

RADIO WORLD

Technology & news for radio decision makers

radioworld.com | September 25, 2024 | \$5.00



Centeno steps up at IPAWS

Former broadcaster is now director of FEMA's national system for local alerting, where he's pushing integration, cooperation and new technologies.

Photo by Jim Peck

When carts were new

Criss Onan takes a look back at the development of the tape cartridge machine.

Media asset management

Buyer's Guide features 13 products for automation, traffic and billing.

Your letters

Readers comment on the CrowdStrike outage, Larry Cervon and the value of college radio.

Sticker Shock.

(The good kind).



Meet the Logitek Mix-It radio console. The Livewire AoIP console with every feature you need at a price you can actually afford.



logitekaudio.com



#BXMTQJ AUTO**SCH 5-DIGIT 92253 MIX COM
#00009751 98
7 039 RDWOL P19 7 3572 63377
DAVID_GLEASON CONSULTANT
TELEVISION RADIO
80960 BELLEVUE
LA QUINIA CN 92253-5647

IT'S ALL IN WHEATNET-IP



THE INTELLIGENT NETWORK

BRING THE STUDIO ANYWHERE

GLASS LXE



Glass LXE is a multi-touch UI that operates as a standalone virtual console into the WheatNet-IP audio network, a complete IP audio ecosystem of consoles, talent stations, I/O units, accessories, and appliances.

Experience the power of Wheatstone's flagship LXE hardware console, now under your fingertips. Glass LXE is a multi-touch screen software interface, featuring familiar buttons, knobs, and multi-touch controls. Set EQ curves, filters, and more, just like you would on the LXE hardware console. Anywhere, anytime—**Glass LXE brings the studio to you.**

Connect with your Wheatstone sales engineer for all your WheatNet-IP AoIP network needs!

Call (252) 638-7000 or email sales@wheatstone.com

<https://wheatstone.com/glass-lxe-rw-2023d>



www.wheatstone.com | Manufactured, shipped and supported from North Carolina, USA

FOLLOW US

www.twitter.com/radioworld_news
www.facebook.com/RadioWorldMagazine
www.linkedin.com/company/radio-world-futureip/c

CONTENT

Managing Director, Content & Editor in Chief Paul J. McLane
paul.mclane@futureip.com, 845-414-6105

Assistant Editor & SmartBrief Editor Elle Kehres
elle.kehres@futureip.com

Technical Advisors W.C. "Cris" Alexander,
Thomas R. McGinley, Doug Irwin

Contributors: David Blikl, John Bisset, Edwin Bukont,
James Cynelless, Ean Deutsch, Mark Durenberger, Charles Fitch,
Donna Halper, Alan Jansson, Paul Kaminski, John Keen, Nick Langen,
Larry Langford, Mark Lapidus, Michael LeClair, Frank McCoy, Jim Peck,
Mark Persons, Stephen M. Poole, James O'Neal, T. Carter Ross, John
Schneider, Gregg Skall, Dan Slentz, Dennis Sloatman,
Randy Stone, Tom Vernon, Jennifer Walts, Steve Walker, Chris Wygal

Production Manager Nicole Schilling

Senior Design Director Lisa McIntosh

Senior Art Editor Will Shum

ADVERTISING SALES

Senior Business Director & Publisher, Radio World

John Casey, john.casey@futureip.com, 845-478-3839

Publisher, Radio World International

Raffaella Calabrese, raffaella.calabrese@futureip.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
futureip@computerfulfillment.com,
call 888-266-5826, or write P.O. Box 1051, 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@futureip.com

MANAGEMENT

SVP, MD, B2B Amanda Dorman-Allen

VP, Global Head of Content, B2B Carmel King

MD, Content, Broadcast Tech Paul J. McLane

VP, Head of US Sales, B2B Tom Sikes

Managing VP of Sales, B2B Tech Adam Goldstein

VP, Global Head of Strategy & Ops, B2B Allison Markert

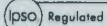
VP, Product & Marketing, B2B Andrew Buchholz

Head of Production US & UK Mark Constance

Head of Design, B2B Nicole Cobban

FUTURE US, INC.

Future US LLC, 130 West 42nd Street, 7th Floor, New York, NY 10036



All contents © Future US, Inc. or published under license. 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 02008829) 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 license 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.

Radio World (ISSN 0274-8541) is published bi-weekly by Future US, Inc., 130
West 42nd Street, 7th Floor, New York, NY 10036.
Phone: (978) 667-0252. Periodicals postage rates are paid at New York, NY
and additional mailing offices. POSTMASTER: Send address changes to Radio
World, PO Box 1051, Lowell, MA 01853.



Please recycle. We are committed to only using magazine
paper which is derived from responsibly managed, certified
forestry and chlorine-free manufacture. The paper in this magazine was
sourced and produced from sustainable managed forests, conforming to strict
environmental and socioeconomic standards. The manufacturing paper mill
and printer hold full FSC and PEFC certification and accreditation.



Future plc is a public
company quoted on the
London Stock Exchange
(symbol: FUTR)
www.futureip.com
Tel: +44 (0)225 442 244
Chief Executive Officer Jon Steinberg
Non-Executive Chairman Richard Huntingford
Chief Financial Officer Sharjeel Suleman

BMW embraces DTS AutoStage

The carmaker is the first to offer both
the audio and the video versions



Paul
McLane
Editor in Chief

B

MW has begun offering DTS AutoStage
audio functionality in approximately 20
new vehicle models.

I asked Joe D'Angelo, senior VP of
broadcast radio and digital audio at DTS
AutoStage's parent company Xperi Inc.,

to update us.



Why is this development notable?

Joe D'Angelo: As your readers may be aware,
there are two types of DTS AutoStage functionality:
video and audio. Our video service is powered by TiVo,
and BMW last year became the first automaker to launch with that.

Then in early 2024 BMW added our audio functionality to their BMW
iDrive system. I previewed it in a test vehicle at Radio Days Europe in March
but it wasn't yet public.

In July they went live, so BMW now is offering both DTS AutoStage audio
and video in cars with the most recent versions of their iDrive operating
system. It's the first carmaker to offer the complete solution, and it is
available in around 20 models now, a range of vehicles that includes sedans,
SUVs, EVs and high-end luxury vehicles.

You may remember that BMW was the first OEM to launch with HD Radio,
so we have a long history of working with them as innovators.



You seem particularly amped up about this.

D'Angelo: What I'm super excited about is the pace of the rollout.
With these new implementations, our system can not only be factory
installed in new cars but it can be deployed via a free software upgrade
using the modem in the vehicle. You'll recall that Tesla deployed DTS



THIS ISSUE

NEWS

3

From the
Editor

5

Centeno's
passion for
public warning
comes full
circle

FEATURES

12

A tour of
WGEM
produces
useful tips

16

These were the
carts of our
lives

BUYER'S GUIDE

24

Northwestern
Media is "all in"
with RCS

26

In Texas,
"Patriot Talk
920" embraces
cloud model

28

Villanueva
University of
Madrid
migrates to
AudioPlus

30

"Your Network
of Praise"
expands
distribution
with Arrakis
Apex

34

Brewer
modernizes its
ENCO
infrastructure

OPINION

37

Readers'
Forum

AutoStage that way, and BMW is offering it both as an installed option or via upgrade.

And if a driver is signed up for the BMW ConnectedDrive service, that upgrade is automatic, though there's also a way to do it manually.

In the first 30 days after BMW went live with the audio version, we saw vehicles come online in more than 60 countries, which is spectacular. Hundreds of thousands of cars were activated.


It reinforces the opportunity for radio to take advantage of a technical innovation at a pace that the industry has never seen before. The DTS AutoStage platform is delivering scalable installations with a fantastic velocity of conversion.

We're in well over 7 million cars globally now with the audio version. The takeaway is that more listeners are listening to better radio that's more discoverable and that delivers more data about listening.

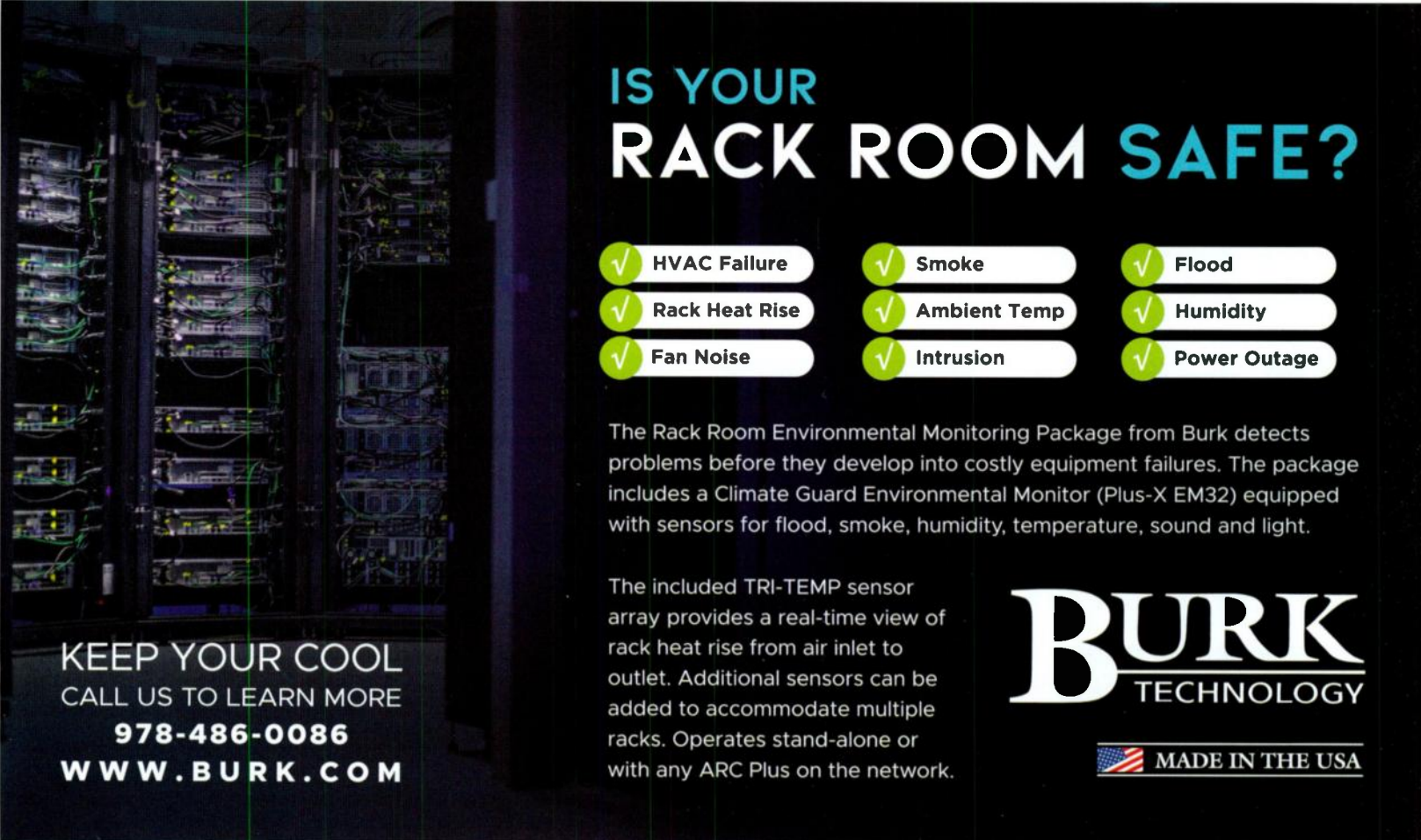
Meanwhile it's also clear that video platforms in general are becoming increasingly important. Mercedes also has a video offering, as does Tesla. That's an area of very active RFQs or requests for quotes in the automotive space.



