AUTOMATION BUYER'S GUIDE — Page 18

ENCO
Radio Show Booth 133 ENCO.com

ADVERTISEMENT

RADIOWORLD

SEPTEMBER 25, 2019 | The News Source for Radio Managers and Engineers | $5.00 | RADIOWORLD.COM

INSIDE

HISTORY

Photo by Rachel Matney

• An explosion destroys the birthplace of HD Radio. — **Page 3**

TECH TIPS

• Build an EAS receive loop antenna. — **Page 10**

ALERTING

Getty Images/kgtoh

• Jamila Flomo calls multilingual emergency broadcasting a moral imperative. — **Page 30**

World Radio Day Organizers Raise Profile

The 13th of February is a big day for them; they hope American radio will get excited too

"Since its origins, radio has been shown to be the most useful medium of social communication for humanity."

So states the home page of World Radio Day, celebrated in February of each year. An offshoot, the Academy of Radio Arts & Sciences of America, seeks to raise awareness of World Radio Day in the United States.

Radio World asked Jorge Álvarez, president of the Spanish Academy of Radio, about the effort.

Radio World: *What is the history of World Radio Day and why was it created?*

Jorge Álvarez: It began when I realized that the United Nations had established World Television Day and World Press Freedom Day, but that there was not a World Radio Day.

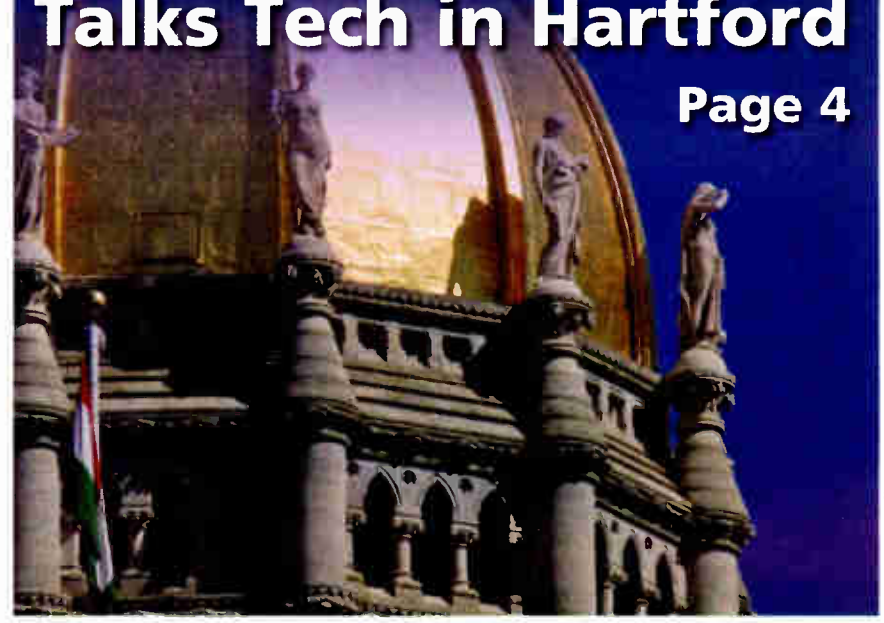
I sent a letter to the director general of UNESCO, Kōichirōō Matsuura, in January 2008, requesting the establishment of World Radio Day. The response from UNESCO was positive, indicating that the government of Spain would have to make the formal proposal.

So the Spanish Academy of Radio collaborated with the Permanent Delegation of Spain to UNESCO, for three years, to prepare a proposal to

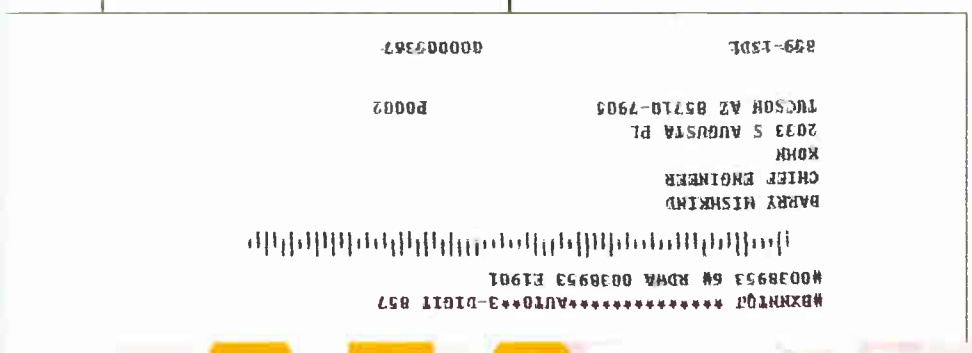
(continued on page 8)

IEEE BTS Symposium Talks Tech in Hartford

Page 4



Getty Images/Rusty Clark



Listening, watching, reacting, learning...

The **Bionic Studio** is here.

Discover it for yourself at **bionic.radio**

Broadcast Bionics

World Radio History

THE FUTURE CAN BRING ANYTHING
LXE IS READY FOR EVERYTHING

Virtually every button, knob, and display is configurable to your workflow at any time. Built to last in every way. Whether it's 2020, 2040, or 2080, your LXE will adapt to your needs.

LXE: YOUR FOREVER CONSOLE

wheatstone.com/lxe-forever-rw

Wheatstone
BROADCAST AUDIO PERFECTIONISTS®

1.252.638-7000 | wheatstone.com | sales@wheatstone.com

World Radio History

RADIOWORLD

Vol. 43 No. 24 September 25, 2019

www.radioworld.com

FOLLOW US
www.twitter.com/radioworld_news
www.facebook.com/RadioWorldMagazine

CONTENT
Managing Director, Content Paul J. McLane, *paul.mclane@futurenet.com*, 845-414-6105
Senior Content Producer — Technology Brett Moss, *brett.moss@futurenet.com*
Content Manager Emily M. Reigart, *emily.reigart@futurenet.com*
Technical Advisors Thomas R. McGinley, Doug Irwin
Technical Editor, RWEE W.C. "Cris" Alexander
Content Director — International Marguerite Clark
Contributors: Susan Ashworth, Dave Beasing, John Bisset, James Careless, Ken Deutsch, Mark Durenberger, Charles Fitch, Travis Gilmour, Donna Halper, Craig Johnston, Alan Jurison, Paul Kaminski, John Kean, Peter King, Larry Langford, Mark Lapidus, Jim Peck, Mark Persons, Stephen M. Poole, James O'Neal, Rich Rarey, Jeremy Ruck, John Schneider, Randy Stine, Tom Vernon, Jennifer Waits, Chris Wygal
Production Manager Nicole Schilling
Managing Design Director Nicole Cobban
Senior Design Director Karen Lee

ADVERTISING SALES
Senior Business Director & Publisher, Radio World
John Casey, *john.casey@futurenet.com*, 845-678-3839
Publisher, Radio World International
Raffaella Calabrese, *raffaella.calabrese@futurenet.com*, +39-320-891-1938

SUBSCRIBER CUSTOMER SERVICE
To subscribe, change your address, or check on your current account status, go to *www.radioworld.com* and click on Subscribe, email *futureplc@computerfulfillment.com*, call 888-266-5828, or write P.O. Box 282, Lowell, MA 01853.

LICENSING/REPRINTS/PERMISSIONS
Radio World is available for licensing. Contact the Licensing team to discuss partnership opportunities.
Head of Print Licensing Rachel Shaw *licensing@futurenet.com*

MANAGEMENT
Senior Vice President, Content Chris Convey
Group Publisher Carmel King
Vice President, Sales John Bubello
Head of Production US & UK Mark Constance
Head of Design Rodney Dive

FUTURE US, INC.
11 West 42nd Street, 15th Floor, New York, NY 10036

Connectiv The Business Information Association a division of SIIA

All contents ©Future US, Inc. or published under licence. All rights reserved. No part of this magazine may be used, stored, transmitted or reproduced in any way without the prior written permission of the publisher. Future Publishing Limited (company number 02008885) is registered in England and Wales. Registered office: Quay House, The Ambury, Bath BA1 1UA. All information contained in this publication is for information only and is, as far as we are aware, correct at the time of going to press. Future cannot accept any responsibility for errors or inaccuracies in such information. You are advised to contact manufacturers and retailers directly with regard to the price of products/services referred to in this publication. Apps and websites mentioned in this publication are not under our control. We are not responsible for their contents or any other changes or updates to them. This magazine is fully independent and not affiliated in any way with the companies mentioned herein.

If you submit material to us, you warrant that you own the material and/or have the necessary rights/permissions to supply the material and you automatically grant Future and its licensees a licence to publish your submission in whole or in part in any/all issues and/or editions of publications, in any format published worldwide and on associated websites, social media channels and associated products. Any material you submit is sent at your own risk and, although every care is taken, neither Future nor its employees, agents, subcontractors or licensees shall be liable for loss or damage. We assume all unsolicited material is for publication unless otherwise stated, and reserve the right to edit, amend, adapt all submissions.

FUTURE
Connectors. Creators. Experience Makers.

Future plc is a public company quoted on the London Stock Exchange (symbol: FUTR)
www.futureplc.com

Chief executive Zillah Byng-Thorne
Non-executive chairman Richard Huntingford
Chief financial officer Penny Ladkin-Brand

Tel +44 (0)1225 442 244

Photo by Rachel Matney

Maryland Explosion Site Was Birthplace of HD Radio

A gas explosion that left 22 businesses homeless in Columbia, Md., in August also wiped out a little bit of radio technical history.

That office and shopping complex was where HD Radio was invented and commercialized. Technology development company USA Digital Radio was based there in the early days of HD Radio.

"The entire system used today and approved by the FCC was developed there," said Glynn Walden, the veteran broadcast engineer who was a key player in the development of the in-band, on-channel digital radio technology.

"There were about 50 employees there. This was the home of USA Digital Radio during the development of HD Radio which became iBiquity."

Walden's office, other offices and the laboratories were there. The company later moved and subsequently became part of DTS and then Xperi, which today maintains offices in another part of Columbia.

"All of the [IBOC] system that was approved by the FCC was developed in that building," Walden continued. "The only real changes have been the implementation of the multicasting and data, which were part of the original design but were later added through the use of importers and exporters."

The first IBOC test transmissions were performed in the early 1990s. USA Digital Radio's investors included radio broadcast groups seeking a way to deploy digital technologies that could coexist on the parts of the spectrum where their existing AM and FM assets were licensed. The company filed a petition for rulemaking with the FCC in 1998, and the commission began the regulatory approval process the next year.

According to news accounts, the Lakeside Office Building and shopping center, where the August explosion occurred, was home to a nail salon, day spa and an office for the Social Security Administration, among others. Residents at least a mile away reported their houses shaking from the explosion. No injuries were reported but parts of the complex were entirely wiped out.

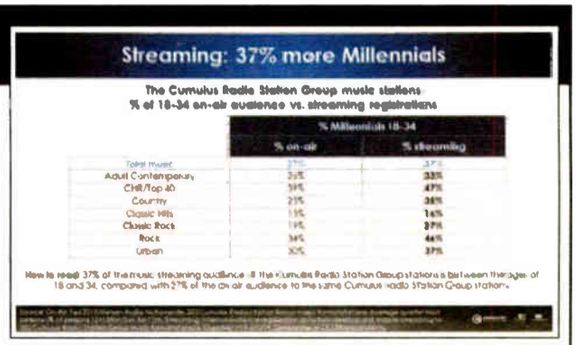
Based on news photos, Walden believes that the second-story office space that USADR/iBiquity had occupied then was near the center of the blast and probably totaled.

NEWSWATCH

STREAMING: Seeking to attract more advertisers to streaming, Cumulus is emphasizing its appeal to women and younger listeners.

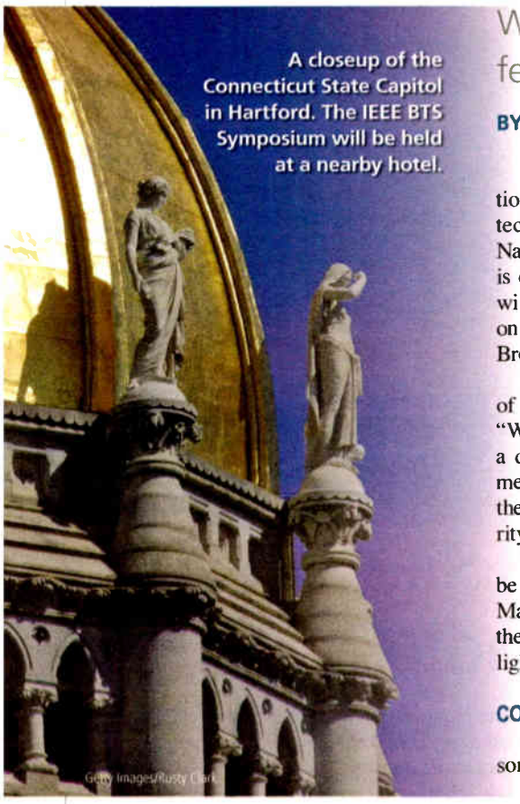
While streaming is a "natural extension" of an AM/FM station's brand, there are distinctions between the profiles, said Doug Hyde, senior director for national and local insights.

Westwood One analyzed data from 88,000 consumers who registered on Cumulus station sites that make up its streaming network. While half of the on-air audience to its music stations is female, a higher percentage, 62%, of the music streaming audience consists of women. Also, the median age of listeners to music streams is 40, five years younger than on-air. The proportion of 25–54s is higher in the music streaming audience; and (perhaps surprisingly) over 80% of the music streaming audience is in the home DMA.



World Radio History

BTS Explores Tech's Role in Content Wars


A closeup of the Connecticut State Capitol in Hartford. The IEEE BTS Symposium will be held at a nearby hotel.

Getty Images/Rusty Clark

What might make a service stand out? What new features make content more exciting to consume?

BY PAUL McLANE

What form will the next generation of broadcast architecture take? A technology committee organized by the National Association of Broadcasters is exploring that question; and its work will be one of the radio-friendly topics on the agenda of the upcoming IEEE Broadcast Symposium.

Highlights of the BTS include a series of talks about emergency alerting; a new "Women in the Industry" breakfast; and a discussion of new protection requirements for Class A AM stations. Further themes include 5G, ATSC 3.0, IT security and regulation.

The annual technical conference will be held over three days at the Hartford Marriott Downtown in Hartford, Conn., at the beginning of October. Below are highlights of interest to Radio World readers.

