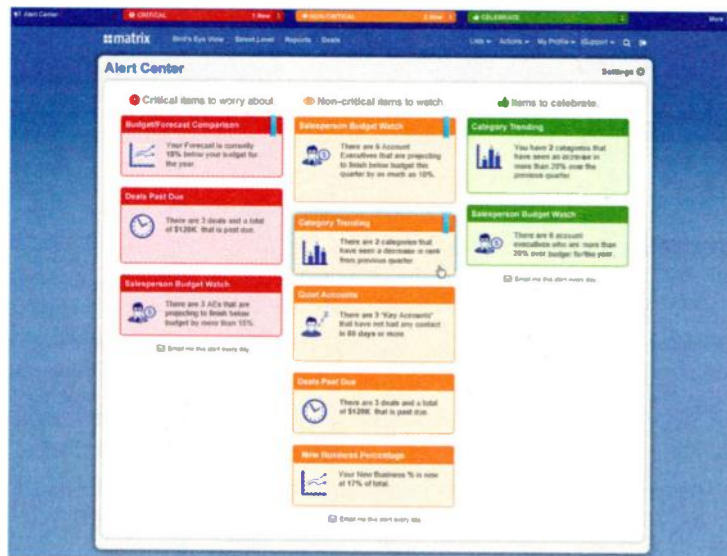
The Matrix Premium Platform customizes and normalizes data specific to media organizations' sales workflow. For example if data imported from traffic has McDonald's with an apostrophe from one station and without an apostrophe from another, Matrix will correct and align the data. The company says that having data that is normalized and organized not only produces an accurate view of sales activity to minimize redundancies and errors, but also provides insight into the business at both a 30,000-foot view and a drilled-down view to the contact, station, platform or account level.

Matrix Premium media CRM features include account and contact management; pipeline reports; performance and forecasts; and graphical dashboard views.

The Alert Center allows users to configure and personalize alerts, rules and settings to create a more valuable experience, allowing the solution to "provide actionable data." The Sales Intelligence module combines detailed reporting, visual analytics and personalized dashboards to help sales professionals maximize their time and profit.

Alerts and Dashboards include activity alert; forecast to budget alert; pacing alert; account retention dashboard; sales coverage dashboard; and budget analysis dashboard.

For information, contact Matrix Solutions at (877) 687-9066 or visit www.matrixformedia.com.



ABOUT BUYER'S GUIDE

Radio World publishes User Reports on products in various equipment classes throughout the year to help potential buyers understand why colleagues chose the equipment they did. A User Report is an unpaid testimonial by a user who has already purchased the gear. A Radio World Product Evaluation, by contrast, is a freelance article by a paid reviewer who typically receives a demo loaner. Do you have a story to tell? Write to bmoss@nbmedia.com.

TECHUPDATES

BE AUDIOVAULT XPRESSO PACKS FLEX FEATURES

Broadcast Electronics' has introduced the new AudioVault Xpresso radio automation system. BE says that Xpresso combines the power and reliability of AudioVault Flex and packages it in a smaller system that is not only easy to use, install and configure, but easy on the budget.

Xpresso also comes with a new installer that allows the user to configure their system via a drag and drop graphical user interface. This eliminates messing with text files or confusion over what audio channels are used where.

In addition to the easier installation, Broadcast

Electronics says it has also simplified purchasing and support. Users can buy an Xpresso package with only the features requested, so there is no need to pay extra for features that never get used. Free basic support is also included along with low-cost options for enhanced support if needed.

Xpresso is also packed with all the best features of a full AudioVault Flex system — such as voice-tracking, quick starts, CD ripping, schedule imports, editing, redundancy options and more.

BE says that AudioVault Xpresso is perfect for streaming stations and multicast channels, yet still powerful enough for large operations on a budget.

For information, contact Broadcast Electronics in Illinois at (217) 224-9600 or visit www.bdcast.com.