What's the status of Xperi's exploration of in-car gaming?

D'Angelo: We have not announced any commercial deployments of our gaming solution yet. It's still going through iterations. We have proof of concepts such as a quiz show involving music. But we're leaning heavy into our music and audio experience with these. My intent is to develop them in such a way that when there is monetization, it's available to radio stations so they can participate in the revenue generation. 

You may remember that BMW was the first OEM to launch with HD Radio, so we have a long history of working with them as innovators.



IS YOUR RACK ROOM SAFE?


✓ HVAC Failure	✓ Smoke	✓ Flood
✓ Rack Heat Rise	✓ Ambient Temp	✓ Humidity
✓ Fan Noise	✓ Intrusion	✓ Power Outage

The Rack Room Environmental Monitoring Package from Burk detects problems before they develop into costly equipment failures. The package includes a Climate Guard Environmental Monitor (Plus-X EM32) equipped with sensors for flood, smoke, humidity, temperature, sound and light.

The included TRI-TEMP sensor array provides a real-time view of rack heat rise from air inlet to outlet. Additional sensors can be added to accommodate multiple racks. Operates stand-alone or with any ARC Plus on the network.

BURK

TECHNOLOGY

 **MADE IN THE USA**

KEEP YOUR COOL
CALL US TO LEARN MORE
978-486-0086
WWW.BURK.COM

**Writer**Randy J.
Stine

Radio World's lead news contributor wrote in the Sept. 1 issue about EAS performance in U.S. territories.

Above
Centeno, left,
interviews
alerting expert
Eddie Bertola in
the hardened
studio facility
of KHKA(AM), a
Primary Entry
Point station in
Honolulu.

Centeno's passion for public warning comes full circle

He was promoted this summer to director of IPAWS at FEMA

The Integrated Public Alert and Warning System office at the Federal Emergency Management Agency has a new leader; but his face is familiar to broadcasters.

Manny Centeno was promoted to director this summer. He succeeds Antwane Johnson, who'd held the position since 2009.

Centeno has a long history with the IPAWS program, working in a variety of roles since 2010. He most recently was program manager and spearheaded several of the nationwide tests of EAS and WEA.

FEMA says more than 1,800 federal, state, local, tribal and territorial alerting authorities use IPAWS to send critical public alerts in their jurisdictions.

In a statement announcing Centeno's appointment, the agency said: "His work has been integral to propelling the program to new heights. Chief among his accomplishments

is his oversight of the National Public Warning System and Primary Entry Point (PEP) system, which helped ensure emergency communications can reach more than 90% of the public under all conditions.”

While specializing in emergency and resilient communications, Centeno, a former radio broadcaster, has a varied background that also includes experience in management, system engineering, manufacturing, film and television production.

In August, Centeno and his team took part in the Monthly Siren Demonstration at KHKA(AM) in Honolulu, as part of the IPAWS Training Series. KHKA is the most recent station to participate in FEMA's PEP resiliency or "hardening" program; those facility upgrades include increased sheltering capabilities, expanded broadcast capacity and sustainable power generation for all types of hazardous events.



Above
Manny Centeno attended a traditional cultural blessing of the PEP resiliency upgrades at KHKA in 2023. From left: Kahu Kordell Kekoa, who performed the blessing; Duane Kurisu, chairman of aho Media Group; Manny Centeno; and Antwane Johnson, then the director of FEMA's Integrated Public Alert and Warning System.

RW Tell us about your background, especially as a former small-time broadcaster.

Manny Centeno: My crisis communication experience began in 1989 while working as a radio station operator in the Caribbean. As a broadcaster, I responded to emergencies such as devastating major hurricanes affecting the eastern Caribbean.

In those scenarios, it is common to see the destruction of critical infrastructure including the destruction of all communications and power generation and distribution for months. In most cases, the radio facilities I operated were the only ones that continued broadcasting through these emergencies, reaching more than 3 million people in the U.S. Virgin Islands and Puerto Rico.

These events required working day and night with local leaders, emergency managers, federal authorities, first responders and the public to get critical information to the affected islands. It was the community, coming together in a time of need, that got us through those events.

I learned and witnessed the lifesaving potential of effective emergency communications to the public and the negative effects of what the lack of preparedness and resiliency can lead to.

RW You've been very hands-on when it comes to national testing of Emergency Alert System and Wireless Emergency Alerts. When is the next national test of the EAS?

Centeno: Legislation passed in 2015 requires FEMA to conduct nationwide tests of IPAWS at least once every three years. The most recent national test reached millions of mobile phones across the country via Wireless Emergency Alerts, radio and television via the Emergency Alert System, and other communication pathways. We last tested on Wednesday, Oct. 4, 2023.

FEMA does not intend to conduct a nationwide IPAWS test for 2024, but we are planning one for fall 2025.

RW Do you plan to increase routine FEMA tests for participating stations as well as Local Primary and PEP stations?

Centeno: FEMA regularly tests radio stations that are participants in the National Public Warning System. FEMA IPAWS also conducts specific NPWS Primary Entry Point Station special broadcasts to routinely assess readiness and response with our station partners, local state, tribal and territorial emergency management and first responders.

I am a firm believer that the nation must continue to invest in all forms of resilient communications with the public, including AM radio, as an important way to get information to the public before, during and after disasters. FEMA encourages broadcasters to work with their state and local officials to update and exercise EAS plans in accordance with FCC rules.

RW What more can you and FEMA do to combat the negative view of AM radio, reflected in the automotive industry's decision to eliminate AM radios from certain vehicles?

Centeno: IPAWS is committed to addressing equity in alerting — not only by continuing to adopt technological advancement, such as an expansion into satellite technology, streaming media providers, smart home technology and other possible communications methods, but we also want to preserve the importance of emergency communications with the public using pathways such as free AM/FM radio.

Millions of Americans listen to AM radio every day, especially in rural America, tribal communities and major cities. AM radio plays an essential role in our nation's emergency communication infrastructure. Its ability to transmit signals over long distances, wide accessibility and superior resiliency have made it an invaluable tool for disseminating critical information during various emergency situations.

Multiple natural disasters have highlighted that there is no substitute for AM radio. When other forms of communication have failed in the past, broadcast radio has remained operational.

AM radio also serves as a vital platform for connecting diverse communities across the U.S. For example, according to the National Association of Broadcasters, many of the nearly 4,500 AM stations across the U.S., 16% or approximately 735 stations serve niche or minority audiences, often delivering content in languages other than English. In rural America, where reliable cellular or broadband access can be scarce, AM radio is an essential lifeline.

Radio serves as the backbone of the Emergency Alert

Gear Up for Sports Remotes



Affordable Option: Bridge-IT II and ViA

Gear up for summer and fall sports with Bridge-IT II - the ultimate affordable, high performance stereo IP audio codec and pair it with ViA, the sports remote broadcast dream machine. Both codecs support multiple network interfaces, hitless packet switching using SmartStream PLUS, Fuse-IP network bonding, plus connection backup.



Pro Option: Gateway 4 and ViA

Our pro option for covering sports includes the powerful Gateway 4 codec which supports 2 simultaneous stereo connections, or 4 mono connections. Gateway 4 includes dual NICs and dual AoIP ports, dual internal power supplies, plus multiple layers of redundancy with SmartStream PLUS, Fuse-IP and connection backup.

Features	Bridge-IT II	Gateway 4
Stereo 2 x Mono	✓	✓
Triple mono, Stereo + Mono IFB, 2 x Stereo, 4 x Mono		✓
AoIP: AES67, SMPTE ST2110-30, Livewire +, Ravenna	✓	✓
AoIP: SMPTE ST2022-7, Ember+, WheatNet-IP, Dante		✓



Scan for more
information

The ‘I’ in IPAWS stands for integrated, because through the integration of diverse alerting pathways, FEMA was able to create the world’s leading alerting ecosystem.

System. There are 77 NPWS PEPs across the country, the vast majority of which are AM stations. These are designated radio stations whose combined signals cover 90% of the American population and have a direct connection to FEMA and the National Weather Service.

Once a designated NPWS PEP station receives an emergency alert, it broadcasts the message to other connected radio and television stations. This means that when the EAS is properly maintained and operated, emergency messages are relayed from one station to another, ensuring the rapid and efficient dissemination of critical information without use of the internet. It is not uncommon for the internet to fail during significant emergencies. NPWS PEP stations are constructed to operate even under the most extreme conditions.

With all of this in mind, I am committed to demonstrating the value of all communications tools or pathways during a disaster, particularly the most resilient ones like AM radio. IPAWS is constantly scanning the marketplace to identify innovative ways to reach the public during an emergency.

RW What are your thoughts and what can be done about providers whose products don’t comply with FCC Part 11 rules?

Centeno: We urge all EAS participants to comply with FCC Part 11 rules. IPAWS Alerts are currently disseminated as Common Alerting Protocol messages via IPAWS-OPEN and over-the-air reception and distribution of EAS message.

FEMA IPAWS is not a regulatory program and does not enforce non-compliance. The FCC is responsible for enforcement.

We work in partnership with other federal agencies who also conduct their own research into emerging innovative tools. We look forward to updates from the FCC on promising innovations that will make our nation’s alerting technology more resilient.

RW What is your take on NAB’s assertion that IPAWS “fully endorses” the NAB proposal on software-based EAS? Particularly in light of an alternative solution already presented by major broadcast manufacturers. Does FEMA actually endorse such things?

Centeno: IPAWS has met with the NAB standards committee and discussed the possibility of software-based EAS solutions. Any proposed software solution that is fully compliant with all applicable requirements for both over-the-air monitoring and monitoring IPAWS per FCC rules may be worthy of consideration.

The IPAWS mission is to disseminate public emergency alerts through various communication pathways in timely manner. IPAWS does not endorse any specific product but enthusiastically welcomes discussion about innovative solutions that can enhance the timely and effective distribution of alerts to the public.

RW What is the future of IPAWS?

Centeno: We at IPAWS see opportunities for incremental growth and identifying opportunities to share lifesaving information while working with our broadcasting partners and other stakeholders. We continue to embrace new technologies, but we cannot do it alone.

The IPAWS program was founded on cooperation between federal, state, tribal and territorial partners. The “I” in IPAWS stands for integrated, because through the integration of diverse alerting pathways, FEMA was able to create the world’s leading alerting ecosystem. It is through that continued integration of many perspectives and partnerships that the program and this nation’s emergency communications with the public will continue to elevate, evolve and ultimately save lives. The broadcast community continues to be an extremely important partner with FEMA now and in the future.

FEMA and IPAWS are dedicated to evolving alongside emerging technology, through incorporation and integration with HD Radio, ATSC 3.0, smart technologies, satellites and others. We’re considering building new partnerships with technology developers, satellite service providers, the automobile industry and more.

Radio broadcasters provide an invaluable service to the community by providing continuing emergency information to the public in times of crisis. This requires hard work, planning and preparation that takes place on days like today. I thank our broadcast partners for their continued support of IPAWS and the emergency alert system to keep our communities safe. **RW**

RW Does the ZoneCasting FM geotargeting system from GeoBroadcast Solutions, which recently gained FCC approval, pose any benefits or challenges for EAS?

Centeno: IPAWS is always monitoring and testing new alerting technologies.

Big or small, hardware or software, there's a Telos® VX phone system for you.

When it comes broadcast phone systems, no one delivers like Telos. In fact, we invented VoIP for broadcast! Flawless call quality, unparalleled flexibility and ease of operation, and system configurations to fit any scenario are just a few of the reasons that broadcasters worldwide choose Telos VX systems. Hardware-based Telos VX Enterprise is purpose-built for medium to large facilities, expandable up to 120 channels. Compact Telos VX Duo hardware is right-sized for smaller facilities, starting with 2 channels and expandable to 4, 6, or 8 channels. Software-based Telos VXs delivers all of the power and quality VX hardware systems are known for, with the advantage of flexible local or cloud-based virtual deployment options. No matter your size or budget, you'll find a Telos VX system that's the perfect fit.

