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How Will iHeart's "Centers of Excellence" Strategy Play Out?

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Pittman: "We don't think the quality will go down, we want the best programming in each market"

BY RANDY J. STINE

The massive technical recalibration of iHeartMedia earlier this year — when it shed over 1,000 jobs and moved to a more centralized content distribution system — was viewed by some industry observers as one possible blueprint of commercial radio's future.

And that was before coronavirus hit the country hard.

This article is about the long-term implications of that reorganization, though such discussions now must carry additional caveats about the unknown impact of the health crisis, over coming weeks as well as years to come.

It's certain that similarly sized radio broadcast companies were already watching closely to see if iHeartMedia's cloud-based top-down programming structure would succeed. Now iHeart and every other company is also struggling to adapt to the public health dangers and the economic downturn.

iHeartMedia has said that its new "AI-enabled Centers of Excellence" or network operation centers would allow the company to pivot and embrace the capabilities of artificial intelligence. This doesn't surprise radio experts since it is in line with corporate America's love of automation. The company didn't describe the exact role of the hubs in press releases describing the changes.

The technical modernization allowed the company to eliminate many jobs on the programming side; and in March it was still not clear how many technical and engineering positions were affected. It is possible iHeartMedia has added some podcast producers and data scientists to fill out new digital teams, industry observers say. Those comments preceded fresh news at the end of March that the company would institute furloughs due to the coronavirus and that company head Bob Pittman would not take a salary for the rest of the year.

(continued on page 10)

Lee De Forest, Pioneer Broadcaster

Radio scientist was playing a key role years before KDKA's historic broadcast

BY JOHN SCHNEIDER

One in a series of articles celebrating radio's first century.

Nov. 2, 1920, traditionally is recognized as the start of radio broadcasting in the United States. It's the date that station KDKA broadcast the Harding-Cox election returns from a primitive transmitter atop a Westinghouse factory building in

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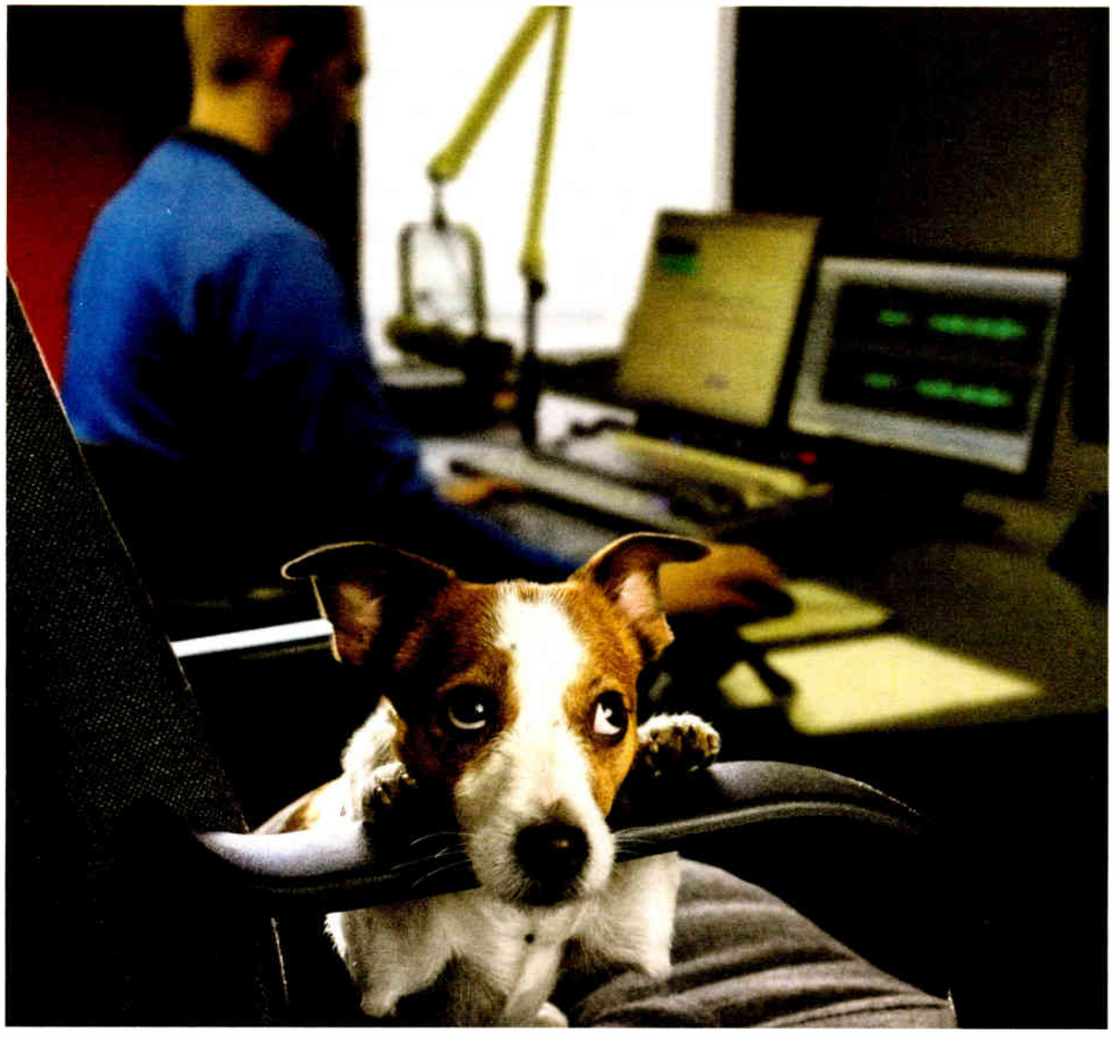

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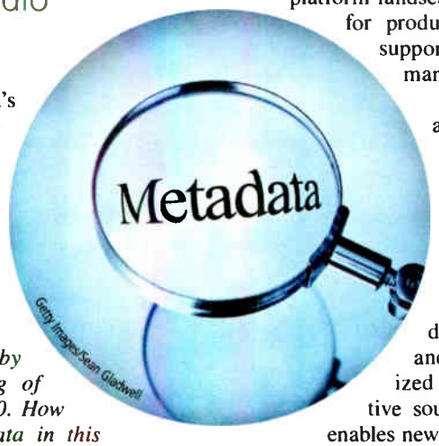
Metadata Is Both Glue and Lubrication

NPR's David Julian Gray talks about how the tool is being used in radio

BY PAUL McLANE



David Julian Gray is NPR's senior product manager, content production. Before the coronavirus crisis hit, he was preparing to lead an NAB Show session about radio metadata including the value proposition for metadata through the content lifecycle

Radio World: *Let's start by updating our understanding of what the term means in 2020. How do you define radio metadata in this context?*

David Julian Gray: A classic definition of *metadata* is "everything but the thing itself," meaning all the descriptive and technical information about an object.