DIGITAL JUKEBOX DEBUTS PRODUCTS

Digital JukeBox has a pair of new products available. According to the company, DJB Radio Central Server automation product has advanced its technology to operate with the latest Microsoft Server OS providing operational efficiency for radio group clusters and WAN-operated stations.

The DJB Radio CS software offers AIR Studio Operations enhanced graphics, a phone bit recorder/editor, multi-user real-time log editing and updating.

New features in the production suite include audio importing with normalization, audio editing all formats including M4A, "wet" playback-in and out voice-tracking and enhanced log affidavit reporting including to CSV file format. Configurations are available for combo formats, multistation, clus-

ter and wide-area operated stations.

The DJB Radio Web Stream logger allows recording of webstream and/or analog/digital transmitted "off air" audio with enhanced "loss of signal" monitoring and email or closure-based "No Recording" warning features. The 24/7 Logger records in any audio flavor including M4A (iTunes), Ogg Vorbis and Windows Media (WMA).

Mic skimming, competition monitoring and "Best of Show" recording features are also included. Recorded audio file play-out uses a Windows-compatible audio player.

Webstream, winner of Radio World's "Best of Show" Award, is available in one-, two-, four- and eight-channel versions and is compatible with low-cost USB soundcards making the package economical for LPFM, professional and Internet-only broadcasters, the company says.

For information, contact Digital JukeBox in Nevada at (702) 487-3336, ext. 1 or visit www.digitaljukebox.com.



PRODUCTS & SERVICES SHOWCASE

137th AES Booth #1135

WhisperRoom, Inc.
SOUND ISOLATION ENCLOSURES

**Recording
Mixing
Mastering
Broadcasting
Voiceover
ADR
Foley
and much more!**

WhisperRoom, Inc.
(865) 558-5364
www.whisperroom.com

OPTILATOR™

Rack Mount UPS's 1500VA-2200VA w/AVR & OptelatorII \$736.95-\$811.95
Remote dry contact Monitoring is available for \$250.00 more for the Rackmount UPS.

\$386.95 ea.

Fiber Optic Modem Protection
Lightning Protection that keeps on working!
Fiber optic protection impervious to Lightning.
It is now a recognized name brand in the RF Industry.
For more technical information call toll free 888-471-1038.
Ph: 727-823-6100, Fax: 727-823-6044.
For pricing and sales call: Broadcast General Store, Broadcastworks, Broadcast Richardson, RF Specialists, Crouse-Kimzey, S.C.M.S., or your local distributor.
See our web page: www.optishield.com It is for real!
The Ultimate Lightning Protection!
Return for Repairs average cost between \$96.60 to \$135.40

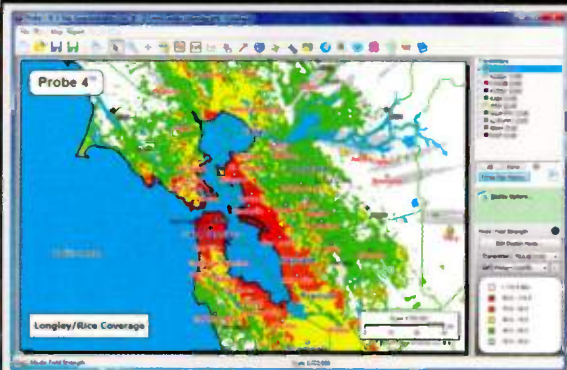
BESCO INTERNACIONAL World Leader in **AM-FM Transmitters**

Complete Inventory at:
www.Besco-Int.com

Pre-Owned AM-FM units in stock!
Now carrying new rack mount Amps and FM transmitters from 30 watts to 14Kw of solid state power for FM Analog and HD HD/C carriers. New and used FM antenna with coax and connectors tuned to needed frequency.