**Contact Us Today.
We'll Help You Get Ready
for Virtual Radio.**

Telos VX® Enterprise



The first (and finest)
broadcast VoIP phone system
for medium to large facilities.

Telos VX® Duo



Small but mighty!
Big Telos VX features in a
package that fits anywhere.

Telos VXs



Everything you love about the
Telos VX broadcast phone system,
delivered virtually.



BROADCAST WITHOUT LIMITS

TelosAlliance.com/TelosVX

DIGITAL RADIO MONITORING

Experience the monitoring expertise of Inovonics technology.



INOVONICS
DAB+ PRODUCTS



INOmini 661
DAB+ Monitor Receiver

661

- All DAB Band III & DAB+ frequencies.
- LCD display with flashing-red alarms.
- Analog LR & AES-digital outputs.



INOmini 662
DAB+ SiteStreamer

662

- Remotely monitor via Web GUI.
- Remote listening via Web stream.
- Up to 30 stations via "StationRotation".

SOFIA 563 DAB+ SiteStreamer+



563

- Advanced remote monitoring via Web GUI.
- Remote listening via Web stream & Dante AoIP.
- Up to 30 stations via "StationRotation".
- Outputs via analog, AES-digital, Dante AoIP.

WHY INOVONICS?

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

World Radio History

VIEW OUR
DAB+
PRODUCTS
ONLINE



679

- Sensitive SDR-based receiver for FM & HD Radio.
- LCD display with flashing-red alarms.
- Analog LR & AES-digital outputs.

638

- Remotely monitor via Web GUI.
- Remote listening via Web stream.
- Up to 30 stations via "StationRotation".

568

- Advanced remote monitoring via Web GUI.
- Remote listening via Web stream & Dante AoIP.
- Up to 30 stations via "StationRotation".
- Outputs via analog, AES-digital, Dante AoIP.

551 & 552

- **551** Hi-Res 7" Touch Screen with accurate reading in a graphic format.
- Web GUI displays HD Radio Listener Experience & station logos.
- Spectrum Plots, History Plots, O-scope/XY, FM/HD1 Alignment.
- Outputs: Analog L&R, AES-Digital, Dante-based AES67 AoIP.
- Remote listening via Web stream & Dante AoIP.

INOmini 679

HD Radio® Monitor Receiver



INOmini 638

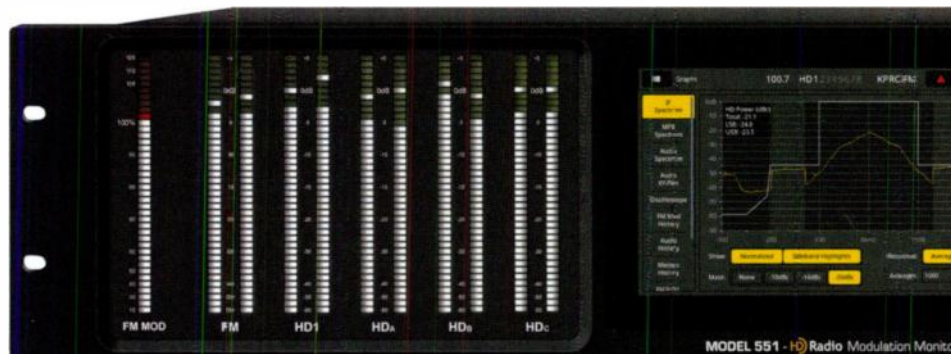
HD Radio® SiteStreamer



SOFIA 568 HD Radio® SiteStreamer+



MODEL 551 & 552 HD Radio® Modulation Monitors



VIEW OUR
HD RADIO®
PRODUCTS
ONLINE

www.inovonicsbroadcast.com
sales@inovonicsbroadcast.com
+1-831-458-0552

INOVONICS
BROADCAST



John Bisset

CPBE

The author is in his 34th year of writing Workbench. He handles western U.S. radio sales for the Telos Alliance and is a past recipient of the SBE's Educator of the Year Award.



Send your tips

Workbench submissions are encouraged and qualify for SBE recertification credit. Email johnpbisset@gmail.com.



A tour of WGEM produces useful tips

Add a little magnetism to your work life

I was invited to speak recently to a meeting of SBE Chapter 49 in Central Illinois, where the subject of Harbor Freight came up. If you don't have a store in your community, hop online and visit www.harborfreight.com to see a variety of items useful to a broadcast engineer.

One is a small dish that has a magnet affixed to the back, shown at right. Brent Clingsmith, chief technology director at WGEM(FM/TV) in Quincy, Ill., and his team found this useful during their buildout of a technical operations center for television. As they installed new racks and the associated equipment, they affixed this dish to the front of the rack to hold an assortment of rack screws.

Because the dish is magnetic, it can be moved easily to another spot or another rack. One pole of the magnet holds the dish to the steel rack frame, the other keeps the screws from falling out of the dish even when it is placed vertically. Screws are always at your fingertips.

The dish costs about four bucks at Harbor Freight; search the site for Pittsburgh Automotive 6-inch magnetic parts holder.



Above
U.S. General's 18-inch magnetic holders keep tools out of the way yet in plain sight.

Right
This magnetic parts holder is ideal for holding rack screws.

Evolving The World Of Audio

PLAYOUT • MUSIC SCHEDULING • NEWS
TRAFFIC • CLOUD • STREAMING

RCS evolves with your business, blending pioneering initiatives and valuable client input. Our groundbreaking Software as a Service (SaaS) seamlessly aligns with your distinct requirements, providing an unparalleled media experience.



RCS
Sound Software

rcsworks.com

© Copyright 2024 RCS. All Rights Reserved. RCS Sound Software and their marks and logos are registered trademarks of RCS.

World Radio History



Above

This tabletop channel permits m!ka booms to be moved horizontally to accommodate changes in guest positions.

Right

Bright yellow identifies potential trip hazards.

Brent's staff installed another magnetic product from Harbor Freight: an 18-inch tool holder made by U.S. General that costs under \$5. Talk about a neat way to organize tools! The top photo on page 12 shows two of these holders doing their job. How nice to see all your hand tools hanging, rather than you digging through a drawer to find one.

For a few more dollars, U.S. General manufactures a sturdy steel magnetic power tool holder. The three-hole design permits three pistol-grip-style drills or screwdrivers to rest above the workbench yet easily accessible.



which can also be used to hold TV monitors. For information, email info@forecast-consoles.com.

Before we leave WGEM, there's one other photo I want to share.


Robotic cameras are used in the newly refurbished television studio. These cameras and their associated monitors are mounted on floor pedestals. Note the bright yellow pedestal supports in the photo at left. Visible against a black floor, these protect your staff and guests from tripping over the supports.

A unique internet controller

Dan Slentz has been scouring the internet again, and he discovered a neat little box that broadcast engineers should find useful.

The uSwitch controls any device, anywhere, using the Web or a network. In addition to turning devices on or off, uSwitch can be used to reboot network devices. You simply log into uSwitch from any web-enabled device such as an iPhone, Android, PC or Mac.

uSwitch comes with two sets of SPDT (single-pole-double-throw) relay contacts, which are rated to 5 Amperes at 110/220V. The package is compact, about the size of a pack of cigarettes. No programming is required, and the device is password-protected. At \$160, the cost is reasonable.

The company's website is <https://uhavecontrol.com>. Search uSwitch for more information or to order. If you purchase a uSwitch, let me know how you are using it. Send me a description to johnpbisset@gmail.com, and remember your tips qualify for SBE recertification credit. 

Boom! Problem solved

If you've built studios, you know it's not always obvious where you should drill out the countertop to install mic arms.

WGEM has a rich history of providing news and sports. The sports studio can host multiple guests; but as their number changes, mic placement can be a problem, depending on how many people are in the studio.

Brent showed me a solution for use with Yellowtec m!ka mic arms. A metal channel, called a rail, runs along the countertop; the base of a m!ka boom fits into this channel. The boom can then be tightened down or unscrewed and moved to another part of the rail as guest seating dictates. No more mic arms in the wrong place. Forecast Consoles sells this channel,

**UNLOCK REVENUE,
RATINGS & LISTENERS**

Buy a **GV²** transmitter and try

HD Digital Radio
Test Drive

nautel.com/hdtestdrive

nautel

The processing advancement that everybody is talking about.

ST- Enterprise
ST- Enterprise
ST- Enterprise
ST- Enterprise
ST- Enterprise
ST- Enterprise

And it is no wonder.

The engineering community is hailing ST-Enterprise as not only a budget-friendly time-saver, but a new standard in audio processing clarity, impact and control.

ST-Enterprise will give you centrally located processing for all of your FM, HD and AM stations, which can be easily sent to your transmitters with MicroMPX.

It all adds up to spectacular audio processing, convenience and affordability.

With engineering resources often stretched thin, ST-Enterprise will be a time saver by allowing central control of all of your FM, HD, and AM stations, and will deliver independently managed, state-of-the-art processing, along with built-in Nielsen PPM, Kantar and Intrasonics watermarking for audience measurements for each service.

And each ST-Enterprise can run up to 50 different, totally unique instances on a single PC.

It is a truly revolutionary processing management tool, designed to address the challenges and responsibilities of today's engineering community.

And the price? That's the best part.

\$1995 for FM+ HD instance.

\$995 for streaming instance.

sales@thimeo.com

THIMEO
AUDIO TECHNOLOGY

World Radio History

These were the carts of our lives

Feel free to read this article at 7.5 inches per second

For nearly 30 years, audio tape carts were essential to radio station operation, first for spots and later for music. Their initial development is a fascinating story with many loops, er, twists and turns.

In the early 1950s, George Eash of Toledo, Ohio, experimented with loops of tape in a bin and a device to apply graphite to the back of the tape to lubricate it as the tape slid on itself during playback.

He was granted several patents for his inventions and initially was dismissive of new back-lubricated tape from Minnesota Mining and Manufacturing and Reeves-Soundcraft. However he quickly changed his mind.

His patent for a cart shell to hold the tape loop would become the standard. A Chicago company was licensed to manufacture the cartridges using the Fidelipac name. Several manufacturing companies followed.

Eash worked with the Viking metal stamping company in Minneapolis to build a transport deck matching his design in a 1956 patent application. Viking improved on Eash's pressure roller mechanism in its model 35 in 1957. The

Writer



Criss
Onan

deck could operate at 3-3/4 or 7-1/2 inches per second. Several head configurations could be used, including mono and stereo. The cost was \$70.

In the background

Originally, tape cartridges were designed for background music and retail point-of-sale displays, which is the application that Moulic Specialties — eventually known as SMC — began modifying Viking decks for in the late 1950s. The electronics manufacturing company, located in Bloomington, Ill., was started in 1945 by local electrical engineer, instructor and author William Moulic.

One of Eash's patents had mentioned possible use in broadcasting, which is exactly what the general manager of WJBC in Bloomington thought when he saw Moulic's decks in action. Vern Nolte tasked station engineers Ted Bailey and Jack Jenkins with modifying the decks for broadcast use, initially only by WJBC.

They developed prototypes using a two-track machine, with one track for mono audio and the other for cueing. They added a 1 kHz tone generator and sensor to provide automatic tape re-cue and a solenoid to the Viking decks for a faster start. Prototypes were shown at the Illinois Broadcasters Association meeting in October 1958.