CONSUMER INTERFACE

On Tuesday Oct. 1, Michelle Munson, co-founder and CEO of Eluvio, will keynote. She founded Aspera and led it as CEO until May 2017, including through its acquisition by IBM. She speaks frequently about content networking, machine learning, block chain and cloud infrastructure.

Michelle Munson keynotes Tuesday's luncheon.

Tuesday afternoon the focus turns to "the consumer interface." Tim Carroll, senior director, sound technology for the office of the CTO at Dolby Laboratories, is among the presenters.

"When first speaking with Peter

BTS IEEE Broadcast Technology Society

IF YOU GO

Where: Hartford Marriott Downtown, Hartford, Conn.

When: Oct. 1–3

Who: Industry professionals and academia seeking to collaborate on current and challenges in the field of broadcasting

How: bts.ieee.org/broadcastsymposium

How Much: $630 for IEEE/BTS members, $750 others; single-day passes and discounts for students, advance registration and Life Members are available

Arcadia

[Arc•a•di•a] (n)

1. mountains in ancient Greece known for peace and contentment
2. a cloud service that consolidates ARC Plus data to NOCs and web browsers

Arcadia Cloud Service from Burk Technology delivers fingertip access from anywhere.
Arcadia is simple, scalable and very secure.
Arcadia promises peace and contentment.

BURK TECHNOLOGY www.burk.com | sales@burk.com | 978-486-0086 x700 arcadia

World Radio History

THIS ISSUE

SEPTEMBER 25, 2019

NEWS
World Radio Day Organizers Raise Profile 1
Maryland Explosion Site Was Birthplace of HD Radio 3
Newswatch 3
BTS Explores Tech's Role in Content Wars 4

Photo by Andrew Skotdal

FEATURES
Construct an EAS Receive Loop Antenna 10
Seeking Enlightenment About Lightning Protection? 14

BUYER'S GUIDE
KHNS Derives Efficiency From ENCO DAD 18
Tech Updates 18, 20, 22, 24, 26, 27
Arrakis Digilink Evolves Through the Years 20
Radio Workflow Provides Dividends to Regional Media 22
WideOrbit App Puts Remotes in Charge 24
Radio Rubi Migrates to AudioPlus 27

OPINION
How Radio Can Usher in the Next Era With Innovation 28
"We Are Accountable as Broadcasters" 30

Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by Future US, Inc., 11 West 42nd Street, 15th Floor, New York, NY 10036-8002. Phone: (703) 852-4600, Fax: (703) 852-4583. Periodicals postage rates are paid at New York, NY and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 282, Lowell, MA 01853.

Symes, the chair of the 'Consumer Interface' sessions, I was thinking this was related to HDMI or Wi-Fi or other such interfaces," Carroll said. "In fact, the focus is on the technology/human interface and will include not just a description of specific technologies but more specifically how these technologies can improve experiences for consumers and what might be required from consumers to enable new features."

For instance Carroll said his own talk about "New Audio Features" will explore technologies like immersive audio and how it can be delivered by Dolby Atmos, accessibility improvements such as dialog enhancement and how consumers will be able to make such features work to their benefit.

"Engineers will get a view of what the consumer side can support and what will be required to enable it upstream in the broadcast facility."

He expressed amazement at how far consumer technology has progressed.

"Devices like sound bars have become smaller and cheaper and yet perform far better than their predecessors. They provide a consistent, compelling experience while requiring very little setup experience to get it right. This results in consumer environments that are higher quality and more predictable than ever before, making it easier for broadcasters to satisfy viewers — and listeners."

Three presentations on Tuesday will focus on emergency warning, with speakers from FEMA, the NAB and Global Security Systems. Shown is a promotional image for Alert FM from GSS.

"RELENTLESS" DISASTERS

Several presentations, also on Tuesday, will explore emergency alerting. Hasn't this subject been covered in great detail already? We asked Matthew Straeb, EVP/CTO of Global Security Systems and Alert FM.

"Last year's relentless season of natural disasters, from hurricanes in Houston, Florida and Puerto Rico, to wildfires in California, has solidified radio broadcasting as the last resort for sending out life-saving information when power, cell and internet fail," he replied.

"The future of broadcasting, to remain relevant and avoid becoming a victim of spectrum grab by FCC and others, will depend on the validity of this outcome and entertainment value. The incredible benefit of sharing essential information with communities, residents, first responders and the rest of the nation using terrestrial radio has become an aid and lifeline."

Reliability issues, Straeb said, can impair the effective delivery for emergency alerts, which are of little value when one's smartphone has no service or a dead battery. "That's where FM broadcasting's ubiquitous and pervasive infrastructure remains valuable." He said he'll describe building blocks of a nationwide network and a path for the consumer electronics industry to integrate emergency alerts into products and make it easily accessible for Americans.

Straeb said the most important challenge facing the U.S. radio industry is the relevance of terrestrial radio listening in the car.

"As Americans move from terrestrial to online listening,

(continued on page 6)

World Radio History

IEEE BTS

(continued from page 5)

how does radio continue to stay top of mind as you cross that divide from terrestrial to online? There is a plethora of content competition. If we lose the terrestrial radio platform or it becomes diluted we are at risk," he said.

"That's why we believe the promotion of the radio platform for emergency alerts is critical. It's one reason we created the NRSC 'Emergency Alerts and Information Working Group,' to assimilate the value proposition of radio for saving lives. As chair, I would invite any interested persons to join."

MORE CAPACITY

Alan Jurison, who by day is senior operations engineer for iHeartMedia, chairs radio sessions offered on Wednesday morning.

"Several of the papers are focusing on next-generation transmission methods for radio," he said.

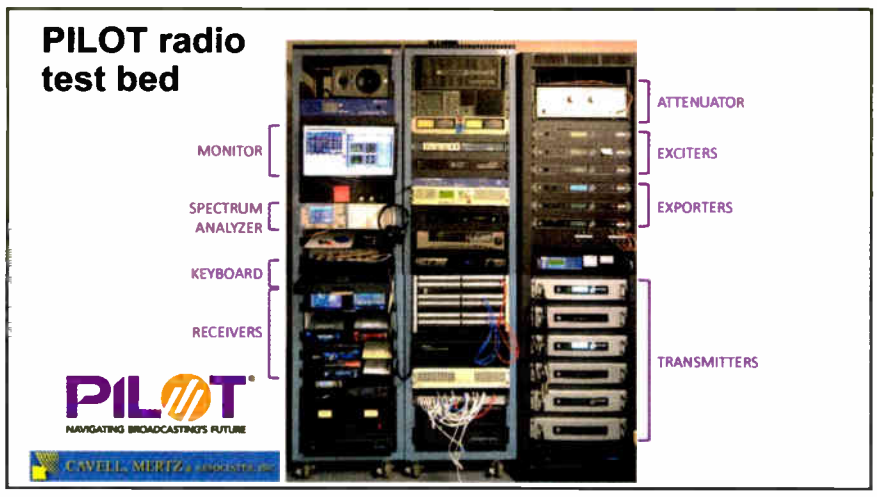
"David Layer of NAB and Harvey Chalmers of Xperi will discuss the lab results of MP11, an exciting new extended hybrid mode enabled by fourth-generation HD Radio transmission hardware. It adds an additional 24 kilobits per second to the hybrid signal, for a total of 144 kbps of transmission capacity. The lab testing of this mode was critical before the industry moves to field trials."

Jurison said that with more broadcasters employing MP3 mode for additional digital capacity and with the MP11 mode showing promising results, a presentation by Philipp Schmid of Nautel is timely. He will delve into peak power reduction for extended IBOC service modes.

Frank Foti of the Telos Alliance will offer "iMPX: Networked FM-Stereo Composite Connectivity," discussing distribution of digital composite, or MPX. "This will be a growing trend over the years, as more functions we've typically relied on in hardware are moved to the cloud," said Jurison.

Also on the docket is "Effective Monitoring and Protection Systems for Multiplexed TV and Radio Facilities" with Paul Shulins of Shulins Consulting and Jim Stenberg of American Tower.

"As we all know, everyone is tasked with more stations and sites than they once had," Jurison said. "Comprehensive monitoring systems are essential to know about problems, hopefully before they exist, so you can be proactive, route around or fix the problem and keep your stations on the air and compliant."



David Layer of NAB and Harvey Chalmers of Xperi will discuss lab results of MP11, a new extended hybrid mode enabled by fourth-generation HD Radio transmission hardware.

NEXT WAVE

Also Wednesday, Roswell "Roz" Clark, senior director of radio engineering at Cox Media Group, will discuss "Next-Generation Architecture for Radio."

"The technology used for radio broadcasting has evolved significantly in recent years," Clark said. "Advancements in content creation, digitization, HD Radio, metadata and display data have all been adopted and implemented into legacy systems. As the next wave of technology looms that includes virtualization and software-based systems, how will the infrastructure and content transport requirements be met to take advantage of these advanced technologies?"

He said the NAB Radio Technology Committee's Next Gen Architecture Working Group is working with manufacturers, Xperi and broadcasters to answer that question.

"The presentation is an update on the ongoing efforts of this team. Engineers who are interested in what the future holds for the radio broadcast industry should find this topic interesting."

Clark noted that radio engineering historically has benefitted from "adjacent" businesses that develop technical solutions that broadcasters then adopt and integrate into their own environment.

"Examples from the past include 66 blocks, data center servers, IP audio over computer networks, and software doing the work that was normally handled by discrete hardware," he said. "What will it take to continue this trend of adoption to include cloud computing and virtualization? What are the requirements? How can products be designed to work together? Can the end result be easier to implement for everyone?"

Clark said that one of the most challenging issues related to the business of broadcast and technology is the human resources needed to take the business into the next generation.

"While technology continues to evolve and become cheaper, better and faster, the people that understand how to take advantage of these advancements and how they can be applied to broadcast are becoming rare. Attending events such as the IEEE-BTS Symposium is one of the ways to accelerate the knowledge needed for the future."

Other talks of interest to radio engineers at BTS include "Real-Time Monitoring of RF System Performance" by Dan Glavin of Dielectric; "New Protection Requirements for Class A AM Stations" with Carl T. Jones; and a look at the 2019 World Radiocommunication Conference from Winston Caldwell of Fox.

BTS features a number of session titles beyond radio. A sampler: "Reputation-based Network Selection in Multimedia IoT," "Group-Oriented Broadcast of Augmented Reality Services over 5G New Radio," "Networking Requirements for ATSC 3.0 Implementation," "Security Provisions in ATSC 3 Studio-to-Transmitter Link Transport Protocol" and "Software Defined Systems — The Future Platform."

On Wednesday, BTS will feature its first "Women in the Industry" breakfast. Featured is Jaclyn Pytlarz, a senior engineer at Dolby Laboratories in Sunnyvale, Calif., where she has worked in Dolby's Applied Vision Science group since 2014.

Keynoting the Wednesday lunch is Mark Schubin, a video tech expert who likes to say that among other career highlights, he hooked up the TV in Eric Clapton's bedroom. Also relevant if perhaps less exciting, Schubin has multiple Emmys and is chairman of the ATSC board of directors.

CONTENT TIDAL WAVE

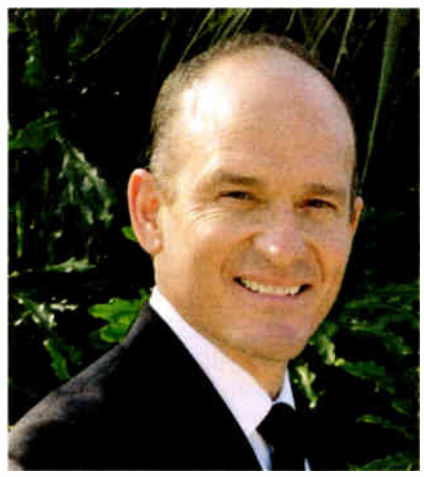
The event's organizers see a clear need for an understanding of the kinds of technical topics explored at their annual event.

Jurison said the industry faces plenty of challenges, "from having long-term digital strategies to retain terrestrial listenership or convert them into streaming listeners, ensuring we keep driving results for our advertisers on both terrestrial and digital platforms."

Tim Carroll echoed Matt Straeb's earlier comment about content competition.

"Consumers have so many choices for the sources of content it is increasingly difficult to provide services that are differentiated," he said. "Quality robbing loudness wars are becoming a thing of the past, so what can make a service stand out and attract and keep listeners? Perhaps new features that make content more exciting to consume can help. Can radio do this?

"I believe the answer is yes," Carroll said. "Audio improvements and new features have thus far been aimed at improving video services but are equally applicable to radio."



"Next Generation Architecture for Radio" is the theme for Roz Clark of Cox Media Group.

Tim Carroll will discuss new audio systems, part of an exploration of the "Consumer Interface."

World Radio History

ACCESS NX

A sleek portable IP audio codec designed with the user in mind

Visit us at Radio Show!
Booth # 105

Unparalleled reliability for remote broadcasts!

Contact Us Today to Learn More

1-800-237-1776 | www.comrex.com

COMREX

World Radio History

RADIO DAY

(continued from page 1)

be presented at the 187th Session of the UNESCO Executive Committee in Paris in September 2011.

Initially, we choose October 30 as World Radio Day as a tribute to the famous radio broadcast of 1938, "The War of the Worlds," which had the support of a large number of radio broadcasting associations of the five continents. However, after an intense debate of the 58 countries represented in the executive board of UNESCO, the date chosen was February 13, the anniversary of the birth of United Nations Radio in 1946.

In November 2011, the General Conference of UNESCO, formed by 96 member states, finally proclaimed February 13 as World Radio Day. In 2012, the 67th General Assembly of the United Nations endorsed this proclamation, thanks to the proposal of the Permanent Mission of Spain to the United Nations, with the collaboration of the Spanish Radio Academy.

***RW:** What role does the academy play?*
Álvarez: The Spanish Academy of Radio was the promoter of the World Radio Day initiative and made a great effort for more than three years collecting support from radio stations around the world and from the different permanent delegations at the UNESCO executive board, to get the vote in favor of the establishment of World Radio Day.

In addition, the academy took the initiative to create the International Committee of World Radio Day, formed by the most important international organizations of broadcasting of the five continents. We're honored that ITU is represented too.

For more information and to download free photos and documents, you can visit *www.academiadelaradio.es/wrd/history.html* and *https://premiosradio-television.com/index.php/2018/01/19/origen/.*

***RW:** And what is the purpose of the World Radio Day Committee?*
Álvarez: Shortly after UNESCO's proclamation of World Radio Day, the Spanish Radio Academy created the World Radio Day Committee, which held its first official meeting on Sept. 11 in Madrid at the International Press Center. One year later, the committee hosted another meeting in Madrid with the participation of UNESCO's General Director of Communication, Janis Karklins. In 2013, the committee along with 16 organizations met in Paris at Radio France Headquarters.

