IP IS CENTRAL AT CORUS QUAY — Page 18

NewBay Media

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INSIDE

Smitty Helps Make Radio Greater

Milford Smith is recipient of Radio World's Excellence in Engineering Award. Page 4

PAIS: Personalized Radio Explained

Project Could Help Create Audience by Making Our Medium Accessible

BY RICH RAREY

The author is manager of strategic technology applications for NPR Labs.

For more than 40 years, radio reading service stations have served blind, low-vision and print-impaired listeners by making the printed word accessible to millions who otherwise would be excluded from literature and news sources the sighted population takes for granted.

COMMENTARY

RRS staff, mostly volunteers, read newspapers, books, magazines, catalogues and other materials — from the timely to the arcane — over an FM station's Subsidiary Communications Authorization channel to their intended audience. In the coming years, RRS stations are expected to migrate from SCA to HD Radio channels, and will be able to take advantage of improved audio fidelity and the rich data paths HD Radio technology offers.

To that end, NPR Labs, in partnership with the International Association of Audio Information Services, sought and received a federal grant from the National Institute on Disability and Rehabilitation Research to create a practical way to identify RRS programs by category, transmit that information as Program Service Data in an HD Radio channel, and develop a working HD Radio receiver that enables blind and low-vision listeners to select desired programs for capture and later listening — including traditional rewind/fast

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THE FRESHEST AIR

The new tablemount Air 3 delivers superb broadcast quality and a great feature set at an extremely attractive price. The Air 3 gives you 12 stereo input fader channels (with both A and B balanced inputs on each channel), a 13th phone caller fader, two mic preamps, two program busses, a control room monitor, split cue, a built-in cue speaker and lots more. Its USB connection is patchable to any of your input faders and internally dipswitchable to pick up program 1 or program 2 output mixes. This lets the Air 3 interface with your desktop computer for news and music sweetening functions, or to stream audio mixes from and to the console. RJ-45 connectors keep your wiring simple and inexpensive. Completely made in the USA and available TODAY!

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PERSONAL RADIO

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forward/scan transport functionality.

The project is called the Personalized Audio Information Service. PAIS has provisions for emergency alerting as well; at the reception of an alert category the HD Radio receiver automatically begins recording the message.

PROTOTYPE

In the course of the three-year PAIS project, NPR Labs worked with IAAIS to create a basic set of 109 RRS program categories and developed a working prototype of a PAIS-enabled HD Radio receiver to test and refine the receiver's user interface with blind and low-vision test subjects.

NPR Labs also devised software processes to transmit and receive PAIS category information as HD Radio program service data and created a working PAIS-enabled HD Radio receiver.

This work is straightforward and easy to understand; NPR Labs published details about the project in a white paper, "The Technical Basis of PAIS," available at *www.nprlabs.org*. The paper describes the PAIS data flow, the PAIS categories — which are field-upgradable — and other programmatic and technical concepts.

An RRS station will have two different methods for generating PAIS tags for broadcast.

For live programs, the human reader can press an external keypad button that triggers a software application to generate and send the PAIS tag to the station's HD Radio importer. For automation system playback, an NPR Labs software application acts as the interface to retrieve the PAIS information from the automation system, and send the PAIS tag to the importer.

We demonstrated the keypad method at the 2010 Radio Show; the custom software we developed interfaced to an external X-Keys 20 button keypad, and sent PAIS tags to the importer of Washington, D.C. station WETA(FM) over the public Internet. The PAIS-enabled HD Radio receiver detected and validated the PAIS tag, and started recording the program.

For audio playback, NPR Labs is working with an automation system's developers to interface their system with the NPR Labs custom software. Other automation system vendors may already have an iBiquity Digital development license and, with slight modifications to their existing code, send PAIS tags directly to the RRS station's importer.

WHY IT MATTERS

Other than immediately assisting sight-impaired Americans who seek information and entertainment from RRS stations by putting it literally at the touch of a button, the PAIS project benefits *all* listeners, sighted and sight-impaired listeners alike. How does PAIS benefit everyone?

First, because we're all *getting older*.

The number of Americans with print impairments will double over the next three decades, according to the American Council of the Blind. Approximately 19 million Americans, 9 percent of the population, over the age of 18 currently experience vision trouble, defined as trouble seeing even with glasses or contacts. As age increases, the percentage of adults with vision troubles increases.

As the ACB states on its website, "The number of print-impaired Americans is expected to grow dramatically as 'baby boomers' reach retirement age, and it is projected that the number of Americans with print impairments will double over the next three decades." Radio reading services will be an increasingly important connection to printed media for an increasing number of Americans.

Second, the techniques to create, change, delete and transmit PAIS categories are applicable to "mainstream" radio programming as well.

Imagine for a moment that commercially syndicated talk shows, personality programs, as well as the whole of

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Photo by Leslie Stimson

NPR Labs' Rich Rarey holds the first PAIS-enabled HD Radio receiver. Created at NPR Labs and based on iBiquity's 1281/1282 reference receiver, the unit has 96 hours of internal recording time and HD Radio Conditional Access. The microcontroller code for PAIS functionality uses only 10 kB of memory. The PAIS receiver is housed in a custom enclosure with a sloping front to indicate its use as an accessible device.

Smitty Sets the Standard

Milford Smith Plays a Leadership Role at Greater Media and Beyond

"Backbreaking minutiae."

That's how Milford Smith describes most of the work done by the National Radio Systems Committee, which he chairs.

"I think a lot of people underestimate the value of standards setting. Without standards, it's really difficult to make *any* technology work."

Smitty is recipient of Radio World's Excellence in Engineering Award, now in its seventh year. Recipients of the award represent the highest ideals of the U.S. radio broadcast engineering profession and reflect those ideals through contributions to the industry.

And while he can point to years of engineering achievement and management success, he was quick to answer when I asked what he considers his most significant career accomplishment.

"As much as other things may have been more fun — stuff we did in the field and pulled off, something involving a facility improvement or allocation — my work with the NRSC is the most important."

He cites RDS as an example: "If there were no standards a transmitter maker could build to and a receiver maker could build to, there probably wouldn't be RDS."

Photo by Jim Peck

Milford Smith speaks at an NAB event in 2009. Smitty is a familiar presence at major industry meetings and on technical panels.

This is where the unsexy "backbreaking minutiae" come in, through the thankless work of a handful of broadcast and consumer electronics technologists who donate time and intellectual energy to firm up parameters around which U.S. radio stations and equipment manufacturers create their products.

Such standards work, perhaps done years ago, influences how consumers interact with radio today.

"RDS and RDS+ are available on an awful lot of products right now. It was standardized more than a decade ago; but stations are finally taking real advantage of this. Here's a technology that isn't brand-new but ultimately got out there through OEM implementation and other ways. It's being used for really neat stuff, and in some cases even being monetized through text that's sponsored.

"That's the most vital stuff," Smith said. "Those are things that serve us well. Sometimes I think they're almost taken for granted."

TIPPING POINT

The NRSC's major work on the U.S. IBOC standard is another example. Smitty played an important role in helping determine the standard, so I asked him how he responds to criticisms regarding HD Radio's lack of uptake.

"If you take a look at the embracing of FM radio, that wasn't an overnight thing. Anyone who expected it to be an overnight thing wasn't thinking realistically," he said.

"Last we heard, there were 3 million receivers out there. But what's really encouraging is we — and I should say iBiquity, more than anyone else — have reached a tipping point, where you're starting to see OEM implementation with HD Radio capability. OEM implementation doesn't happen overnight." If an auto manufacturer decided today to implement HD Radio, consumers wouldn't see it for several years, he said, so that process is only now starting to pay off.

"I also think we as broadcasters need to do a bit of a better job in regard to some of our multicast offerings — specifically targeted programming, or oriented towards demographics we normally don't go after. The industry as a whole needs to take more advantage."

Speaking as a top manager at Greater Media, he continued, "HD Radio gets more interesting as every month goes by. This started out as a fairly straightforward single program channel at –20 dBc; but now it has blossomed in many respects.

"We multicast; we do data over HD Radio; we're members of the Broadcast Traffic Consortium; now we have the ability to increase digital power in some cases, [and] hopefully, in the not-too-distant future, the ability to do that with asymmetrical sidebands and maybe single-frequency networks with digital on-channel boosters."

Overall, he said, "FM HD works wonderfully well, and I think it's going to work even better with higher power [and with] some of these enhancements."

What about AM? "AM HD provides a spectacular upgrade in sound quality and interference rejection. But a challenge on AM is robustness of the digital signal in the presence of nearby conductive structures — overpasses, power lines and the like. When AM defaults to analog in an encounter with one of these environments, the difference in sound quality is tremendous and can be disconcerting. Hopefully, further work can ameliorate some of this irritant."

But Smitty remains a digital advocate. "To think that radio can exist forever as an analog medium in a digital world is probably unrealistic." Because U.S. radio chose a transition using a hybrid approach rather than establishing an analog shutoff date, "I think it's a process that's going to take longer. [But] we'll ultimately get there."

EVERY AND ANY PLATFORM

Greater Media, he said, believes new technology is worth exploring even if the return on investment isn't immediate.

"Something like iTunes tagging is a perfect example. Nobody makes money on iTunes tagging; they just don't. But it's new, it's fresh, it's a way to pull the MP3 generation back into radio at least a little bit."

The new iBiquity Artist Experience

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FROM THE **EDITOR**

Paul McLane

DECEMBER 15, 2010

PERSONAL RADIO

(continued from page 3)

public radio programming were categorized with PAIS "tags" when broadcast, allowing anyone with a PAIS-enabled radio to select for recording anything from "Sean Hannity" to "All Things Considered" to "Glenn Beck" to "Fresh Air" for later listening — an entirely plausible combination.

The recorded programs stay within the HD Radio receiver, and cannot be exported out of the receiver. This emphasizes the personal nature of PAIS.

PAIS is one of several projects at NPR Labs that target opportunities to make radio accessible. We're working on another NIDRR grant-funded initiative to bring radio to the deaf-blind community by translating broadcast radio programs into text (as captioning), then translate that text into a serial stream suitable for sending to the listener's Braille display.

Once the difficulty of creating an accurate, real-time radio captioning stream is completed, it's an easier matter to translate that stream to different display devices, thus serving the deaf community and the deaf-blind community at once.

How many Americans could we expect to help with this initiative?

While the Helen Keller National Center for deaf-blind estimates the number of deaf-blind Americans to be between 70,000 and several hundred thousand people, demographic analyses by Mississippi State University's statistician William Sansing in 2006 projected an additional 1 to 1.24 million older adults with dual sensory loss by 2010.

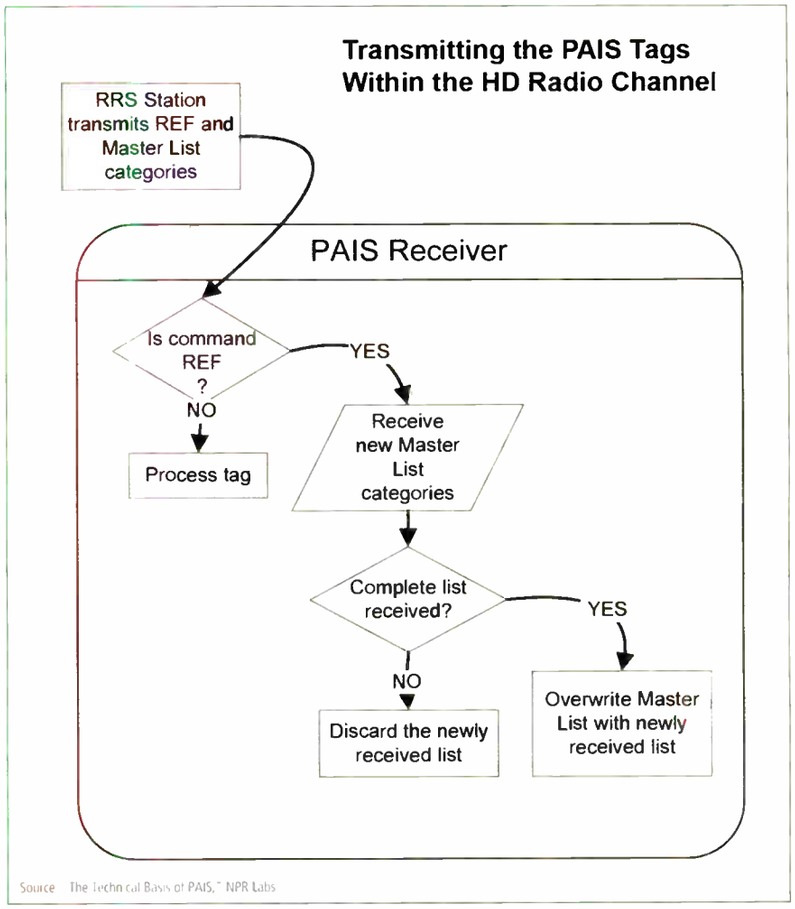
Gallaudet University's Research Institute analyzed data drawn from a U.S. Census Bureau survey and concluded that in 2002 there were 8 million Americans who were hard of hearing and 1 million Americans who were "functionally deaf." Here, then, are Americans who cannot use radio at all, just because we broadcasters have not made our product accessible.

Yet we receive enthusiastic encouragement from our blind, deaf and deaf-blind colleagues, who very much want to experience radio, and enjoy radio's ability to entertain, inform and notify. They want to enjoy these attributes in *real time and also saved for later.*

These citizens have guided our efforts and are eager to help us bring radio to them. Imagine: a new radio audience created — not with expensive marketing or ad campaigns — but just by merely making the radio medium accessible.

Rich Rarey is also a contributor to Radio World; here, he writes in his role with NPR Labs.