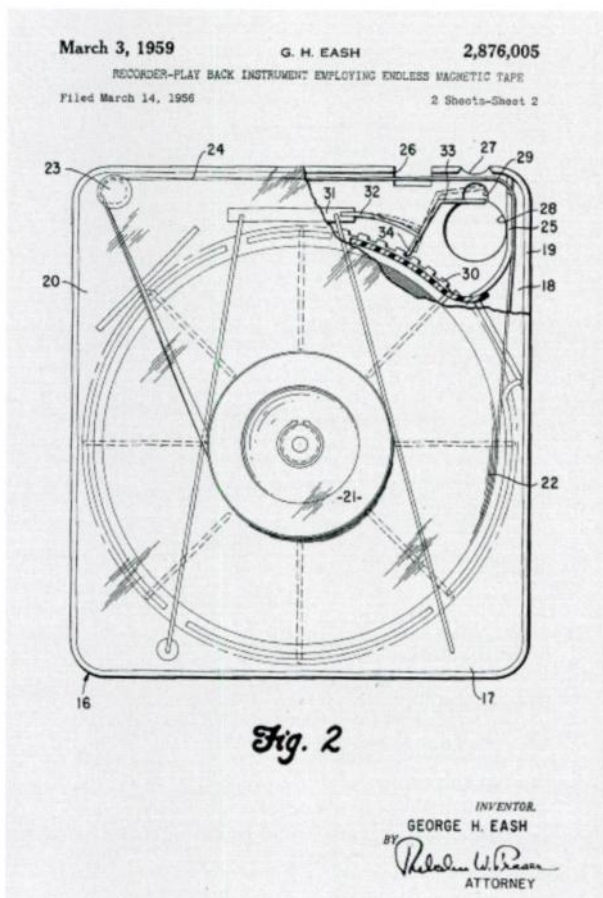
WJBC created a company named Automated Tape Control (ATC), but it had no marketing, manufacturing or sales capability. Nolte proposed that Gates Radio in Quincy, Ill., handle these aspects, but Parker Gates declined, saying he was working on a spot playback deck of his own called the ST-101.

After its district rep Gene Randolph saw the machines in a sales call at WJBC, the Collins Radio Company asked to market the devices. Their introduction was made at the 1959 NAB Show. Moulic Specialties assembled the machines using Viking decks, ATC built the modular tube electronics and Collins built the cases and displayed the decks.

Despite the decks almost self-destructing by overheating in the Collins' cases, they became a hit of the show, reportedly generating more than \$100,000 in sales to 45 radio stations, roughly equivalent to around \$1 million today.

On the Spot

Around the same time, Chief Engineer Ross Beville at WWDC in Silver Spring, Md., modified a Viking transport and displayed it at a fall 1958 audio show in the Washington area. Beville was surprised to see the ATC gear at the 1959 NAB Show because he was just two months from receiving a charter for his new company, Broadcast



Left
George Eash's
1956 cart patent.

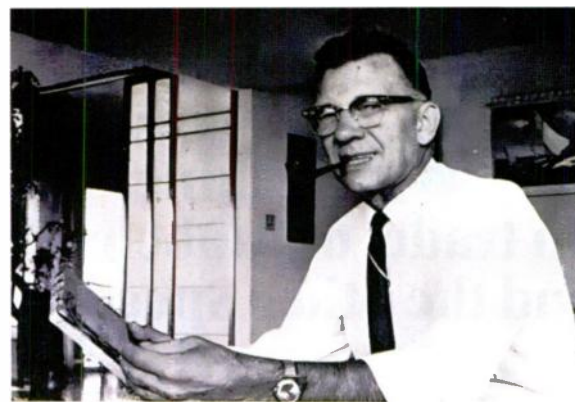
“ George Eash worked with the Viking metal stamping company in Minneapolis to build a transport deck matching his design in a 1956 patent application. ”

Electronics, to manufacture and market a line of cart decks called Spotmasters.

Spotmasters first used the Viking model 35 transport. A pinch roller solenoid was added for fast starting and a half-track head was used for primary tone generation and detection for automatic cuing. After producing a number of these modified decks, Viking agreed to add a solenoid to their standard deck design.

Wanting other design changes to make the deck more rugged under constant usage, BE disassembled every

Right
Eash as shown
in Billboard
magazine in
1966.



George Eash:
CARtridge Inventor Tells
How It was Born

finished Viking transport and replaced various components. Viking eventually agreed to produce a ruggedized version of the deck exclusively for Broadcast Electronics.

The Spotmaster used an 850 Hz primary tone rather than ATC's 1,000 Hz, and a 150 Hz secondary rather than ATC's

Moseley

WHEN STAYING CONNECTED IS THE ONLY OPTION

Impeccable Audio Quality	Maximum Data Throughput	All Worldwide STL Bands 180 kHz – 38 GHz	Cost-efficient Configurations 1+0, 1+1, 2+0 Hot Standby
--------------------------	-------------------------	---	--

BUILT TO LAST



moseleysb.com
+1 805-968-9621

Carrier-grade microwave radios for always-up operation in Digital Studio Transmitter Links for Radio and TV Broadcast and Point-to-Point Communications Links.

“ Ted Bailey recalled two early ATC machines taken in on trade, one labeled Pokey and the other Speedy. ”



Above
Moulic Specialties
background
music deck

3,200 Hz. Both BE and ATC soon standardized on a 1,000 Hz primary and a 150 Hz secondary, with BE adopting these after producing about 50 units.

Randolph at Collins said he grew tired of hauling the heavy ATC record and playback units into radio stations for demonstrations, so he installed decks into the folding backseat footrests of a used Cadillac limousine. Several TV stations featured the setup, and Randolph said it paid for itself within the first six weeks.

Despite the initial NAB Show sales and Randolph's success in his own sales territory, adoption by very large stations and networks was much slower than in small markets. Bailey recalled meeting with engineers at WIL in

St. Louis in 1959. One union member said, "If it's new, I'm against it." Bailey noted that announcers could place a cart in the machine, but engineers had to press the remote start button.

By 1961, ATC had developed its own manufacturing facilities in Bloomington.



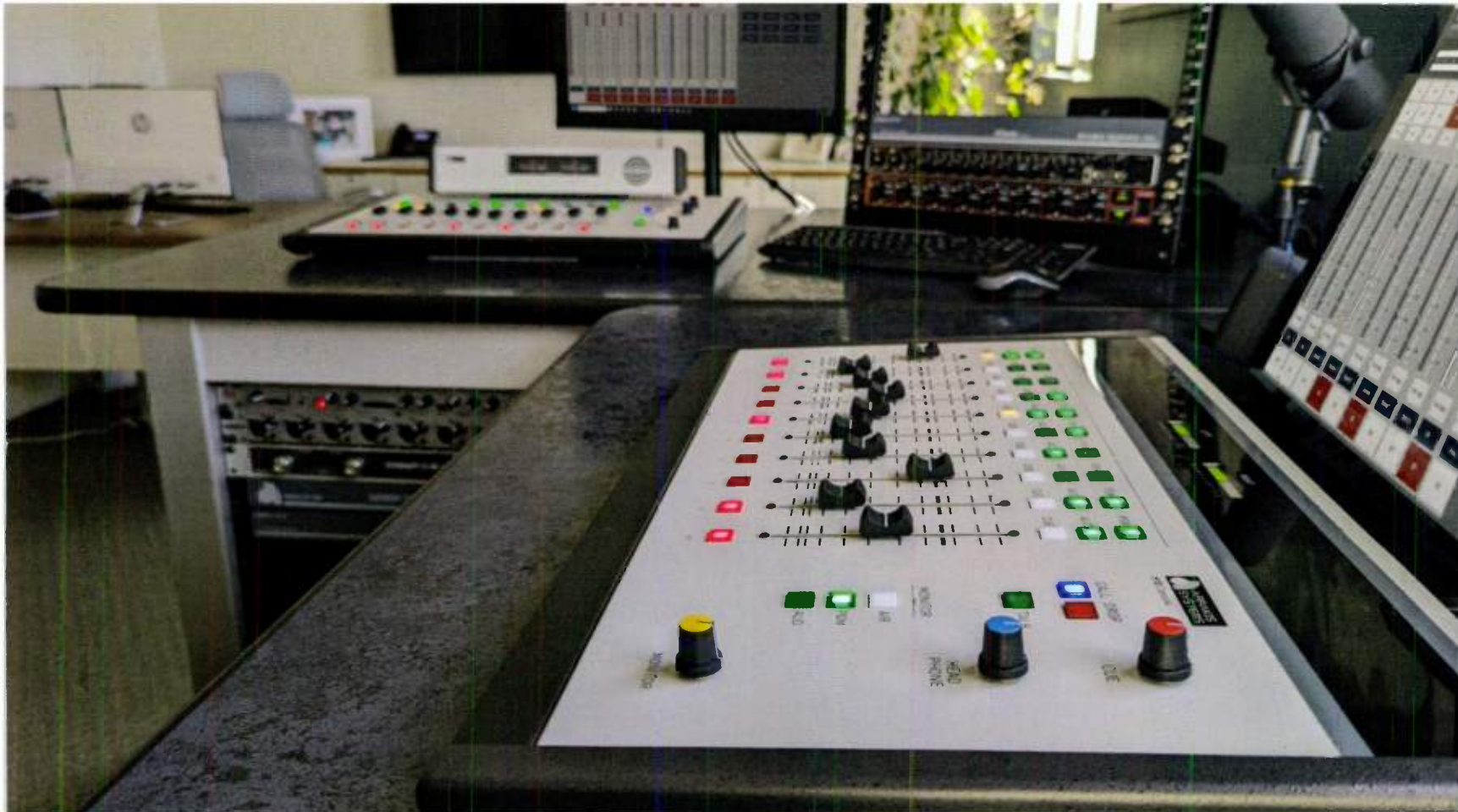
radio.cloud

Radio playout studio and programming suite

Now powering **TU 98.7** **A POP-UP STATION** in New York and your brands soon.

Contact andrew@radio.cloud for more





Don't Shop Angry. Shop Smart.

Some 'new' consoles are coming out with the same ol' technology we've had for decades. Instead of settling for old technology, choose a truly new board that can be controlled remotely via software. Our analog consoles have been setting the standard for decades, and we've done it again with our H Series boards.

SOFTWARE CONTROLLABLE - REMOTE CONTROL - BLUETOOTH - USB - LED / ANALOG METERS - USER PRESETS



H10 & H15 Hybrid Consoles

The H Series comes in two sizes to meet your needs. The H10 features two mic channels, balanced and unbalanced stereo line inputs, USB, Bluetooth, and a Mix-Minus bus. The H15 is larger, with up to five mic channels and two Mix-Minus busses.

 **ARRAKIS SYSTEMS**
arrakis-systems.com

No matter how you stream it,

IN THE CLOUD

Layers Stream software running on AWS gives you stream provisioning, audio processing, and metadata support from the cloud. Spin up or down streaming instances as needed and pay for only the cloud services you use, all controlled through a web browser.

- Audio processing designed specifically to optimize the performance of audio codecs.
- Lua transformation filters for converting metadata from any standard automation system to standard CDNs.
- Optional Nielsen audio software encoder for PPM watermarking streams.

Follow Club Wheat




Wheatstone has you covered!

FROM AN AOIP APPLIANCE

Streamblade/Wheatstream appliances manage multiple streams in one rack unit, including audio processing and metadata individualized by channel. Add onto your studio network or ours.

ON THE SERVER

Layers Stream software can be added to any server in your rack room or regional data center for managing each stream locally along with related metadata and audio processing designed specifically for streaming.

- 
- Compatibility with standard CDN and streaming protocols, including Triton Digital as well as HLS, Icecast, RTMP, and RTP streaming protocols.
 - Standard BS.1770-compliant loudness control.
 - Be part of the WheatNet-IP family, a complete AoIP ecosystem of 200+ interconnected devices and elements.



www.wheatstone.com | Manufactured, shipped, and supported 24/7 from North Carolina, USA

Right
A Viking 35
from a 1957
issue of Tape
Recording.