In terms of radio, and media production and distribution in general, "the thing itself" is a media file or a stream, often called the "essence."

All the information that helps identify and describe the essence is its metadata. The station ID, the origination producer, program, season, episode, story, byline(s), voices, subject tagging, production data such as component files and production staff. Technical metadata includes container format (e.g. MPEG-4), encoding format (e.g. AAC), sample rate, bit rate, etc.

RW: *The description for the session that didn't happen called metadata "both the glue and lubrication of digital workflows and distribution." Expand on that.*

Gray: That something can be both "glue and lubrication" may seem counter-intuitive, but that's how metadata enables and enhances media workflows, and why it's essential for digital workflows.

To take a step back: In ancient times "the thing itself" was a reel or cassette of tape, or sheets of copy; something material we could hold in hands. How do we get ahold of a digital essence? With metadata. The name of the file, its storage location, that's "lubrication" — getting the system to flow.

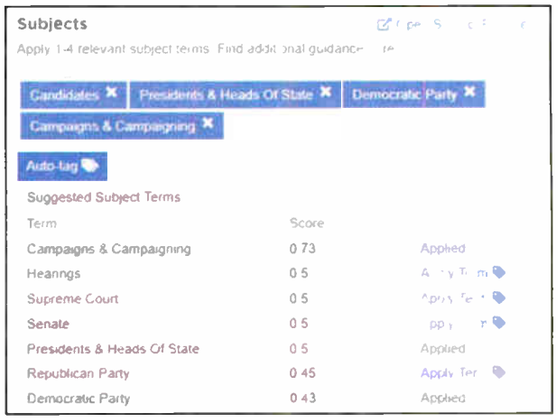
But to go from an idea to a program stream to the listener requires a multitude of systems, and that's where metadata as glue becomes important. Assigning Guaranteed Unique Identifiers (GUID) and other standardized identifier conventions that can be shared across systems "glues" media objects across systems and contributors, ensures the correct media is used through its lifecycle, production, distribution, reuse. Standardized semantic tagging helps with discoverability, aids end users to find the content they want.

RW: *What role does metadata play at NPR?*

Gray: At the most basic level, again, metadata answers the question: "Where's my stuff?"

As a modern media organization we present and collaborate with our members and other partners across a variety of platforms: broadcast, podcasts, smart speakers, mobile apps. To navigate this multiplatform landscape, NPR uses a variety of systems for production, distribution, archiving, and support functions like analytics, identity management, etc.

Metadata is essential for integration and efficiency. Our most mature systems automate capture and generation of descriptive metadata to ease the burden on users; and we're also starting to automate use of semantic tagging from controlled lists curated by our team of information scientists. Not every system is this developed, but as our systems evolve and mature, increasing use of standardized metadata from common, authoritative sources, improves that efficiency and enables new opportunities.



The Artemis archive system used by NPR Research Archive and Data Strategy shows auto-tagging of semantic metadata.

RW: *Can you discuss another example of the kind of application that typifies metadata trends?*

Gray: A key focus of the North American Broadcasters Association's Future of Radio and Audio Symposium is hybrid radio. That is an umbrella term to refer to a range of technologies melding broadcast and internet.

Last year NABA published "The Value Proposition of Radio in a Connected World," which addressed how metadata is essential for success with hybrid

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Low-Power Radio in the Parking Lot

Here's what you need to know from an expert in radio systems for emergencies and TIS

Thanks to the coronavirus crisis, radio stations and engineers are hearing a lot of questions from U.S. churches and hospitals inquiring whether they can legally set up low-power radio broadcasts to their parking lots. What's the right answer?

I asked Bill Baker — whose company Information Station Specialists provides radio solutions for emergencies and events, Traveler's Information and Highway Advisory Radio and specialized legal unlicensed operations — to describe the general rules.

"FCC 'Part 15' rules set the parameters for short-range broadcasts, which can contain almost any kind of content and can operate on any standard frequency as long as interference to broadcasters does not result," he said. "A license is not required as long as the equipment bears a FCC certification number."

Bill Baker

With the advent of international services such as Amazon, he said, it is relatively easy to inadvertently purchase a foreign-made unit that isn't legal. He recommends you confirm that the equipment has a certification sticker on the product. "In this regard, purchasing from a U.S.-based manufacturer is usually the safest move."

> "The point of short-range broadcasting is to deliver critical information just when it's needed most."

Baker said this kind of communication service can be very effective at a point in which people are 1) in their vehicles, 2) in a slow-moving line of cars or parked and 3) in need of critical information that is pertinent.

"Virus treatment information can be critical to our physical health just as spiritual encouragement can be critical on a totally different level," he said. "Either way, the point of short-range broadcasting is to deliver critical information just when it's needed most."

To answer a common question: Both FM and AM broadcasts are possible. "But the reason that AM band FCC Part 15 devices are most often preferred is because per the FCC's FM Part 15.219 rules, the broadcast distance is so restricted as to make it unusable for more than a few feet," Baker said.

"At 100 feet, the signal needs to be gone. A drive-through restaurant that has the listener's car hugging the building perhaps could utilize a FM system of this kind. But most people we talk to require more range to make such a communication system useful."

FROM THE EDITOR

Paul McLane

Baker's own transmitter product uses a 3 meter antenna and 100 mW of power. "Short of an audio and a power source, the InfOspot product line provides basically everything else most operators need. You can send line level audio from a sound board or wireless pickup right to the transmitter's live input. There is also a voice recorder/player onboard that some COVID test locations use to record messages for a repeating broadcast, on the fly."

As to power or range limitations he said there's some common misconceptions.

"Part 15.219, while limiting the AM transmitter power and antenna/ground length, does not specify a signal intensity limit the way the Part 15 FM rules do. Therefore, it's not possible to get out of bounds with the signal distance with a system like InfOspot."

He concluded with the advice that most FM Part 15 systems that you see advertised are not legal for use in the United States. "Buyer beware," he said.