The purpose of this committee is to collaborate with UNESCO every year on the organization of the World Radio Day celebrations, proposing the slogan of celebration and the various activities to be developed. Usually, this committee meets twice a year at the UNESCO headquarters in Paris. I was the first president of this committee; since 2014, the it is coordinated by Giacomo Mazzone, director of institutional relations of the European Broadcasting Union.

Officials gather for a UNESCO World Radio Day meeting in Paris in 2017.

Jorge Álvarez presented the World Radio Day Award to NAB and its President/CEO Gordon Smith in February.

***RW:** Describe the effort to develop awareness of World Radio Day in the United States.*
Álvarez: The academy considers it very important to promote events to celebrate World Radio Day in the United States.

Each year the official WRD website, *worldradioday.org*, incorporates a world map where is possible to record the celebrations and events planned by radio stations and institutions. We realized that the United States recorded few events and so the academy wanted to start a promotion in this country, especially when radio stations in the Spanish language are increasingly important.

In 2018 the Academy awarded the WRD prize to radio station WURN, "Actualidad 1040 AM" in Miami, Florida. The prize is sponsored by international equipment manufacturer AEQ. This was the most important World Radio Day event held in the U.S. that year.

***RW:** You recently presented the World Radio Day Award to the National Association of Broadcasters.*
Álvarez: The NAB was one of the broadcasting organizations that supported the academy in its proposal to UNESCO to establish World Radio Day. In February I visited NAB headquarters in Washington, along with with my communication director Fátima Estramiana, to present the award to Sen. Gordon Smith. The event was attended as well by the ambassador of Spain in Washington, Mr. Santiago Cabanas.

***RW:** What actions would you like American radio organizations to take in the future? What else should we know?*
Álvarez: I would like radio organizations and any radio professional to join the Academy of Radio Arts & Sciences to work closely together in the World Radio Day celebrations in the United States. For more information you can visit the website, *radioacademy.us.*

At this time, the Academy of Radio Arts and Sciences is forming a jury of radio professionals to award the World Radio Day Award 2020 on Feb. 13; the jury is being coordinated by Frank Montero, a prestigious communications attorney based in Washington. Prospective judges are encouraged to apply by emailing *academy@radioacademy.us.*

WORLD RADIO DAY COMMITTEE

The 19 members of the WRD Committee are the Asia-Pacific Broadcasting Union (ABU); Association of European Radios (AER); Asia Pacific Institute for Broadcasting Development (AIBD); World Association of Community Radio Broadcasters (AMARC); Arab States Broadcasting Union (ASBU); African Union of Broadcasting (AUB/UAR); Bangladesh NGOs Network for Radio and Communication (BNNRC); Caribbean Broadcasting Union (CBU); Permanent Conference of Mediterranean Audiovisual Operators (COPEAM); European Broadcasting Union (EBU/UER); Egta; International Association of Broadcasting (IAB); Islamic Broadcasting Union (IBU); International Telecommunication Union (ITU); International Organization of the Francophonie (OIF); Public Media Alliance (PMA); Spanish Radio Academy; United Nations Educational, Scientific and Cultural Organization (UNESCO); International Radio and Television Union (URTI).

World Radio History

ViA
The Remote Codec of Choice...

The ViA now supports 7 IP interfaces:

- Internal module supports 2 SIM cards for Telco diversity (coming soon)
- Supports built-in Wi-Fi (no USB modem required)
- Connect 2 air cards and 2 Ethernet connections
- Rock solid IP connections with primary and redundant streams using SmartStream PLUS.
- Control remotely from anywhere with the new Cloud Codec Controller (sold separately). Watch the video.

https://youtu.be/S1WZ6TacYDI

((ViA))

Wi-Fi
Built-in

Tieline
The Codec Company

317-845-8000 | sales@tieline.com | tieline.com

September 24-26, 2019 - Dallas
radio show
RADIO | STREAMING | PODCASTING
Visit BSW's Booth #102

World Radio History

Construct an EAS Receive Loop Antenna

We love hands-on ideas — like this one from Ken Beckwith

WORKBENCH

by John Bisset

Email Workbench tips to johnpbisset@gmail.com

Ken Beckwith is a field engineer with EMF based in Nebraska. Being a hands-on engineer, Ken has done his share of construction over the years. One of his projects was the construction of an octagonal-shaped AM loop EAS antenna using PVC pipe.

Before you begin this project, check out the completed antenna, shown in Fig. 1. The visual will help you piece all the angled elbows and tees together.

Note that to improve the strength of the loop, Ken added a piece of conduit down its middle.

Construction starts with one tee, to which you attach two 4-inch pieces to the arms of the tee. The 2-1/4-inch piece attaches to the bottom of the tee. The 90-degree elbow attaches to the other end of the 2-1/4-inch piece, but save that step until later.

Two 45-degree elbows attach to the 4-inch pieces so they lay flat. This is so the "tail" of the tee is at 90 degrees, as shown in Fig. 2. The 9-1/2-inch pieces of PVC attach to the elbows next. Then, another set of elbows and another set of 9-1/2-inch pieces.

Continue with a third set of elbows, and the 9-1/2-inch pieces. Attach the 2-1/8-inch pieces to the last elbows. The "tee box" is connected to the 2-1/8-inch pieces, so the bottom of the tee sticks up parallel with the tee at the top of the antenna.

Fig. 1: The completed loop antenna.

Fig. 2: Two elbows attach to the 4-inch pieces so they lay flat. The "tail" of the tee is at 90 degrees.

Fig. 3: The 2-inch piece fits down into the bottom of the tee on the "tee box."

Attach the 23-1/4-inch piece to the 90-degree elbow, mentioned above, and then attach the other end of the elbow to the 2-1/4-inch piece on the top tee. Position it so the bottom end will connect to the remaining tee at the tee box.

Attach the 2-inch piece to the tail of the remaining tee, then connect it to the 23-1/4-inch piece so the 2-inch piece fits down into the bottom of the tee on the tee box, as shown in Fig. 3.

Attach the remaining piece of conduit to the other end of the tee, and attach the end cap to the end of that piece, to complete construction. Assemble the parts without glue, first. Once everything is fitted properly, use PVC cement to make a permanent bond.

After the glue is dry, fish a pull string through the conduit loop. A vacuum cleaner will make the job easier.

(continued on page 12)

YOUR ULTIMATE
SUPPLY & SERVICE SOLUTION
www.LightnerElectronics.com
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

World Radio History

HD Radio

INOVONICS SUPPORTS HD RADIO

LIKE NO OTHER

THE FINEST SELECTION OF FM & HD RADIO PRODUCTS IN THE RADIO BROADCAST INDUSTRY

JUSTIN 808 FM | HD RADIO TIME ALIGNMENT PROCESSOR

100% Automatic to Within +/-1 Sample

Precise time alignment between analog FM and HD1, Dynamic Web interface, SMS/email alarms, Data logging with graphic display.

719 DAVID IV FM | HD RADIO AUDIO PROCESSOR

Sophisticated Sound

Ultra low latency, DSP design; 5 bands of dynamic range compression and "graphic-EQ", 25 factory and 20 customizable presets, Stereo-Gen with RDS metering, easy setup and control.

AARON 655 FM | HD REBROADCAST TRANSLATOR RECEIVER

Combines Multiple Processes in a Single Box

DSP-based FM/HD Radio Receiver, Audio Processor, Dynamic RDS Encoder, and Streaming

639 FM | HD RADIO MONITOR RECEIVER & 638 FM | HD RADIO SITESTREAMER

Compact and Agile

Inomini products provide powerful monitoring in reduced size & cost

INOmini 639
- Professional off-air monitoring
- Analog L/R & AES outputs
- Alarms

INOmini 638
- Remote Monitoring Via Web
- Streaming on-line
- Alarms & Notifications

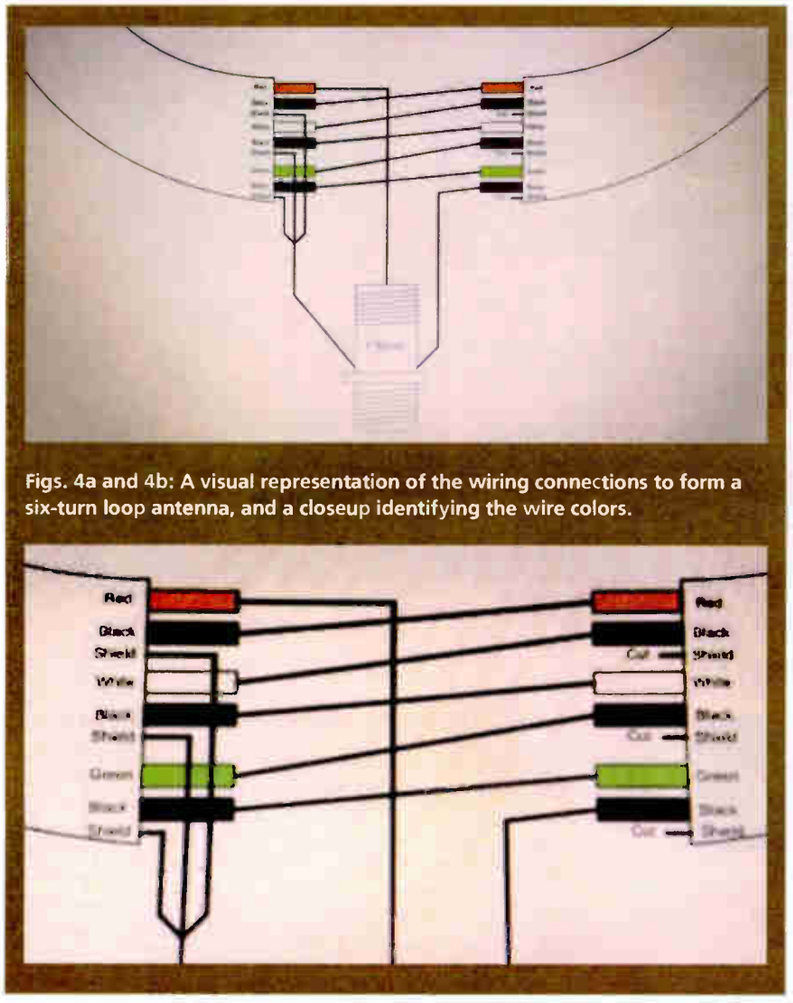
Why Inovonics?

Quality Solutions. Competitive Prices. | Three-year Factory Warranty.
Quick to Install. Easy to Program. | Quality after sales service.

www.inovonicsbroadcast.com | sales@inovonicsbroadcast.com | 831-458-0552

INOVONICS BROADCAST

World Radio History



Figs. 4a and 4b: A visual representation of the wiring connections to form a six-turn loop antenna, and a closeup identifying the wire colors.

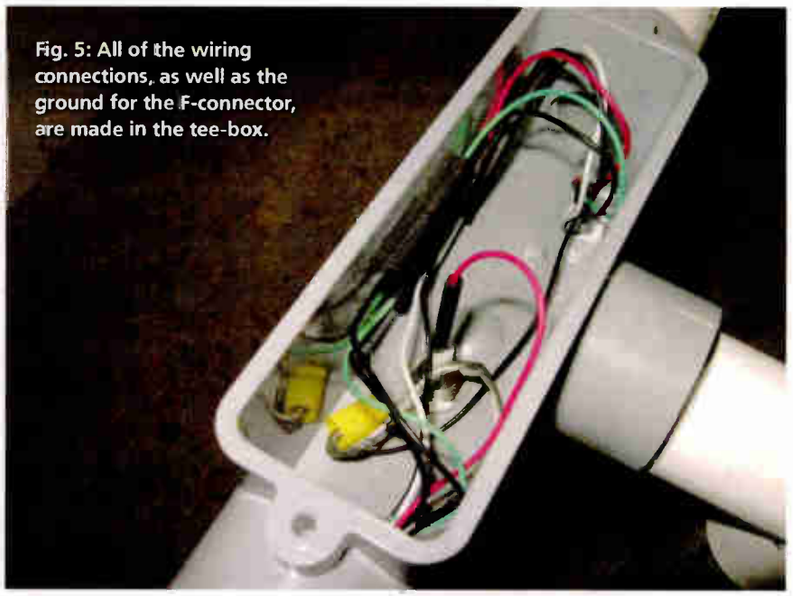


Fig. 5: All of the wiring connections, as well as the ground for the F-connector, are made in the tee-box.

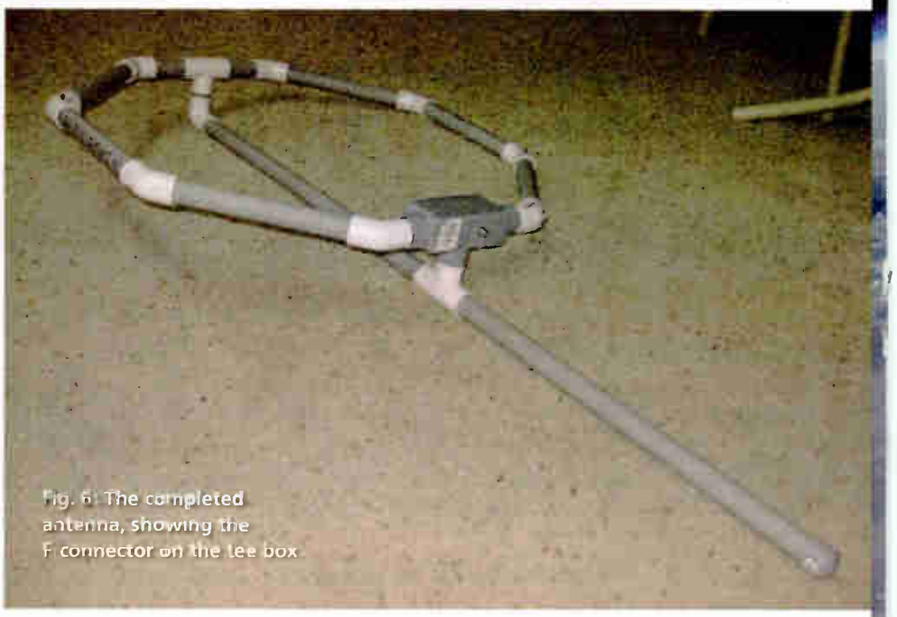


Fig. 6: The completed antenna, showing the F connector on the tee box.