Radio World welcomes other points of view.



Source: "The Technical Basis of PAIS," NPR Labs

The PAIS XML tags are intended to be sent within the COMMent field of an HD Radio channel. The field is implemented in iBiquity's importer/exporter code and does not require additional coding to transmit. HD Radio receivers can handle the COMMent field, although it is not usually displayed. A PAIS PAD application — created at NPR Labs — accepts triggers from an automation system and an external keypad. Once triggered, the application forms a PAIS XML tag based on the triggered information and sends the PAIS XML tag to the station's HD Radio importer/exporter.

SMITH

(continued from page 4)

technology is another instance; it will allow graphics, album art and advertiser-oriented visual elements on equipped receivers — of which there are few to none right now.

"There's no return on it out of the box, [and] there's some expense," Smitty said. But while waiting for the ROI to build, he said, "there is a promotional benefit in terms of the image and the station, appearing you're 'with it,' having that additional product there."

Meanwhile on the other side of the air chain, Greater Media engineers are getting up to speed with IP audio.

"We've just about fully transitioned in the Philadelphia cluster; it's not been totally seamless and trouble-free, but we've worked our way through it and learned a lot. It's obvious that's the direction things need to go in, but there is a learning curve."

All the company's facilities eventually will be based on AoIP; "It works fantastically well when everything is clicking on all cylinders; plus there's more and more integration between the control surface and routing systems, and the playout automation."

Other technical goals for Greater Media include establishing itself on "every and any platform conceivable," including various forms of Internet distribution such as mobile apps and video projects, as well as additional features and functionality in analog and HD Radio, such as RDS and data services. Many of the new platform projects are managed by a separate interactive division, with Smitty's department acting in support.

INFLUENCES

I asked Smitty to identify his influences. He first named his father, Milford Smith Sr., who was "not a technologist, but an attorney and a state Supreme Court justice in Vermont. He was an active radio listener and a shortwave listener. I picked up my initial interest in radio from him. He had a great interest in propagation and listening from halfway around the world."

Another mentor is audio processing wizard Mike Dorrough. "We were working in Washington at First Media's WPGC(AM/FM) in the midst of the loudness and processing wars." This was in the days of Dorrough's first product, the Model 310 Discriminate Audio Processor. "He was a great friend and ally. We had some good times together, trying to be top dog on the dial."

The late Ralph Dippell taught Smitty much of what he knows about RF, propagation, allocation and regulatory matters. He also mentions Bob Gull and Sid

A BUSY SMITTY

Widely respected and admired, Milford Smith is among the most influential of U.S. radio engineers.

He has served since 2007 as chairman of the National Radio Systems Committee, an industry standards body sponsored by the National Association of Broadcasters and the Consumer Electronics Association; he also served on its IBOC standards development working group, its RBDS subcommittee and its AM Broadcasting subcommittee. During critical years of the IBOC standards process, he was chairman of its DAB subcommittee. Smitty also has been active in the NAB's own Spectrum Integrity/Digital Radio Committee. He is a past recipient of the NAB's Radio Engineering Achievement Award.

He is a member of the Institute of Electrical and Electronics Engineers, Society of Broadcast Engineers, National Association of Radio and Telecommunications Engineers and Association of Federal Communications Consulting Engineers.

Those activities are in addition to his day job. For 26 years he has been vice president of radio engineering for group owner Greater Media, which owns about two dozen radio stations, as well as weekly newspapers and telecommunications towers. He reports to CEO Peter Smyth.

The company employs approximately 50 radio engineers, Smitty said. "We're very fortunate the company supports engineering and believes in good engineering, supplying us with the resources and people to do that."

Prior to Greater Media, Smitty worked for First Media Corp. and Tribune Broadcasting. His first engineering job was at WAMF(FM) — now WAMH — at Amherst College in Massachusetts, his alma mater. He also jocked in the early years. His first commercial chief engineering position was at WHMP(AM/FM) in Northampton, Mass., also while attending college.

He lives with his wife Maralee and daughter Ashley in New Jersey.

For more on Milford Smith's career, read Radio World's 2005 article at *www.radioworld.com/article/1970.*

Khanna at consulting engineering firm Khanna and Guill Inc., "whom I have worked with and learned from for many years on RF/allocation-related matters." Tom Silliman of ERI has been a friend and mentor through many complex FM projects.

True to form, Smitty ended our conversation talking about what's ahead for the standards body he chairs.

NRSC reviews and updates its standards at least every five years; now it is working to harmonize the U.S. and European RDS standards as much as possible.

The group also is seeking to expand publication of "guideline documents," online resources that can help stations comply with standards without having to delve into the … well, the minutiae.

The G201-A guideline regarding proper measurement techniques for AM and FM spectral occupancy "is really a tremendous resource for anyone in the field responsible for HD Radio and ensuring its compliance," Smitty said. "It gets right down to the nuts and bolts. We use it in the company all the time."

Another guideline document, G202, just recently approved, helps engineers determine proper HD power levels; it includes a Web-based widget that will spit out the proper numbers. "This will be important especially if asymmetrical sidebands are authorized."

You can find these guidelines at *www.nrscstandards.org/SG.asp*. Smitty hopes the NRSC will produce more such resources as newer technologies emerge, to help engineers understand "how to measure, how to quantify, how to stay compliant."

Selected content from Radio World's "The Leslie Report" by News Editor/Washington Bureau Chief Leslie Stimson.

FASTROAD RELEASES EARLY SFN RESULTS

Interim field test results of digital single-frequency network technology for FM IBOC are encouraging, according to iBiquity Digital.

The NAB "Flexible Advanced Services for Television & Radio on All Devices" project (FASTROAD) released an interim report on the SFN field testing, which looked at digital performance and digital compatibility with the host FM analog signal near the booster site. IBiquity states in the document that its synchronized SFN digital booster technology has the potential to extend FM IBOC signal coverage to the protected contour and to fill in areas within a station's coverage area where a signal is compromised.

At the IEEE Broadcast Technology Symposium in October, iBiquity officials said the system had worked in the lab but they needed to field-test it. For these tests, iBiquity built a main site in Catonsville, Md., and a booster site in Kingsville about 20 miles away, to characterize the digital coverage of the main station and extensions of digital coverage when the digital booster was added.

Digital compatibility was characterized mainly in areas where signals of the main and booster signals overlapped.

Further testing of both asymmetrical sideband and SFN operation is underway at Greater Media station WKLB(FM) in Needham, Mass. That station has FCC permission to operate at higher digital power, with HD sideband levels of –14 dBc, a 6 dB increase.

Company VP of Radio Engineering Milford Smith tells me the station also has experimental authorizations for a hybrid analog/HD Radio booster transmitter at a site roughly 20 miles from the WKLB main site to permit iBiquity testing of an on-channel digital booster.

The station also has an additional experimental authorization to operate with asymmetrical sideband power levels up to and including –10 dBc on the "lower" sideband and up to and including –14 dBc on the upper sideband to facilitate iBiquity testing.

IBiquity is working on a booster design that is interoperable among various transmission equipment manufacturers; it says its technology is backward-compatible with existing receivers and supportable by existing FM IBOC broadcast products, such as exciters, through upgrading.

The report is available at *www.nabfastroad.org*.

FM in Cellphones Emerges, Slowly

Meanwhile, Retailers Feature Radio in MP3 Players, FM Car Transmitters

BY LESLIE STIMSON

Radio functionality may not be ubiquitous in cellphones; but it is indeed available if you look for it. That's one conclusion we can draw when reviewing options offered by electronics companies this holiday shopping season.

Here's a sampling of how radio showed up in a buffet of consumer electronics devices in this 2010 holiday sales season. We featured HD Radio and Internet radios in the Dec. 1 issue.

Broadcast industry attention is strong right now on FM in cellphones, so Radio World surveyed the websites of T-Mobile, AT&T Wireless, Verizon Wireless and Sprint/Nextel, the four U.S. carriers listed in a recent report by NAB's FASTROAD technology advocacy program (see sidebar). We sought to find out what new FM-enabled cellphones wireless carriers are featuring this holiday.

CELLPHONES & FM

New from T-Mobile is the Motorola **Defy with Motoblur**, featuring messages from the user's friends with integrated social networking updates. The user can filter feeds and customize widgets and the screen display. In addition to FM radio, the device features a 5 megapixel camera and is 3G-capable, according to T-Mobile, which lists the phone as free after a Web-only $99.99 discount, though the purchaser still needs to buy a two-year service contract.

The T-Mobile **myTouch 4G-Black** offers FM radio in the "media room," which also features MobiTV, Slacker Radio and YouTube. The phone also features two cameras and video capture and playback. The cellphone is $199.99 with a two-year contract.

In addition to FM radio, the **HTC HD7**, a new Windows Phone 7 from T-Mobile, features an HD camcorder and is 3G-capable. The user can send a message or a photo to any wireless phone or e-mail address or stay connected using "always-on" social networking, T-Mobile says. The unit sells for $199.99 after discounts and a two-year service contract.

The **Nokia 5230 Nuron** from T-Mobile features FM radio and a 2 megapixel camera; it is 3G-capable. After discounts, a refurbished device, which T-Mobile says is "like new," is free with a two-year contract.

Of six new smartphones offered by AT&T Wireless, one features FM radio, the **Sharp FX**. Listed under "music" features, AT&T lists both "built-in" FM radio as well as streaming radio. The device also features mobile TV and video and a two megapixel resolution camera. It features a 3G high-speed data and voice capability for an additional charge. AT&T Wireless is offering the Sharp FX for $119.99 with a two-year contract. This phone requires a minimum $20 messaging service or a qualifying combination of messaging and data services.

Verizon Wireless has the fewest FM-enabled cellphones of the four carriers, according to the recent Insight report for NAB FASTROAD. Indeed, of the 25 newest smartphones Radio World found listed by the carrier online or at retail locations, none mentioned FM as a feature.

According to the report, the **Samsung Omnia II** being offered by Verizon has a working FM radio chip; however a description of the phone's features on the Verizon Wireless website doesn't mention FM. The device lists for $49.99. Verizon boasts with its Swipe Technology, the Omnia II helps the user "type" up to 50 words per minute without lifting a finger.

Of nearly 30 "feature" phones from Verizon Wireless, one model has operable built-in FM radio. In addition, the Kin Two also includes an 8.0 megapixel camera and HD video capability. This model is only available online; it lists for $49.99 with a two-year contract.

The FASTROAD report says the **Sprint/Nextel HTC EVO 4G** is an FM radio-enabled handset; however radio is left out of the feature description on the Sprint/Nextel wireless phone site. The manufacturer says the device has two cameras, access to 4G speeds and is a mobile hotspot for up to eight of the user's Wi-Fi devices. It retails for $199.99 after a $100 mail-in rebate.

The Motorola ROKR EM35 and Nokia 5030, highlighted recently by NAB as examples of how GSM cellphones could implement radio with embedded FM antennas, are not for sale in the United States, according to the trade group. A web search turns up mentions of these phones on European websites.

Our online shopping experience seems to echo what NAB FASTROAD reported about limited availability of activated radio capability in cellphones and limited promotion of the feature by carriers.

The Consumer Electronics Association American has argued that consumers aren't clamoring for radio in their cellphones. In response to NAB's push for a congressional mandate of radio in cellphones, part of its negotiations with the Recording Industry Association of America over performance rights, CEA President/CEO Gary Shapiro told news outlets that building FM into cellphones requires an additional antenna, which could add weight and bulk to devices prized for their sleekness. It could also drain battery life more quickly, which could lead manufacturers to remove other features from their devices, he said.

NAB disputes these points.

MOBILE DEVICES IN THE CAR

In other CE trends, it's clear from online offerings that consumers want to use mobile music devices in their cars as much as ever.

Consider Crutchfield's offerings. The supplier tar-

A LACK OF PROMOTION AND DEMAND

Some 9.5 percent of cellphones sold in the United States in 2009 contained "activated" FM chipsets (meaning users could hear FM radio on their phones if they knew how to use the feature). But it's difficult to determine which handsets feature FM because U.S. carriers are not heavily promoting the feature.

That's according to a report this fall commissioned by NAB's FASTROAD technology advocacy program and conducted by Insight Research. FASTROAD stands for Flexible Advanced Services for Television & Radio on All Devices.

NAB wanted to know how many cellphones with activated FM radio chips were sold in the U.S. in 2008 and 2009, the latest figures available. It also wanted an estimate of the prospects for FM-enabled cellphones and other hand-held devices in the future.

Insight Research estimates that in 2008, 6 percent of handsets sold in the U.S. were FM-enabled. This increased to about 9.5 percent in 2009.

Though several manufacturers have integrated FM into their cellphones, the only way to know for sure the percent of handsets with an installed FM chip would be to match each handset with its associated chipset, which would require reverse engineering of all handsets on the market in 2008 and 2009, according to Insight. That was beyond the scope of the study.

It does conclude, however, that the number of handsets that have non-activated FM chips could be "significant," based on the amount of wireless phones that are sold with an FM chip that was never activated.

Compared to that in other countries, consumer demand for radio in cellphones in the United States is low. Few U.S. carriers have promoted it, the authors wrote, concluding that the feature could "languish" here if there's no consumer demand and if carriers don't promote it.

Insight suggested several ways to increase visibility of the radio feature in cellphones, such as broadcasters developing a promotion program with carriers using in-store displays and sales rep training about radio. FM stations could promote the feature on the air and refer listeners to websites containing activation instructions.

— Leslie Stimson

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RADIO IN CE

(continued from page 8)

gets people who like to install their own car stereos: it is offering 57 iPod/MP3 car adapters from brands like USA Spec, Peripheral, Dice, Alpine, Clarion, Eclipse, Jensen and Pioneer.