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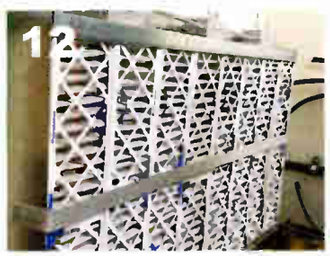

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METADATA

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radio, connected cars and apps on mobile devices. There are a variety of technologies, RDS, IBOC, RadioDNS, available for broadcasters to link additional data and images to broadcast streams. These can range from whatever they can put in RDS' 128 characters all the way to entire interactive websites synchronized to the broadcast stream. Many folks are already familiar with artist name, title and album art available from the HD Radio Artist Experience. With emerging technologies like 5G and smart speakers moving to cars, media producers can link content across platforms — so a song or interesting story they hear in their car can be tagged to be finished on a mobile device later, or additional, related material can be tagged to be explored on another platform or device.

***RW:** What would you say is a key takeaway from this discussion?*
Gray: Capture your metadata early and often, and keep it handy; it's the glue that ties your supply chain together and the lubrication that moves your content through it. We talk a lot about the importance of metadata to enhance the listener experience and create opportunities for audience and revenue growth. That assumes metadata is available. Consider the entire lifecycle, from initial idea to audience discoverability to long-term preservation, and best practices in the care and feeding of enabling metadata."

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

DE FOREST

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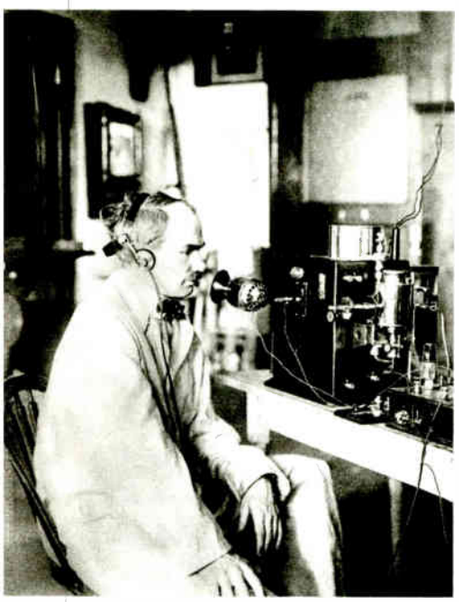
Pittsburgh. But in reality, broadcasting had been taking place on an experimental, irregular basis for more than 10 years prior.

Notable early experimenters included Reginald Fessenden in Massachusetts, Charles Herrold in California, Vincent Kraft in Seattle and Frank Conrad in Pittsburgh. And perhaps the most prominent of these early experimenters was Lee de Forest (1873-1961), the radio scientist noted for his invention of the triode vacuum tube.

"ELEMENTS OF CULTURE"

De Forest had envisioned the concept of broadcasting news and music to an unseen audience as early as 1907, while experimenting with the transmission of voice using primitive arc transmitters.

"I had in mind its great usefulness as a means for broadcasting news and music entirely in addition to the use of the wireless telephone as a means of two-way communication by voice," he wrote later. "From the beginning, (as) a great lover of opera and fine music, I was intent on developing the means and methods for broadcast distribution of these elements of culture to widely scattered audiences."



Lee de Forest transmits into an early arc transmitter, about 1910. Two telephone microphones are joined in parallel to create a double button carbon mic. The arc chamber is attached to the right side of the transmitter cabinet. To the right is an Audion receiver.

De Forest conducted a number of demonstrations of voice transmission between 1906 and 1910, principally for the U.S. Navy, in which he broadcast phonograph music as well as the live voices of opera singers. In 1910, he broadcast a live performance from the stage of the Metropolitan Opera, although the sound quality was poor and almost no one heard the broadcast.

In 1914, Lee de Forest sold his "Audion" vacuum tube patents to AT&T, but he wisely retained the rights to use tubes for distribution of news and music, and to manufacture devices capable of receiving these broadcasts. AT&T foresaw no commercial value in broadcasting, and so readily conceded to this clause in the contract.

Then de Forest established a laboratory at 1391 Sedgewick Avenue in the Highbridge neighborhood of the Bronx, where he developed a high-power vacuum tube capable of radio transmitting, which he called the Oscillon.

In 1915, de Forest received an experimental station license with the call sign 2XG and began experimental transmissions of concerts and news bulletins on a wavelength of 800 meters (375 kHz). It was the first radio station to use vacuum tubes instead of obsolete arc or spark technologies.

In October of 1916, he made a cross-promotion agreement with the Columbia Gramaphone Company, and 2XG began broadcasting the latest Columbia recordings three nights a week.

Carl Dreher, a young amateur operator, later recalled being a regular 2XG listener: "The quality was quite good, and I used to listen to the station for hours at a time."

On Nov. 7, 1916, de Forest broadcast the returns of the Woodrow Wilson-Charles Evans Hughes presidential election, four years before KDKA. De Forest later wrote: "The New York American ran a wire line into our office so as to have the up-to-the-minute reports. I myself served as one of the announcers. At 11 o'clock that night we signed off, after assuring our invisible audience that Hughes had been elected president." The next morning, he was horrified to find out that late results from California had in fact reelected Woodrow Wilson for a second term.

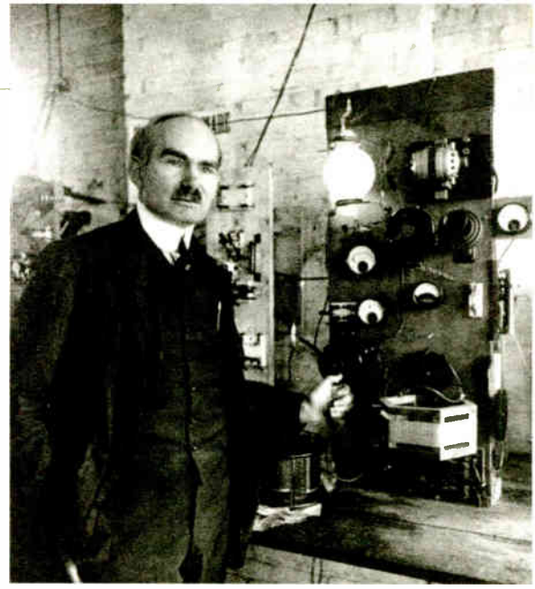
It was estimated that 7,000 people heard de Forest's broadcast that night, including listeners as far away as North Carolina.

RADIO SILENCE

After the United States entered the World War, all private radio stations were ordered off the air on April 17, 1917. The operators were instructed to take down their antennas and disassemble their transmitters. The general public was even prohibited from operating a radio receiver. As a result, all other early broadcast experimentation was halted.

Lee de Forest's 2XG was shut down, along with the stations operated by Frank Conrad in Pittsburgh and Charles Herrold in California.