Below
Spotmaster
400 series
cart deck.



More Info

This article builds on a paper by Dr. David MacFarland, "Archaeology of the Broadcast Tape Cartridge," as well as a tape cartridge machine history by Andy Rector, formerly of ATC, ITC and Audi-Cord, for a 2009 manufacturers' reunion. See the latter on the SBE Chapter 24 site at <https://tinyurl.com/4nd6km9e>.

More detailed information about the development of cart technology, including biographical of those involved is available in a series of Facebook posts by the page Radio History:

Fidelipac
<https://tinyurl.com/yu3r46ma>

SMC
<https://tinyurl.com/2mjdne97>

ATC
<https://tinyurl.com/25bdj4vx>

BE
<https://tinyurl.com/y5h3m62a>

Automation

Obstacles to success included slow adoption by stations, poor audio performance due to manufacturing issues, and station maintenance problems.

In 1963, one of the nation's major advertising agencies, J. Walter Thompson, forcefully requested that non-automated stations play spots from disks rather than carts because of poor spot audio playback quality. Ted Bailey recalled two early ATC machines taken in on trade, one labeled Pokey and the other Speedy.

In 1966, Gates purchased ATC following its unsuccessful ST-101 production and moved ATC's operations to Quincy. Some employees stayed in Bloomington and formed a new company called International Tapetronics Corp. or ITC. Meanwhile BE outgrew its radio station location and relocated to a larger Silver Spring facility, then to Rockville, Md. and finally to Quincy, Ill. (as recounted in a recent Radio World article about businessman Larry Cervon).

Program automation became more popular with the FCC's 1964 requirement to separate AM and FM programming and to control costs. Machines to automatically sequence and play multiple tape cartridges were developed including the ATC 55 and SMC Carousel.

Rather than slowly declining as BE had forecast, new cart machine sales plummeted in the late 1980s. The consolidation of radio stations into centralized studio complexes, made possible by the loosening of FCC ownership regulations, made managing duplicate cartridges for each station's spots unwieldy in larger markets. Even with multiple cart players, carts didn't offer the desired walkaway time in smaller markets that had begun using long-form satellite-delivered programming. The switch to PC audio cards with controlling software seemed to happen much more quickly than the adoption of tape cartridges had.

Share your memories of cart machines. Email radioworld@futurenet.com with "Letter to the Editor" in the subject field.

The author is a retired broadcaster who worked at both stations and manufacturers. He's a member of the Antique Wireless Association and the California Historical Radio Society and posts daily on the Facebook "Radio History" page.

VIKING of Minneapolis announces the "35 Series,"

A complete line of handlers for the new Fidelipac continuous loop tape cartridge

The "35 Series" handlers have been designed to fill the need for a cartridge handler combining high performance with complete dependability. They are available now in limited supply for background music applications, point of sale devices, experimental and research applications.

The "35 Series" cartridge handlers feature:

Instantaneous cartridge change . . . single fingertip control initiates play or release.

Frequency response and low flutter and wow characteristics comparable to VIKING's outstanding "FF75 Series."

Head configurations for in-line stereo play, monaural play, monaural erase-record and erase-record-monitor operation.

Tape speeds of 3 3/4 and 7 1/2 L.p.s. instantly selected.

Suited for use with standard VIKING recording and playback preamplifiers.



THE VIKING SERIES 35 HANDLER

The Fidelipac continuous loop tape cartridge is patented and manufactured by Speed Stream Laboratories, Toledo, Ohio. 100% Fidelipac is your available form factory stock.



In the Fidelipac cartridge, the tape is completely self contained — permanently protected, permanently identified.

Static neutralizing bearing surfaces distribute static charges and eliminate sticking and binding of tape.

Cartridge designs to accommodate 300', 600' and 1200' of tape, respectively. Minimum loop playing time: a few seconds. Maximum playing time (1200' Fidelipac, 3 3/4 L.p.s. and Moebius loop): approx. two hours, monaural.

Note to audiophiles — Major tape re-conductors, including Bell, Conner, General, EMC, Livingston and Omega, currently offer selected stereo tapes in the Fidelipac continuous loop cartridge.

Further information may be obtained by writing to Viking of Minneapolis



VIKING OF MINNEAPOLIS
9600 Aldrich Avenue South, Minneapolis 20, Minnesota
EXPORT DIVISION: 23 Warren Street, New York City 7, New York
Cable: SHORTRICE, NEW YORK (AS CODE)





Broadcast Software INTERNATIONAL

BSI RADIO AUTOMATION
POWERFUL,
AFFORDABLE
& TRUSTED

EMPOWER YOUR STATION WITH
BROADCAST SOFTWARE
INTERNATIONAL'S MORE THAN
20 YEARS OF EXPERIENCE IN
RADIO AUTOMATION.

ITS TIME TO OPTIMIZE YOUR
STATION WITH RADIO AUTOMATION
SOFTWARE THAT IS AFFORDABLE,
SCALABLE AND POWERFUL FOR A
PROFESSIONAL SOUND. FOR MORE
INFO CONTACT SALES@BSIUSA.COM
OR CALL 888-274-8721

BSIUSA.COM

BUYER'S GUIDE

MAM: Automation, Traffic & Billing

About Buyer's Guide

This section appears in every other issue, focusing on a particular category of equipment and services. It is intended to help buyers know what's on the market and gain insight into how their peers are using such products.

Northwestern Media is "all in" with RCS

Users are vocal about the interoperability of the ecosystem

Northwestern Media has deployed a full suite of RCS software across its 15 stations, which feed 137 broadcast signals. This includes Zetta radio automation, GSelector music scheduling and Aquira traffic scheduling and billing. The organization

also is onboarding its newest station group with Revma for streaming.

Network Production Software Manager Derek Murphey said the selection of Zetta automation began several years ago. "The University of Northwestern-St. Paul, our parent company, was asking questions about what to do with Windows 7. As is so often the case, it all came down to an operating system and new PC hardware requirements that go with that."

The organization had been satisfied with its RCS NexGen software but now wanted a platform built with current code, following best practices, that would get it through the next several OS revisions. It researched the decision over several years and sent air personnel and technical staff to see various automation systems at other stations and trade shows.

In 2020 it committed to converting its media automation

to RCS Zetta. By 2022 it had also deployed GSelector and Aquira to take full advantage of the RCS ecosystem.

"From the on air side, we placed a lot of value in the ability for Zetta to integrate with everything that is in the studio and in the air chain," he said.

"With Zetta and the code that is running on the back end, really the possibilities are endless on what you are able to integrate — different audio consoles, audio routing devices, traditional analog devices from GPIO to TCP, HTTP."

Also important was the ability to automate steps that operators do over and over into a button click or an automated task; he said this allows them to focus on delivering a great product over the air.

"Software has to look good on the front end as well, and Zetta really shines when it comes to the UI. The user has so much flexibility to customize and save multiple layouts to enhance their workflow, everything from module size, position, data sorting and columns to the coloring and font size." Murphey said talent appreciate the UI customization. "They set it up for their workflow and don't have to spend mental energy trying to find what they're looking for."

The feature that finalized the decision for Northwestern Media is the ability to voice track remotely in a web browser with Zetta2GO. "It allows us to utilize voices and talent from other markets efficiently and easily. It's really fantastic when your talent have robust home studio setups. Even with less-than-ideal hardware, Zetta2GO still shines. Any web browser, any audio device, track directly into the system, see the log as it is, to hear the songs and segues exactly as they are."

His users are vocal about the integration with other software.

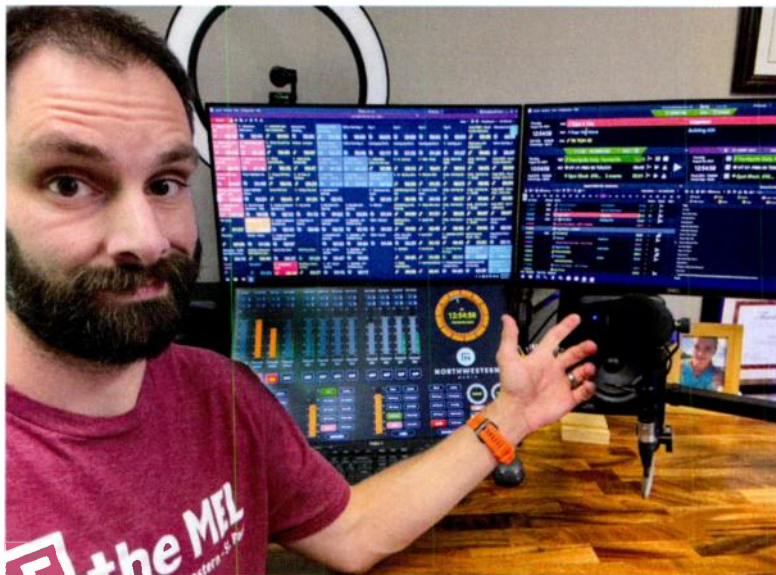
"When programming schedules a new log, it's populated in Zetta. When sales closes a new client and their media ID is assigned, there's a placeholder in Zetta. Talent or producers who want to swap songs or imaging in Zetta can see the 'best' options according to GSelector's defined goals. Those changes update in real time so they don't have merge and reconcile logs across platforms, it's all in sync." 🎧



More Info
www.rcsworks.com

Below

Derek Murphey



Optimize Revenue with a Connected Traffic and Payments Ecosystem

The modern era of radio traffic software has arrived, powered by modern technology, integrations and automation.

With three traffic systems that connect to our electronic payments platform, we have a solution for you to meet your structure, volume and unique needs!



+

PN

Simplify Traffic Management and Payments

- ✓ Optimize workflows with automation tools.
- ✓ Run advanced and customizable reports.
- ✓ Save time and money with electronic invoicing.
- ✓ Get paid faster with frictionless online payment options.
- ✓ Access payment features like guest checkout, pre-payments and automatic reconciliation.
- ✓ Count on expert support, dedicated training and other value-added services.

Why Radio Trusts Us

50+

years in the radio industry

7K

media companies rely on Marketron daily

1.5M+

advertisers supported

\$7B

in advertising revenue managed



Explore our solutions by visiting **Marketron.com/connected** or scan the QR code.



Marketron

In Texas, "Patriot Talk 920" embraces cloud model

KYST adopts Radio.Cloud's cloud-native operating model

As one of the early adopters of Radio.Cloud's new operating model, Hispanic Broadcasting Inc. is taking full advantage of the radio playout studio and programming suite.

After flipping from a Spanish talk format in January, KYST(AM) has overhauled its infrastructure starting with the cloud-native automation platform.

Patriot Talk 920 runs a two-hour live morning show Monday through Friday, broadcasting out of a small studio using Radio.Cloud's browser-based Live Studio. The audio feeds the transmitter site, where all other vital equipment sits.

As a news/talk station, KYST runs 22 hours of satellite programming per day. The satellite dishes and uplinks reside at the transmitter, along with Radio.Cloud's main and backup Edge Gateway playout boxes. The workflow is unique, as all satellite cues and triggers are received and controlled through the cloud, ensuring no manual work. This method of operation ensured that Patriot Talk was one of two news/talk stations in the Houston market never to go off air during Hurricane Beryl earlier this summer.

Radio.Cloud says its model enables stations to operate entirely from the transmitter site, integrating all incoming satellite feeds into the cloud workflow. The company says this empowers broadcasters through technology to reduce expenses by moving away from legacy systems and hardware.



Above
Michael Wilson, host of KYST's morning show "The Lone Star Conservative," in action in the Patriot Talk 920 studio.

"Radio and the technology behind it were starting to feel archaic," owner Matt Velasquez told the company.