Rob Malany
President
(321) 960-4001
Email: Sales@Besco-Int.com

Broadcast Engineering Software



- Create stunning "real-world" coverage maps, interference studies, and population reports with Probe 4™
- Find STL broadcast auxiliary and Part 101 microwave frequencies and generate PCN letters with Microwave Pro™
- AM Pro 2™, used daily by FCC engineers, performs skywave and groundwave allocation studies and AM coverage mapping.
- Map FM stations and discover upgrade possibilities using FCC minimum separations and contour-to-contour methods with FMCommander™



www.V-Soft.com

(800) 743-3684

ACOUSTICS

Acoustics First
-SOUND AND NOISE CONTROL MATERIALS-
Toll-Free Number: **888-765-2900**
www.AcousticsFirst.com

AUDIO PROCESSING (INCLUDES ON-AIR)

WANT TO BUY

Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST - 214 738-7873 or sixtiesradio@yahoo.com.

ANTENNAS/TOWERS/CABLES

AM LOOPS

FOR EAS RECEIVERS
FEMA RECOMMENDED

www.PixelSatRadio.com
(303) 526 1965

WANT TO SELL

300' 1-5/8" foam coax, \$600.
432-559-1738.

AUTOMATION EQUIPMENT

WANT TO SELL

It's free and it has been expanded. The only cost is to keep us informed as to how the system is performing and let us know how you are using it. DIY-DJ, is a Linux based radio automation system and now sports a record scheduler (DIY-DJ-RECORDER) which allows you to schedule the

DISTRIBUTOR DIRECTORY

The following distributors serving the broadcast industry would be glad to help you with any of your requirements.

CORNELL-DUBILIER
MICA CAPACITORS

FROM STOCK

JENNINGS VACUUM
CAPACITORS

FROM STOCK

HIGH ENERGY CERAMIC
CAPACITORS

SURCOM ASSOCIATES

5674 El Camino Real, Suite K
Carlsbad, California 92008
(760) 438-4420 Fax: (760) 438-4759
e-mail link@surcom.com web www.surcom.com

CONSULTANTS

OWL ENGINEERING, INC.
Consulting Communications Engineers
5844 Hamline Ave. N., Shoreview, MN 55126
651-784-7445

- AM/FM/NCE Applications
- Allocation and Upgrade Studies
- Pre-Purchase Inspections
- ANSI and NRSC Measurements
- AM Directional Array, Design, Tuning and Proof using Method of Moments
- Tower Detuning
- Intermodulation Studies
- Radiation Hazard Evaluation and Measurements

Fax (651) 784-7541 E-mail: info@owleng.com "Member AFCCE"

GRAHAM BROCK, INC.
BROADCAST TECHNICAL CONSULTANTS
Full Service From Allocation to Operation AM/FM
Field Work, Antenna and Facilities Design
Over 45 years engineering and consulting experience
912-638-8028
202-393-5133
www.grahambrock.com

EVANS ENGINEERING SOLUTIONS
Full-Service Broadcast Engineers
Transmitter Upgrade or Relocation
FM Translators
STL/TSL/RPU Licensing
Coverage Studies
(262) 518-0002
evansengsol@gmail.com
Over 35 Years Experience - Member AFCCE

recording of a network or any other program for replay later as well as a basic logging system. Beside these additions the system schedules music, does voice tracking (ALWAYS hit the vocal), create a shell, live assist, exact time events, join satellite feeds, automated temperature announce, do unattended remote events and more. Call (406) 679-0527 or email krwvs@digitaldevelopment.net for a copy today.

WANT TO SELL

Radio broadcasts of Major League Baseball, NFL, and some college football games that are on cassette tapes, approx 100 to 125 games, time period of entire collection os from the 1950's - 1970's, BO. Must purchase entire collection. Contact Ron, 925-284-5428 or ronwtamm@yahoo.com

1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KQWB, KSF, KOFY, KCBS, KQW, KRE, KTIM, KYA, etc, I will pay for copies... Feel free to call me at 925-284-5428 or you can email me at ronwtamm@yahoo.com.