The receiver ban was not lifted until April 15, 1919, while the restriction against transmitting ended on September 26. De Forest immediately reopened his 2XG Highbridge station, and on Nov. 8 he broadcast the play-by-play results of a Wesleyan-New York University football game. Popular New York vocalist Vaughn De



Here is de Forest with one of his first Oscillon transmitters, similar to one used at Highbridge. Before 1915, de Forest and others used arc transmitters, and he was apparently the first to develop a tube transmitter. (Perham de Forest papers, History San Jose)

De Forest with singer Mary White, broadcasting from 6XC at the California Theater in San Francisco.

Soprano Ruth Phipps sings over 6XC in San Francisco.

Leath also made the first of a series of live broadcasts, earning her the title of "The Original Radio Girl."

Early in 1920, de Forest moved the 2XG transmitter to the top of the World Tower Building in Manhattan, giving him improved coverage and easy access to performers in the city's theater district. But Radio Inspector Arthur Batcheller ordered 2XG to cease operations because he had not requested prior government approval for the move. "There is no room in the ether for entertainment," Batcheller declared.

Undaunted, de Forest packed up his equipment and took it to San Francisco, where he opened 6XC in the California Theatre, the city's most opulent motion picture house. His 1,000 watt transmitter broadcast on 1260 meters (238 kHz) into an antenna suspended between the theatre building and an adjoining bank building. On Jan. 28, 1920, he wrote: "California Theater radiophone is in pretty good shape. Antenna on Humboldt Tower is not ideal, but the music has been heard 1,200 miles out to sea."

Vaughn De Leath, the "Original Radio Girl," first broadcast over de Forest's station 2XG in 1920.

By April of 1920, six months before KDKA, 6XC was airing daily broadcasts of Herman Heller's 50-piece orchestra live from the stage of the theatre.

A microphone attached to a large Magnavox horn was hung 40 feet above the stage to pick up the music. Live singers also performed into individual microphones, and harp and piano soloists were broadcast. To allow the transmission of phonograph records, a steel needle was connected directly to the diaphragm of a microphone mounted on the tone arm. Demonstration receivers were set up in clubs, hospitals and hotels around the area to introduce the public to the potential of radio broadcasting.

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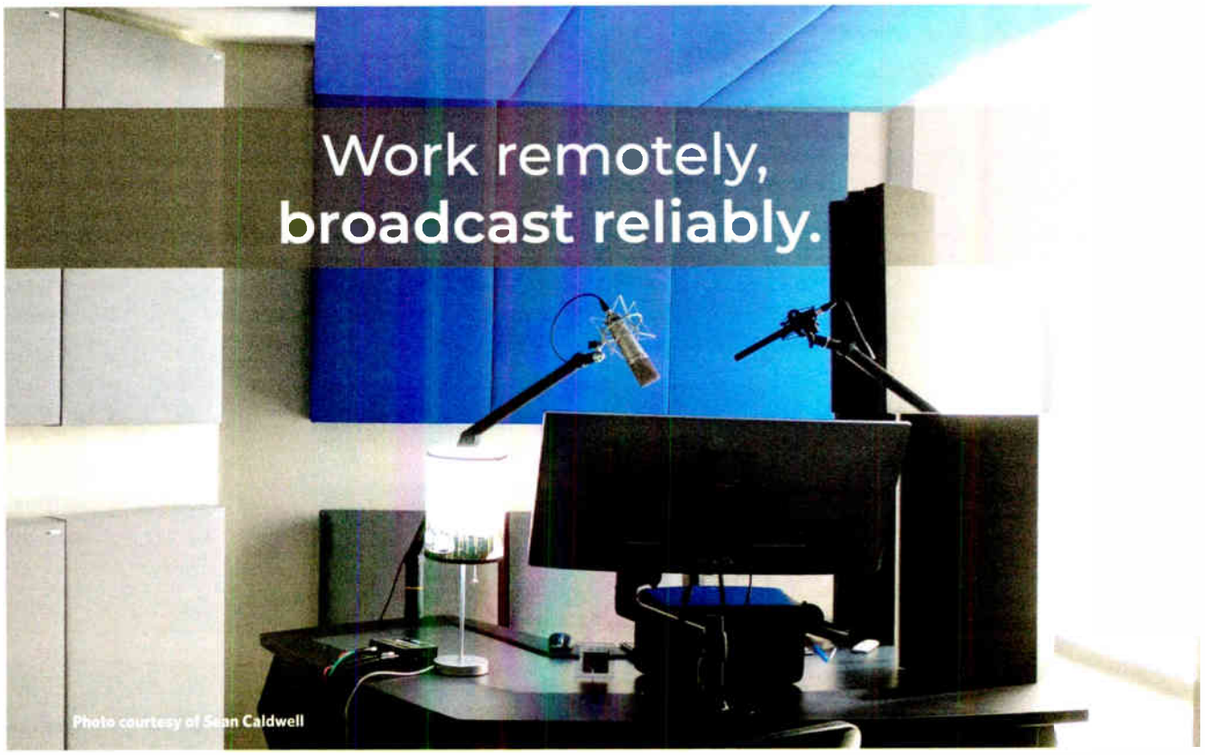

DE FOREST

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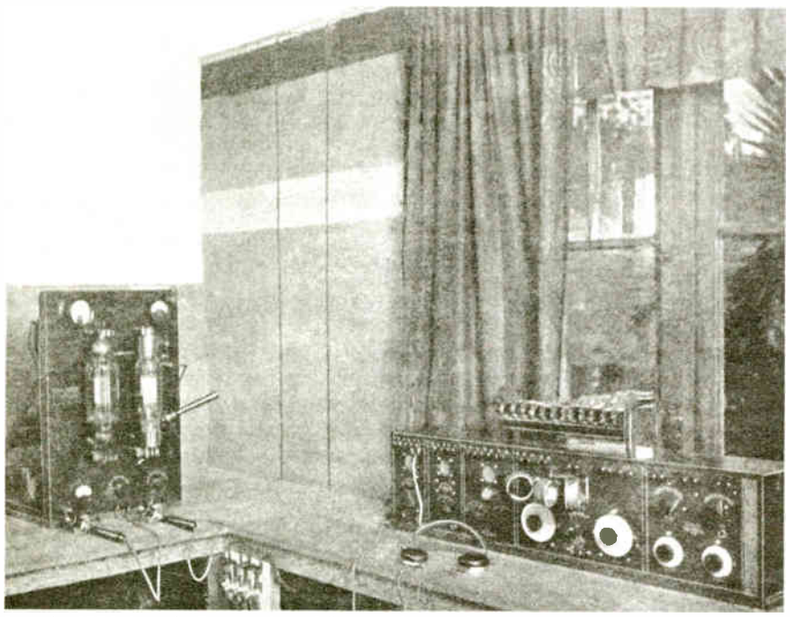
In September, ARRL President Hiram Percy Maxim addressed the 6XC audience, predicting that radio broadcasting would one day serve audiences in the millions.