WORKBENCH

(continued from page 10)

Tie the Belden cable to the end of the pull string, and secure with electrical tape. Pull the cable through the pipe.

Strip the jacket off both ends of the cable and unwrap the shielding foil from each of the three pairs, and from both ends. Cut the shield wires off only one end of the cable. Join the ground wires at the other end together. Take the red wire next to the shields and lay it with the shields. It will be connected later. Take the other end of the red wire and connect it to the opposite end of the black wire paired with it. You'll want to solder these connections, and cover them with a short piece of heat shrink or electrical tape. You will be making a six-turn coil using the multi-pair wires.

Now take the other end of that black wire, described above, and connect it to the white wire on the opposite side. The second end of the white wire connects to the black wire of the same pair at the first end. That black wire then connects to the green wire on the opposite side. The second end of the green wire then connects to the opposite end of the black wire it is paired with. The second end of the black wire connects to ground along with all of the shields.

Confusing? Fig. 4 gives you a visual of the connections.

Once the connections are made, connect the shields and the black wire from the opposite side to ground using a 3/8-inch ring connector. That is held in place using the nut securing the F connector barrel to the tee-box housing.

The antenna has a broad coverage angle with a deep null when the antenna is broadside to the signal. Aim the "edge" of the loop toward the AM station you want to receive. The strongest signal will be received when the antenna end or edge is pointing to the signal source. The antenna can be mounted on a mast with U-bolts, hose clamps or whatever else works.

Here's the construction parts list:

A 10-foot length of 3/4-inch diameter, schedule 40 PVC conduit cut into the following lengths:

- 2 – 4-inch
- 1 – 2-inch
- 1 – 2-1/4-inch
- 2 – 2-1/8-inch
- 6 – 9-1/2-inch
- 1 – 23-1/4-inch

Whatever is left over can be discarded, but before making your cuts, cut the flared end off, so all cuts are even.

- 1 – 3/4-inch 90 degree elbow
- 2 – 3/4-inch tee
- 8 – 3/4-inch 45 degree elbows
- 1 – 3/4-inch cap
- 1 – 3/4-inch tee box, plastic, with weatherproof gasket
- 1 – 7-foot piece of Belden 8777 or other three-pair shielded cable
- 3 – 7-foot single-pair shielded cables can substitute for Belden 8777
- PVC primer and cement
- Wire nuts or other connectors
- 1 – 3/8-inch ring terminal
- F connector barrel with nut

Share your tips with other engineers in the pages of Workbench while qualifying for SBE recertification credit. Send your tips and high-resolution photos to johnpbisset@gmail.com.

Author John Bisset has spent 50 years in the broadcasting industry and is still learning. He handles western U.S. radio sales for the Telos Alliance. He holds CPBE certification status with the SBE and is a past recipient of the SBE's Educator of the Year Award.

World Radio History

On your broadcast audio journey, we've been with you every step of the way. From analog to digital to AoIP to your entire networked ecosystem.

Let Us Be Your Trusted Partner

We're not just manufacturers and software developers, we're your partner in standards-based AoIP broadcast solutions and processing built on award-winning technology, trusted by the biggest names in the media landscape.

Audio Is Our Thing

We deliver innovative, intuitive broadcast audio solutions that meet the challenges you face head-on, so that you can spend less time solving problems and more time creating the most exciting and engaging audio experiences imaginable for your audience.

We're Up for Any Challenge

Together, no audio challenge is too big, no technology is beyond reach. And no solution—large or small—is unobtainable. Partner with the Telos Alliance to hear your future.

AOIP CONSOLES	AOIP INTERFACES	IP COMMUNICATIONS	ROUTING CONTROL
AXIA	Omnia	Telos	AXIA
Axia® iQx Surface + Mix Engine in One!	**Omnia® MPX Node** Extending the Power of AoIP from the Studio to the Transmitter	**Telos VX®** The VoIP Phone System That Pays for Itself	**Axia® Pathfinder Core™ PRO** See More. Do More. Control More.

SHAPING THE FUTURE OF BROADCAST AUDIO

THE TELOS ALLIANCE®

©2019 TLS Corp. All Rights Reserved. C19/1/19085

TelosAlliance.com | inquiry@telosalliance.com | +1.216.241.7225

World Radio History

Seeking Enlightenment About Lightning Protection?

We asked Jeff Welton to share best practices in preparing your transmitter site

Jeff Welton, CBRE, is Nautel's central U.S. regional sales manager. He often shares best practices about lightning protection, grounding and other important subjects; he also wrote the chapter on Facility Grounding Practice and Lightning Protection for the 11th edition of the NAB Engineering Handbook.

In light of that work, the Society of Broadcast Engineers recognized him with the 2018 James C. Wulliman Educator of the Year Award, and the Association of Public Radio Engineers recently honored him with the APRE Engineering Achievement Award.

We picked his brain in an emailed Q&A about lightning and radio broadcast engineering.

Radio World: *How effective are "lightning dissipation hats or arrays" installed at the top of towers and promoted by various companies? How do they function?*

Jeff Welton: Well, they're not only installed at the top. Depending on the height of the tower, they may also be installed at various points up the tower as well, or on guy wires. They work by point discharge theory — what I call "intentional corona," in that they will tend to arc as the tower ionizes while a storm approaches.

Some claim they will reduce the chances of a direct strike. I'm not convinced in that area, but I do believe they reduce the arcs that happen as energy builds up without a strike being involved.

I've heard enough anecdotal evidence of reduced off-air time or damage after installing them to believe they can help, but they're certainly not a replacement for a good grounding system.

RW: *How effective are lightning suppression systems connected across the incoming power lines at the main breaker/disconnect box? Some use rather sophisticated electronics, but others use only MOV devices. A few are series connected, while most are just shunt/parallel connected. Which type is better and why — or is it situational?*

Jeff Welton

Welton: At the base level, a simple MOV to ground from each power line, with a fuse in series, is good protection. The series units just involve two legs of these with a series choke between them, and yes, they can be more effective, at a multiple of the price.

More advanced devices, such as silicon avalanche diodes, are also available and will tend to fire faster — I'm sure that may make a difference in some cases — but for the most part, the MOV-based protector is usually quite sufficient.

As to your first question — how effective they are — the best grounding in the world will give a lot less protection without a good quality surge protector installed between that grounding and the incoming AC entrance, both for surges on the incoming AC and for surges on ground as lightning strikes a tower and sends massive amounts of current through ground resistance.

RW: *Ground resistance around a tower base or building is an important factor in designing and implementing an effective grounding system for lightning protection. How is ground resistance best measured?*

Welton: Well, ground resistance is important only in determining the ground's ability to dissipate lightning energy. Ultimately, even the best ground resistance isn't going to be good enough.

NEC specifies a system impedance to ground of 25 ohms or less, 5 ohms for sensitive equipment (Article 250.6). If you have a tower strike carrying 50,000 amps of lightning energy to ground, E=I*R indicates that 5 ohms will result in a quarter million volts of potential damage.

This is why we stress that proper grounding practices, with copper strap are critical. I say strap because it has lower resistance per foot than copper cable and less inductance per foot for any high frequency components of the lightning strike.

Photo by Andrew Skotdal

So yes, to determine compliance with NEC, measuring ground resistance is useful, and there are several meters on the market for measuring this, including our friends at Fluke (model 1621 is the one I'm aware of, although there may be new ones now).

However, for lightning protection, copper in the ground beats earth any day, ideally connected to ground rods reaching the water table. I understand that this isn't always feasible, but the closer you can get, the better your odds.

RW: *Is single point ground reference always the best method to achieve good grounding? Or do you suggest the collector ring method with a number of ground rods connected at various locations around the facility?*

Welton: I'm not sure the two are mutually exclusive.

Ultimately, single point grounding is the absolute best way to control grounding at a facility and to reduce the chance of ground loops, with attendant loss of control over where discharge energy is flowing. However, you could have a set of ground rods at the base of the tower, tied together, with a strap running back to a ground rod at the building and another ground rod at the AC power pole, also connected with strap to the one at the building.

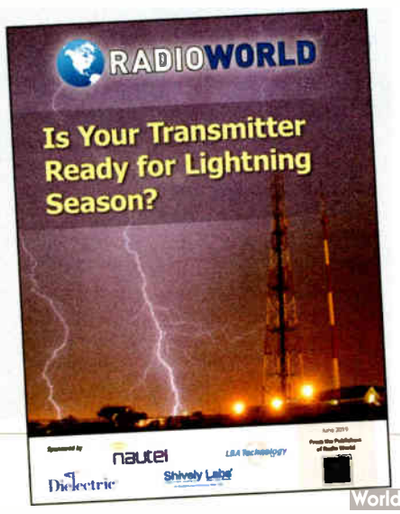
As long as only one lightning safety ground enters the building, you've still accomplished the goal of single point grounding. Obviously, this doesn't include the AC entrance safety ground, which, relatively speaking, is such a high resistance that it doesn't factor into the equation. The same with halo grounds inside the building. A lot of folks love them; I'm of the opinion that they make it too easy to create inadvertent ground loops; but again, as long as we've only got one egress from the building for our lightning ground, the end result doesn't change much.

RW: *Should engineers connect a separate ground reference from the station's equipment to the power company's ground reference? What if your power company doesn't allow or recommend doing that?*

Welton: If your power company resists, refer them to NEC Article 250, which basically says that equipment needs to be connected to the supply source, along with any other conductor that could be carrying a ground fault current. While lightning is not specifically a fault current, from a safety aspect, there's a strong argument that minimizing the resistance from one point to another, thus minimizing the potential that can build up between the two points, is the end goal of Article 250.

RW: *How effective are toroid ring "snubbers" placed around coax, communications and power cables in suppressing lightning energy?*

This article is from Radio World's ebook "Is Your Transmitter Ready for Lightning Season?". We've now published almost 60 ebooks on a wide range of topics that are of interest to the broadcast technologist or manager including AoIP, next-gen codecs, cloud technology, digital radio, RDS, DRM, translators and more. All are free to read. Find recent issues by clicking the ebooks section under the Resource Center tab at *radioworld.com*.



World Radio History

Welton: I'm told I should have a toroid tattooed around my wrist, so my position is pretty clear. Toroids on their own do very little. However, in conjunction with a properly installed surge protector at the AC power entrance and a properly implemented grounding system, toroids add another layer of protection that can raise the effective impedance of the equipment being protected and help to minimize any surge energy that does get to that equipment.

Again, I've got dozens of anecdotal tales of strikes causing repeated damage, which ceased when ferrites were installed. Again, ferrites alone are not a solution — but in addition to grounding and surge protection, they certainly can make a difference.

RW: *Is it possible to prevent lightning that strikes a tower from entering a nearby building with connecting lines into the building? If it is, how can that be accomplished?*

Welton: Prevent? Probably not totally, no. There's still a voltage divider theory in play that indicates that some energy will still make it into the building. However, with proper grounding and surge protection (and ferrites!), that level can usually be reduced to an amount that causes minimal damage, if any.

RW: *Fiber optic cables rather than copper wiring seem to be largely immune as a conduit for lightning energy. But can they or their terminating equipment still be damaged by a lightning strike? If so, what kind of suppression techniques are available for such installations?*

Welton: The cables themselves, I would assume, are quite immune from lightning energy, being glass (an insulator) with a protective jacket. However, their terminating equipment would still have power supply connections, which would be susceptible and should be protected by the standard means (ferrites, surge protector on the facility, etc.).

RW: *Other than installing and maintaining ball arc gaps across the base insulator of AM towers, what are recommended methods to achieve optimal lightning suppression at AM transmitter sites?*

Welton: Obviously, good grounding and protection practices, as outlined already, but in addition to that, there are several things that can be done in the ATU enclosures to help.

First, a static drain choke to ground, to bleed off energy as it builds up while the tower ionizes during an approaching storm. Secondly, a DC blocking capacitor to force that energy to go through the drain choke to ground, rather than down the coax to the equipment.

In addition, there should be a ball gap inside the ATU (this would apply to both base insulated and skirt fed towers where the tower itself is grounded). A ball gap inside the ATU can be set much closer than one at the tower base, without having nuisance trips by raindrops or insects, so it would offer a higher degree of protection.

One other thing related to AM towers is that guy wire insulators should be inspected frequently. Folks complain about transmitters tripping as storms approach or about damage whenever a storm passes by without going directly

(continued on page 16)

Cables tied to ground at a building entrance.

Photo by Mark Persons

World Radio History

LIGHTNING

(continued from page 15)

over the site. Frequently, this is the result of guy wire insulators arcing, which momentarily puts a capacitive load on the transmitter.

Once an insulator arcs, it develops a carbon track that makes it more prone to arc the next time. In some cases, ceramic rod insulators, phillystran or bleeder resistors/discharge devices around the insulators are the solutions, but the problem will typically only get worse until it is resolved.

RW: *Transmitters are more frequently using SNMP and web-based remote control, and IP gear can be a big lightning path. How can this be best mitigated?*

Welton: For IP connections themselves, having a fiber link in the middle will make a difference; glass doesn't conduct, as mentioned above.

On the power supplies, surge protection and ferrites on the AC line to the outlet would help. Most of these devices are fed by wall warts, so it's no good to put ferrite after that, the power supply/wall wart would still fail. That's not going to do anything for the feed coming into the building.

You're at the mercy of your ISP there, so having a backup IP link, whether a P2P wireless bridge or other alternate, is a really good idea.

RW: *Could you explain Ufer grounds?*

Welton: In short, an Ufer ground is a concrete-encased electrode. For example, in a tower pier, rebar used to strengthen the pier could be bonded together to form a Ufer ground. It relies on the natural moisture content and conductivity of concrete to provide a safety ground connection.

From a lightning protection perspective, it's a fairly high resistance — only having to meet the NEC requirement of 25 ohms — so it's of minimal value. However, having the bonded conductors inside the concrete carrying any lightning current, vs. the concrete itself, can help to prevent spalling or failure of the concrete in the event of a lightning strike, so from the aspect of protecting a tower, it's quite beneficial.

A side note: The conductive and moisture retaining properties of concrete are the main reason I like to see our transmitters installed on nonconductive material in a site with concrete floors — whether left on their shipping pallets or installed on a sheet of plywood or other insulator.

We provide carefully controlled single point grounding within the transmitter to the insulated ground lug on the rear (which is internally connected directly to the output connector). By sitting the transmitter on a concrete floor, we've introduced an alternate path to ground that reduces the value of the single point grounding scheme.