WANT TO BUY

Collector wants to buy: old vintage pro gears, compressor/limiter, microphone, mixing consoles, amplifiers, mic preamps, speakers, turntables, EQ working or not, working transformers (UTC Western Electric), Fairchild, Western Electric, Langevin, RCA, Gates, Urei, Altec, Pultec, Collins. Cash - pick up 773-339-9035 or ilg821@aol.com.

Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSFO Radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

MICROPHONES/ HEADPHONES/ SPEAKERS/AMPS

WANT TO SELL

1934 RCA 77A double ribbon microphone, originally used by Arthur Godfrey at WFBR Baltimore. 100% perfect condition. Contact Bill Cook, 719-684-6010.

WANT TO BUY

RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 214 738-7873 or sixtiesradio@yahoo.com.

MISCELLANEOUS

ROTRON BLOWERS AND PLATE BLOCKERS, new & rebuilt for Elcom, Harris, CCA, CSI, McMartin. Goodrich Ent. 11435 Manderson St. Omaha, NE 68164 402-493-1886 Email: CGoodrich@tconl.com

2" plastic "spot" reels 6.5 or 8" diameter, as used for quad video. Wayne, Audio Village, 760-320-0728 or audiovlg@gte.net.

Equipment Wanted: obsolete, or out of service broadcast and recording gear, amplifiers, processing, radio or mixing consoles, microphones, etc. Large lots preferred. Pickup or shipping can be discussed. 443-854-0725 or ajkivi@gmail.com.

I'm looking for San Francisco radio recordings from the

Looking for KFRC signoff radio broadcast from 1930 Andy Potter, running time is 0:22 & also the KLX kitchen the program guest is Susanne Caygill, a discussion of women's affairs with a long promotion for Caygill's appearance at a local store. Anne Truax, Susanne Caygill, running time is 13:44. Ron, 925-284-5428 or email ronwtamm@yahoo.com.

Looking for KTIM FM radio shows from 1981-1984 if possible unscoped. R Tamm, 925-284-5428 or ronwtamm@yahoo.com.

Buying used equipment?
Selling used equipment?

YOU'RE IN THE RIGHT PLACE!

Call
212-378-0400
ext. 523

RECEIVERS/ TRANSCIEVERS

WANT TO SELL

Free sample SCA decoder.
417-881-1846.

RECORDING & PLAYBACK HARDWARE

WANT TO BUY

Large or small collections of 16" transcriptions or 12" transcriptions, not commercial LPs. Bill Cook, 719-684-6010.

Schnader telescriptions 16 mm musical films produced in the early 50 s. Bill Cook, 719-684-6010.

Standard Short-tune series.
Bill Cook, 719-684-6010.

STATIONS

WANT TO SELL

Wilmington, NC 1 kW AM on FM Translator. \$130,000 with owner financing. 954-292-0537.

TAX DEDUCTIBLE EQUIPMENT

Donations Needed: All Volunteer, Non-profit Low Power community radios stations need Equipment. Will offer tax deduction letter, You determine donation value, We will pay shipping. Equipment shared between three Wisconsin stations. Looking for Mics, Mixers, field equipment, etc. You name it. Email: Dan@WIECradio.org.

Reach Radio Professionals!

For more information, including rates & deadlines, call Michele at 212-378-0400 x523.

Advertise today!





Rebuilt Power Tubes 1/2 the cost of New!

Se Habla Español

ECONCO

Se Habla Español

Tel: 800-532-6626 Web: www.econco.com
 Intl +1-530-662-7553 Fax: +1-530-666-7760



TRANSMITTERS/EXCITERS/TRANSLATORS

TUBES

TRANSCOM CORPORATION

Serving the Broadcast Industry Since 1978
 Transmitters and Broadcast Equipment for Radio & Television