"When I saw the possibilities with Radio.Cloud I knew we could create something that would future-proof our radio station and minimize our downtime and maintenance, plus open new opportunities to our broadcasting capabilities."

One of those new opportunities Velasquez refers to started late this summer, as KYST is airing Houston Christian University football, broadcasting completely through the Radio.Cloud Live Studio. The supplier said this highlights Radio.Cloud's goals of empowering local, increasing efficiency and reducing hardware footprint and costs. 📡



More Info
www.radio.cloud

Tech Update

BSI Plans Upgrade for Simian Pro

The flagship software of Broadcast Software International is receiving an upgrade.

"Simian Pro has long been a standard in the industry. Simian Pro 3.0 will have a new look and new features including, but not limited to, a new and improved database, and our value-added TransferConvert program for customers with a valid TechAdvantage Plan," the company states.



Broadcast Software
INTERNATIONAL

"The TransferConvert program easily downloads your files from any FTP or HTML site on your schedule and then converts them to the format you desire. It can also convert files in bulk, adding them directly to your database."

BSI said the program's ease of use and cost-effectiveness make it suitable for small-market or single stations looking to streamline their operations.

Info: www.bsiusa.com



Tech Update

Marketron Offers Integrated Traffic and Payments Solution

"A truly connected ecosystem of traffic and electronic invoicing and payments."

That's how Marketron describes its Traffic and PayNow systems, saying they work together to boost productivity rather than existing in separate silos or creating workflow issues for stations.

"The tight integration between the two systems capitalizes on automation," it says. "As a result, traffic managers and other stakeholders have a streamlined workflow to manage advertising revenue and get paid faster. Users can log in to one platform to access account tools, reporting, billing and payment details."

The connection between Marketron Traffic and PayNow includes the entire life cycle. The traffic system sends invoice data to the PayNow Advertising Portal, which electronically delivers it to advertisers. When they submit payment, it syncs with the PayNow Merchant Processor and pushes payment to the station's bank in as little as one day.

These connected systems are also cloud-based, providing layers of security and easy access for users.

Highlights of this integration include order entry and invoicing automation; import of payments to AR; guest checkout options; pre-payment capabilities; elimination of duplicate tasks for reconciliation;



end-to-end encryption to meet compliance and security requirements; the ability to receive ACH, credit card and debit card payments; and collections tool for account executives.

Info: www.marketron.com/connected

CHANGE IS IN THE AIR

Meet the all new DJB ZONE

It's powerful.

It's simple.

It's easy to use.

And best of all, it's affordable.

WIDE AREA AUTOMATION

Who says you can't have it all?

Discover our game-changing, top-of-the-line automation software. Minimal hardware requirements. Ideal for mid-to-large sized groups. Share audio anywhere with a single mouse-click. Manage multiple locations through a simple browser.

DJB RADIO
We Make Radio Automation Easy!

**YOUR NEXT AUTOMATION
SOFTWARE IS HERE**
www.djbradio.com | 702-487-3336

Villanueva University of Madrid migrates to AudioPlus

The institution uses AEQ automation systems to support two radio studios

Villanueva University of Madrid has trained professionals for more than four decades. "The university has always emphasized the great importance of imparting practical knowledge to its students," said Audiovisual Systems Technician Mario Muncharaz, "and to this end has implemented two complete radio studios at its campus, through which more than 3,000 students have passed since 2000."

For automation of its broadcasts, the university equipped its studios with AEQ software, beginning with Mar4Win and then migrating to the AudioPlus version.

"Not only were we surprised by the ease with which students adapted to Mar4win, but what we liked most about the new automation system was its stability and its great features in terms of audio management."

AEQ AudioPlus incorporates tools for manual, automatic and remote-controlled playout, automatic programming of music and advertising, and content generation and editing. Designed for Windows operating systems and SQL Server databases, it has a simple self-installation wizard. It is compatible with low-cost audio cards and has complementary editing and management tools.

Muncharaz said he appreciates the stability and simplicity of AEQ's workflow, which in this installation involves four computers located in two radio studio control rooms, connected through a continuity server.

"Its operation is simple and more agile, such as the



export of objects or the possibility of ingesting material in our own managers directly from a pen-drive by simply dragging them to the manager."

In addition, AEQ said it will soon announce the integration of its automation system with the new visual radio application VisualRplus, which allows a user to launch macros from objects in the AudioPlus playlist or in instant button templates.

Among other things the macros can trigger video clips or images related to files in the playlist, or focus a camera on a point of interest such as a talent and launch it on air.

For more information about Villanueva University visit www.villanueva.edu.



More Info
www.aeq.eu

Tech Update

Jutel ClipperAI Is an All-in-One Tool

ClipperAI is an "all-in-one" tool for audio production; Jutel says it can transform how journalists create, edit and manage their audio content.

"Designed for today's fast-paced media environment, ClipperAI empowers journalists to produce high-quality audio from anywhere in the field or the newsroom."

Users can record and edit interviews on the go and manage media assets from one intuitive platform. "Capture audio clips with your mobile device or craft complex, multi-track audio stories in a browser. ClipperAI makes bringing your ideas to life easy."

With the mobile app, a journalist can record, edit and send high-



quality audio to their media asset management system, ready for immediate broadcast. Back in the newsroom, they can refine the audio using ClipperAI's browser-based tools, which include multi-track editing and AI features.

AI features provide speech synthesis, audio transcription and text-based audio editing.

ClipperAI also integrates with RadioMan and other media asset management systems. "Since the mobile app is available for iOS and Android devices, and the multi-track editor operates seamlessly in the browser, ClipperAI eliminates the need for multiple tools, streamlining

production, user management, updates and data security."

By centralizing audio production needs in one platform, Jutel says, ClipperAI helps transform creative ideas into polished, broadcast-ready content.

Info: <https://clipperai.com>

Tech Update

NextKast OnAir Launches Syndication Platform

NextKast OnAir announced a major update with the release of a new syndication platform designed to simplify and enhance live broadcasting across multiple stations.

"This innovative platform is integrated directly with the NextKast On Air Music Scheduler and Radio Automation, enabling stations to efficiently distribute live shows and music formats to affiliates, all while maintaining seamless, high-quality content delivery," it said.

The platform is built to support a range of operational needs, from fully staffed stations to those operating remotely or unattended.

"Using the platform's built-in audio and meta data synchronizers, stations can broadcast live content to various affiliates effortlessly, without the need for a live operator at every location. This makes it an ideal solution for stations looking to expand their reach while minimizing operational complexity."

With these syndication tools, stations can customize content for different markets easily. Affiliates can receive tailored versions of a station's primary format, such as a popular hosted morning show, while adding or adapting additional music categories to

suit local preferences.

"This flexibility helps maintain strong listener engagement across diverse regions. The new syndication platform offers a real-time, scalable solution that reduces the challenges of content distribution and management."

Info: www.nextkast.com/onAir



RAVE! Radio Mixing Console



 ANGRYAUDIO.COM

INTRODUCING THE 677 EAS TRIPLE TUNER

AM FM NOAA



Powerful features in a compact half-rack design.

EAS
Emergency Alert System

INOVONICS
BROADCAST

YELLOWTEC



mika
The system
to success.

www.yellowtec.com

Telos VX Duo Powerful, Economical Broadcast VoIP



TelosAlliance.com/VXDuo

Telos Alliance
BROADCAST WITHOUT LIMITS



Broadcasters General Store
157-443-7700 | www.BGS.cc



Broadcasters General Store
Family Owned & Operated Since 1979



Your source for broadcast
equipment and services.

Contact us for a quote today!

352-622-7700 www.BGS.cc

“Your Network of Praise” expands distribution with Arrakis Apex

Radio ministry has launched two satellite radio channels for Africa

Your Network of Praise is a non-denominational Christian radio ministry that operates approximately 60 radio facilities in the northwestern United States as well as two missionary radio stations in the Republic of Tanzania and one in Liberia.

In 2021 it launched the New Life Africa Satellite Network. “This ambitious project aimed to establish a 24/7 satellite radio channel that would cover the entire continent of Africa,” said Roger Lonnquist, president and network general manager.

In order to meet that challenge, YNOP sought a system that could handle not only the requirements of radio automation but also offer simplicity in programming and operation. Additionally, he said, it needed a system that was reliable and came with exceptional technical support when needed.

YNOP chose Apex automation from Arrakis Systems. “Our initial interaction began with a phone call to Ben Palmer, where we had the opportunity to ask important questions and finalize our purchase. This positive experience continued throughout the entire process.” Once the system arrived, Melissa Freeman reached out to guide the network through the setup and programming phases. “Her support was instrumental in making the setup process smooth and effortless, effectively removing



the complexities that often accompany such tasks. Over the past three years, we have encountered only a few instances where we needed technical support, and on each occasion, the response from the Arrakis team was prompt and helpful.”

In 2022, YNOP expanded its operations by launching a second satellite radio channel in Africa and again chose the Apex system. It has since acquired a third system and plans to purchase three more in the coming year.

“Having worked with many automation systems over my 40+ years in radio, I can confidently say that APEX has been one of our best decisions,” Lonnquist said. 📻

Right
Roger Lonnquist



More Info
www.arrakis-systems.com

Tech Update

Super Hi-Fi Offers Rosetta Traffic

Super Hi-Fi describes its latest offering as a way to integrate existing broadcast traffic tools into its cloud-based radio management and playout services.

“With Rosetta Traffic, Super Hi-Fi customers can now deliver broadcast advertising from leading ad traffic solutions such as Marketron and others for over-the-air stations using Super Hi-Fi’s end-to-end cloud solutions, without modifying their existing inventory management or reporting tools,” it said in its release.

The announcement was made by Super Hi-Fi CEO Zack Zalon. Marketron’s CEO Jimshade Chaudhari was quoted saying that



Super Hi-Fi’s efforts complement Marketron’s systems.

Rosetta Traffic reads and translates traffic logs and audio advertising in real time. It converts those into cloud-enabled advertising breaks, plays the ads using Super Hi-Fi’s cloud-based streaming services and sends back a compatible report that will automatically integrate into current solutions for reporting and payments.

“Rosetta Traffic is designed to allow radio companies to easily take full advantage of Super Hi-Fi’s significant operating efficiencies without having to retrofit any new traffic solutions to do so,” the company said.

Info: www.superhifi.com/products/rosetta-traffic

Tech Update

DJB Radio Offers Wide-Area Automation

An automation package built for multi-market operation is the latest offering from DJB Radio.

DJB Zone includes a live log editor, waveform-based voice tracking and integrated audio editor. Users can voice track from anywhere using iVT, DJB's remote tracker.

"Share audio assets between markets with a single mouse click and view all markets in a single window," the company says.

"Program logic, background recording and satellite closures and monitor all stations in your group from a web browser."

DJB Zone's log scheduler can be set to create schedules automatically or ingest from third-party music and traffic systems. Email alerts are prompted by problems with log creation or asset delivery. Custom logic interfaces for Wheatstone, Axia and SAS provide integration with leading AoIP providers.

DJB Zone On Air now has an on-screen mixer to control remote audio and local playout channels. "Centralize or run locally with audio, program log and database redundancy on every local machine or backup to the cloud for added peace of mind."



Info: www.djbradio.com

31



All Inclusive

Radio Automation-Music Scheduling-Traffic

99%

of the Features

from Leading Automation Systems

Fraction of the Cost



Premium Music Scheduling Included

nextKast Radio Automation Software

www.nextkast.com | 210-286-2975

Tech Update

Myriad Offers Studio/Cloud Hybrid Radio

Broadcast Radio says its Myriad 6 release combines advanced scheduling and automation with intuitive, user-friendly broadcast tools for live studio shows and remote contribution.