RW: *Preparation is obviously crucial, but sometimes Mother Nature will do her best to outsmart you. If the worst happens — the tower is hit and efforts to shield the transmitter failed — what's next?*

Welton: I'm not sure I like the wording of this question, as it infers some sort of intelligence and nefarious intent on the part of nature, which simply isn't true. This is just physics, and while we certainly can't predict how it will behave in all circumstances, the things we can do are quite well documented.

Granted, we're not going to protect against the "mother of all strikes" — when a 200 kA bolt comes out from the blue, so to speak! So, once that happens, the first step (after the storm has passed) is to head out to the site to count the red lights or see what's got smoke coming out.

At that point, it's logical to call your manufacturer's support department and let them walk you through your options. They can help identify what's gone awry, and let you know if the options include module replacement/exchange, or whether you'll need to send something in for repair, or if it's something you can fix on site. Obviously, your decision will be influenced by budget, whether there's a backup available or time off-air, but knowing the options is a great starting point.

Thanks to Tom McGinley, Chris Wygal and Michael Leclair for your assistance in compiling and phrasing these questions. We couldn't do our jobs without you!

World Radio History

ADVANCED PROCESSING: BEHIND THE SCREENS

X5 is the most advanced, finest sounding broadcast audio processor ever designed. It's loaded with inventive technology that dramatically improves your sound AND delivery all while letting you be counted by every PPM out there.

PPMport INSERT LOOP FOR PEOPLE METERS

An insert loop to interface your ratings encoder AFTER the processing delivers a signal with greatly reduced audible artifacts, which ensures you'll be moving all those meters out there.

FM/HD LIVELOCK FM/HD SIGNAL SYNC

Integrated HD and FM analog signal alignment keeps listeners tuned in to your station even during extreme blending conditions. No more "dip and skip" in reception that can cause tune out, affecting TSL.

UP UNIFIED PROCESSING®

Each X5 function in the chain interacts closely with other functions to deliver just the right amount and type of processing needed, creating a sound that's as close to the original as possible.

LIVE LOGGER LIKE THE NSA FOR YOUR X5

Live Logger keeps track of everything happening on your X5. Preset takes? Remote login? Audio failover? Every event is date and time stamped so you can review it.

LIMITLESS CLIPPER INTELLIGENCE KNOWS ITS PLACE

Proprietary high-frequency distortion canceling technology passes the highs, but not the overshoot. No more "spitty" highs or pops from clipping; no IM distortion whatsoever. Takes all the highs you can give it and never gives you back IMD.

MPX SYNCLINK STUDIO-TRANSMITTER LINK

Extends HD/FM alignment from your studio to your transmitter site. Keeps the HD and FM packets in sync so time alignment done at the studio goes straight to the receiver.

BETTER SOUND MORE LISTENERS X5

wheatstone.com/X5-rw

Wheatstone
BROADCAST AUDIO PERFECTIONISTS®

1.252.638-7000 | wheatstone.com | sales@wheatstone.com

World Radio History

KHNS Derives Efficiency From ENCO DAD

Mobile device access and a plethora of features please Alaskan broadcaster

USERREPORT

BY MARLEY HORNER
Program Director
KHNS(FM)

HAINES, ALASKA — As the Voice of the Wilderness, public radio station KHNS(FM) has been broadcasting to the Alaskan Panhandle communities of Haines, Skagway and Klukwan since 1980. Situated near majestic mountains and the Upper Lynn Canal, our listener-supported station is a source of music, news and programming from networks such as NPR, BBC World News and Alaska Public Radio.

Our staff has been downsized from 10 to four full-timers over the years and our budget remains tight — now even tighter with Alaska vetoing public broadcasting funding in June. But we've managed to maintain a highly-efficient and reliable broadcast operation in large part due to our ENCO DAD radio automation system.

Over several generations and system upgrades, DAD has supported our operation in what I would call a flexible, hybrid configuration that lets us to choose when and how our station automates playout. While DAD is programmed to deliver our 24/7 playlist, we are only fully automated overnight and on the weekends. Since DAD continuously plays out our playlist as a background process, it's always there and ready to go should we need it.

Like our turntables and CD players, DAD has its own slider on our control room board. At the start of their shifts, our DJs pot down DAD, do their live shows and then pot DAD back up when they're finished. DAD plays any time there isn't a DJ sitting at the board, running through a daily playlist that has backup programming if a volunteer can't make a regularly hosted show.

This flexible DAD setup allows our DJs to deliver a fresh, original show, playing music from our two turntables and CD players — as well as a DAD mini-array — as they've always done, and more important, preserving our station's unique, regional sound.

While we chose DAD for its comprehensive functionality, we're still discovering valuable features and capabilities. One such recent upgrade is ENconveyor, which automates the download of audio files, such as syndicated shows, from various web or FTP sites on the internet, and delivers them to our DAD media library, with metadata.

DAD's DropBox application, also a recent upgrade, scans a watch folder associated with our own FTP site. When new media files arrive, DropBox retrieves them according to rules-based criteria. Together, these two new features save considerable man-hours and labor.

The ability to access the DAD system remotely from any mobile connected device, is another big time-saver. For instance, for our 1950s big-band retrospective, "Melodies and Memories," our producer can access the DAD system remotely, from a desktop application in her home, to upload the latest show for broadcast on Sundays at noon.

Whenever a problem occurs while I'm off-site, such as satellite network disruption or weather emergencies, I can remotely access DAD using an iPad or smartphone to turn on weather advisories or technical difficulties messages. That flexible remote accessibility eliminates the long drive to the station.

For every KHNS department, including KHNS Local News, DAD is a vital platform underlying all that we do on a daily basis. We find the ENCO DAD system to be reliable, user-friendly, intuitive and for our lean operation, crucial for delivering the on-air product that our listeners rely upon and enjoy.

For information, contact Ken Frommert at ENCO Systems in Michigan at 1-248-827-4440 or visit www.enco.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 **brett.moss@futurenet.com.**

TECHUPDATE

WIN-GROUP OFFERS SCALABLE SOLUTIONS

Win-Group says its WinMedia radio and TV automation software unifies your content chain by managing all aspects of media, from acquisition and production through to distribution, marketing, planning and dissemination.

The company promotes the software as a complete solution that allows users to ingest and produce content for radio, TV, web and mobile in one system.

The WinCam module adds a visual radio system for radio broadcasters including easy-to-use camera management. WinCam allows users to handle eight cameras or inputs and broadcast the results on platforms such as YouTube and Facebook Live.

In addition, Win-Group offers the WinMam integrated newsroom computer system, designed to let users manage library, logger, voice track or playlist functions via internet.

WinSales web-based CRM manages client sales activities. WinSales is a scalable system that the company says provides real-time online booking, custom customer relationship management and a range of planning, management, billing and reporting options.

For information, contact Jesus Vazquez in France at +33-494-102-101 or visit www.winmedia.org.

World Radio History

NEWS DESK IN UNDER 1 SQ FT

With ScreenBuilder™ 2.0, YOU decide what to put behind your glass. Smart virtual tools. Buttons. Faders. Knobs. Meters. Clocks and timers. Salvos. Hardware control and interaction. Complete signal chains. YOU determine exactly how they function and interact via the Intelligent Network with a simple scripting wizard. Adapt as your needs change. Get the idea?

BUILT WITH SCREENBUILDER

wheatstone.com/glass-screenbuilder2-news-rw

Wheatstone
BROADCAST AUDIO PERFECTIONISTS®

1.252.638-7000 | wheatstone.com | sales@wheatstone.com

World Radio History

Arrakis Digilink Evolves Through the Years

Engineer is settled on automation system from analog to digital

USERREPORT

BY CHARLES MICHAEL "MIKE" HURST
Chief Operator/Engineer
WSHC Radio

SHEPHERDSTOWN, W. VA. — In late 2006 or thereabouts I was asked by a colleague to help him select an automation program to recommend to one of his client stations that was looking to automate its talk format. He presented me with literature from Arrakis Systems on the Digilink-Xtreme automation product. After thoroughly reading the literature and going online to investigate further, I was sold on the system.

We then commenced planning the installation and programming of the system. We of course got the satellite package since most satellite delivered programming was already provided with automation cues. I found the instruction manual to be complete and easy to understand. After some experience with the system I found it to be self-intuitive to program. I understand that the system continues to perform flawlessly at that station.

In 2008 I was asked to recommend an automation system to one of my clients and, of course, I recommended the Arrakis Digilink-Xtreme. Again as in the first installation, I was impressed as was the client, especially with the ability not only to automate their talk format but to automate pro baseball, pro and college football and basketball games and the ability to handle baseball rain delays without human assistance.

In 2016, I was asked by the folks at Shepherd University for a recommendation for an automation system to replace the existing system they had at WSHC(FM). I recommended the Arrakis Digilink-HD system because of the newer features included in the software.

The system was quite easy to install, just like Digilink-Xtreme and as easy to program. Fortunately, I was forward thinking and insisted that they order the package that included the Bridge Switcher, a hardware matrix box originally designed to interface with multiple satellite feeds. I figured WHSC should have the ability to place any of their three studios on air if need be. In 2017, they were able to make an arrangement with West Virginia Public Broadcasting to carry much of their programming.

In 2018 Arrakis Systems announced a new automation program called Apex that looked to be cost-effective, and offered more features than Digilink-HD and Xtreme. After talking to the company's Melissa Freeman and Ben Palmer, I recommended to WSHC management that they transition to Apex. I am happy to say that Apex has been all it was supposed to be and more. The transition to Apex occurred in short order one afternoon while we aired programming from the satellite receiver through the studio console.

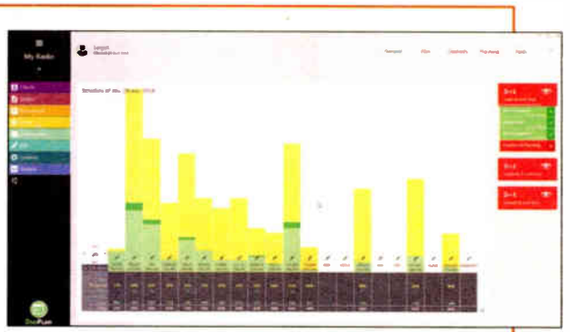
In less than an hour, we were back on the air with Apex software running the show.

Yes, we have had some minor problems arise from time to time. However, we have never been off the air due to an automation problem. When we have had an issue that we couldn't resolve on our own, Arrakis Customer Support came to the rescue. I can't brag enough about Arrakis Customer Support. They have been the nicest people to work with, extremely knowledgeable and in all ways very attentive to customer needs. Hats off to all the employees at Arrakis Systems.

For information, contact Ben Palmer at Arrakis Systems in Colorado at 1-970-461-0730 or visit www.arrakis-systems.com.

TECHUPDATES

OPNS DIGIPLAN FACILITATES TRAFFIC MANAGEMENT



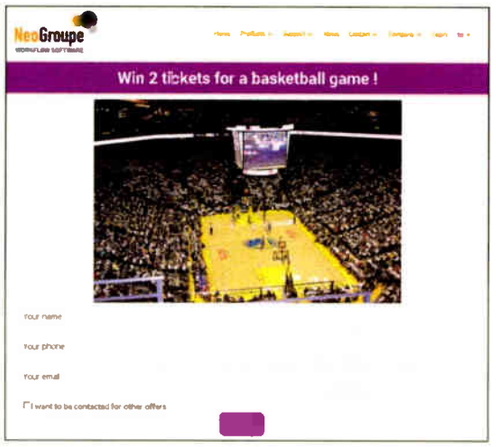
DigiPlan traffic management software from OPNS optimizes planning for radio and TV stations.

The system, which the company says is suitable for small stations and large networks, can manage sophisticated schedules, where commercials breaks can be national, regional or area-specific.

OPNS says DigiPlan matches the station's broadcast constraints, such as coupled or uncoupled break durations. Thanks to its "multipass" engine, it optimizes schedules according to volume of sales for more flexibility than fixed grids. The system manages duration, advertiser competition sectors as well as placement as per the sales package or a station's preferences.

According to OPNS, DigiPlan selects the most listener-appropriate commercial schedule to fit into a global on-air schedule. Users can also customize output to match third-party broadcast automation tools as well as the OPNS multi-transmitter broadcast tool Castlan.

For information, contact OPNS in Belgium at +32-2-542-87-87 or visit www.opns.be.



NEOGROUPE ENRICHES OFFERINGS

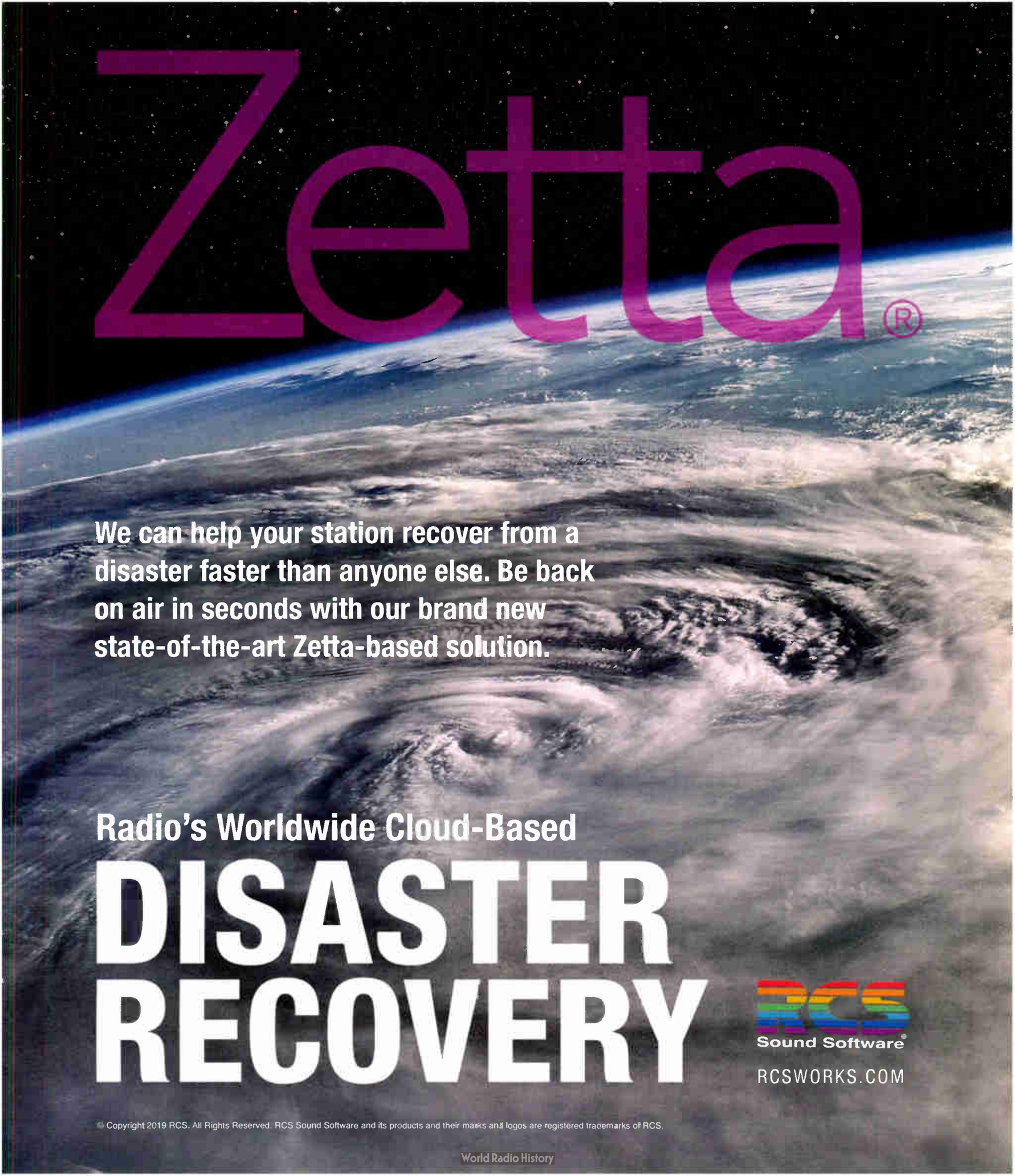
Software developer NeoGroupe has developed new monthly subscription plans for its line of products.