Used FM Transmitters

100 W	2008	BE FM100C
500 W	2000	BE FM 500C
3.5 KW	2000	Harris Z3.5CD, solid-state
5 KW	1995	Harris HT5CD
5 KW	1999	Harris Z5CD, solid-state
5 KW	2006	Harris Z5, solid-state, unused
7.5 KW	2002	Harris Z7.5CD, solid-state, S PH
10 KW	1988	BE FM10A
20 KW	1989	BE FM20B
25 KW	2008	Continental 816HD w/Flexstar/Exporter
27.5 KW	1994	Continental 816R-4B, SS IPA
30 KW	1988	Harris FM30K
35 KW	1990	BE FM35B

Used AM Transmitters

Please see our website or contact us for current listing

Exciters & Miscellaneous Equipment

BE FC30, SCA Generator
 Bird Model 8936, 10 kW air-cooled RF Load
 Harris N + 1 Controller
 Harris THE-1, FM exciter
 Marti ME 40, FM exciter
 MCI 4 Port 1-5/8" Coaxial Switch
 Sola Constant Voltage Transformer #23-23-230-8

Please visit our website
www.fmamtv.com, for additional listings.



HARRIS nautel

CROWN BROADCAST

TV Transmitters- Analog and Digital
 Used FLO TV Transmitters** Axcera
 Rohde & Schwarz Harris Maxiva

New TV Transmitters- Analog and Digital
 OMB, Rohde & Schwarz and Technoligix
 VHF and UHF TV Antennas
 (10 W to 10 KW) TV STL

800 441 8454 • 215 938-7304 • FAX +1 215-938-7361

www.fmamtv.com • E-mail: transcom@fmamtv.com

RETUNING & TESTING AVAILABLE • CALL US FOR A QUOTE!

AM Ground Systems Co

Complete AM Ground System
 Construction,
 Evaluation and Repair Services
 Fast, Efficient Full Site Construction
 Services

www.amgroundsystems.com
 866-22RADIO

WANT TO SELL
 5KW Collins/ITA FM transmitter, \$2000. 432-559-1738.

RF PARTS™ CO.

Se Habla Español We Export

EIMAC • TAYLOR • SVETLANA
 New & Rebuilt Tubes - Same Day Shipping
 Motorola • Toshiba • SGS • Thomson & Mitsubishi Semiconductors
 800-737-2787 760-744-0700
rpf@rfparts.com www.rfparts.com

SPACE IS
 AVAILABLE!

FOR THE BEST PRICE
 & 24 Hr service on transmitting tubes &
 sockets/parts, new & rebuilt call Goodrich
 Ent. at 402-493-1886 day or night,
www.goodrichenterprises.com.

Without advertising
 a terrible thing happens...

NOTHING...

For information contact
 Michele at 212-378-0400 ext. 523
 or minderrieden@nbmedia.com



ISO 9001 Certified
 The Choice of Successful
 Broadcasters Since 1934

NEW POWER TUBES

Triodes
 Tetrodes
 Pentodes

NEW SOCKETS &
 REPLACEMENT PARTS

Worldwide Availability

Made in U.S.A.

CALL 800-414-8823
 Int'l (650) 846-2800
 Fax (650) 846-3795

Visit our Web Site at
www.eimac.com



Broadcast
 Equipment
 Exchange

For more
 information, ask
 Michele at 212-378-0400 x523
 or minderrieden@nbmedia.com

RADIOWORLD

EMPLOYMENT

POSITIONS WANTED

Are you a small market station needing a good nuts & bolts engineer in the Los Angeles area? I will make your station shine! CET, fully FCC Licensed. Available for Full/Part-time/Contract work. Available immediately. Mitchell Rakoff, 909-446-6820, mitchellrakoff@yahoo.com.

Experienced radio station manager seeks new management opportunity. More than 39 years experience in radio. Willing to relocate. Family-friendly format(s) preferred. Send details about your management opening to: radiogm@hotmail.com.

Extremely knowledgeable and articulate racing writer/talk show host Adam Amick is available for shows, correspondent, features, etc. Check out www.bleacherreport.com for samples. Call 214-384-5812 or email: adam@rubbinsracingshow.com.