Features include AI Voice Links, contextual song information and live Autohooks.

Released in 2023, the native cloud version of Myriad, called Myriad Cloud, offers a professional radio playout and automation platform, running natively on MS Azure.

"Myriad Cloud offers feature parity with its desktop sibling, meaning stations no longer need to compromise when switching to cloud," the company says.

"Our propriety BR Live technology allows for live, real-time radio shows featuring multiple presenters operating from any device from anywhere in the world via a web browser. The system also includes native cloud-based music, jingle and advert scheduling combined with advanced Voice Tracking, and everything else you need."

By combining Myriad 6 Playout and Myriad Cloud with the company's multi-direction replication technology, stations



can leverage the creativity of live, studio-based radio with the convenience of a cloud-based solution.

"Content is automatically replicated between Myriad Cloud and one or more Myriad 6 Playout systems automatically handling content and schedule distribution. Stations can freely switch between local playout in their studio, and their Myriad Cloud system, freeing up studio time and resources."

Myriad Cloud also offers a thin "edge" client that can be installed at your transmission site. It's not dependent on web connectivity for playout.

Info: www.broadcastradio.com

32

**PEAK VOCAL PERFORMANCE
FOR THE SOFT AND THE VOCIFEROUS**

Half-width, single-channel device shown in optional twin rackmount. Single rackmount available.

Connect with your Wheatstone sales engineer for all your WheatNet-IP AoIP network needs!

Call +1-252-638-7000 or email sales@wheatstone.com

<https://wheatstone.com/voice-1-vociferous-rv2024d>

AUDIOARTS ENGINEERING

Wheatstone

Manufactured in North Carolina USA

Brewer modernizes its ENCO infrastructure

Tennessee cluster upgrades studio operations for two FM stations

There comes a time in every broadcast system when the technology lifecycle is ready for a refresh, even if the current system's performance remains strong. Such is the case with Brewer Media Group's two-station FM cluster serving the Chattanooga, Tenn., market. Thanks to a relocation project, Brewer was inspired to upgrade studio operations for FM stations WMPZ and WJTT.

On-air and production personnel across both stations have been working with ENCO's DAD radio automation system since 2002 after Sam Lewis of Chattanooga Engineering transitioned the facility's computer operating systems from DOS to Windows. While updates have been made along the way, there was no time like the present for a hardware and software upgrade.

Lewis was satisfied with DAD's workflow and reliability over two decades but wanted to take advantage of the latest available features and functionality.

"We implemented a new IT infrastructure and higher-performance computers allowing the staff to perform multiple functions within the DAD on-air and production suites," said Lewis.

"That can mean many things, from creating and managing multiple playlists, to automatically downloading and ingesting audio into multiple libraries. We can also now automate RDS formats for radio displays and streaming services. That just scratches the surface."

DAD workstations have been added to on-air and production studios for each station, along with Logitek



Above
Magic, left, and Keith Landecker are shown working with the ENCO tools at WMPZ.

consoles that Lewis selected in part for their robust interoperability with DAD. The flexibility of the integration will allow automatic switching between any studio to suit each station's needs on the fly.

Lewis said the station will continue to favor the DAD applications they are most familiar with, including enConveyor for automated file downloads and ListGen to interface with music scheduling and traffic software for tracking and log creation.

Lewis also decided to bring an ENCO server into the new facility for on-air protection from minor blips to full disaster recovery scenarios.

"This is a server with a modern RAID array, and six different drives configured as one large drive to optimize performance. There is at least 5 TB of capacity for both stations, and it automatically feeds their air chain where things left off."


More Info
www.enco.com

33



**KINTRONIC
LABORATORIES**

 www.kintronic.com

 1.423.878.3141

 ktl@kintronic.com



FM Combiners



LAB4.50K Dehydrator



Motorized Coaxial
Switches



Co-Location on AM Towers



AM Multiplexers

110-220VAC

Custom Solutions for
FM, LPTV, 4G & 5G

Directional or Non-Directional
As low as 50kHz apart

Tech Update

AxelTech Highlights XRadio for Its Flexibility

XRadio is an audio and media content management system and publishing platform from AxelTech.

The company says it is a flexible and scalable solution, suitable to meet the needs of organizations of various sizes including regional and national networks. It manages one or more radio stations with simultaneous and multiple playout feeds to support separate broadcasting areas with advertising splits.

Its design is modular. XRadio Core handles production, scheduling and traffic while the XRadio OnAir module manages automated or manual on-air operation including tools for live broadcast, recording and control.

XRadio is compatible with cloud-based and IP workflows and now embeds a new voice-track module. A demo version of the software is available at the company website.



Info: www.axeltechnology.com/xradiow

34

KQMR moves on up the mountain

A site move has allowed KQMR — a 30 kW FM serving the Arizona communities of Phoenix, Globe and surrounding area — to continue providing reliable broadcast service without consuming expensive diesel fuel. The project is featured in the Radio World ebook features "Awesome RF Buildouts."

Martyn Horspool, regional director of RF transmission for licensee TelevisaUnivision, said, "We moved from a site with no commercial electrical power to an existing site that had commercial electrical service and that already served our aux transmitter and two TV translators."

Both sites are on Pinal Peak, near Globe. The previous one ran on a large diesel generator that was expensive to operate and required frequent re-fueling and maintenance.

The work included installation of a new five-bay ERI MP-5E

Rototiller Circular Polarized FM Antenna and moving an existing GatesAir FAX series FM transmitter from the lower site. (It originally was a FAX40 but the company converted it into two FAX20 transmitters; one is at the upper site, the other will be redeployed elsewhere in the market.)

"On the savings side, we not only removed a large diesel fuel cost but we were also able to reduce the transmitter power by approximately half, thus saving electrical energy. The reduction in transmitter power was made without sacrificing any coverage due to the increased height above average terrain and the higher gain of the new five-bay ERI antenna," Horspool said.

Find more photos and RF projects in "Awesome RF Buildouts" at <http://radioworld.com/ebooks>.



RAM SYSTEMS

Building Sound Broadcast Furniture for over 50 years

RADIO—TV—DIGITAL



WWW.RAM68.COM



TECH. TOOLS. PRODUCTS. PEOPLE.

Join *thousands* in broadcast, media and entertainment at NAB Show New York, where infinite product discovery, networking and knowledge is within your reach. Ask questions. Get answers. Make connections. The latest innovations await on a show floor full of new-to-market tech and time-saving digital tools. Plus, access to amazing people and the most pivotal trends and topics you need in on now... *AI*, the *creator economy*, *sports*, *photography*, *virtual production*, *FAST* and more!

Invest in yourself through these incredibly in-depth conferences:

- Local TV Strategies
- Post|Production World New York
- Radio + Podcasting Interactive Forum



NAB SHOW[®] NEW YORK

EXHIBITS: OCTOBER 9-10, 2024

EDUCATION: OCTOBER 8-10

JAVITS CENTER | NEW YORK, NY

BROADCAST EQUIPMENT EXCHANGE



**Rebuilt Power Tubes
1/2 the cost of New!**

Se Habla Español

ECONCO

Se Habla Español

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



Keeping you on the
air since 1934

ISO 9001 Certified

NEW POWER TUBES

Triodes
Tetrodes
Pentodes

NEW SOCKETS &
REPLACEMENT PARTS

Worldwide Availability

Made in the U.S.A.

Call (800) 414-8823
Int'l (650) 846-2800
Fax (650) 856-0705

Visit our Website at
www.cpii.com/eimac

CPI
Communications
& Power Industries

TUNWALL RADIO



AM DIRECTIONAL CONTROL SYSTEMS

Now with SNMP v2c and web server

330-995-9642

www.tunwallradio.com

CORNELL-DUBILIER MICA CAPACITORS

FROM STOCK

VACUUM
CAPACITORS

FROM STOCK

HIGH ENERGY CERAMIC
CAPACITORS

SURCOM ASSOCIATES

5674 El Camino Real, Suite K
Carlsbad, California 92008
(760) 438-4420 e-mail: link@surcom.com
WWW.SURCOM.COM

**Oldies
Music
for
Radio**
RadioMusic.com
1-844-RADIO-MUSIC
A Scott Studios Company

**RF
Specialties®**

Your best
source for all
RF projects
and beyond

rfspecialties.com



Get your message across
with an ad in radio's industry
leading publication.

RADIOWORLD

For more information contact
John Casey at 1-845-678-3839 or
email john.casey@futurenet.com

A case in point

Andrew Gladding's commentary in the June 19 issue about the value of college radio struck a strong chord with me.

There's no doubt that I would not be who I am if not for my college radio experience at WRUW-FM, the student station of Case Western Reserve University in Cleveland. That relationship extended, in several different forms, more than a decade past

graduation. And to this day, 4 decades later, I am in touch with station colleagues and employed in the broadcast field.

As Andrew reports, the presence of a robust college station was not at all part of my choosing to attend Case Western Reserve University. Yet it provided my most memorable experiences in my college years and was instrumental in my career. Prior to WRUW I was a radio listener, and most of all an audio junkie. My experience there is what made me a radio person.

Thank you WRUW. And thank you Andrew for extending a helping hand to keep college radio alive.

Rolf Taylor
Rocket Engineering and Consulting

Willing to share

Both my wife Cathy, who also used to work at Harris and Broadcast Electronics in Quincy, and I enjoyed Tom Vernon's article about Larry Cervon in the July 17 issue of Radio World.

My time working for Larry is the most important part of my professional development. I would not know nearly as much about the history of broadcasting and the broadcast equipment business had it not been for my relationship with Larry.

He understood so much and, more importantly, was always willing to share what he knew.

Bill Harland
Vice President of Marketing
Electronics Research Inc.
Chandler, Ind.



Build, buy or fix

A recent thread of Radio World letters discussed the importance of being able to fix things yourself. It used to be that component-level repair skills were as valuable to your career as an SBE certification, but it is in the nature of software and hardware that basic foundational bones become buried and eventually invisible, lost inside advanced and modularly serviceable gadgets built upon them.

Probably for too long, I preferred to make things that I should have bought. After all, my first big station was built by hand out of op amps, step attenuators etc. — arguably because nothing available commercially was good enough.

Wayne Pecena recently sent me a publication notice of Forest Mims' memoir, "Make: Maverick Scientist," subtitled "My Adventures as an Amateur Scientist." For some of us, Forest was a god of sorts who wrote books on designing with solder and silicon that you would buy at Radio Shack. In that primeval



world, there are famous folks, too many for this note, and their lessons were as much about life and perspective as design approach. There is a Zen to design at any level.

I recently encountered street repair stands in Bangkok, where component-level life persists; one is shown in the photo above. I came for Buddha, but this raised my consciousness.

Solder and bread boards are now arts and crafts. We belong with the weavers, soap makers and chemical photographers. Still, I'm not tossing out my chip inventory quite yet. I fashion these one-offs just for myself these days. It's not fair to leave some young broadcast engineer a custom PLC-based system, or custom interfaces that only an old-school guy can maintain. If you must, it would be kind to leave lots of documentation and spares.

Fred Baumgartner



Lessons from the CrowdStrike outage

As I read news stories and tweets during this summer's CrowdStrike outage, I kept circling back to one thought: This type of incident will only become more common.

Even though it wasn't a cybersecurity attack, hack or ransomware situation, it crippled the infrastructure of many essential business sectors including medical, travel and emergency services. And while broadcast wasn't one of the top industries impacted, radio and television did not go unscathed. No matter how briefly, there were stations in North America and Europe that were affected.

This type of outage can be avoided.

The company I work for, Radio.Cloud, and its worldwide affiliate base stayed operational without any issues. The reason lies in our infrastructure, which uses only cloud-native services without any traditional Windows machines.

The benefits of going cloud-native and not relying on hardware apply to increasingly more parts of the radio air chain and other facets of our industry.