NeoWinners (giveaways and scripts), NeoScreener (talk show calls) and NBS (inventory management) as well as their associated modules and services are now available for a monthly fee per user connection. The company says this means that these professional solutions are now more affordable for smaller entities.

With GDPR/PDPA-compliant additions such as NeoAgent or NeoWinnersPortal, stations can now comply with personal data protection laws by having winners enter their own personal data into the station's database.

For information, contact NeoGroupe in France at +33-9-72-23-62-00 or visit www.neogroupe.com.

World Radio History



Copyright 2019 RCS. All Rights Reserved. RCS Sound Software and its products and their marks and logos are registered trademarks of RCS.

World Radio History

Radio Workflow Provides Dividends to Regional Media

"Keeps our entire team in-sync … with lower probability for human error"

USERREPORT

BY FLETCHER FORD
President/CEO
Regional Media

DAVENPORT, Iowa — Regional Media partnered with Radio Workflow in September 2018. Throughout our first year, we have improved our productivity in sales and budgetary goals, team collaboration and overall success of our 14 radio stations.

We were presented with this new, fast-growing Consumer Relationship Management System, and it was easy to get acquainted with. It is an easy, simple to use system. Through detailed, well-instructed demos and tutorials from Radio Workflow, my team and I were able to learn how the system worked in order to get the most out of its features.

Radio Workflow has a 24-hour support team available to answer our questions and adjust anything in our system to suit our needs. They do a great job ensuring our knowledge of the system and providing different tips on how to optimize our use of it.

Before partnering with Radio Workflow, we used another system for our sales, keeping track of our accounts, production, etc. My team at Regional Media is able to merge our accounts and documents easily with Radio Workflow. We can view a list of all of our accounts and organize them based on seasonal businesses, current clients of ours, along with prospective business. Radio Workflow allows us to keep better track of our progress and set/achieve monthly goals throughout the entire company.

Regional Media works with our clients to ensure they are getting the most out of their advertising with our radio stations; and Radio Workflow gives us the tools to do this efficiently and professionally. Through their digital proposals and contracts, our advertising campaigns are broken down concisely for our clients to review with multiple options, choose what suits them best, convert everything to a contract and sign, all from any web browser on any computer. My team along with our clients enjoy how accessible this cloud-based system is. We have increased our closing ratio, increased our client return and earned more new businesses since partnering with Radio Workflow.

In addition to its customer relationship management elements, Radio Workflow is notable for its production features and traffic merging capabilities. Using Radio Workflow in production removes the possibility for error and allows us to work more efficiently with our production team. We input all of our production orders in one place, including our scripts, any necessary media and additional files, along with instructions for what needs to be included in the production order. Our production team accesses all of this, produces the spot and provides our sales team with finalized projects in Radio Workflow.

We keep better track of the spots we have running, when they will expire, and what still needs to be completed. Radio Workflow keeps our entire team in-sync from production to sales and management with lower probability for human error as everything is at our fingertips through its cloud-based format.

Radio Workflow will soon release their own traffic system and we will integrate that, allowing us access to everything we need under one domain. We look forward to continuing our partnership with them.

For information, contact Robert Maschio at Radio Workflow at 1-855-973-1145 or visit www.radioworkflow.com.

TECHUPDATE

BE AUDIOVAULT ENTERPRISE AUTOMATION TAKES FLIGHT

Sixty years ago, BE became a worldwide provider of tape cartridge machines. Thirty years later, this evolved into one of the first radio automation software products, AudioVault.

Today, AudioVault advances with enterprise capability, redundancy, cloud-based options and integrated scheduling tools. The "Gadgetized" AVFleX user interface is customizable to the individual user level, providing a level of "FleX"ibilty in system design and operation.

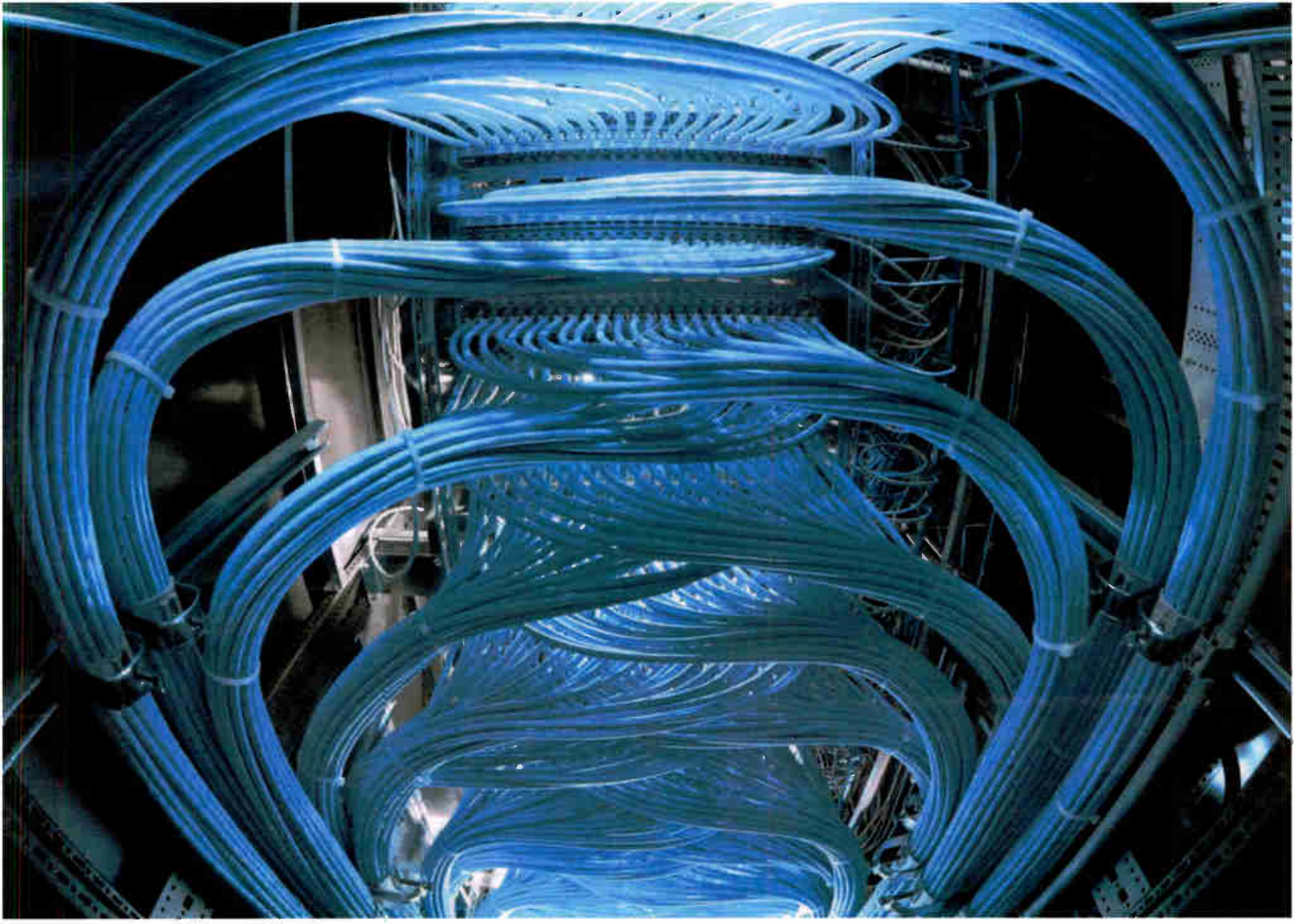
BE also recently announced an AudioVault contract with the Armed Forces Network. The company says that AudioVault has been installed at Armed Forces Network bases worldwide for decades. Over the next four years, BE will be providing the front-end enterprise radio automation system at AFN's broadcast center as well as providing further product implementations to the global operations of AFN.

With the AudioVault Enterprise Radio Automation System, AFN will have complete control of its global radio operations from any location within their network.

"The Defense Media Activity award of the Enterprise Radio Automation System contract to BE does not imply endorsement of BE or its products and services. Product and company names used herein are trademarks or registered trademarks of their respective owners."

For information, contact BE in Illinois at 1-217-224-9600 or visit www.bdcast.com.

World Radio History



Connecting MusicMaster Scheduling to your other systems is really neat...

Thanks to MusicMaster's uniquely open architecture, system integration has never been easier. That's why many of the world's most popular Automation systems have developed a live MusicMaster interface through our Nexus API - and the list is growing! So, how does this benefit your station? You'll be able to add or edit song info in one system and see changes instantly reflected in the other - saving time and reducing error; you can instantly push logs and changes to the studio; allow on-air users to access your MusicMaster intelligence when selecting songs without violating your programming rules; and, see instant log reconciliation to name just a few. Coupled with the ability to push and pull data to station websites, mobile apps, social media, music research systems and other external data sources, the Nexus API from MusicMaster is the way to connect your platforms together. **Learn more at the NAB Radio Show or visit www.musicmaster.com/nexus.**

MusicMaster
SCHEDULING

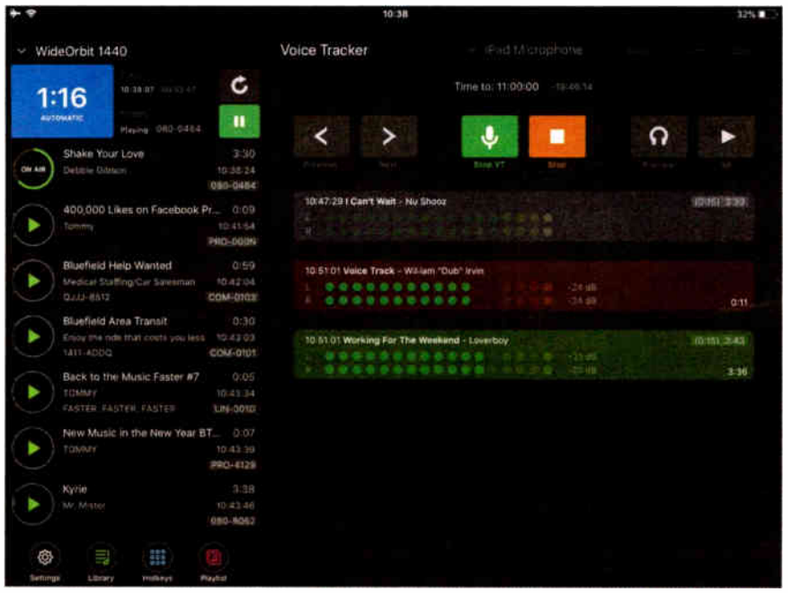
World Radio History

WideOrbit App Puts Remotes in Charge

AFR Mobile app makes remote control simple — even for DJs

USERREPORT

BY TROY WYLIE
Broadcast Specialist
Jim Pattison Broadcast Group



VANCOUVER, BRITISH COLUMBIA — Jim Pattison Broadcasting operates 47 radio stations in four Canadian provinces. Twenty-two of our stations use WideOrbit Automation for Radio Version 4.0. One of the main benefits of WideOrbit V4 is AFR Mobile, an iPhone and iPad app that allows full control of WideOrbit from anywhere.

AFR Mobile gives our users full control of the on-air product, including the ability to start and stop events, play hotkeys, make changes to the playlist and record new audio files. But for most of our users, the voice-tracking function is the most useful.

Like most broadcasters today, our on-air talent is responsible for recording voice tracks for our stations in our other markets. We have found that AFR Mobile is faster and easier to use than other voice-tracking solutions, including WideOrbit's Distant City Voice Tracker. We have purchased 14 iPads for use by our staff to record voice tracks, and we have installed iPad holders in our production studios to hold the iPads. The iPads are integrated with Axia Livewire network for the best audio quality, and connect to our Wi-Fi for connectivity to our LAN. The DJ can quickly connect to the remote station and record all of the voice tracks for their shift.

We also have one remote DJ that records voice tracks from their home studio. We supplied this DJ with an iPad that connects to our infrastructure via our VPN over an LTE cellular network connection. Voice-tracking works great even when used with only a cellular connection.

In addition to voice-tracking, we have used AFR Mobile for remote broadcasts. Earlier this year, during the opening of a new children's hospital, we used AFR Mobile to record drop-ins from the hospital. AFR Mobile uploaded the drop-ins to one of our local stations for broadcast, and WideOrbit's Friendship Server automatically distributed the drop-ins to our other markets for broadcast. This works well but we found that we had to test our audio levels before the broadcast. This was because AFR Mobile does not normalize audio after recording. A useful improvement to AFR Mobile would be the ability to normalize audio after recording.