As a graduate dedicated to achieving success, I am seeking positions for announcer, copywriter, AE, & MD. Being listener focused, I give 100% in the field of Broadcast Journalism. Jamie, 405-532-6506 or reed11171986@gmail.com.

Broadcasting graduate seeking a position as a voice over personality or DJ for a R&R or AC station. Very strong voice & great personality for on-air. Hard worker! Herbert, 405-819-5665 or Herb_Man1974@yahoo.com.

Passion for sports/broadcasting. Vast knowledge/appreciation of sports, athletes, and what it takes to stay in the game! Strong Utility Player. Tyler, 817-219-4799 or tylermckenzie63@yahoo.com.

Good guy and broadcaster. Strong digital/music/news skills. Energetic, quick, doesn't mind getting hands dirty, dusts off and keeps moving forward. James, 215-200-4267 or absjames0498@yahoo.com.

Strong communication and prep skills. Engaging, thought provoking, perceptive, patient, and punctual. Great personality and public speaking. Good understanding of programming/music. Paul, 404-437-8413 or paularthur@yahoo.com.

READER'S FORUM

NOT THE PROBLEM

I agree about our dress and actions dictating the type of work one does ("Five Questions: Cris Alexander," *radioworld.com*, July 21).

Education opportunities are seen as social events for engineers who ask for reimbursement.

Engineers are seen as creating work, rather than fixing problems.

This has hindered the progress of EAS and ABIP programs that broadcast associations have worked so hard to maintain.

The engineer who is so often the bearer of bad news is equated to being the source of those problems, rather than the obsolete physical and digital infrastructure at the station. This often cannot be solved with a trade out.

Allan Johnson
Al's First Call Communications
Wausaw, Wis.

INTEREST IN OVER-THE-AIR

It is my opinion that the FCC, in concert with the FTC, should mandate that, as a matter of national security, all automobiles sold in the USA must have an analog AM tuner — it is the last gasp of service in extreme emergencies ("NAB Asks BMW to Rethink Leaving Out AM for i3," *radioworld.com*, Aug. 13, 2014).

If they don't have an AM radio, then they should be mandated to provide a NOAA Weather Radio with standby that would interrupt when the EAS tones sound. I think of WWL running their AM station on 25 kW day and night as an outreach to the not only New Orleans, but the entire southeast USA.

The FCC has failed us by not giving 12 MHz of bandwidth for a new AM band when they want 150 MHz for the cellphone industry. The chairman's days as a lobbyist nullifies his interest in over-the-air broadcasters.

John Pavlica
Engineer
Toledo, Ohio



Interior of BMW's i3

NOT A GREAT DAY FOR AM RADIO

The following comments are responding to Paul McLane's *radioworld.com* blog, posted Aug. 13, 2014:

BMW's decision to drop AM from their OEM radio has more to do with harmonizing their radio offerings with other markets. The i3 is projected to sell much better in Europe, where its low carbon footprint and high gas mileage is more in demand. European broadcasting is very FM-centric due to the higher population densities and it is uncommon to find AM in European OEM radios. It is rather sad and out of touch for the NAB to hassle BMW to add AM to its radios.