An iPod adapter allows the user to connect an iPod to the car stereo, then access playlists with the stereo's controls. The user can scroll through song titles on the stereo's larger display (instead of squinting down at the iPod) and route the adapter cable to the glove compartment or center console, so the iPod stays safely out of sight, says Crutchfield on its website. The iPod adapter keeps the iPod charged.

At the upper end of the price range is the USA Spec iPod interface kit for $149.99. The kit includes an auxiliary input for connecting other sources, such as a satellite radio or another type of MP3 player.

The Pioneer CD-IB100ii iPod Interface Adapter from Crutchfield is priced at $79.99 and meant to be used with Pioneer head units.

Jensen's jLinkUSB cable connects an iPod to certain Jensen multimedia receivers with a USB input. The cable plugs into the iPod's dock connector and then into the USB input of the stereo, providing audio playback and control from the Jensen receiver. The jLinkUSB cable retails for $29.99.

Chain retailer hhgregg Appliances & Electronics is highlighting the Monster Cable Radio Play 300 Universal Full-Spectrum FM Transmitter at $59.99. "Enjoy your MP3 player, CD player, portable DVD player or even your laptop audio through your car stereo's FM radio or most FM stations," says Monster on the hhgregg site.

The wireless FM transmitter tunes in to just about any FM station, except 87.7 and 87.9 MHz, the frequencies on which it rebroadcasts the user's audio in the car.

Another retailer, Best Buy, is featuring the Sony-Walkman MP3 Player with FM radio and 4 GB of storage; it lists for $69.99. The 2-inch LCD screen, earbuds and a USB cable are included. This Walkman features a rechargeable lithium-ion battery that provides up to 50 hours of music playback.

At $49.99, Best Buy also offers the Archos-15 Vision 4 GB MP3 Player with FM radio. It stores up to 2,000 songs and up to 40,000 photos. The Archos unit has up to 10 hours of battery life and includes eMusic and Rhapsody music management software.

For those really watching their pennies, chain retailer hhgregg Appliances & Electronics offers the **GPX Portable FM Scan Radio.** Marketing the device as a radio to take to ballgames, hhgregg lists this radio online for $4.97. It features a stereo headphone jack and requires two AAA batteries.

Also, hhgregg says the **Sansa Clip+** MP3 player makes a big sound and offers several features in a tiny package. Listen to up to 500 songs on the 2 GB player as well as FM radio. The device, now $39.97, also has a long-life 15-hour battery, voice recorder and memory card slot.

Finally, hhgregg offers the **Electro Brand 4 GB MP3 Video Player.** Model MP2404CP features FM radio and a camera, and plays music, video, photos and displays text. It retails for $39.97.

Radio remains missing from most of the Apple product line.

Only one of Apple's iPod models (the latest Nano) supports FM radio and a live pause feature. None of Apple's iPhone, iPod touch or iPad devices includes FM. Apple sells around 70 percent of the market's MP3 players and has a prime position in mobile phones and tablet devices, according to Apple Insider.

Meanwhile, both the Best Buy Insignia HD MP3 player and Microsoft ZuneHD MP3/video player include embedded FM HD Radio.

In more traditional CE categories, clock radios remain a gift for those sending students off to college or for anyone redecorating a bedroom.

Target offers a range of clock radios, ranging in price from around $60 to just under $10. It was featuring the iLuv Audio System with dual docks for iPod, iPhone and a dual alarm clock for just under $60 in late November online at Target.com. The device also features AM/FM radio, a radio alarm and an AC power adapter.

One of the most inexpensive clock radios from Target is the GPX AM/FM Digital Clock Radio. Listed at $9.99 online, it features brightness control for the display, a snooze function and an alarm.

NEWSROUNDUP

CAP DEADLINE: The FCC responded to concerns among broadcasters and manufacturers about EAS CAP compliance, and it has extended the deadline to Sept. 30, 2011. The previous deadline would have been in March. The move came shortly after NAB, SBE, NPR and several TV groups asked for an extension.

EAS GROUP: Several people active in EAS formed a group and petitioned the FCC to answer some of the undecided questions surrounding enhanced EAS and Common Alerting Protocol. The group, Independent Emergency Alert System Stakeholders, includes Adrienne Abbott, chair of the Nevada State Emergency Communications Committee; Clay Freinwald, chair of the Washington State SECC; and Richard Rudman, vice-chair of the California SECC. Among unresolved issues, they said, are a need for greater involvement of special needs individuals and the Department of Justice for AMBER messaging; logging and discrepancy reporting certification; and emergency management "buy-in."

FM IN CELLPHONES: Consumers may not care about having FM in their cellphones, according to Mark Ramsey. The programming consultant says this conclusion jives with what the Consumer Electronics industry has been saying as it disputes the NAB's viewpoint. In a survey done with VIP Research, Ramsey asked approximately 1,000 listeners age 10–54 whether they had shopped for a cellphone that contained FM radio; the majority, 88 percent, said no. When asked why, the majority said built-in FM wasn't a factor when they choose a new phone.

APPLE & RADIO APPS: Separately, Ramsey also said a dustup about whether Apple was "banning" single-station radio apps appeared to be a non-starter. He quotes an app developer who blogged about the issue on *Yourtechlife.com*, disputing the account. The developer wrote that "app developers submitting identical apps with just a logo/stream change under their own developer accounts are not looked well upon" by Apple, but there was no outright ban. Rock programming consultant Fred Jacobs, head of app supplier JacApps, said that JacApps has had single-station new and updated apps recently approved. The question arose when Jim Barcus, president of Digital Jukebox and *DJBapps.com*, sent a letter to radio trade publications saying that Apple had rejected several single-station radio apps and apparently was banning all single-station apps.

DIGITAL: HD Radio Alliance member companies will continue their partnership in 2011 and they plan an "aggressive" marketing campaign to the tune of airing spots valued at $110 million. Members are CBS Radio, Clear Channel Radio, Greater Media, Emmis, Entercom, Bonneville International, Beasley Broadcasting, Buckley Radio and WBEB(FM), Philadelphia. Alliance President Peter Ferrara called on other radio owners to join the alliance, saying financial obligations, format restrictions or commercial limitations have been dropped.

CANADIAN SAT RAD: More than two years after their U.S. counterparts did so, XM Canada and Sirius Canada are merging. The companies have signed a deal to combine in an all-stock "merger of equals." They peg the combined value of about $506 million (U.S.), including long-term debt of approximately $126 million. Shareholders and regulators must approve the deal. The companies estimate the combined entity would have a total subscriber base of more than 1.7 million.

FM TRANSLATORS: BIA/Kelsey's "Investing in Radio Market Report" reveals more than 400 AMs are using FM translators to improve their nighttime coverage areas. "Huntsville, Ala., for example, currently has five AM stations using translators to rebroadcast on another frequency to cover areas not adequately served by their main signal. In addition, FM HD multicast stations are rebroadcasting in analog to expand their audiences." BIA/Kelsey's Mark Fratrik said these stations are using "an innovative way to broaden their reach, provide more options to listeners in the market and appeal to advertisers."

2010 REVENUE PROJECTIONS: BIA/Kelsey has updated its revenue estimates and says U.S. radio appears on track for its best year-over-year revenue uptick in a decade. "On the heels of strong political battles, increased auto advertising and an improving economy, radio has experienced a better year than expected and will end 2010 with over-the-air revenues of $14 billion, a 5 percent increase over 2009," the research organization stated.

Simplicity Made Smarter

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Less than a decade ago building infrastructure at even the most modest radio facility was difficult and costly. Today, AoIP is making it possible to replace miles of cables and closed systems with routers that use standardized network protocols. The **JetStream Mini** brings you the benefits of this new technology, and nothing is easier to use, faster, or less expensive. Add a **Pilot** control surface that includes the basic operating features your staff will need and you have the most cost effective AoIP networked audio system available.

The Pilot is easy on the eye and the budget and like the JetStream Mini, Logitek has built it with ease of use and durability in mind. The Pilot is a tabletop control surface that includes all of the basic engineering features your staff will need- and more- including 4 Program busses, 3 monitor sections and 24 mix minus busses. It is available in frame sizes for 6 to 24 faders.

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Logitek

Engineers Need MREs, Too

Also, How Cold Weather Prep Can Help You Avoid Headaches This Winter

Engineering veteran (and past Radio World Excellence in Engineering Award recipient) Clay Freinwald raised a very real issue on the Broadcast.Net site recently.

WORKBENCH
by John Bisset
Read more Workbench articles online at radioworld.com

As we enter colder months, Clay compiled a list of "must haves" for the transmitter site. His list was by no means exhaustive but will get readers to stop and think about their personal requirements, be it in the vehicle or at the transmitter building.

What's on your cold-weather emergency supply list?

Topping the list is water. If you get stranded at a site, you've got to have water. I saw 36 bottles of water, wrapped in a plastic pack, on sale at Staples the other day for less than $5.

What to do with leftover Halloween candy? Take it to the site; and buy one of those hard plastic tubs, a Tupperware or other brand of food container to discourage animals from lunching on your food. Nuts are a good source of protein.

"Meals Ready to Eat" and other sealed dehydrated camping food is available from military surplus stores as well as camping supply stores like REI.

In fact, REI sells a 72-hour emergency food kit for around $50. The dehydrated entrées sound pretty good — they do need hot water to prepare, though the instructions say that in a crunch they can be mixed with cold water, yuck! Consider the purchase of a coffee pot, or better yet a small fold-up camp stove.

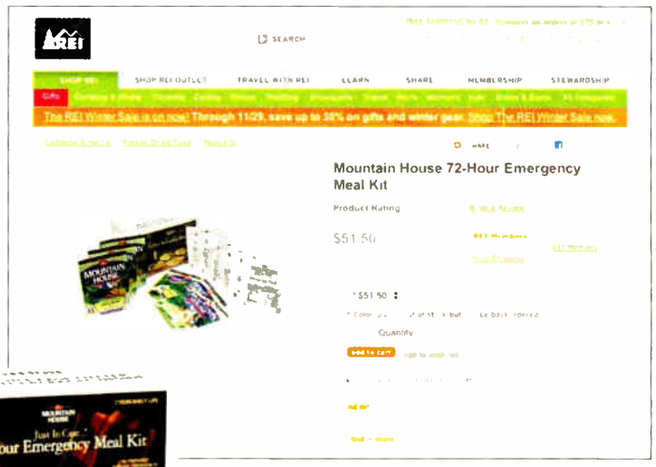

Fig. 1: This emergency food kit provides freeze-dried meals for a single person for 72 hours and includes six entrees, three vegetables and three breakfast meals. It can last on the shelf for seven years.

The same company that packages the emergency freeze-dried food sells a $12 flameless food oven "sleeve" that can be used five times. A chemical reaction generates the heat, preparing hot meals in just 20 minutes.

Clay's suggestions include chemical light sticks, LED flashlights and plenty of batteries. If your budget permits, purchase a fold-up cot and sleeping bag; put both in a sealed plastic bin or trash bag.

Clay mentioned an emergency cell phone. But planning against a failure of cell service, he adds a 2 meter ham rig, perhaps an old base station that could be used to contact people should the cell phone fail.

He also recommends a set of snowshoes; and I'd add cross country skis, which are much more efficient than snowshoes if you need to travel any distance. But hopefully, you won't be traveling; stay put! That's the whole idea behind stocking these supplies.

We'll touch on medical and health items in our next column. Meantime, if you have things to add to the list of emergency items to keep on hand at your transmitter site, please send them to me at *johnpbisset@gmail.com*.

Speaking of colder season prep, this is a good time to check the operation of your FM antenna deicers.

Radio World's Bue Fitch wrote a thorough article in 2008 about deicers, how they work and how to keep them working. It is archived at *www.rwonline.com/article/71554*.

An example of deicer temperature controls is seen in Fig. 2.

Fig. 2: Check proper operation of deicer controls. It's effort well spent this time of year.

Greg Muir read here about Lincoln Hubbard washing his equipment after a flood, and adds a few pearls of wisdom.

Greg enjoys restoring and using older tube-type test equipment in his lab. Aside from his front-line solid-state equipment, Greg has some 400 vacuum tubes in his older inventory (plus 2,500 spare replacement tubes). It gives him plenty of heat to keep warm through the winter!

Part of his stock consists of several Tektronix 500 series tube-type oscil-

(continued on page 14)

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WORKBENCH

continued from page 12

Tektronix 500 series tube-type oscilloscopes. Cleaning and restoring these can be a chore.

Many years ago, Tek published a service note explaining that its service department used to (carefully) wash their scopes using a light mixture of water and a mild cleaning agent.

Greg has found considerable success with this technique. He also uses the approach with newer solid-state equipment and finds that this equipment is considerably more resistant to the effects of water when it is applied properly.

A good discussion can be found at the website of U.K. Vintage Radio Repair and Restoration; we've linked to it at *http://tinyurl.com/rwbath*. The thread explains some of the caveats, including possible recontamination of the equipment if you are using tap water.

As for using a car wash, Greg notes, you might want to be cautious about aggressive (and sometimes corrosive) soap solutions, as well as wash pressures that can force water into places it shouldn't go. Even if you don't apply soap, there may be residual amounts in the system as you wash.

For uncomplicated wash applications (printed circuit boards, small items), Greg uses a small amount of tap water and a small paintbrush to lightly scrub the dirt off, followed by a distilled water rinse and then low-pressure air to remove most traces of moisture.

He then places the clean board in a low-temperature (~100 degrees) source and lets it bake for an hour or so. Finally the cleaned item is left at room temperature overnight before energizing.

Fig. 3: It only takes a few minutes to inspect the condition of site fence padlocks.