Now that our users are comfortable with AFR Mobile, we have also used AFR Mobile for five live remote broadcasts without a board operator. The DJ uses hotkeys on AFR Mobile to turn their microphone on and off. In the next month, we plan to adapt this work methodology for a mobile studio for use in remote broadcasts. Our goal is to give the DJ the same experience in the remote studio as in the main studio, with a Tieline audio link, virtual Axia faders, and AFR Mobile.

Installation of AFR Mobile is easy. The app is available as a free download and it connects to our infrastructure via our own VPN, so we have control of who can connect to our system. If one of our AFR Mobile users leaves their job, we can disable their access to our automation system simply by disabling their VPN connection.

We have shared some feedback with WideOrbit about improvements that could be made to AFR Mobile, In addition to normalization, our users have found that the dark colors of AFR Mobile are difficult to see in bright sunlight, so a "bright" mode would be helpful.

For information, contact WideOrbit in California at 1-415-675-6700, Option 2, or visit www.wideorbit.com.

TECHUPDATES

RCS ZETTA USES THE CLOUD

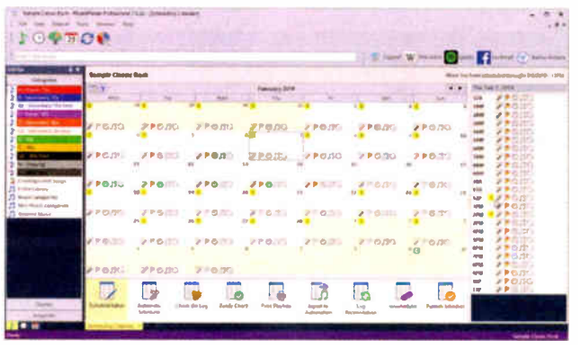
Broadcast software developer RCS says that its Zetta automation platform features a "No Limits" design that allows maximum flexibility without restriction on functionality. Zetta, it says, can be a complete solution with features and possibilities for terrestrial, satellite, digital radio or streaming stations.

The latest example is Zetta Cloud. It automatically uploads a station's content to the cloud, where it is ready at a moment's notice for playback. RCS says this helps stations be more prepared in the case of natural disasters or viruses taking down IT infrastructure. Zetta Cloud is intended as a safety net that gets broadcasters back on-air, efficiently.

Then Zetta's cloud-based Disaster Recovery tools seamlessly back up audio, schedules and metadata; and when the station is ready to return to its normal live output, Zetta Cloud rapidly restores the original data.

The service is offered for a fee of a couple of hundred dollars a month for commercial users. Users retain ownership of the assets even though they're off-premises. RCS adds that this is a global service, available anywhere.

For information, contact RCS in New York at 1-914-428-4600 or visit www.rcsworks.com.



MUSICMASTER UPDATES VERSION 7

MusicMaster says Version 7 of its pro music scheduling software has new workflow and performance enhancements which will make it more efficient.

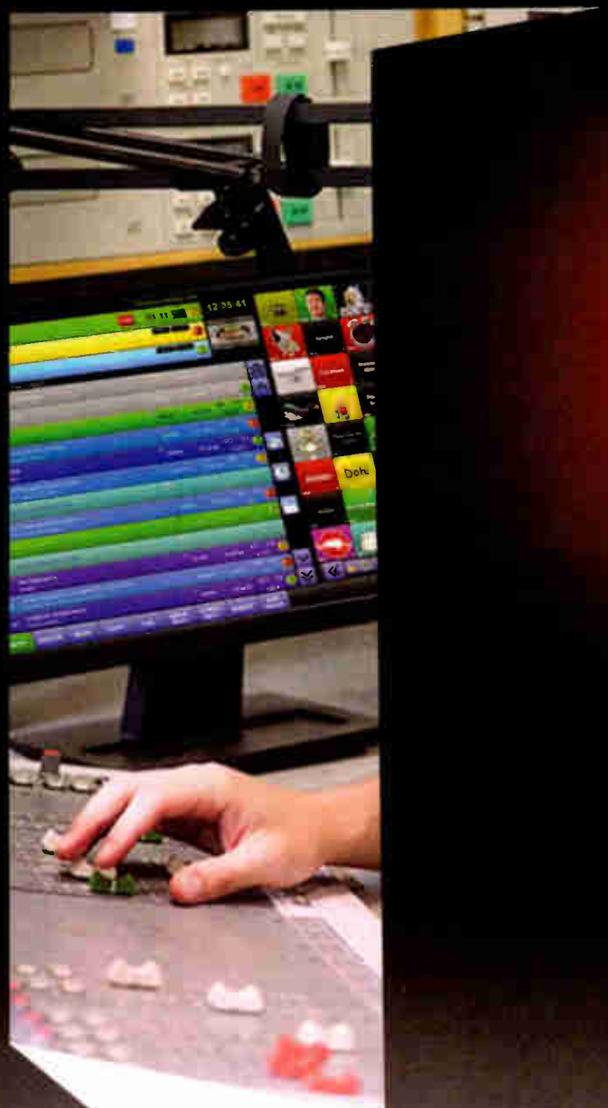
Included are deeper search functionality, new styles and customization options, easy database field creation, an enhanced Scheduling Calendar dashboard, a simplified Live365 connector, new library and clock tools, and more.

MusicMaster's Client-Server, the top-tier option for large broadcasters who wish to manage data and processing in a central location, has new options for setting user and station permissions, importing songs to a station from the Enterprise library, merging duplicate songs, printing reports to Word, PDF or rich text formats and more in the recent Version 2.2 release.

For information, contact MusicMaster in Texas at 1-469-717-0100 or visit www.musicmaster.com.

World Radio History

Open the door to *your* possibilities!



Powerful, state-of the-art automation with the flexibility to grow with you...

- The power of OPX in one stand-alone computer
- Easy to learn
- The power to handle the largest audio libraries
- Satellite and live programming
- Additional stations
- Remote voicetracking
- Remote control

OPX ONE

BSI

Call (888) 274-8721

(888) BSI-USA-1

or email us at sales@bsiusa.com

World Radio History

TECHUPDATES

DJB RADIO IS IN THE ZONE

DJB Radio calls its DJB Zone automation reimagined.

DJB Zone radio automation software offers a user interface on the Play Stack with all relevant information for Live Assist clearly visible.

Each function or "Zone" of the automation system can run in its own resizable window or on dual air studio monitors for total customization, with full access to the DJB OnAir Production Suite. With DJB Zone's Scene Recall, each user can configure their workspace as they like it, then save and recall.

Included with DJB Zone is a music and/or satellite-integrated programming scheduler with multiple-cut carts, and a sports-remote log feature for live or network broadcasts that is functional with an unattended control room. In addition, where programming is delivered by streaming, DJB Zone can log schedule and play out a web stream URL within a daily log or back-to-back URLs with breakaways and rejoins.

DJB Zone has a flexible in-studio voice tracker with adjustable user control over out and in segues; prompts for best voice track record time.

Recording, WAV editing, and multichannel playout can operate on generic computer onboard sound cards, external USB sound cards, AudioScience and Digigram professional cards, along with IP audio drivers for Dante, WheatNet and Axia Livewire.

DJB Zone is scaleable to small-, mid- or large-market radio groups. The software is available with or without computer hardware, although specifications for the system are provided on request. DJB WebStream Logger, Radio Spider and Button Broadcasters are all compatible with DJB Zone systems.

All DJB-II and DJB Radio users are able to upgrade their system databases to DJB Zone. Check with DJB sales for more details.

For information, contact DJB Radio in Nevada at 1-702-487-3336 or visit https://djbradio.com.

BSI OPX ONE UPDATES OPX

BSI's flagship product is OpX One, an automation suite for Windows operating systems.

The latest version uses the same modular suite of programs offered in BSI's longtime standard, OpX. OpX One also uses the same GUI interface of the original OpX; with easy-to-read colorful logs, import/merge traffic merging software, file management via FTP and File Server, the company says.

Handling of serial remote controllers, satellite receivers and many more serial hardware configurations with the Serial Server, and file playback with the OpX Audio server module.

BSI OpX One features Clock Builder software, which simplifies the playback of syndicated satellite programming for configuration of triggering events via time-sensitive cues and audio switching commands.

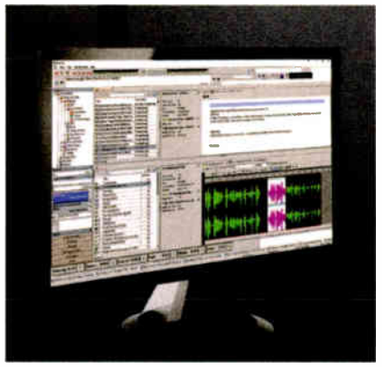
Audio playback is supported via professional AudioScience sound devices or Axia and Wheatstone AoIP drivers. OpX One supports remote operation, Remote voice tracking and more can be performed from any iOS device via a free app.

For information, contact Broadcast Software International at 1-888-274-8721 or visit www.bsiusa.com.

BURLI EXPANDS NE

According to newsroom software developer Burli Software, Burli NE is the next-generation newsroom system.

It has the standard ingesting and editing newsrooms tools you'll find in the company's Burli Newsroom plus a host of powerful additional features. Burli NE is a scalable, flexible newsroom system for journalists, designed to open up workflows of the modern newsroom.



It provides tools for video and PDF linking plus publishing to many social media outlets such as Twitter, WordPress and SoundCloud.

There is an onboard multitrack audio editor along with an image editor for quick cropping, resizing and basic editing within the suite. There's also a built-in prompter.

Burli NE's mobile web app, Burli Beat, has expanded. Users can now start writing a story at their desk, edit it on the subway, then file it from your kitchen, the company says. This in addition to dozens of small performance and usability improvements for users on laptops, tablets and mobile phones. Users use Burli Beat to file stories — with audio, images and video — from wherever they can find a connection.

New to Burli NE is QGoLive, a mobile app for both live and recorded audio reports. It also includes a Send to Burli function that uploads audio clips, scripts, or entire packages directly into Burli NE, complete with editorial notes.

Burli NE works with Wheatstone WheatNet-IP.

Burli NE also provides for editorial supervision of the story approval process. It is also networkable for teamwork that spans geographical location.

In addition, much of Burli NE is customizable to allow for differences in corporate workflow practices.

For information, contact Burli in British Columbia at 1-604-684-3140 or visit www.burli.com.

Radio Rubi Migrates to AudioPlus

Longtime AEQ equipment client replaces MAR4 automation with new suite

SPECIAL REPORT

BY NACHO OLIVELLA
AEQ Sales Manager, Catalonia

RUBI, SPAIN — Radio Rubí 99.7FM is the municipal station of the city of Rubí in Spanish Catalonia. Radio Rubí started its activities in November of 1979, with a primary mission of being a public service for the inhabitants of the city, providing an ample variety of content including news, sports and culture while allowing for the active participation of the citizens. In 1996 the station was bestowed with the Rosalia Rovira Award as the best municipal broadcaster in Spanish Catalonia.

From its beginnings, Radio Rubí has counted on equipment and technology from AEQ: mixing consoles, audio codecs or automation systems. A station with the profile of Radio Rubí looks for durable, reliable equipment that is easy to operate and cost efficient.

Radio Rubí is replacing its broadcast production equipment. As part of the renovation, it was decided to migrate its previous AEQ MAR4 automation system to the current AEQ AudioPlus platform in all their studios and news room.

AEQ AudioPlus offers new functionality and performance that adapts to the real needs, technical skills and budget of the majority of different broadcast stations at this day and age. AudioPlus incorporates everything necessary for manual or 100% automated playout, including remote control at a variety of levels. The same is valid for the actual content acquisition and programming — both musical and advertising. These functions can be accomplished completely automatically or manually, including the editing of contents.

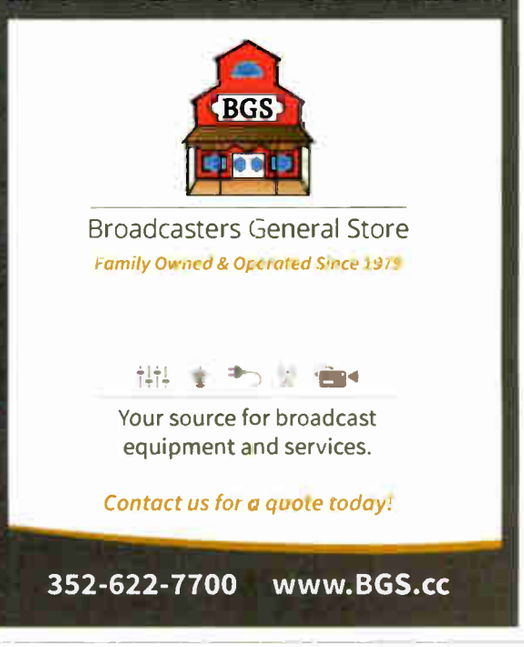
The head of the technical department at Radio Rubí, Jordi Alba, explained, "The AEQ AudioPlus automation system is a perfect match for us and is an indispensable tool in our daily operations."

Unlike other brands of applications that initially may be perceived as less expensive, this tool of the trade is suitable for small- to medium-sized stations. The capacity to produce and the quality of the programming generated are comparable to systems that the large networks are deploying but costing a fraction of what such stations may be investing in their automation.

The application is designed for Windows OS and uses SQL databases. The software comes with an efficient auto-installation wizard and is compatible with low-cost audio boards as well as more sophisticated choices, including Dante AoIP multichannel network connectivity.

The project to transition the AEQ MAR4 platform to the new AEQ AudioPlus system was coordinated by Mr. Xisco Caballero and Mr. Oscar Bastante of Radio Rubí and the AEQ System Services team at its headquarters.

For information, contact Peter Howarth at AEQ Broadcast International in Florida at 1-800-728-0536 or visit www.aeqbroadcast.com.



World Radio History

How Radio Can Usher in the Next Era With Innovation

The better our tech tools are behind the scenes, the better radio will fare

COMMENTARY

BY FRED VANDENBERG

The author of this commentary is CEO of Play MPE.

Radio continues to thrive and grow in spite of decades-old predictions of decline. It remains (by far) the single most common way to hear a song. Predicting the future for radio comes with challenges as the digital age of music evolves. As the industry changes from the historical view of terrestrial radio broadcasts to a broader view that includes online streaming, radio will continue to thrive, so long as radio programmers, promoters and other behind-the-scenes curators find the right tech tools to enhance their product and boost their efficiency.

Station listenership is growing and moving to new devices. According to Nielsen's 2019 mid-year report, there were 7 million more weekly radio listeners in the United States. than there were in 2016. Terrestrial broadcast is only part of the growth, as one of the most frequent uses of a smart speaker is to stream a favorite FM station.