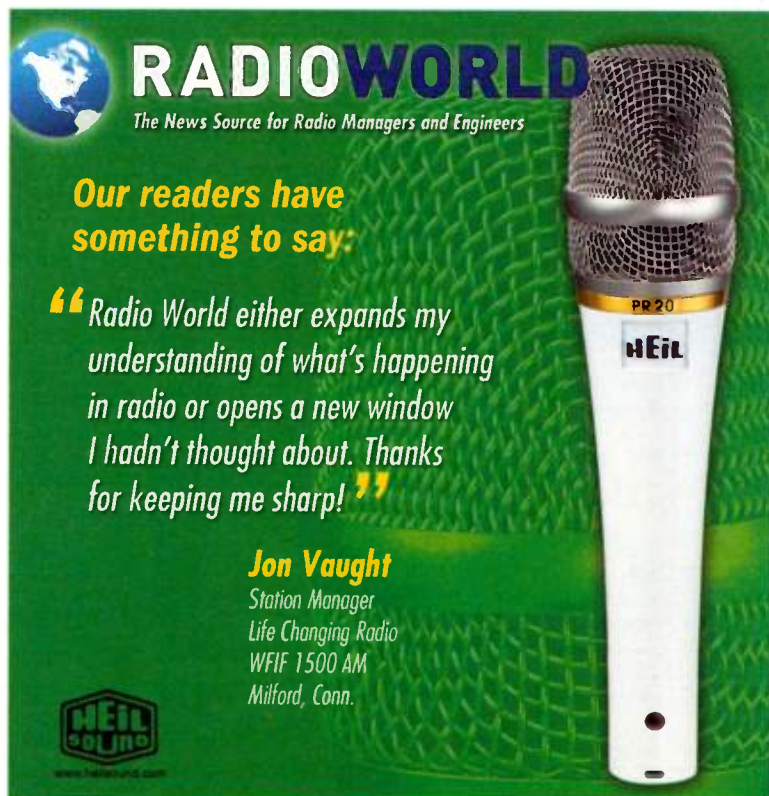
Steve Webster
Eugene, Ore.

I am not alone when I say that content still trumps method of delivery. Interesting, timely, compelling programming that is highly relatable will win even if it comes over the CB. Who's doing it these days? We know their call signs: WJR, KMOX, WLW and a handful of others. Figure out the programming stagnation problem and you will solve not only AM's woes, but those of an entire industry going forward.

Chris Roberts
Owner
First Family Broadcasting Inc.
WERT(AM)/WKSD(FM)
Van Wert, Ohio

I think the fact that Catholic radio has been buying stand-alone AM stations in major markets for bargain prices speaks for itself.

Fred Krock
Retired Engineering Supervisor
KQED(FM)
San Francisco



RADIOWORLD
The News Source for Radio Managers and Engineers

Our readers have something to say:

"Radio World either expands my understanding of what's happening in radio or opens a new window I hadn't thought about. Thanks for keeping me sharp!"

Jon Vaught
Station Manager
Life Changing Radio
WFIF 1500 AM
Milford, Conn.

ADVERTISER INDEX

This listing is provided for the convenience of our readers. Radio World assumes no liability for inaccuracy.

PAGE	ADVERTISER	WEB SITE/URL
10	Acoustics First Corp	www.acousticsfirst.com
25	AES	www.aes.org
15	Arrakis Systems Inc.	www.arrakis-systems.com
27	Besco Internacional	www.besco-int.com
21	BSI	www.bsiusa.com
7	Comrex Corporation	www.comrex.com
5	DaySequerra/ATI	www.daysequerra.com
30	Heil Sound, Ltd.	www.heilsound.com
11	Inovonics Inc	www.inovonicsbroadcast.com
13	Lawo	www.lawo.de
18	Lightner Electronics	www.lightnerelectronics.com
6, 14	Nautel Ltd.	www.nautel.com
1	Radio Systems Inc	www.radiosystems.com
31	RCS	www.rcsworks.com
19	SCMS	www.scmsinc.com
27	Stormin Protection Products	www.opticsshield.com
9	Tieline Technology	www.tieline.com
2, 16-17, 32	Wheatstone Corporation	www.wheatstone.com
27	Whisper Room, Inc.	www.whisperroom.com



**THE WORLD'S LARGEST
BROADCAST SOFTWARE COMPANY**

Zetta2GO®

PLAYOUT MANAGEMENT ANYWHERE®

rcsworks.com

© Copyright 2014 RCS. Todos los Derechos Reservados. RCS Sound Software y sus productos y sus nombres y logotipos son marcas registradas de RCS.

World Radio History

RADIO TODAY (AND EVERY TOMORROW)

Wheatstone
BROADCAST AUDIO PERFECTIONISTS™

-60 -56 -52 -48 -44 -40 -36 -32

DBF

Wheatstone