Of most importance is to keep water away from transformers, motors, relays, switches and other electromechanical devices. Greg recommends covering those parts and then cleaning them individually by other means on a per-item basis.

It's important to treat high-voltage circuitry carefully, due to creation of possible leakage paths from residual contamination. The big thing to remember is that water can damage things as well as clean them.

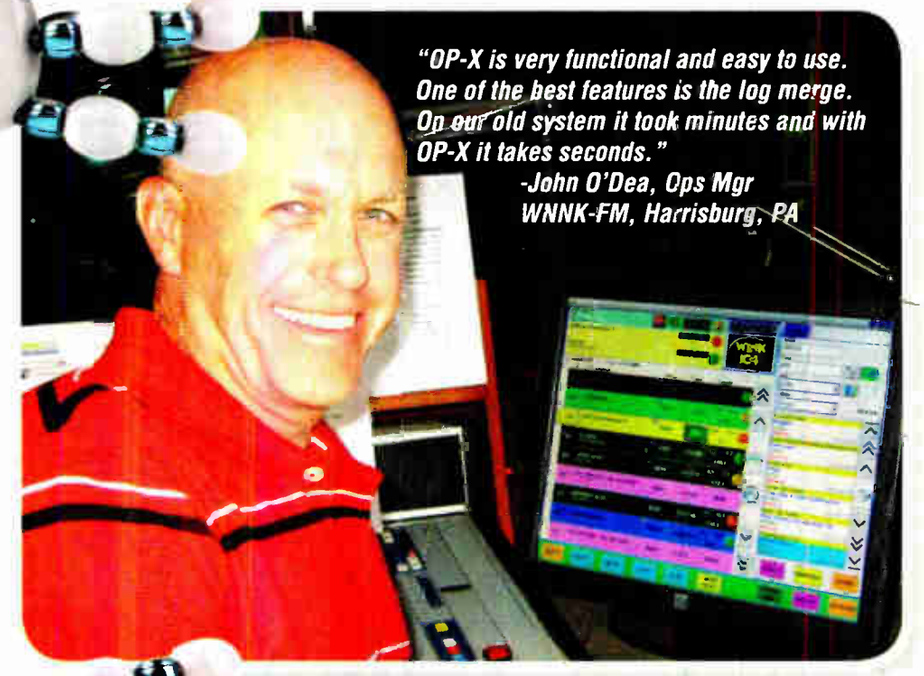
The website *www.vintage-radio.net/forum/index.php* is a resource for those who need to repair or restore any type of equipment old or new. There also is a good vintage Tektronix scope forum on Yahoo referenced on the thread we mentioned earlier.

Greg Muir is a principal engineer with Wolfram Engineering Inc. in Great Falls, Mont. Reach him at *engineering@mt.net*.

What is the condition of your site locks? If they are rusted like the one in Fig. 3, the cold weather isn't going to be a good time to find out.

Next site visit, check every outside padlock. If they are in working order, add some spray graphite lubricant and work it through the mechanism. The five minutes it takes can avoid an embarrassing situation later.

John Bisset marked his 40th year in radio in broadcasting recently. He works for Tieline Technology and is a past recipient of the SBE's Educator of the Year Award. Reach him at johnphisset@gmail.com *or (603) 472-5282. Faxed submissions can be sent to (603) 472-4944.*



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-John O'Dea, Ops Mgr
WNNK-FM, Harrisburg, PA

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Bext: 25 Years, and Just RF

SUPPLYSIDE

Bext recently noted its 25th anniversary. Radio World Editor in Chief Paul McLane touched base with Dennis Pieri, its founder, CEO and majority shareholder.

RW: How did the company come about?
Pieri: I was a radio broadcaster from 1975 to 1985; I owned and managed an FM station. I got into it initially because of my love for music and programming; however, I became interested in RF, in part because I found it fascinating and in part because I realized that in order to understand certain aspects of broadcasting, I really needed to become personally familiar with RF rather than delegating it all. Becoming hands-on also allowed me to save some money. I didn't have a school background in engineering.

I kept thinking that an RF company catering to broadcasters' RF needs would have more credibility if it was managed by an ex-broadcaster. So in 1985 I decided to give it a try and Bext was born.

I was working with an attorney whom I hired to form the corporation, and we needed a name. I kept coming up with names that I liked, but to our dismay, all of them were taken. It was almost comical. Finally, I started playing with random letters and creating "names" that way. When I got to B-E-X-T, it was not taken. So we picked that one. Few people ever asked if Bext was an acronym or if it meant something specific. Actually, it was neither.

RW: Who are the other top managers and what are your areas of manufacturing?
Pieri: The CEO is my partner Claudio Tilesi. The operations manager is Paola Fregoso. The chief engineer and engineering staff manager is Luca Borgnetto.

We are an RF company. This includes just about every possible different flavor of broadcast transmitters, meaning transmitters of any power level up to 35 kW, exciters, translators and boosters for FM radio and television, microwave STLs for radio, a wide selection of virtually any possible variation of FM radio antennas, and an always growing business in RF filters and RF combiners for FM radio of all power levels. We intentionally never try to be too many things to too many people. We just concentrate on RF, and leave everything else to others.

RW: What's your geographic base and where do you sell products?"

The Bext team, from left: Tino Romagnoli, Claudio Tilesi, Paula Matthews, Melanie Lococo, Dennis Pieri, Tom Troland, Paola Fregoso, Mark Hoffman and Luca Borgnetto.

Pieri: Bext is a California corporation and has always been. We are still based in central San Diego. The majority of our sales are in North America — United States, Canada and Mexico — but we do sell on a regular basis also in other parts of the world. Recently, we have had good sales into Africa, Asia and South America.

RW: What is your most notable recent product introduction?
Pieri: The best and brightest new products are the XL and FB lines of FM radio transmitters, which are remarkable for their efficiency and compact size. We have yet to see a competitor's product that is as efficient in terms of power consumption and as compact in size.

The reason overall size of transmitters is slowly becoming a factor is that space inside mountaintop shelters for broadcast transmitters is limited, so it comes at a premium. Many broadcasters are renting space. If you can have the same power in a transmitter half the size, it usually costs less in rent. Even for those stations who own their own transmitter site, it is beneficial to use less space so they have room left over to rent out or to use for other equipment.

RW: What trends do you see in talking to engineers that reflect how the industry is changing?
Pieri: As far as RF, the main trend is what for lack of better definition we'll call "going green." Essentially, everyone is becoming more interested in lower power consumption. Another trend is multiple FM stations joining forces and using a single broadband antenna system to broadcast more than one frequency. Most of our antennas are broadband, and we sell RF combiners, exactly for this purpose.

RW: Bext is a dealer for FMeXtra. What is your assessment of the success of that technology?
Pieri: FMeXtra technology is amazing. It continues to evolve, with more and more sophisticated algorithms, which allows a higher number of higher quality digital audio channels. FMeXtra can now also broadcast images and video on an FM radio subcarriers.

Unfortunately, while from a pure technology standpoint FMeXtra is fantastic and becoming more so every year, it hasn't met as much success as it deserves in the marketplace. We feel that there is a mistaken perception where broadcasters erroneously feel that they have to go either with HD Radio (IBOC) or with FMeXtra; and since HD Radio is of course promoted much more powerfully than FMeXtra, station owners go with HD Radio and disregard FMeXtra.

This is really a misperception. While they are both digital, HD Radio and FMeXtra are two different things which serve two different purposes. Unlike HD Radio, FMeXtra is a digital subcarrier that is injected into the analog carrier, and it really should be seen more as a modern-day version of the older analog SCA subcarriers. Also, a little known fact is that HD Radio and FMeXtra can actually coexist on the same station. So, it's really not a matter of one against the other, or having to pick one vs. the other.

For more information about Bext, visit www.bext.com.

MARKETPLACE

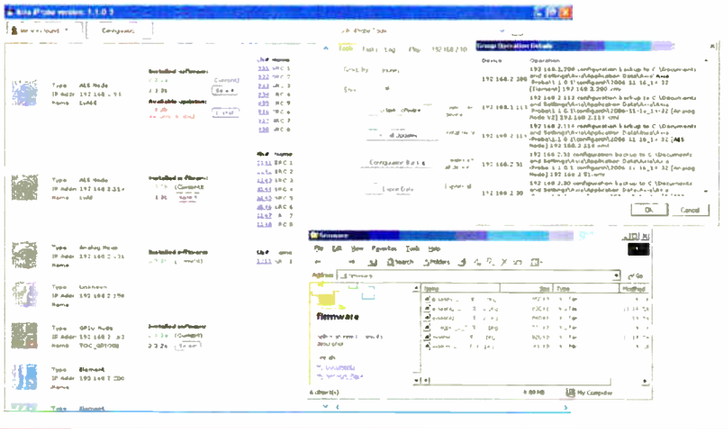
UPGRADE: AudioScience has upgraded its ASI5111 to a PCI Express form factor/interface and rechristened it ASI5211. The card has two streams in and four out, 48 V phantom power and onboard DSP in the form of a three-band EQ and a compressor/limiter. Digital conversion and recording are 24-bit and 11–96 kHz. Also new is a GPIO for two opto-isolated inputs and a pair of open relay outputs. Drivers are available for Windows XP, 7, Server 2003/2008 and Linux. It offers AudioScience's MRX mixer app and SoundGuard protection schemes.

The company said GPIO was a feature request from a radio broadcast OEM: "With the upgrade to a PCIe version, it made perfect sense to add the opto inputs and relay outputs, making the ASI5211 more versatile." Price: $645.

Info: www.audioscience.com.

iPROBE: Axia released an update to iProbe, its IP-Audio network management software. The upgrade is free for Axia clients. Version 1.1.3 includes support for PCs with multiple NICs, enhanced hostname displays, support for Axia IP-Audio drivers for Linux and Mac (beta) and other enhancements. Registered users can download v1.1.3 from www.axiaaudio.com/downloads/.

Info: www.axiaaudio.com.



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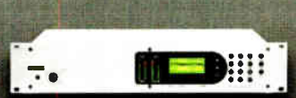

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IP Central to Corus Quay Project

Big Broadcast Facility in Toronto Puts New Tech Approaches to Work

Corus Quay consolidates the Toronto radio, national television and web operations of Corus Entertainment on the Toronto waterfront.

Photo by Richard Johnson

BY JAMES CARELESS

It is billed as "the most advanced broadcast facility in North America." And Corus Entertainment's brand-new Corus Quay broadcast and content center on Toronto's waterfront is entirely IP-centric.

Three radio stations, 24 television services and numerous websites are centralized on a massive server farm and fiber-optic network. The telephone system is voice over IP; the radio stations use Wheatstone audio-over-IP technology to produce and distribute their signals.

"We built this facility to support not just what we do today, but also what we might do tomorrow," says Corus Chief Technology Officer Scott Dyer. "With the IP infrastructure that we have installed, there is plenty of headroom for growth in an IP-driven world."

WHY CORUS QUAY?

Corus Quay is a eight-story low-rise built by the city of Toronto and leased by Corus as the primary tenant. The building employs advanced environmental features, including reduced power consumption, a five-story bio-wall for air filtration, a "green" roof and energy-efficient lighting. The plumbing system uses low-flow toilets and collected rainwater to help reduce its demands on the public water supply.

Jack Diamond, principal at Diamond+Schmitt Architects, designed the building to achieve LEED Gold status.

Why did Corus decide to consolidate its Toronto-based radio, national television and Web operations in this location?

"We had grown over the last 10 years through acquisitions, which means we ended up with 1,100 employees working at 11 locations across Toronto," said Dyer. "Not only did this not allow for effective sharing of personnel and facilities, but it created challenges fostering a unified culture."

The Corus Quay facility solves these problems. Staff work together in an open concept environment that includes some fun elements like a circular enclosed slide in the central atrium that delivers people quickly to the ground floor.

"I have gone down the slides in my suit and tie," said Dyer. "It is important to show that both management and staff use gravitationally assisted transportation."

TECHNOLOGICAL ADVANCES

Corus Quay brings the company's stations and services onto a common IP platform that is simple to provision and service. The heart of the technology infrastructure, implemented by Siemens IT Solutions and Services, is in the second-floor Technical Services room that connects to all of its studios.

"It is equipped with HP BladeSystem ProLiant and HP StorageWorks servers. These servers are linked using 600 kilometers [about 370 miles] of fiber-optic cabling managed by Cisco Nexus routers. The result is a very secure, extremely fast IP infrastructure that is both powerful and flexible."

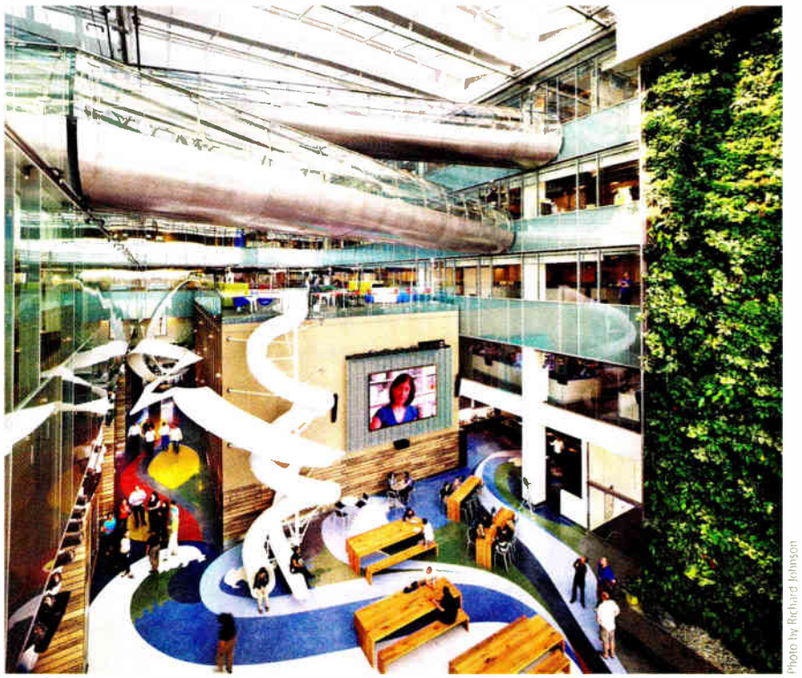


Photo by Richard Johnson

A three-story slide speeds movement within the building. 'It is important to show that both management and staff use gravitationally assisted transportation,' Scott Dyer said.