OTHER INTERESTS

But de Forest was beginning to lose interest in radio. His professional interests were being directed towards the development of his "Phonofilm" sound-on-film technology, and his radio work was delegated to others in the company.



Late in 1921, Lee de Forest closed 6XC at the California Theater. It was relicensed as KZY by the Atlantic-Pacific Company, and installed in the Rock Ridge neighborhood of Oakland. Seen here is the de Forest 1 kW transmitter, left, and an Interpanel receiver at right.

And so in late 1921, after originating more than 1,500 separate broadcasts from the California Theatre, 6XC was shut down and the equipment was transferred to the Atlantic-Pacific Radio Corporation, the de Forest Radio Telephone and Telegraph Company's Western representative. A new station was installed in the company president's home in the Rock Ridge area of Oakland, and KZY, "The Rock Ridge Station," soon debuted.

KZY went on the air at midnight on Christmas Day, 1921, broadcasting several hours of Christmas carols. It quickly developed a large and loyal following in the Bay Area, and was heard clearly at night throughout the Western states. Live and recorded music programs were supplemented by news reports provided by the San Francisco Call and the Oakland Post-Enquirer.

But soon, like so many pioneer broadcasters, the new operators lost interest in funding the high cost of a radio station without any incoming revenue, and KZY had ceased operation by the end of 1922.

Back in New York, one of de Forest's employees, engineer Robert Gowen, assumed responsibility for the company's broadcasting activities. He built station 2XX at his home in Ossining and broadcast phonograph and live music each night at 11 p.m.

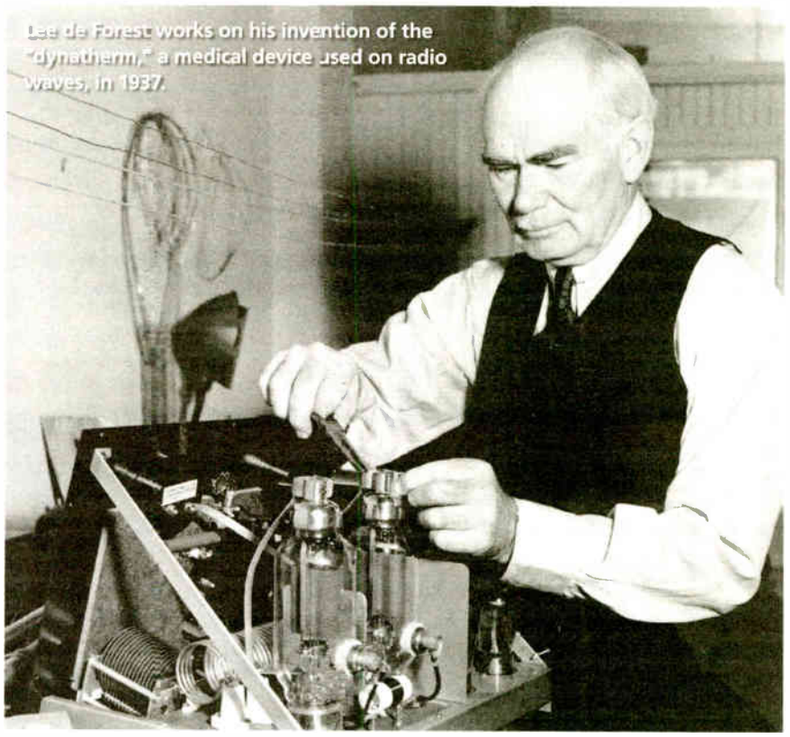
Vaughn De Leath again was heard on the New York airwaves, and news reports were broadcast nightly. 2XX operated from December 1919 to May 1921 with 300 watts on 330 meters, and was heard by amateurs around the country.

In 1921, the Department of Commerce became concerned that too many amateur and experimental stations were broadcasting programs intended for the general public, and so in the fall of 1921 it created a new "Limited Commercial" license class specifically for broadcasting. All stations were required to share just two frequencies: 360 meters (833 kHz) and 485 meters (619 kHz). All other classes of licenses were forbidden from broadcasting music and news.

And so, in order to continue broadcasting, the de Forest Company closed 2XX and obtained a Limited Commercial license on Oct. 13, 1921, with the randomly-assigned call sign WJX. But apparently, the station was never a serious venture and appears to have operated only sporadically. The license was finally deleted in June of 1924, marking the end of Lee de Forest's radio broadcasting activities.

The renowned inventor spent the majority of his remaining career on the development of his sound-on-film system. It fell to the big electrical corporations — General Electric, Westinghouse, RCA and AT&T — to develop radio broadcasting into a solid commercial technology.

John Schneider is a lifetime radio historian, author of two books and dozens of articles on the subject, and a Fellow of the California Historical Radio Society. He wrote in Radio World in December about KJR in Seattle, perhaps the first station in the U.S. to achieve a century of continuous broadcast activity.



Lee de Forest works on his invention of the "dynatherm," a medical device used on radio waves, in 1937.

NEWSWATCH

SPRING SHOW @ HOME

This free resource is part of Radio World's "Spring Show @ Home" initiative, helping equipment buyers and sellers keep in touch in an April without an NAB Show.

In the 21st century, radio is enduring, engaging and evolving. So too are the media companies that create all that great content. And so are the manufacturers that make the technologies that are the backbone of our great industry.

The guide is intended to give you a sampling of new offerings that you would have seen if you'd attended the show. It includes ads and Product Previews from our sponsors about technologies they are introducing or highlighting this spring. Also, you'll find "Exhibitor" listings based on the material that companies had sent us shortly before the physical convention was cancelled.

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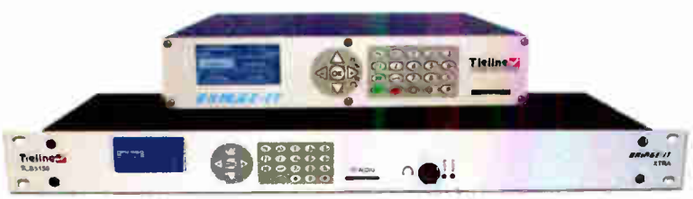

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iHEARTMEDIA

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AI-DRIVEN

iHeartMedia has more than 850 stations and also owns online music service iHeartRadio. It now has a Markets Group organizational structure, which allows for the grouping of clusters of stations that are geographically close and culturally similar, according to a press release.