While ours is a cloud-native radio playout and programming suite, we do have a small on-premises Edge Gateway with an additional layer of security. This server handles the last-mile playout and stores forward up to two weeks of logs and audio to prevent an internet outage taking a station off air. The only connection is from the Edge Gateway to our cloud infrastructure located in two AWS regions in Ohio and Oregon. Thus there is no risk of catching a virus or being brought down by a worldwide Windows update.

We're nearly 25 years into the 21st century. As an industry, we must stop relying on manual software updates and hardware upgrades. Even in facilities with a newer AoIP chain, reliance on constant software and hardware maintenance keeps the industry fighting uphill.

Staying on the air is directly connected to radio's ability to serve communities. As the NAB fights to keep radio in the dash, we as an industry must prove that radio can continue to perform during these types of situations.

Above

In July businesses including airlines were affected by a global technology outage attributed to a software update issued by cybersecurity firm CrowdStrike. This photo was taken at Dulles International Airport in Virginia.

As disruptions like the CrowdStrike outage become more common, it's our duty as broadcasters to modernize our mentality and infrastructure so that we can stay on the air and keep listeners informed.

Andrew Scaglione
Account Director
Radio.Cloud
New York

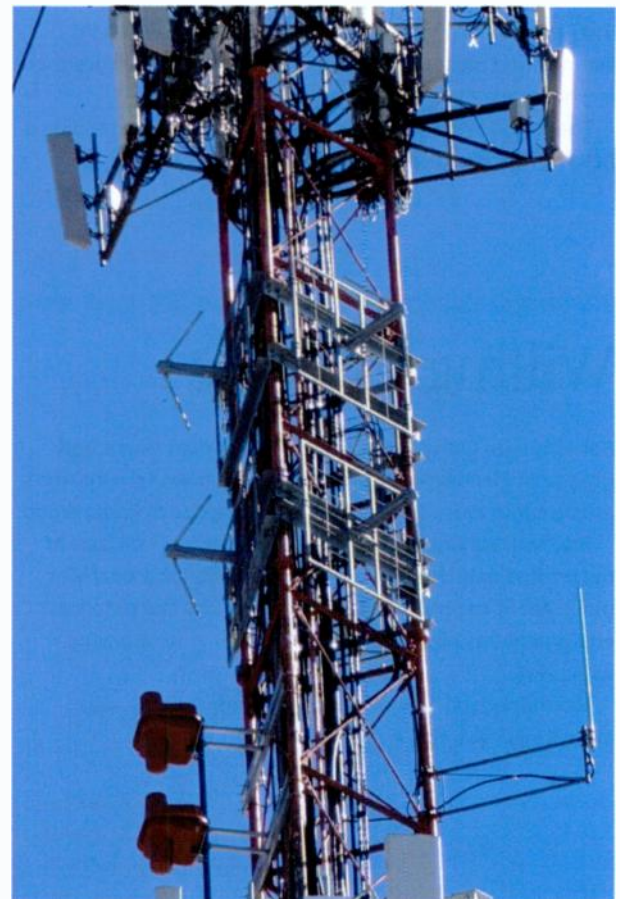
Mistaken identity

I really enjoyed the recent "Awesome RF Buildouts" ebook. However, I did notice one minor error in the caption at the bottom of page 12.

It states that "WVER-FM's antenna with red radomes is visible at lower left." In fact, that Shively antenna belongs to WMUD. WVER-FM has a single-bay Dielectric antenna further down the tower.

Thank you for an otherwise excellent publication.

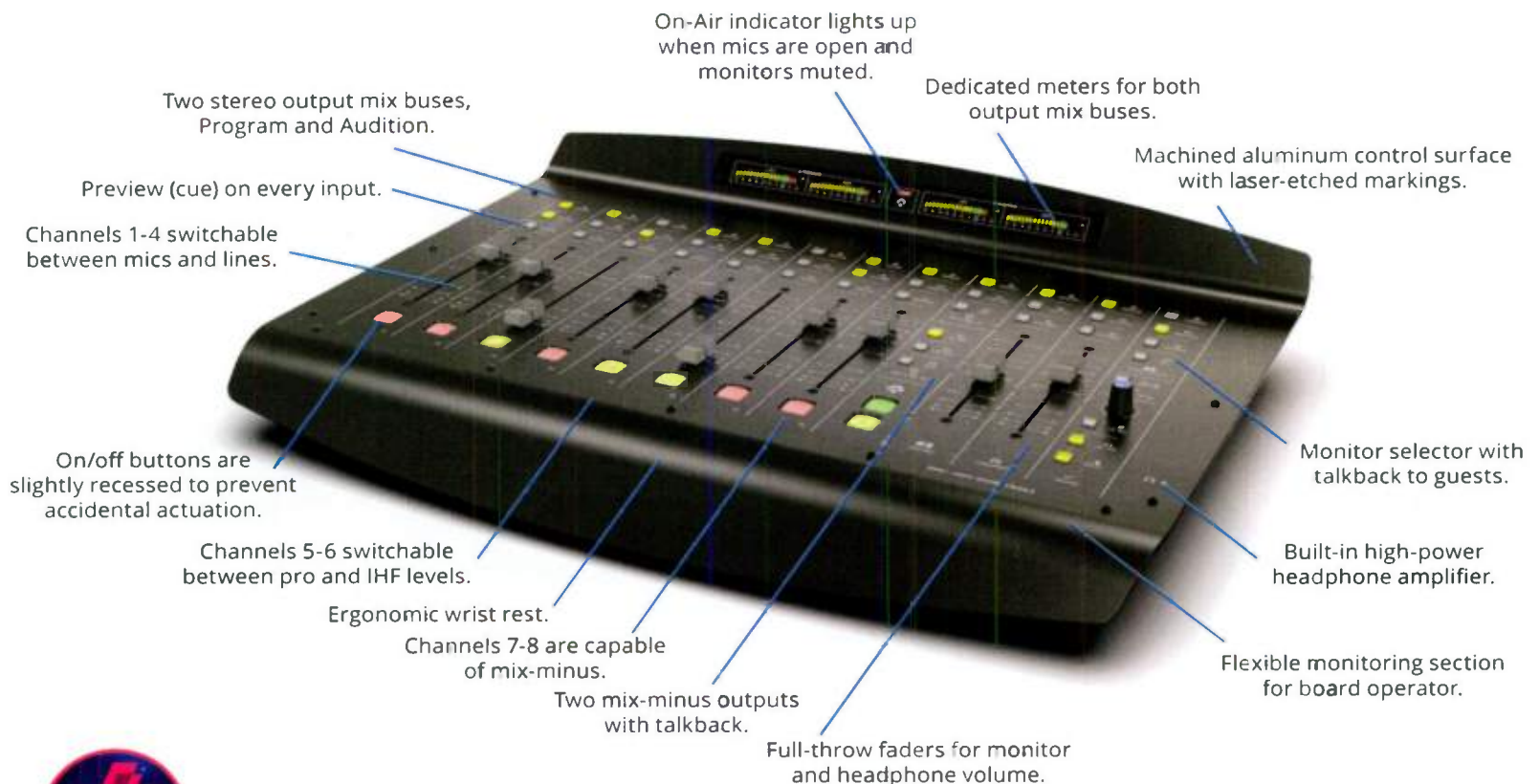
Joel Epley, Chief Technology Officer
Light of Life Ministries Inc. d/b/a Worship Radio Network
Augusta, Maine



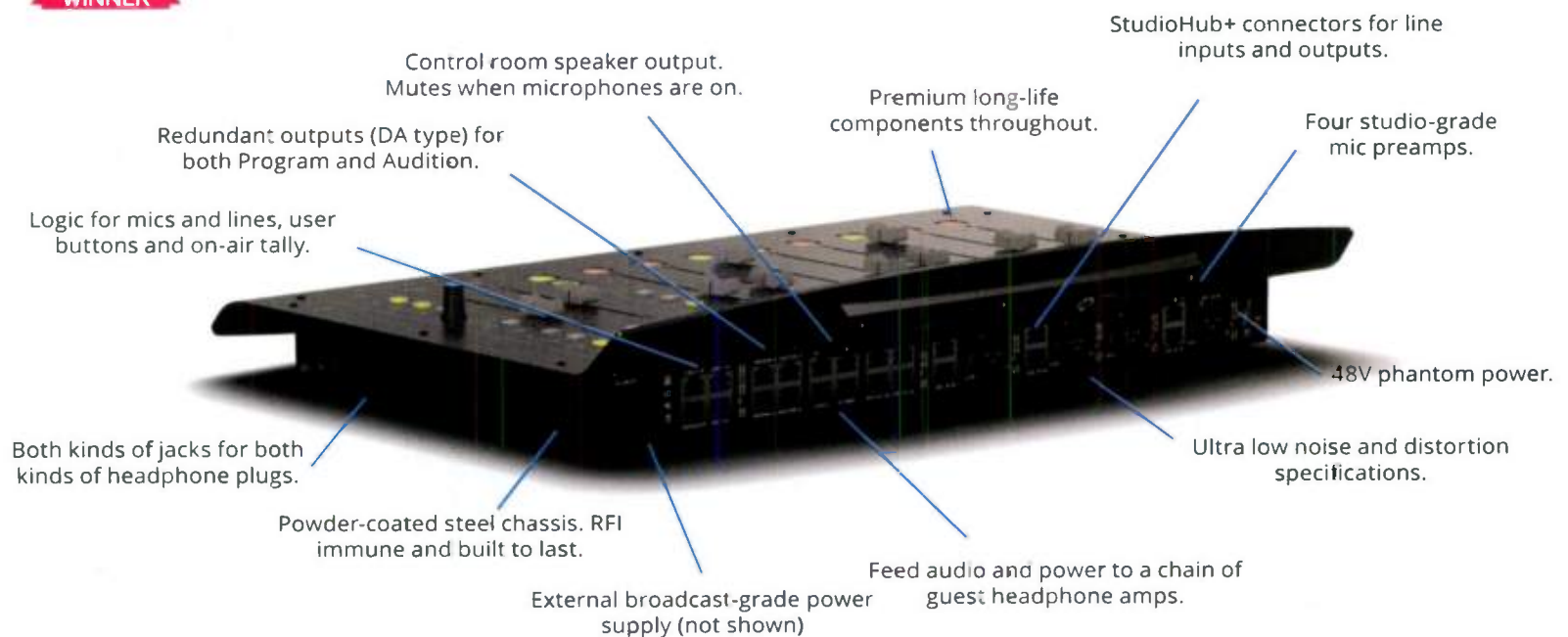
How to submit

Radio World welcomes comment on all relevant topics. Email radioworld@futurenet.com with "Letter to the Editor" in the subject field.

Double your bang. For half the bucks.



RAVE! Radio mixing console.
\$2,199 MSRP. Yes way.



DMX

WHEATNET
WP

GO FROM ANALOG TO AOIP IN A SNAP!

NEW! ACI for full ployout
and automation control.



▲
YOUR MIX
ENGINE


▲
YOUR ENTIRE STUDIO I/O

▲
YOUR ETHERNET SWITCH INSIDE
Expanded I/O, network studios, and
more. WheatNet IP compatible.

IP audio networking, local I/O and mixing console in one.
Available in 8 or 16 channel frames. Ethernet switch included.
Plug in and ready for air. Just add CAT6 cable *(actually, we include that too).*

Engineered, manufactured and supported by Wheatstone. Call +1-252-638-7000 or email sales@wheatstone.com.

<https://wheatstone.com/DMX-RW24a>

 **AUDIOARTS ENGINEERING**

www.wheatstone.com | Manufactured, shipped, and supported 24/7 from North Carolina, USA

 **Wheatstone**

World Radio History