The radio, television and Web operations share a common storage pool and network. A storage pool of more than 2 PB is available for radio, television and IT operations at Corus Quay.

To help further reduce electrical demands, the server farm is set up as virtualized servers, where a server's resources are divided by software so that it can act as many virtual servers. This has reduced the number of actual servers onsite by more than 90 percent, dropping the electrical consumption of its data center by more than 40 percent.

Similarly, workstations have been virtualized, so that all programs run off the network, and all documents and audio and video files are accessible from any point on the network. This allows staff to move about the facility, making use of the 155 meeting rooms and 250 other spaces for gathering and collaborating.

The Corus facility uses Cisco TelePresence videoconferencing suites here and in its offices across Canada. This allows executives to meet without having to travel. The VoIP system is provided by Cisco, as are more than 150 Wi-Fi access points throughout Corus Quay.

RADIO AT CORUS QUAY

Corus operates three stations in Toronto: classic rock station Q107; talk station AM640; and new rock station 102.1 The Edge.

Collectively, the stations use eight Wheatstone Evolution 6 control surfaces, two Evolution 4 control surfaces, nine Evolution 6 VMI-E Virtual Mixer Interfaces and 12 Glass E Remote Control Surface Software bundles.

Digital audio is routed using two WheatNet 4864s (48-port TDM switches) in a dual-redundant configuration. They

connect to six 22-position Wheatstone Bridge I/O frames and twenty 10-position Bridge Satellite I/O frames, resulting in a 1,000-by-1,200 audio I/O matrix and 552-by-552 GPI logic matrix. Audio over IP connectivity from the TDM routing matrix is provided by four ip88 Audio I/O Blades from the WheatNet-IP product line.

According to Wheatstone, this is the first installation of a Bridge-based system integrating E-Series control surfaces into a TDM platform.

Besides being cutting-edge, the Corus Quay studios are large enough to allow for live performances by small ensembles. Canadian rocker Gowan (now lead singer of Styx) was the first artist to perform live in the Q107 studio during Kim Mitchell's afternoon show. Mitchell was one of the founders of '70s rock band Max Webster.

With the IP infrastructure that we have installed, there is plenty of headroom for growth in an IP-driven world.

– Scott Dyer

"To let our fans see their DJ heroes up close and personal, we have located all three stations plus a fourth backup facility at ground level in our northwest corner," said Scott Dyer. "This makes it possible for fans to watch our people in action through plate-glass windows."

The spot is especially audience friendly as the city of Toronto built Canada's Sugar Beach Park, named for the nearby Redpath Sugar facility on Lake Ontario, beside Corus Quay. The beach has sand, umbrellas and comfortable Muskoka chairs for people to relax in.

"Add the fact that we pipe our audio outside, and this is a wonderful spot to relax and watch radio take place," Dyer said.

Corus Quay has raised the profile of Corus Entertainment in Toronto.

"Before, we were standalone stations and services; now we are a destination that people visit," Dyer said. But the new facility also has made this company uniquely suited to face whatever IP-driven media advances will come. "We call ourselves 'the most advanced broadcast facility in North America.' That's no idle claim: We have the technology and the equipment to back it up."

WHO'SBUYINGWHAT

Barix said **Radio Notimil**, the station for the Armed Forces of Ecuador, deployed an audio over IP network to distribute programming to radio stations in four cities. **DIT**, a design and integration telecommunications company, designed and installed the system. ...

Audemat, part of the WorldCast Systems group, surpassed 1,000 Goldeneagle HD units sold. The product is an HD modulation monitor that launched in 2005. ...

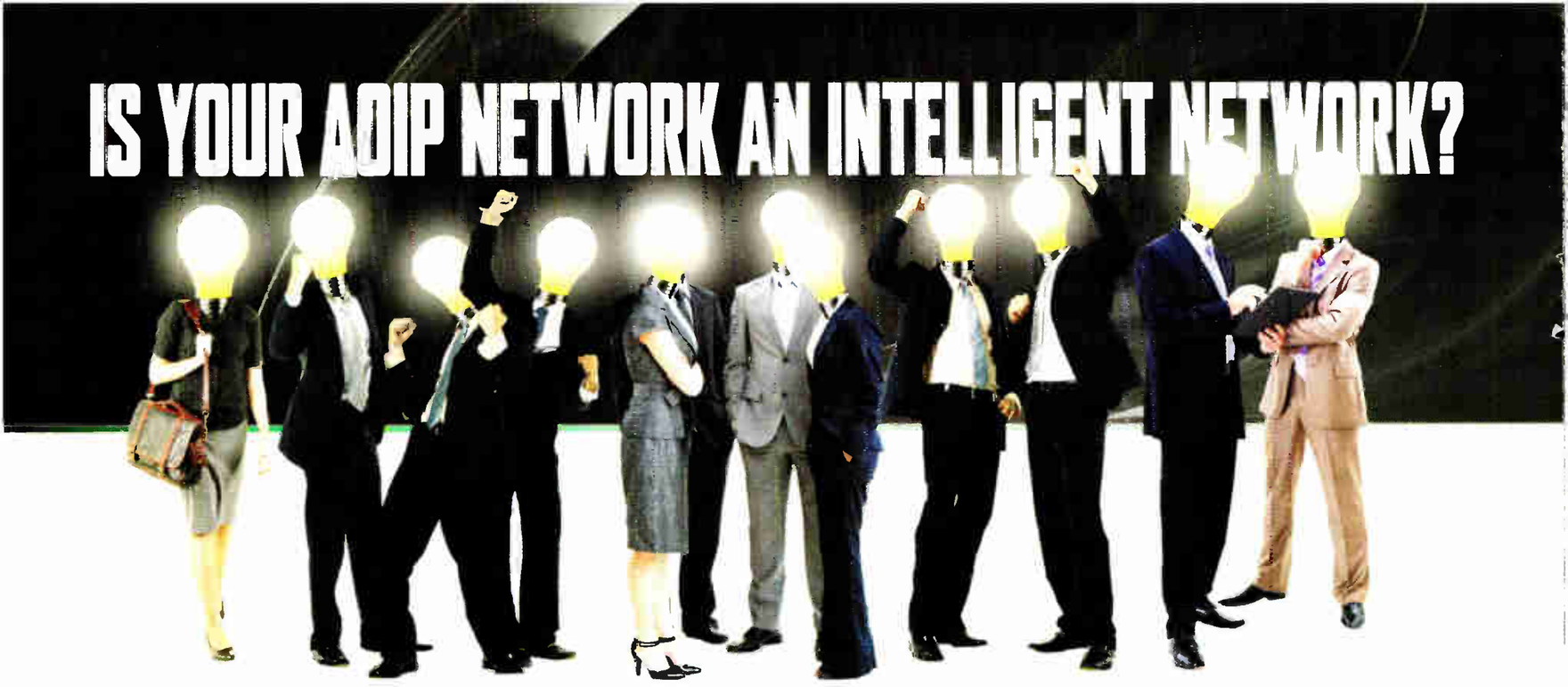
CBC/Radio-Canada chose the **Sonnox** Restore suites for audio postproduction. Jean Diamant is CBC supervising technician-TV technical production. ...

Jean Diamant, CBC Radio Canada

Studer this summer said it had sold its 1,000th OnAir 3000 digital console. Recent buyers included the **BBC**, **Rede Globo of Brazil**, the **Danish Broadcasting Corp.**, **Turkish Radio and Television Corp.** and **Egyptian Radio and Television Union**. ...

Harris reported that **KTCK(AM)**, a Cumulus station serving the Dallas area, purchased a 3DX-25 solid-state transmitter. The sports talk station operates at 25 kW power by day and switches to 2.3 kW at night.

IS YOUR AOIP NETWORK AN INTELLIGENT NETWORK?



There's no reason to be in the dark about your AOIP Network...

An intelligent network is one where the network's core intelligence is distributed to all of its access points. These nodes, which we call "BLADES", are intelligent – each has knowledge of itself, of its place in the network, and of the network as a whole. This means that every BLADE has the smarts to get things done, locally or anywhere else in the network. Couple that with a multitude of features and a wide range of functionality and you have WheatNet-IP -- The Intelligent Network.

1. WheatNet-IP Intelligent Network is self-aware.

What does this mean? Every BLADE on your network knows who it is and what it is supposed to do. This makes setup as easy as plugging it in and turning it on. When you need to add to your network, just connect the new BLADE, and watch it configure itself in seconds. It's literally THAT easy.

2. WheatNet-IP Intelligent Network is self-healing.

WheatNet-IP offers as many points of recovery as you have BLADES in your system. In the exceptionally unlikely event that a BLADE should fail, just plug an alternate in and you are up and running. Since each BLADE has the entire WheatNet-IP Intelligent Network's configuration embedded in its DNA, the new BLADE inherits its function immediately and you are back up and running. Pretty cool, eh?

Wheatstone

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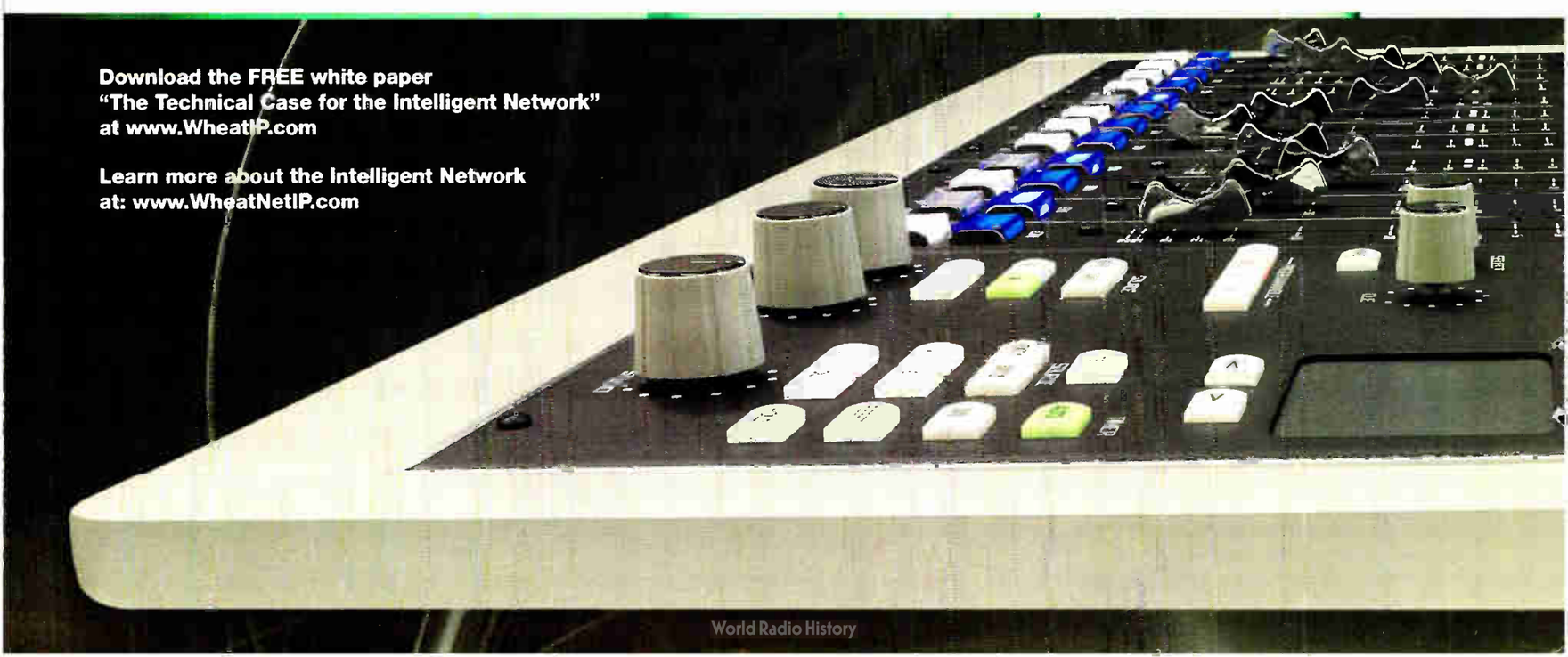
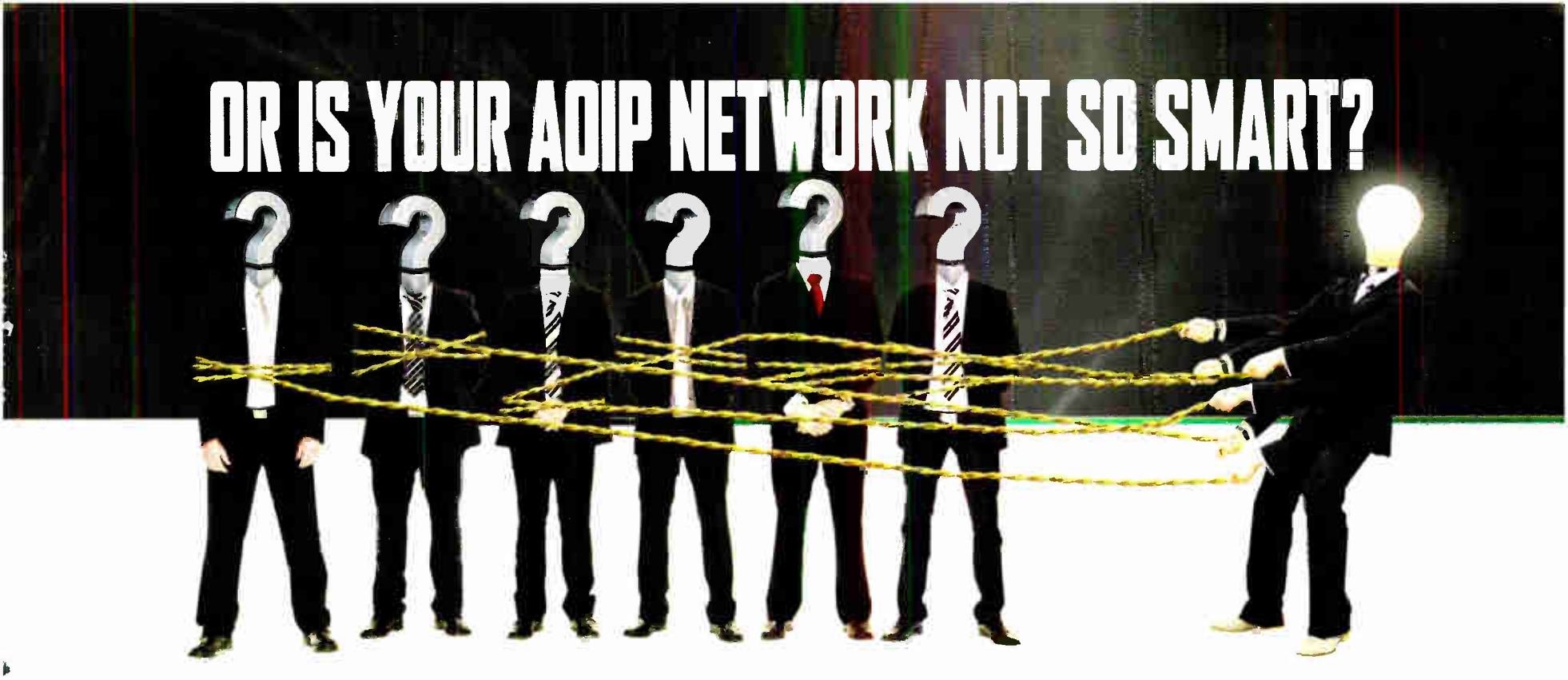