Company officials have declined to speak about specifics, but it appears at least part of the technical modernization is based on a music-mixing AI system offered by Super Hi-Fi, according to Radio World's previous reporting. The system allows for music to be segued with voice-over capabilities along with other algorithmic options.

"Technology-powered" is how iHeartMedia now characterizes itself, according to a variety of press releases. It plans to use its "unique scale" to take advantage of its position in the audio marketplace.

"The company has made significant technology investments to change everything from how it sells advertising to how it utilizes data and builds new businesses like its digital platform, podcast platform and robust data platform," it stated in early 2020.

Since the company has been slim on details, Radio World asked several veteran technical observers for their views about what iHeart's new technical strategy might look like. Though most of them spoke prior to or early on during the disruptions of mid-March, their focus was on longer term anyway.

The most obvious result is that iHeartMedia would likely have little live programming except in its larger markets, they said, looking ahead. AI-enabled Centers of Excellence will program smaller markets. Some markets could be left with only a sales staff and no building.

"The technical consolidation of programming origination on a massive scale, never before seen, might be a possibility," said one technical observer. "I would further guess that in many smaller and medium-sized markets of iHeartMedia, possibly also in the larger ones that only a sales force would possibly remain."

The radio industry's subsequent rush to enable wide-scale telework now would seem likely only to accelerate any such changes.

iHeartMedia, which emerged from Chapter 11 bankruptcy in 2019, revealed little new information about its plans during an earnings call for investors in late February. There was a lot of talk about "de-leveraging balance sheets" and "improving capital structure," but iHeartMedia executives again gave scant insight into that transformative shift in business operations and jobs cuts.

According to a 10-K filing with the U.S. Securities and Exchange Commission that predated coronavirus, it still had 11,400 employees. The modernization initiatives were expected to deliver $100 million in cost savings by the middle of 2021, according to a financial release.

iHeartMedia said then that it was anticipating real estate expenses to jump this year as it possibly consolidates some broadcast facilities and downsizes others.

But by the end of March the company had withdrawn its full-year fiscal guidance. "iHeartMedia had a strong January and February before the effects of COVID-19 began to unfold into a global pandemic in early March," it said then. "The challenges that COVID-19 has created for advertisers and consumers has impacted iHeart's revenue in recent weeks, creating a less clear business outlook in the near term."

"COOKIE-CUTTER"

Longtime radio observer and iHeartMedia critic Jerry Colliano reported early last month that the broadcaster was at least considering building out "cookie-cutter office and studios" that would be very similar in each market.

> **Distance is no longer an issue** in our business and our ability to project the best talent we have to any location any time is a substantial advantage for us.
>
> — Bob Pittman

"While iHeart tries to negotiate out of leases and/or sell property it owns, according to those familiar with developments, the intention is to create a new build in every city. Presumably that even includes major markets," Colliano wrote then.

iHeartMedia's new network operation centers likely consist of management, program origination, commercial and imaging production as well as log preparation and billing, said another industry observer.

"AI in its most basic form has been part and parcel to current program automation systems, music scheduling and log preparation for some time. There will have to be significant expansion and integration to enable (iHeartMedia) to use over a large number of stations," this expert said.

A sophisticated distribution network would also be essential to the delivery of program content and technical functions, this person said.

Technical monitoring could also be centralized with "virtualization of all studio functions" clearing the way to have a functioning radio station with no studios, according to another technical expert. "The FCC's deletion of the main studio rule makes such operation possible and entirely legal now," he said.

Another industry observer said that over time, he suspects there will be many fewer iHeartMedia stations managers and programmers "artfully shaping compelling content" to appeal to a local community.

"They are likely to be replaced with AI distilling local social media to sound as though the station is connected to the community," he said.

Even local sales teams could be eliminated in some cases and replaced with a more regionalized approach to selling, according to the expert.

There are examples of such a "move to the cloud" with broadcast groups operating stations remotely, he said.

"TV has embraced AI more so, but EMF [Educational Media Foundation] feeds the same programming to all

Getty Images/Gerardo Mora/Stringer

Chairman/CEO Bob Pittman of iHeartMedia is shown at an event in 2017. According to news reports, Pittman won't take a salary for the rest of this year due to the national health crisis.

of their local stations and centralizes technical monitoring at their master control facility near Sacramento, Calif. Obviously, iHeart would take this a step farther and use a common facility to produce most if not all programming for multiple local facilities," the technical expert said. "The result will probably be regional sanitized content."

DISTANCE NOT AN "ISSUE"

iHeartMedia's turn toward a more centralized system of program delivery does raise the question of whether the company can improve its bottom line without jeopardizing local ratings in each market, observers said. In fact, financial analysts on February's earnings call raised the issue of localism and whether the broadcaster's ratings could be hurt following the earlier staff cuts.

"We don't think the quality will go down, but rather it will go up. We want the best programming in each market. Distance is no longer an issue in our business, and our ability to project the best talent we have to any location any time is a substantial advantage for us," said Bob Pittman, chairman and CEO of iHeartMedia.

Pittman mentioned personalities Ryan Seacrest and Bobby Bones and their national syndicated morning shows during the earnings call and remarked about the quality they bring to any radio station.

"We will continue to find those opportunities where we think we can improve quality or create leverage out of great talent," Pittman said. "To the listeners it is local and we will continue to serve our local communities."

In addition, Pittman said building music logs and selecting music for each individual iHeartMedia radio station is a lot of work, which can be made easier by using AI to streamline operations.

"Now that we have so much data, the problem is absorbing all that data. By using AI to help us with that, I think it improves the music, and it will free up iHeartMedia programmers to do other things that make radio great, like imaging and promotions. And working with the talent, no matter where the talent is located."

By the end of March, the business world had changed. But there was no sign of a change in the company's long-term plan described above. Rich Bressler, the company's president, COO and CFO, said then, "We fully appreciate the unprecedented challenges posed by this crisis, however, we remain confident in our business, our employees and our strategy. With our experienced management team and our leadership position in the audio sector, we are committed to navigating this period while serving our audiences and other constituents."

NEWSWATCH

CORONAVIRUS: IN THE AIR, ON THE AIR

The pandemic of the novel coronavirus has had sweeping impact across the economy and the radio industry. Radio World is covering this fast-changing story — with articles, newsmaker interviews and profiles of how stations have converted workflows and set up remote broadcasting, but also reporting on job cuts and staff furloughs. Find the content at *www.radioworld.com/tag/coronavirus* or search keyword coronavirus in the website search field.