Fred Vandenberg

plaympe®

FINDING MUSIC

This is not to say that listeners' habits aren't shifting dramatically, because they are. These shifts and the change in expectations that go with them should give anyone pause. Radio professionals will need to find new and innovative ways of getting access to a broader range of content, more quickly, if they wish to compete with rising mediums such as streaming.

Identifying these technological solutions can empower radio professionals to make a positive push towards innovation. The concrete details of this push feel less than revolutionary, but promise to have a vital impact on the way radio programmers can work.

Professionals need the means to find new, appropriate music, anywhere, from any device, at any time. Bringing key tools to mobile, for example, should be an industry priority. Listening to, saving and sharing with colleagues should be easy. The music should be at the center, with technology simply serving to surface new tracks and make them easy to manage.

There are additional important layers that will be ever more essential to decisionmaking for radio teams, and they all involve data of some sort.

This may be contextual assets and information, images, videos, lyrics and other helpful materials that add to the tracks themselves. This data may include analytics and other guides that help a radio pro assess a track's potential for exciting their audiences and working in their format. In short, the more data radio professionals have access to, the easier it will be for them to evolve with the current shift in expectations. Gaining a deeper understanding of how consumers engage with the music they hear will be key to leading the innovation needed to stay relevant.

The more seamless and accurate our tech tools are behind the scenes, the better radio will fare. It will be able to change and live on, without losing what it does so perfectly: present great music, with a touch of a button, in places and at times when listening is prized most.

Play MPE is a music promotion and delivery service that "connects content from the world's largest major and independent labels, artists, promoters and managers to thousands of music's top tastemakers and curators."

Comment on this or any story to radioworld@futurenet.com.

BROADCAST EQUIPMENT EXCHANGE

ANTENNAS/ TOWERS/CABLES

WANT TO SELL

CCA FM8000G Trans 107.9, great cond; 4-Bay Jampro antenna w/deicers; 3-bay Shively antenna FM. D Brockman, 606-965-3436.

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.

Wanted: real plate reverb. abgrun@gmail.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

WANT TO SELL

UPGRADE consoles to international specs with world standard Weston 30B illuminated 4" vu meters. 4 in like-new condition. GramOphone@earthlink.net

I'm selling between 150 and 200 cassette tapes that consist of old-time radio shows, sports shows, some local New York radio talk shows, etc... Must take entire collection and the price is negotiable. Please call me for details and, my phone number is 925-284-5428.

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

CONSULTANTS

Doug Vernier
Telecommunication Consultants
Broadcast Engineering Consulting
AM/FM/TV/LPTV/DTV
Custom mapping service
Frequency searches
Propagation prediction
FCC application preparation
V-Soft Communications
Software for your PC
(800) 743-3684
www.v-soft.com

WYBG 1050, Messina, NY, now off the air is selling: 250' tower w/building on 4 acres; 12' satellite dish on concrete base; prices drastically slashed or make offer. 315-287-1753 or 315-528-6040

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.

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 KFRC radio special of Elvis Presley which aired on January 8, 1978. I'd be willing to pay for a digital copy. Ron, 925-284-5428.

I'm looking for KTIM, AM,FM radio shows from 1971-1988. The stations were located in San Rafael, Ca. Ron, 925-284-5428.

www.radioworld.com

World Radio History

Rebuilt Power Tubes 1/2 the cost of New!

ECONCO

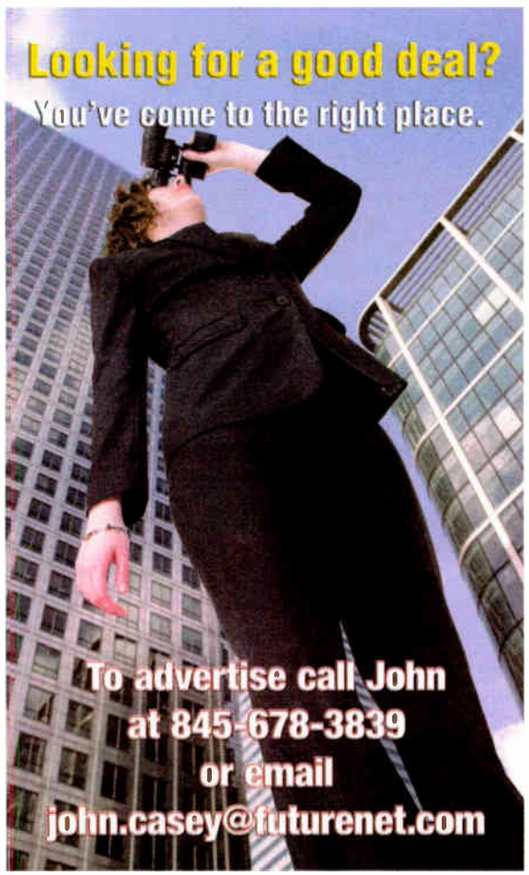
Se Habla Español

ECONCO

Se Habla Español

ECONCO

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



MISCELLANEOUS

WANT TO BUY

I'm looking for the Ed Brady radio show in which he did a tribute to Duke Ellington, the station was KNBR, I'd be willing to pay for a digital copy. Ron, 925-284-5428.

I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSFX, KOBY, 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.

Looking for a broadcast excerpt of a SanFrancisco 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.

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 KSFX radio shows, Disco 104 FM, 1975-1978. R Tamm, 925-284-5428.

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

RECEIVERS/ TRANSCEIVERS

WANT TO SELL

Johnson Electronic SCA880 module, 67/92 Khz, 417-881-1846.

WANT TO BUY

AM Stereo radio. Call 417-881-1846.

RECORDING & PLAYBACK HARDWARE

WANT TO BUY

1960s-vintage MacKenzie Repeater machines, magazines, spare parts and manuals, complete or "parts" machines considered, James, 870-777-4653.

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

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

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

(2) LPFM radio stations for sale, located in the NW part of central Florida on the gulf coast, covers the county, get out of the cold weather, come to Florida, call or write for particulars, 352-613-2289 or email boceey@hotmail.com or Bob, PO Box 1121, Crystal River, FL 34423.

RADIOWORLD
Equipment Exchange

RF CONNECTORS

WANT TO SELL

RF CONNECTORS & GADGETS – Parts, Products & More! www.W5SWL.com

TAX DEDUCTIBLE EQUIPMENT

Donate your broadcast facility; IRS approved 501(c)(3) nonprofit charitable organization. Fair market value. License (AM/FM/FV), land, building, tower, equipment, etc. The Augustus Foundation, Inc., 2902 Main Street, La Marque, Texas 77568. (409) 359-3435. Contact Dr. M. Augustus

TRANSMITTERS/ EXCITERS/TRANSLATORS

WANT TO SELL

BE-25T 25KW FM transmitter 2007 frequency agile tube transmitter in good working condition on 90.7 (all its life) when pulled from service. Approx. 6 mos. on rebuilt tube and a newly rebuilt fan motor, also spare optical modules, manuals and maintenance logbook. $17,500/OBO. As-is, where-is: Hayward, CA, Jeff Cotton, 530-279-6262 or info@kdup.org.

BE 35kW FM, and QEI 3.5kW FM. Make an offer on either or both. All working when removed. Steve Tuzeneu 704-973-0438 (9 a.m. to 4 p.m., Monday-Friday) or stuzeneu@bbnmedia.org

SPACE IS AVAILABLE!

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.

SITUATIONS WANTED

Manager-engineer with multiple decades of experience in many areas, seeks full-time executive level position (G.M.) or higher with CCM, modern Inspo, or G-rated family-friendly secular format(s). Prefer warm climates. Send complete details to: radiogm@hotmail.com

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

TUNWALL RADIO
SWITCH AND TRANSMITTER CONTROLLERS

AM/FM/MULTI-SWITCH AND CUSTOM DESIGNS
330.995.9642 www.tunwallradio.com

World Radio History

"We Are Accountable as Broadcasters"

Multilingual emergency broadcasting is a moral imperative for the radio industry

COMMENTARY

BY JAMILA FLOMO

Jamila Flomo

The author is an Earle K. Moore Fellow at the Multicultural Media, Telecom & Internet Council.

According to a 2011 Census Bureau report, 21 percent of the U.S population speaks a language other than English at home. Yet many of these individuals find themselves at a profound disadvantage when emergencies strike because very few of America's radio stations routinely transmit emergency information in widely spoken languages other than English.

Notably and infamously, in August 2005, in the wake of Hurricane Katrina, close to 100,000 Spanish-speaking individuals were left with no radio lifeline after the only Spanish language station in New Orleans was knocked off the air.

To date, the FCC has no multilingual emergency broadcasting requirements. "It means that if you speak only Spanish, and a hurricane hits, you are on your own," said Brent Wilkes, the former CEO of the League of United Latin American Citizens. Although the Federal Emergency Management Agency (FEMA) supports extending alerting to the non-English speaking populations, stations have the choice to provide emergency information only in English.

Getty Images/fgtoh

America has no national language, so it is imperative that the broadcast marketplace ensure that those who do not speak English still receive life-saving information during emergencies.

NEXT SOLDIER UP

The idea of requiring EAS in languages other than English is not a new concept and can work if each local area has a "designated hitter" selected in advance to broadcast in languages other than English. The concept is based on the U.S. Army's training of platoons: If a soldier goes down when the platoon is taking a hill, another soldier takes his or her place, and the job still gets done.

In 2018, this idea worked when three radio station groups voluntarily cooperated to provide vital information to Spanish-speaking residents to communities threatened by Hurricane Florence. At the request of MMTC and LULAC, Miami-based Spanish Broadcasting System (SBS) voiced and transmitted Spanish-language alerts for Cumulus Media and Dick Broadcasting, which serve Myrtle Beach and Hilton Head.

The execution of the process was quite simple. According to Dick Broadcasting's Aaron Wilborn, "Broadcasters can pick up the phone and in two hours it can be broadcast, put on the air and done."

These broadcasters made it possible for 22,000 Hispanic residents in Myrtle Beach and 21,000 Hispanic residents in Hilton Head to receive information about health care issues, avoiding injury, shelters and where to find missing bodies after the hurricane hit. The initiative worked because "[w]e are accountable as broadcasters and license holders," said Jesus Salas of Spanish Broadcasting System, the largest Hispanic-owned media company in the United States.

"These companies are an example to other broadcasters of the essential services that they should provide to the public they serve in times of disaster," said MMTC President Maurita Coley. "America's broadcasters should engage now, in this hurricane season, to save the lives of everyone, no matter what languages they speak."

Got an opinion on an issue of importance regarding radio technology, management or regulation? Email radioworld@futurenet.com.

ADVERTISER INDEX

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

PAGE	ADVERTISER	WEBSITE/URL
22	Acoustics First Corp	www.acousticsfirst.com
15	Arrakis Systems Inc.	www.arrakis-systems.com
1	Broadcast Bionics	www.bionic.radio
32	Broadcast Electronics	www.bdcast.com
27	Broadcasters General Store	www.bgs.cc
25	BSI	www.bsiusa.com
4	Burk Technology	www.burk.com
5	Burli Software	www.burli.com
7	Comrex Corporation	www.comrex.com
16	DJB Radio	www.djbradio.com
1	ENCO	www.enco.com
11	Inovonics Inc	www.inovonicsbroadcast.com
10	Lightner Electronics	www.lightnerelectronics.com
23	MusicMaster	www.musicmaster.com
6, 8, 12, 18, 20, 24	Nautel Ltd.	www.nautel.com
31	Radio Systems Inc	www.radiosystems.com
26	Ram Broadcast Systems	www.ram68.com
21	RCS	www.rcsworks.com
13	Telos - The Telos Alliance	www.telosalliance.com/telos
9	Tieline Technology	www.tieline.com
2, 17, 19	Wheatstone Corporation	www.wheatstone.com

ADVERTISING CONTACTS

THE AMERICAS:
JOHN CASEY
845-678-3839
john.casey@futurenet.com

EUROPE, MIDDLE EAST & AFRICA:
RAFFAELLA CALABRESE
+39-320-891-1938
Fax: +39-02-700-436-999
raffaella.calabrese@futurenet.com

SEND MATERIALS TO:
NICOLE SCHILLING nicole.schilling@futurenet.com

Write to RW
Email **radioworld@futurenet.com** with "Letter to the Editor" in the subject field. Please include issue date and story headline.

World Radio History

meet RUBY

Hi, I'm Ruby Carr. And yes, my name really is Ruby. Get it? Ruby Carr/Ruby Consoles?

Anyway, I'm a radio host in Toronto and I truly think these Lawo consoles look great. With a name like Ruby, they've got to be good!

Ruby

Fantastic Lawo Broadcast Consoles are now widely available and fully supported by a name you know and trust in the USA.

Ruby, Sapphire, Crystal, and R3LAY (virtual) console systems offer simply the best in performance, dependability and sophistication because they are designed by Lawo and built in Germany for the ultimate in engineering and durability. And Radio Systems provides local sales, service and support for your perfect international combination.

Overall, Lawo consoles are simply the most BEAUTIFUL, SOPHISTICATED, and FLEXIBLE consoles in the world–yet now available at prices below their able competition. Contact Radio Systems today for more information or to arrange for your personal interactive video demonstration.

LAWO radio SYSTEMS

Radio Systems, Inc.
601 Heron Drive, Suite A, Logan Township, NJ 08085
856.467.8000 Fax: 856.467.3044
www.radiosystems.com

World Radio History

10000X

THE WORLD'S MOST POWERFUL FM TRANSMITTER IN 4RU

CRAFTED WITH PRECISION
The product of 40+ years of broadcast engineering experience

Made in Europe, Designed in Italy, supported from the USA

World Radio History

ELENOS

Introducing the new Elenos ET10000X, highly efficient 10 kW Solid State FM transmitter

10kW in just 4RU

Utilizes strip-line construction providing maximum stability, and minimum size and weight

Innovative

Lifextender algorithms protect against overloads, assuring long term reliability

Total Control

Remote controllable from anywhere via web, SNMP, mail and SMS

Choose BE,
part of the Elenos Group
with a combined 40,000 installations worldwide

24/7 SERVICE AND SUPPORT
FROM BE IN QUINCY, IL - USA
+1 217 224 9600

elenos group

ELENOS BE itelco PRO TELEVISION

BE Broadcast Electronics
Radio & TV Broadcast Equipment
and Solutions Worldwide

www.bdcast.com

Broadcast Electronics

60th ANNIVERSARY