OR IS YOUR AOIP NETWORK NOT SO SMART?



Got questions? Boy can we help!
Perhaps you're about to invest in a new set of consoles for your station. Or maybe you've already decided an AOIP network is right for you. Maybe you've already got a system and are looking for more or better functionality. Give us a call. We know this stuff inside and out. While no single entity wrote the book on it, we've got a few chapters under our belt and would be happy to offer enlightenment about WHY our Intelligent Network is better!

3. WheatNet-IP Intelligent Network is 10 X faster.

You may not think you need the speed, but think of it this way... remember when a 10 meg hard drive seemed like it was all you'd ever need? Or when a 56K modem seemed like overkill? Audio needs as much bandwidth as you can throw at it, and WheatNet-IP Intelligent Network gives you 10 times the bandwidth of the other major system. Think of it as money in the bank.

4. WheatNet-IP Intelligent Network is NOT more expensive.

It's true. When you add up all the costs for your network, WheatNet-IP comes out to just about the same money as the other guys. No marketing mumbo jumbo about your labor or performance here - we're talking straight hardware comparisons. Go ahead, configure your network and see. Of course we DO outperform them by up to a factor of ten. And we DO save you great googobs of money by giving you a system that configures, runs and heals itself... Still, do a full-network hardware comparison and check it out for yourself! Operators are standing by...

WIBN Returns With Help From ERI

After Tower Fell, Broadcaster Gets Replacement and Antenna in One Stop

USERREPORT

BY JOHN BALVICH
President and General Manager
Brothers Broadcasting Corp.

EARL PARK, IND. — Early Saturday morning, April 17, WIBN(FM), 98 Gold, was taken off the air when its tower and antenna were knocked down by farm machinery that was planting corn.

The tower collapsed across WIBN's transmitter building, silencing the station, though it continued to stream its programming online. Without the transmission signal, a significant portion of west central Indiana and east central Illinois was without the local news, weather and classic hits music WIBN provides.

WIBN is a Class B1 FM facility, licensed to Earl Park, Ind., and operates from studios in Oxford. WIBN originally signed on as a 3 kW Class A facility, assigned to 98.3 MHz. In 1988 the FCC granted its application to change channels to 98.1 MHz and operate at 25 kW. These improved facilities made WIBN a regional broadcast service covering a nine-county area of Illinois and Indiana south of the Chicago metro and including Lafayette, Ind.

Shortly after the tower collapse, WIBN's owner Brothers Broadcasting Corp. contacted ERI to begin the process of replacing the fallen tower and wrecked antenna system.

Following settlement with the station's insurance company and after the tower and antenna system details were finalized, ERI was awarded a contract for a new FM antenna, replacement transmission line and a new guyed tower, as well as the installation services to erect the tower and install the antenna and line.

The design and fabrication of WIBN's new 295-foot tower, ERI Model LPX-6C FM antenna and Andrew air Heliax began at the end of May. The project was completed and the station returned to the air at fully authorized facilities on the evening of July 27.

The ERI supplied equipment included a 295-foot, 24-inch face, guyed tower with an ERI Lambda Optimized FM Antenna Mounting System, a six-bay center-fed LPX Series RotoTiller FM antenna and a run of Andrew 3-inch air Heliax. ERI's services complemented the equipment package through a complete installation of the tower and guy anchor foundations, the tower steel and the antenna and transmission line system.

The choice of a single supplier, with ERI's range of capabilities and resources, allowed this complex project to be completed quickly and without unexpected changes, additional cost or delays.

For information, contact David White or Denise Ruffin at ERI in Indiana at (812) 925-6000 or visit www.eriinc.com.

View from the top of WIBN's new 295-foot tower showing the new ERI LPX-6C RotoTiller FM antenna.

TECHUPDATE

SINE CONTROL UPDATES POWERCLAMP WITH SERIES 10 SURGE SUPPRESSOR

Sine Control Technology Inc. recently introduced the PowerClamp Series 10 Transient Voltage Surge Suppressor (TVSS) unit.

These new ultrahigh-capacity surge suppressors are designed for installation at broadcast transmitter sites where electrical spikes and surges can cause serious damage to transmitting equipment.

The Series 10 PowerClamp units are rated at 200,000 surge-Amps, and are suitable for locations where there is a severe risk of lightning-induced damage. Their multiple surge attenuation circuits and sine wave tracking will attenuate power line spikes and surges to within a few volts of the AC sine wave. PowerClamp's nondegrading hybrid design allows these TVSS units to operate for decades with no reduction in performance, according to the manufacturer.

PowerClamp Series 10 TVSS units are available for any single- or three-phase electrical service. PowerClamp TVSS units are in use by hundreds of broadcast stations and have been distributed by Henry Engineering since 2003.

For information, contact Henry Engineering in California at (626) 355-3656 or visit www.henryeng.com.

ABOUT BUYER'S GUIDE

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

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BUYER'S GUIDE

CC Raleigh Upgrades Two Stations

FMs WDCG and WKSL Benefit From Dielectric Antenna Installations

USERREPORT

BY BENJAMIN BRINITZER, CPBE, AMD
Regional VP Engineering
Clear Channel

RALEIGH, N.C. — Through a group effort of a bunch of dedicated people, Clear Channel was able to complete outstanding upgrades for WDCG(FM) (a.k.a. "G105") and its sister station WKSL(FM) in Raleigh N.C.

Our goal was to move each station's 70 dBU contours over more of the population, thus increasing our reach and penetration in a growing top 50 market (currently No. 42).

We secured construction permits to locate both stations on a tower being vacated by Sinclair Communications that was located as close to the middle of the metro of Raleigh/Durham as possible. Clear Channel purchased the existing WLFL(TV) tower from Sinclair at the end of 2007 just a few months before our permit for WDCG was to expire. This put a very tight timetable in play for what would be one the best station improvements the market had seen in years

DIRECTIONAL

I was challenged with placing a directional license and a nondirectional license on a wide-faced tower that was already loaded to maximum structural levels.

Sinclair TV had to continue to operate their NTSC full-power UHF and would not vacate prior to our permit expiring. This meant that any additions to the tower had to present the lightest possible wind load and physical loading. (The necessary tower modifications

became redundant only 10 months later after Sinclair removed the analog TV gear. Oh well!)

Enter Dielectric/SPX Communication Technology. (Dielectric is now operating under the name SPX Communication Technology; it continues to sell its full range of products under the Dielectric brand.)

Through past changes and upgrades, I was familiar with Dielectric products and had had successful experiences. After researching wind loads and weights of different antenna brands, I chose to purchase the DCR-M6ER for WDCG and the DCR-M6ERD for WKSL.

To simplify the project and expedite the design, we also chose to purchase the transmission line for both projects from SPX Communication Technology. The deciding purchase factors were both weight/tower impact and pure engineering design.

Future tower crews may wonder about one of those recommendations. Since WKSL's was a directional antenna it was important that we not impact the licensed pattern with future tower changes and we certainly did not want to impact either station's designed coverage. Therefore as a result of SPX Communication Technology's pattern studies, I determined it was best to leave small sections of the large waveguide behind one of the antennas after the analog TV shutdown. This unique installation ensured no pattern changes, but looks very strange to most who see it.

Sales Engineer Matt Leland was instrumental in guiding us through the order process. When the hardware arrived we had everything we needed to make the installation go smoothly. SPX Communication Technology met all of the time limitations we placed on them

I was challenged with placing a directional license and a nondirectional license on a wide-faced tower that was already loaded to maximum structural levels.

The DCRM series antenna employs a true circular radiator (continuous emission) as opposed to some other designs that depend on space to regenerate the circular emission by "firing" at a few equal points of the radiator. Some say the Dielectric design improves receiver reception.

After the order was placed, and optimization time scheduled for the Dielectric antenna chamber, I planned a trip to Raymond, Maine, to be present during antenna pattern tests.

Keith Pelletier, the company's RF engineering director, worked within our specifications for requested coverage area for the WDCG non-directional antenna to concentrate on effective signal delivery in areas of concern. In addition, he made changes to the WKSL DA antenna to keep the axial ratios low as possible, thus ensuring minimum multipath issues within the proposed coverage for both antennas.

We faced a challenge with the pattern design due to significant obstructions inside the large-faced tower. Some obstructions would not remain after the analog TV shutdown. Pelletier and I tested different scenarios including keeping 19-inch waveguide and supporting smaller lines, or removing it, so we had knowledge of what the pending departure of Sinclair's TV operations would do to our patterns and antenna performance later. What resulted were recommendations for each antenna installation, which we later implemented.

for shipments.

After installation, I brought in test gear to complete the fine-tuning of each antenna. I was impressed by the bandwidth performance. With minor tweaks of the tuning sections the match is better than 1.01 on fundamental and 1.04:1 ± 100 kHz.

Fred Pace, our market engineering manager for Raleigh, was tasked with on-site construction management and scheduling. Fred came up with many unique solutions with the help of assistant Sol Samet. We hired Jim Coleman's company, Southern Broadcast Services Inc., to complete the tower modifications and antenna installations.

The results and coverage far exceeded our expectations and goals. We "drove" the patterns of both stations using an Audemat FM-MC4 field strength meter with the Goldenear FM reception option. We found little if any multipath areas and were impressed by the performance of each antenna.

Today WDCG is a top market performer in the 12-and-over age group and by far has the best market signal, with WKSL right behind it. WDCG reaches well over 1.2 million people inside the city-grade 70 dBU contour and over 1.7 million inside the service-grade 60 dBU contour — a performance largely due to our new Dielectric antenna installations.

For information, contact Matt Leland at SPX Communication Technology in Maine at (207) 655-8139 or visit www.spxcomtech.com.

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Phase Tech Fills Three-Phase Request

Remote Site Benefits From Reliable Performance, Remote Control Options

USERREPORT

BY AARON ISHMAEL
Director of Engineering
Western Division, Northeast
Broadcasting

CHEYENNE, WYO. — Building new radio stations in the state of Wyoming for the last three years has been a challenging task. Among the problems: Tower sites served with utility three-phase power are virtually nonexistent.

High-power transmitters powered by single-phase are difficult to find. Furthermore, single-phase transformers are costly and not as efficient as their three-phase counterparts. Finding a way to bring three-phase power to a single-phase site can prove economical in the long run.

I am no stranger to the traditional rotary phase converter and expected to purchase one for a new station build atop Warren Peak, a remote mountain transmitter site. However, after doing a bit of research, I found a company called Phase Technologies, a manufacturer of solid-state phase converters called Phase Perfect.

PRICE PERFECT

I gave them a call and found their people to be helpful in determining exactly which model would provide enough current capacity for my transmitter, which in this case was a 40-year-old Collins 831-G2. The price was a little less than a rotary converter with similar specifications would cost, so I decided to go for it.

The model suited for my application consisted of three wall-mounted cabinets (lower-current models only require a single cabinet). These units are by no means light, but are exponentially easier to move around than their rotophase equivalents.

I studied the documentation and found the connections to the unit to be pretty straightforward; I proceeded to have my electrician wire it up.

The first time we fired it up, I heard a contactor click into place followed by a light humming sound. I put the meter on the power input taps to the transmitter and sure enough, identical 240V phase to phase all the way across!