Getty Images/demaerre

It's Time To Inspect That Air Conditioner

Also, beware: Poison kills more than just rodents

WORKBENCH

by John Bisset

Email Workbench tips to johnpbisset@gmail.com

Before it starts to get too hot, now is a good time to check your cooling systems — both at the transmitter and for the studio and rack room.

Studio air handlers can be wedged above the actual studio or technical operations center, which can be a nightmare should the condensate drain get clogged with algae and then overflow.

Whether you do the maintenance yourself or you contract an HVAC company, schedule it now.

If you're doing the work, remove the PVC cleanout cap atop the drain trap (shown in Fig. 1). With a bottle brush — buy one in the housewares/kitchen supply section of a grocery store — clean out the trap. Pour clean water down the trap as you go to speed the process. After cleaning, store the bottle brush next to the condensate drain, so it will be handy next time.

Once the trap is clean, I've seen some HVAC techs pour a little bleach into the drain. The big box stores sell an alternative, Air Conditioner Drain Pan Tablets. These tablets are placed in the drain pan and last about a month. Their chemical makeup prevents the buildup of algae, slime and scale, keeping the drain clear. Two hundred tablets run about $30; smaller quantities are available for about $1/tablet.

We write a lot about redundancy. In a large transmitter building, your cooling backup may consist of a second air conditioner. An alternative is forced air cooling, as pictured in Fig. 2, should the air conditioning fail.

Fig. 1: Pop the cap on the condensate drain and use a flexible bottle brush to clean it out.

An air vent, even if it's filtered, would defeat the job the air conditioning does, so adding motorized louvers is recommended. As shown in Fig. 3, the louvers are controlled by a thermostat, which drives a motor to open them when high temperature is detected. You'll probably need to remove the air filters to inspect the operation of this seldom-used backup system. Maintenance includes lubricating the linkage that controls the louvers, and watching for smooth operation as the louvers open and close.

If you're not using high-efficiency air filters, as in Fig. 2, consider doing so; they're worth the extra cost. We don't get to transmitter sites as often as we used to, and these filters will keep your equipment cleaner. While you're at it, measure the filter sizes of your transmitters and convert them to the higher-efficiency filters as well.

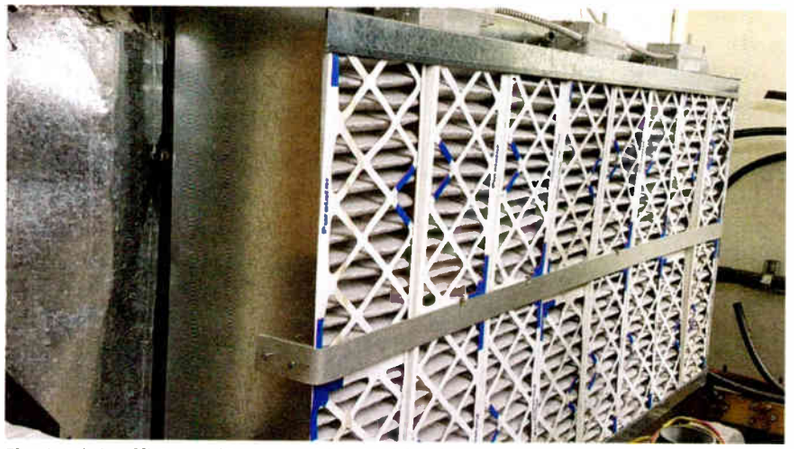

Fig. 2: High-efficiency filters combined with a louvered air intake can keep a transmitter site cool, should the air conditioning fail.

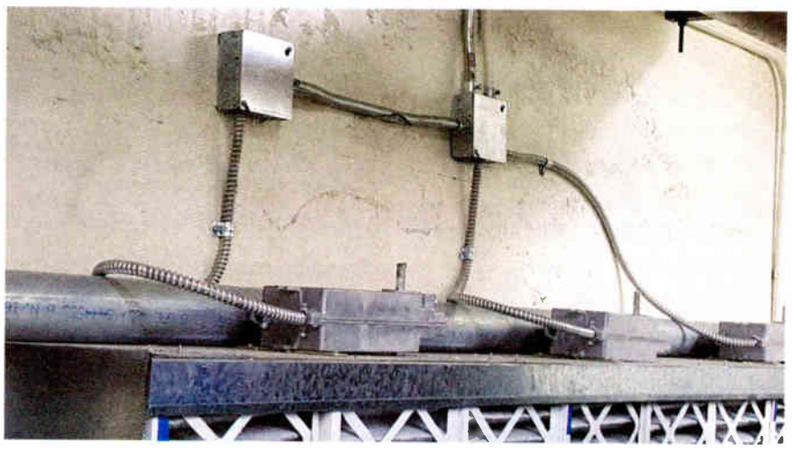

Fig. 3: Inspect the thermostat, motors and linkage that open and close the louvers on your backup air system.

You can reduce cost by buying in bulk. Once you have your filter sizes, search online for bulk air filters. Of course, Amazon sells a variety, but also check *acFilters4Less.com*; they offer free shipping.

We've mentioned this before but it bears repeating: With so many sites to cover, keeping track of the filter change dates can be difficult. With a Sharpie-type permanent marker, write the date of install on the new filters. Depending on the local conditions, plan on inspecting their condition every month and replacing as needed. Most sites can get by with a quarterly filter change.

You'll find a variety of air conditioning maintenance videos online — just search for air conditioning maintenance.

Veteran San Francisco contract and projects engineer Bill Ruck enjoyed reading Frank Hertel's tips regarding rodent control in transmitter buildings.

(continued on page 14)

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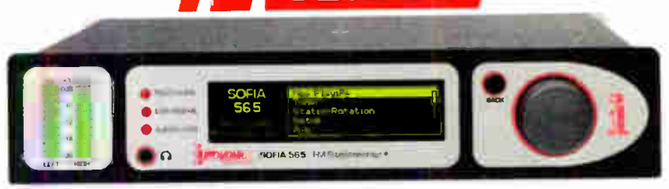

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WORKBENCH

(continued from page 12)

Bill adds two things.

First, regarding rat poison. A poisoned rodent goes looking for water and may die outside. The body is then eaten by one of their natural predators, and the poison kills the predator. Natural predators like coyotes and raptors control rodents for free, so think hard about the effects of using poison.

Engineers will find this useful: Bill's wife Siobhan shared a website called R.A.T.S., which stands for Raptors Are The Solution. Their home page *www.raptorsarethesolution.org* encourages you not to use toxins for controlling rodents. As you will read, poison not only kills birds of prey, but also dogs and cats.