I was definitely surprised. If it had been a rotary converter at that point, I would have had varying voltages phase to phase and I wouldn't have been able to hear myself with the roar those converters make.

The Collins transmitter operates well on the Phase Perfect converter, and has now been in service for about a year and a half. It monitors the incoming voltage and will cease operating if the input voltage crosses certain thresholds. This has happened to us a few times, but it will retry a certain number of times once the voltage is back within parameters.

A pair of contacts in the unit can be run through an external relay to "reboot" it. I have put this to use with our remote control system at the site since there was one occasion where the utility power had so many fluctuations in a short period of time that the unit stopped retrying.

The company adds that Phase Perfect phase converters typically operate at 97 percent efficiency with a phase-to-phase voltage balance of approximately 1 percent. Phase Perfect is UL-listed and has electronic power factor correction with a sinusoidal output, overvoltage, undervoltage and overcurrent protection. Five models run from 15 kVA up to 80 kVA with 50/60 Hz capabilities and 3 RU enclosures available.

The Phase Perfect converter has lived up to its promises and because of that reason I have installed their converters at two other sites now as well, one with another Collins tube transmitter and the latest with a solid-state Nautel. If you need three-phase at a single-phase site, I would definitely recommend Phase Perfect. Your transmitter and your ears will thank you for it.

For information, contact Steve Mathiesen at Phase Technologies in South Dakota at (866) 250-7934 or visit www.phaseperfect.com.

TECHUPDATES

ELENOS COMBATS LIGHTNING

Elenos has developed a three-phase device, designed to suppress voltage transients caused by lightning discharges. It can also be used in single-phase.

It is a power varistor (8/20 µS – Class II) connected between each phase (including neutral) and ground.

The value of the varistors' activation voltage is specified at 420 VAC.

This lightning filter is designed to enhance safety and protect equipment in stations that already employ a separator network. Similar devices, but with a lower discharge capacity, often are already present after a commercial separator network.

The Elenos lightning filter has a very high discharge capacity, and it is able to disperse current peaks up to 60,000 A (40,000 A on the neutral), with a time profile of 8 µS (rise time)/20 µS (fall time).

The placement of the filter is along the connecting cable, between the separator network transformer and the equipment, and should be connected to a good ground.

Elenos has designed a 19-inch, 3 RU chassis that will allow the lightning to be installed directly into the back of a standard equipment rack.

For information, contact Elenos in Italy at 011-39-0532-829965 or visit www.elenos.com.

JAMPRO BUILDS UPON THE PENETRATOR

The Jampro JCPB side-mount antenna is a broadband version of the Jampro Penetrator.

Like that model, the JCPB has excellent VSWR and bandwidth. Each bay consists of a Penetrator-style radiating element supported by a galvanized steel mounting bracket; standard round leg mounting brackets for a uniform face tower are included. Silver-plated inner conductor connectors are used throughout for maximum contact life and minimum power loss. Radomes are also available for the JCPB.

For information, contact Jampro Antennas in California at (916) 383-1177 or visit www.jampro.com

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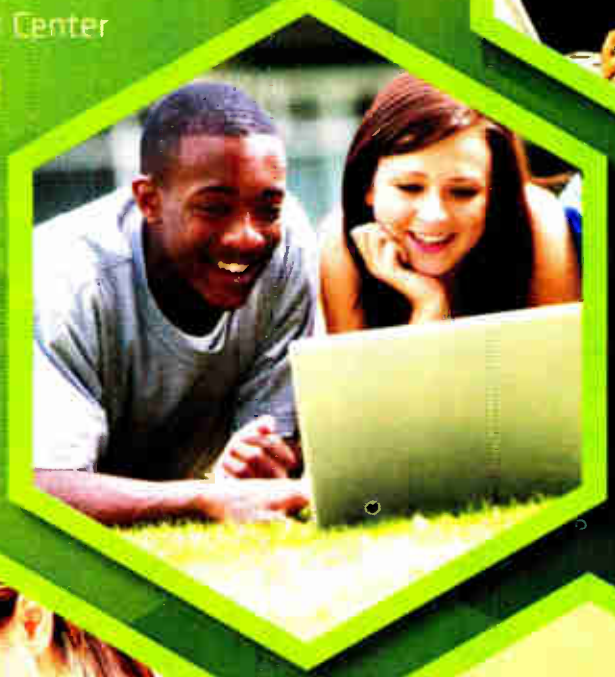

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TECHUPDATES

BELL TOWER HAS HEXPOLE

Bell Tower Corp. offers its Hexpole as an alternative to monopole models.

The company cites a need in the industry for a self-supporting communications tower that can be manufactured, stored and transported in sections, and assembled on site, one that provides the safety, wind-resistance and cost-effectiveness of a lattice tower but with the smaller footprint and corresponding aesthetic appeal of monopoles.

The Hexpole is a hexagonal self-supporting tower, a six-sided structure made of steel lattice panels, which are assembled on site. The Hexpole tapers six inches for every 20 feet, making it slightly wider than a monopole but significantly slimmer than a conventional lattice self-supporter. Therefore, it is expected that the Hexpole will be accepted by most building departments as an alternative to the monopole when a lattice self-supporter has been denied.

The primary advantages over a monopole, other than safety, is the ease of manufacturing, shipping and erection. Erection is done with conventional tower erection equipment without the need of hiring a 200-ton crane to erect it. Unlike a monopole, modification for expanded capacity is achieved without torch cutting or welding.

Additional features are the internal line support system that also serves as interior structural bracing. This feature provides installers adequate room for routing, grounding and supporting transmission lines. The lattice design allows climbers easy access to all sides of the mast and an external climbing ladder incorporated into the bracing pattern provides a safer work environment.

For information, contact Bell Tower in Oklahoma at (918) 789-9020 or visit www.belltowercorp.com.

DELTA OFFERS TRANSMITTER CHOICE

The Model RCCR-1 X 4 Remote Controlled Coaxial Relay from Delta Electronics provides locally and remotely controlled RF switching between one transmitter rated at up to 2 kW average power/6 kW peak power and four antennas operating over a DC to 32 MHz frequency range.

The system provides four momentary pushbutton switches to locally select the antenna to be connected to the transmitter. The pushbutton switch associated with the selected antenna illuminates to indicate the connection of the antenna to the transmitter.

The RCCR-1 X 4 unkeys the transmitter via the interlock circuit prior to RF switching to prevent hot RF switching. Upon completion and verification of the RF switching, the RCCR-1 X 4 closes an interlock relay to enable the transmitter to be keyed. The RCCR-1 X 4 is equipped with a RS-232 or RS-422 serial data interface to enable remotely controlled RF switching. The RCCR-1 X 4 will implement correctly formatted connect messages and will respond to status requests with a message detailing the antenna connected to the transmitter, interlock status, local/remote mode and fault status.

The modular design of the Remote Controlled Coaxial Relay accommodates transmitter/antenna switching requirements ranging from one transmitter/two antennas to one transmitter/eight antennas as well as two transmitters/two antennas transfer switching.

Different RF power levels and operational frequency ranges varying from 2 kW average at 32 MHz/500 W average at 400 MHz to 750 W average at 32 MHz/200 W average at 400 MHz are accommodated by equipping the unit with alternate coaxial relays types or connectors. The microprocessor logic used in the RCCR-1 X 4 facilitates adaptation of the program to meet special customer requirements such as custom serial interface formats or descriptive labels for the transmitter and the antennas.

For information, contact Delta Electronics in Virginia at (703) 354-3350 or visit www.deltaelectronics.com.

TECHUPDATES

NOVA DEVELOPS STROBE SYSTEM FOR AM

Nova Electronics says it developed a solution to a problem that has plagued AM broadcasters.

Series-fed AM towers could not utilize medium-intensity strobe lighting, which meant added expense in painting these towers regularly, because there was no way to monitor the numerous status indicators from the strobe controller other than an expensive base insulator system.

Nova Electronics can retrofit the strobe controllers with the RF Impervious Fiber Optic Link (RIFOL), providing dry contact closures off the tower, without the possibility of grounding or otherwise disrupting the RF energy. The only power needed on the tower to power the strobe system is the 120 VAC operating the incandescent tower lights, which can be delivered through a lighting choke or Austin-Ring transformer.

The RIFOL system takes its power from the strobe controller, drawing a negligible 110 mA. The non-conductive fiber optic cable straps to the existing RF feedline and attaches to the contact closure unit inside the antenna tuning unit housing.

The receiver can take its power from a source in the antenna tuning unit such as a wallwart-type transformer. This can be fitted on any major manufacturer's new or existing strobe controller system without voiding the warranty. Installation is a one-day turnaround and requires no ongoing maintenance; the system carries a two-year warranty.

The system consists of the FTX-8 transmitter and FRX-8 receiver. Both units use digital encoding techniques to transmit and receive eight separate contact closures over a 30-foot fiber optic conductor. Inputs are dry closure or TTL level, outputs are dry closures. Each unit is 3 x 5 x 1 inches; they will fit in any strobe controller. Power requirement is 12–24 volts, AC/DC, 110 mA for transmitter, 210 mA for receiver. The RIFOL sells for $1,250, which Nova says is half or less than the cost of a tower painting job.

For information, contact Nova Electronics in Texas at (214) 725-5621 or visit www.novaelectronics.net.

SHIVELY 6020 IS A DIPOLE

The Shively Labs new 6020 broadband dipole antenna is designed to be deployed rapidly, by itself or in branch-fed arrays. It is also suited for standby or emergency situations and is rated at 5 kW per dipole with a 7/8-inch EIA connector. A single 6020 offers an input VSWR, out of the box, under 1.25:1 at the band edges, and much less within the mid-band frequencies. It can be operated either pressurized, or non-pressurized by the incorporation of a unique venting plug.

Both the dipole and the 6018 panel (which uses two 6020-style dipoles) are designed to be "flat-packed" for ease of shipment, offering broadcasters anywhere an efficient, versatile antenna system at low cost that can be deployed rapidly. The 6020 is aimed at the value-conscious market.

For information, contact Shively Labs in Maine at (888) 744-8359 or visit www.shively.com.

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January 12, 2011

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ANTENNAS/TOWERS/CABLES

WANT TO SELL

ERI LPX-2E halfwave spaced antenna with radomes at 99.1MHz, also an ERI 960-3 cavity filter. Buyer arranges pickup or delivery, BO. J Yinger, 810-694-4146 x.203.

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WANT TO BUY

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AUTOMATION EQUIPMENT

WANT TO SELL

It's free and it has been expanded. The only cost is to keep us informed as to how the system is performing and let us know how you are using it. DIY-DJ, is a Linux based radio automation system and now sports a record scheduler (DIY-DJ-RECORDER) which allows you to schedule the recording of a network or any other program for replay later as well as a basic logging system. Beside these additions the system schedules music, does voice tracking (ALWAYS hit the vocal), create a shell, live assist, exact time events, join satellite feeds, automated temperature announce, do unattended remote events and more. Call (406) 679-0527 or email krws@digitaldevelopment.net for a copy today.

WANT TO BUY

Wanted: old analog automation equip, filters and EQ, tube amps, reel to reel, cart machines and parts. Pacific NW area. 503-493-2983.

CODECS

WANT TO SELL

Netstar 500 IP/ISDN Codecs (2), these units will work all the way up to Uncompressed. One unit works great, the 2nd unit needs to be worked on, $1000. Bill@billLacy.com or 650-731-2020.

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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

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

Complete set of radomes for an ERI SHPX6AC-HW (6 bay), never used, they weren't needed for the antenna sent to Haiti, located in Omaha, NE, Make Offer! Wb0cmc@cox.net.

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

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.

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

RECORDING & PLAYBACK HARDWARE

WANT TO BUY

BE 5402C – 5404C – 5502C – 5504C tape cartridge machine. BE 5409C – 5410C recorder. kentverbeck@yahoo.com.

Large or small collections of 16" transcriptions or 12" transcriptions, not commercial LPs. Bill Cook, 719-687-6357.

Schnader telescriptions 16 mm musical films produced in the early 50's. Bill Cook, 719-687-6357.

REMOTE & MICROWAVE

Standard Short-tune series. Bill Cook, 719-687-6357.

STATIONS

WANT TO SELL

AM Station in Rome, NY, $100K, FM xlators in Jacksonville, NC, Taylorsville, IL, Hopkinsville, KY. mraley@bbnmedia.org.

TAX DEDUCTIBLE EQUIPMENT

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

RADIOWORLD *Equipment Exchange*

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WANT TO SELL

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CCA AM 10,000 D – Call John KQSS 928-595-0263 between 10 & 6 PM Pacific Time.

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POSITIONS WANTED

Dynamic! Experienced female broadcaster! Great Voice! Professional, dependable, charismatic, ability to relate to audience! Skilled in all areas of a radio station. Shanon, 469-337-9157 or shanonjemison@gmail.com.

Strong On-Air ability, comes across warm, friendly, natural and conversational. Notable digital editing capabilities with CoolEdit. Reliable, versatile, and takes direction well. LaWanda, 972-896-2997.

In the know! Energetic, dependable personality available for entertainment news. Knowledgeable in voiceovers, creating/producing commercials plus digital programming. Proficient with DRS/CoolEdit. Bridgett, 214-650-9540 or bridgettprox@gmail.com.

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READER'SFORUM

PUBLIC WARNING: TREAT THIS ALLIANCE SERIOUSLY

Paul, heartiest of kudos on your comments about EAS in the Oct. 20 edition "Your Station Can Be the Hero." Our broadcasting partners in New Jersey are leading the way in promoting EAS and public warning. Distribution of FM Alert receivers is in the offing, and some FMs, such as WRAT in Monmouth County, are already wired to air textual versions of our EAS messages on its RDS stream. I truly value all of the partnerships that the N.J. SECC has formed with its broadcasters, cable companies and the National Weather Service.

Vis-à-vis your editorial, there is one more thing that the GMs and engineers can do to enhance their role in EAS.

As engineers, we often concern ourselves solely with the mechanism of taking the EAS message in and getting it on the air. What is often overlooked is the actual message itself and where it will come from.

I would highly recommend that all participating EAS stations, especially the LP1s, contact their county office of emergency management and also their state office of emergency management to discuss how non-weather EAS messages will be disseminated.

In particular, stations should meet with the OEM's public information officer (PIO). Meet face to face and establish a rapport. Make sure that the county or state OEM has your correct 24-hour contact number, fax number and e-mail address. This will facilitate the authentication process once the emergency occurs and the OEM makes the decision to activate EAS. Make sure that the PIO is aware that the initial EAS message has a practical time limit (i.e., length).

The ability for broadcasters to receive and transmit EAS messages means nothing unless the message content is brief, concise and accurate. Public warning is not an "us vs. them" mechanism. It is a partnership in which the total responsibility is shared between the OEM and the broadcaster.

Treat this alliance seriously, collegially and with respect, and the public will thank you. Only then will you be an EAS hero.

H. Robert Schroeder, N2HX
Communications and Warning Officer
New Jersey Office of Emergency Management
Trenton, N.J.

AN AUSTRALIAN PERSPECTIVE ON DIGITAL

In August 2009 we started DAB+ broadcasting covering 13 million people. After 12 months, 155,000 receivers have been sold. All existing commercial and government broadcasters' AM and FM programs are being transmitted.

There are nine broadcasters per transmitter getting 128 kilobits per second each. Most broadcasters are adding additional digital programs. Individual program data rates vary from 32–128 kbps. All broadcasts are free to air.

Currently all transmitters are between 202–208 MHz (around ATSC/NTSC Channel 11). Each transmitter has an effective radiated power of 50 kW, which is also the same power being used for all region-wide, Band 3 DVB-T TV transmitters. All DAB+ transmissions are vertically polarized to optimize portable and vehicle reception. Most DTV Band 3 transmitters are horizontally polarized; however vertically polarized DTV is also used. Once analog TV is switched off at the end of 2013, some of the Band 3 frequencies will be released to expand DAB+ broadcasting.

In 2011 there will be an inquiry into which technology will be used for the 10 million people who have no access to digital radio. For regional areas DRM+ is a good candidate, probably using 47–68 MHz (European TV Channels 2–4). Another alternative is DRM30 using the empty 26 MHz band.

For sparsely populated areas, then, DRM30 using 6–24 MHz bands. Here we are talking of an oval coverage area which is 1500 x 2000 km (930 x 1250 miles).

The advantage of DAB+, DRM+ and DRM30 is that the power of the transmitter is not limited by an analog FM or AM transmission in the same channel. This will make for greater data bandwidth and greater reliability compared to IBOC (HD Radio).

In the United States, the analog TV switchoff has completely freed TV Channels 2–6 or 54–88 MHz. This would release 340 DRM+ channels. DRM+ can transmit in 5.1 surround sound, have slideshows for advertising and hyperlinking to the advertisers' websites. This could also be used in Canada once they complete their NTSC switchoff.

For Canada and Alaska, DRM30 would be good for totally covering the remote regions between towns with satellite-fed retransmitters. So those in vehicles will get radio everywhere.

The FCC and Canadian regulators could follow the Australian example: Establish a six-year moratorium on new licenses for digital or analog radio in the coverage area of the digital transmitters. This has allowed our existing commercial broadcasters to get a return on investment on costs of installation, promotion and running extra programs to attract new listeners.

Links of interest:
Digital radio is coming: *http://tinyurl.com/rwdigital1*
Digital Radio Plus: *http://www.digitalradioplus.com.au/*
DAB+: *http://tinyurl.com/rwdigital2*
DBCDE inquiry: *http://tinyurl.com/rwdigital3*
DRM Broadcasters' User Guide: *http://tinyurl.com/rwdigital4*

Alan Hughes
Technical Author
Perth, Western Australia

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OPINION

The SBE: A Year in Review

A Busy Schedule Watching Out for the Interests of Broadcast Engineers

COMMENTARY

BY VINNY LOPEZ

It was just over a year ago that I took the reins as president of the Society of Broadcast Engineers. Past President Barry Thomas, CPBE, CBNT, tried to prepare me for what was to come, and did his best. Let me tell you, it is indeed a busy job being the SBE president.

Shortly after the SBE National Meeting last year, Executive Director John Poray, CAE, General Counsel Chris Imlay and I traveled to Washington to talk to the Federal Communications Commission about two topics: Clarity Media, also known as "trucker TV," and TV white spaces.

We spent two days meeting with staffs of each commissioner's office and got some mixed responses. We knew the white spaces issue was going to be a long shot and indeed a ruling has come down on that. Clarity Media is still out there, with its fate unknown at this point.

STAFF SUPPORT

In early 2010, we were contacted by a staff member in Sen. Olympia Snowe's office requesting support of a bill that the senator was authoring, S.2881, "The FCC Commissioners' Technical Resource Enhancement Act."

The bill would authorize each FCC commissioner to add an engineer or computer scientist to their staffs. Since this has been an SBE legislative agenda item for 20 or so years, we quickly agreed to support it and help out by garnering further congressional support.

Imlay and Thomas, now chair of the SBE Government Relations Committee, visited Capitol Hill, trying to drum up a sponsor of a companion bill on the House side.

Barry and Chris visited the offices of several representatives and met with their staff members. We received news shortly thereafter that a companion bill, H.R.4809, was introduced in the House of Representatives by Jerry McNerney, D-Calif. The society began a campaign asking our members to contact their representatives and senators to encourage their support for the bills.

Unfortunately, the House bill stalled, due exclusively to unfortunate infighting between Democrats and the Republicans on the House Energy and Commerce Committee. Even though neither party apparently has any problems with the provisions of the bill, the delay probably will doom it for this term. If the bills do not get to a floor vote, we plan on working with Sen. Snowe and Rep. McNerney to get the legislation reintroduced in the next session of Congress.

FORUM? WHAT FORUM?

In mid-June, we learned that the FCC was convening a Broadcast Engineering Forum to discuss broadcast engineering issues related to the commission's Broadband Plan. We were dismayed to find that the SBE had not been included on the invitation list to the forum.

We submitted an open letter to Julius Genachowski, chairman of the FCC, expressing our concern that the commission would convene a "broadcast engineering forum" and not invite the singular organization that represents broadcast engineers with more than 5,500 members and a long and positive history of working with the FCC.

The day after receiving our letter, we were contacted by the FCC, which invited our participation. SBE Vice President Ralph Hogan, CPBE, DRB, CBNT, and board member Joe Snelson, CPBE, 8-VSB, participated in the forum as representatives of the society.

Besides being involved in legislative matters, SBE has increased its educational activities and programs in the past year. More than 200 people registered and have taken at least one online SBE University course. We added the course "Computer Networking for Broadcast Engineers" and it has been very successful, with 83 enrolled thus far.

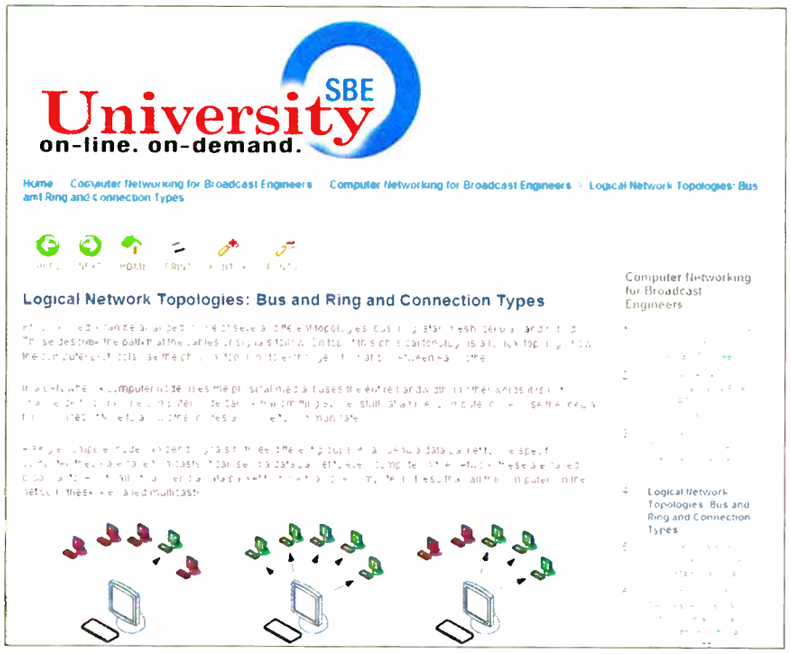
Ennes Workshops were held in south Florida; Las Vegas; El Paso, Texas; Nashville, Tenn.; Dallas; and San Diego, with cumulative attendance of more than 400. As I write, the final workshop of the year, in Worcester, Mass., is pending.

Another big change occurred in August, when the SBE Leadership Development Course was presented in Atlanta. New instructor Rodney Vandeveer of Purdue University led a class of 25 participants, the largest since SBE began presenting the program in 1997.

SBE also presented many online webinars, including the Leadership Development Webinar Series, Event Frequency Coordination, Human Factors in Broadcasting, Maximizing HD and 1080p/60 Cable Performance, EAS Update for Broadcasters and ATSC Mobile DTV. More than 275 people participated in the EAS webinar, which was free to attend.

In retrospect, we at SBE have had a very busy and productive year. The SBE staff, board of directors and officers have really gone above and beyond in service to our members. It is our passion, our dedication to broadcast engineering and our spirit that drives us. So, how can the SBE help you in the future?

Vinny Lopez, CEV, CBNT, is president of the Society of Broadcast Engineers. Radio World welcomes other points of view.



SBE University is an expanding initiative of the society.

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E-mail: radioworld@nbmedia.com
Web site: www.radioworld.com
Telephone: (703) 852-4600
Business Fax. (703) 852-4582
Editorial Fax: (703) 852 4585

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SUBSCRIPTIONS
Radio World, P.O. Box 282, Lowell, MA 01853
TELEPHONE: 888-266-5828 (USA only 8:30 a.m.–5 p.m. EST)
978-667-0352 (Outside the US) FAX: 978-671-0460
WEB SITE: www.myRWNews.com
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ADVERTISING SALES REPRESENTATIVES
US EAST & LATIN AMERICA: John Casey, jcasey@nbmedia.com
T: 212-378-0400, ext. 512 | F: 330-247 1288
US WEST & CANADA: David Carson, dcarson@nbmedia.com
T: 212 378-0400, ext. 511 | F: 866-572 6156
SOUTHERN EUROPE, AFRICA, MIDDLE EAST:
Raffaella Calabrese, rcalabrese@broadcast.it
T: +39-02-7030-0310 | F: +39-02-7030 0211
UK & IRELAND, CENTRAL & NORTHERN EUROPE:
Graham Kirk, g.kirk@audiomedia.com
T: +44-1480-461555 | F: +44-1480-461550
JAPAN Eiji Yoshikawa, callems@world.odn.ne.jp
T: +81-3-3327-5759 | F: +81-3-3322-7933
ASIA-PACIFIC: Wengong Wang, wwg@imaschina.com
T: +86-755-83862930/40/50 | F: +86-755-83862920
CLASSIFIEDS: David Carson, dcarson@nbmedia.com
T: 212-378-0400, ext. 511 | F: 866-572-6156

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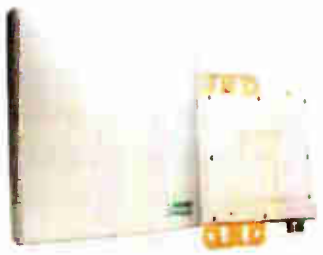

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AirAura Sweet-Spot Technology

When you think about the 'sweet-spot' you need to think about this: Every song or album (yes, a CD IS an album) is mastered differently. Record companies are having their own loudness wars. Of course, this can play havoc with your on-air processor, which essentially is 'mastering' the signal you broadcast. Sweet Spot Technology (SST) has been uniquely designed by Vorsis to manage the behavior of the multi-band AGC as program content density changes, something a typical broadband AGC simply cannot do. It effortlessly handles transitions between the hyper-compressed recordings of today and those of the past that have considerably more dynamic range. SST achieves uncannily natural-sounding consistency in both on-air loudness and spectral balance regardless of density variations in the incoming source material.

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Vorsis Smart Stereo Enhancement

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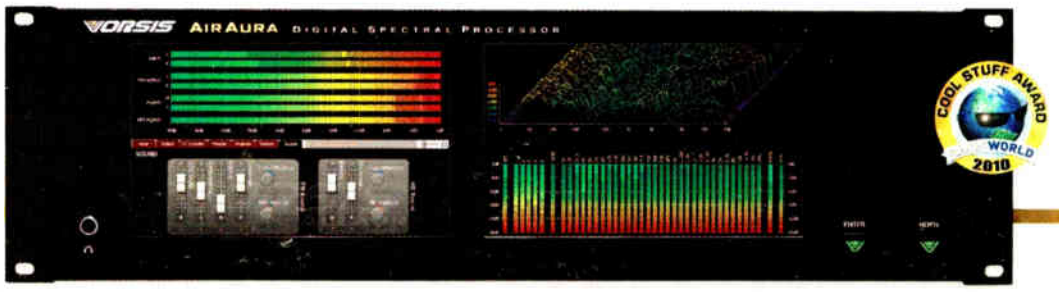

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