Consider alternatives.

If you feel it necessary to kill rodents, Bill suggests snap traps. Bill is one of many volunteers at the KPH Project, the Maritime Radio Historical Society. The National Park Service, which owns the society's sites, prohibits the use of poison, so Bill says they had to seek out alternatives. They have found that electric traps also work well, especially for larger rodents.

Bill's second point refers to airborne disease. He says Frank was lucky that he only got a bacterial infection and not Hantavirus after his rodent experience.

There is no cure for Hanta, and the mortality rate is 38%. Keep that in mind if you encounter a site littered with mouse droppings.

Bill offers a suggestion when cleaning up mouse droppings: First, wet them down with a dilute chlorine bleach solution. It's best to wear a respirator. Then, wear gloves and use paper towels to clean up the mess. Dispose of the used towels carefully, preferably in a plastic bag that you seal.

There's useful information about Hantavirus on Wikipedia (via our bookmark at *https://tinyurl.com/rw-hanta*) and the Centers for Disease Control (*https://tinyurl.com/rw-hanta-2*). He also recommends a PDF from the CDC that you can find at *https://tinyurl.com/rw-hanta-3*. It explains Hantavirus, how it's spread and safe procedures to clean up, should you encounter a rodent infestation.

Bill concludes that the best overall long-term solution for mice infestations is to follow Frank's tips for prevention, especially never leaving any food or drinks or anything that smells of food (like fast food wrappers) in your transmitter building. Practice good housekeeping.

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

MARKET PLACE

Charge of the Light Headphones: Sennheiser says its new HD 25 Light headphones are a more budget-friendly edition of its field-friendly headphones.

The HD 25 Light are closed back supra-aural with 1.5-meter long cables going to each ear. The connector is 1/8-inch/3.5 mm.

Sennheiser specs them at 16 Hz–22 kHz with a max SPL of 120 dB. Impedance is 70 ohms. Price: $99.95

Info: https://en-us.sennheiser.com

To All the Radio Engineers Out There Helping Stations Stay On-Air:

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New Gear and SBE Volunteers Boost NCRS

Raleigh's revived SBE chapter helped this longtime reading service revamp its studios

PROJECTPROFILE

BY JAMES CARELESS

Since 1983, the North Carolina Reading Service has been bridging the reading gap for blind and print-impaired listeners, by providing live/recorded spoken-word news, weather, grocery store listings, obituaries and magazine articles to their homes and workplaces.

NCRS (formerly called the Triangle Radio Reading Service) can be heard 24/7 over the web, live and podcasts and on Alexa-enabled devices; on cable FM and TV channels in Raleigh; and on SCA receivers tuned to a subcarrier of WUNC(FM) 91.5 FM, North Carolina Public Radio.

For listeners beyond the immediate Raleigh/Durham area, MicroSpace Communications provides NCRS satellite coverage to reach all of North Carolina. The reading/audio production is done by approximately 150 volunteers at NCRS' three-studio complex in an office park in midtown Raleigh.

Until recently, NCRS' audio production equipment was as old as the complex itself, and in dire need of replacement. Not only was its mix of analog mixers, reel-to-reel and cassette recorders dated — along with its ancient version of AudioVault automation software — but the entire infrastructure was worn out; so much so, that the complex simply failed during December 2017.

Above: Legacy equipment now on display.

Right: May Tran of the North Carolina Reading Service and Darrel Gordon, project director and SBE 93 chapter chairman, hold the new control surface.

NCRS

NORTH CAROLINA READING SERVICE

(continued on page 18)

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NCRS

(continued from page 16)

"It was three or four days before Christmas," said NCRS Executive Director May Tran. "The whole system just decided to take a break."

NCRS' adept engineers managed to patch the system back together after this breakdown, but more than Band-Aids were needed to keep this vital service running.

Volunteer members of the Society of Broadcast Engineers Chapter 93 stepped in to give NCRS a much-needed technical makeover.

REPRIEVE

Retired electronics executive and long-time amateur radio operator Darrell Gordon (W4CX since 1968) had helped relaunch Chapter 93 in Raleigh, which had lapsed for a number of years.

This radio reading service is humming along with new AoIP gear and a fresh recording/playout system.

Elected as chapter chairperson, Gordon was looking for a public service project that would energize the engineers who had joined the group.

Gordon was a volunteer at NCRS, and it didn't take long for him to suggest a "studio refresh."

"I didn't really know what I was doing, but it just made sense to me to come up with a common project that we would all get behind," said Gordon. "So I brought up the notion of updating one of NCRS' three studios, with our members providing the expertise and labor at no charge; and they all got on board."

To make this project happen, several Chapter 93 members and others formed a committee to handle the project. Pitching in were Allen Sherrill, Keith Harrison, Dan Lane, Ric Goldstein, Bob Schule and Richard Pascal.

Over a 10-month period, the committee came up with an engineering plan to bring NCRS into the 21st century. Its equipment list included audio over IP eight-channel mixing boards as well as computer-based automation and networking.

"Originally, we had only planned to do one studio," said Gordon. "But when we were about 75 percent done, our members decided that we should do all three, since we now had real momentum. So we did."

Chapter 93's members completely rewired the NCRS complex, and added advanced monitoring, studio switching and UPS power backups. The final product was really NCRS 2.0, because the complex is vastly superior to its pre-2018 version.

WHAT THEY INSTALLED

Chapter 93 member Ric Goldstein, based in Apex, N.C., is also an account manager with SCMS Inc, a long-established supplier of broadcast equipment. Working with Gordon and his committee's recommendations, and supported by a company that Goldstein says believes in public service, he was able to provide NCRS' new production equipment at significantly reduced prices.

"Keith and Allen installed PR&E DMX Digital Consoles with engines in all studios," said Goldstein.

Each of these boards comes with eight faders and is networked to NCRS's brand-new AudioVault Flex Recording/Playout System. They also installed Wheatstone four-channel DSP-based Blade-3 voice processors, dbx/Orban audio processors and AoIP codecs made by Barix and Comrex. Also added were Tascam CD-200BT CD players for music; Samson Servo 120 power amplifiers; Cisco switches, routers and patch bays; and surge protectors and UPSes made by Tripplite.

May Tran thanks the engineers who did the installation, from left: Darrell Gordon, Dan Lane, Allen Sherrill and, far right, Keith Harrison.

As for NCRS' legacy production equipment? One set of it was installed in the complex's lobby, to remind people how things used to be done (without putting them through the pain of actually doing it this way). The rest was mercifully taken away.

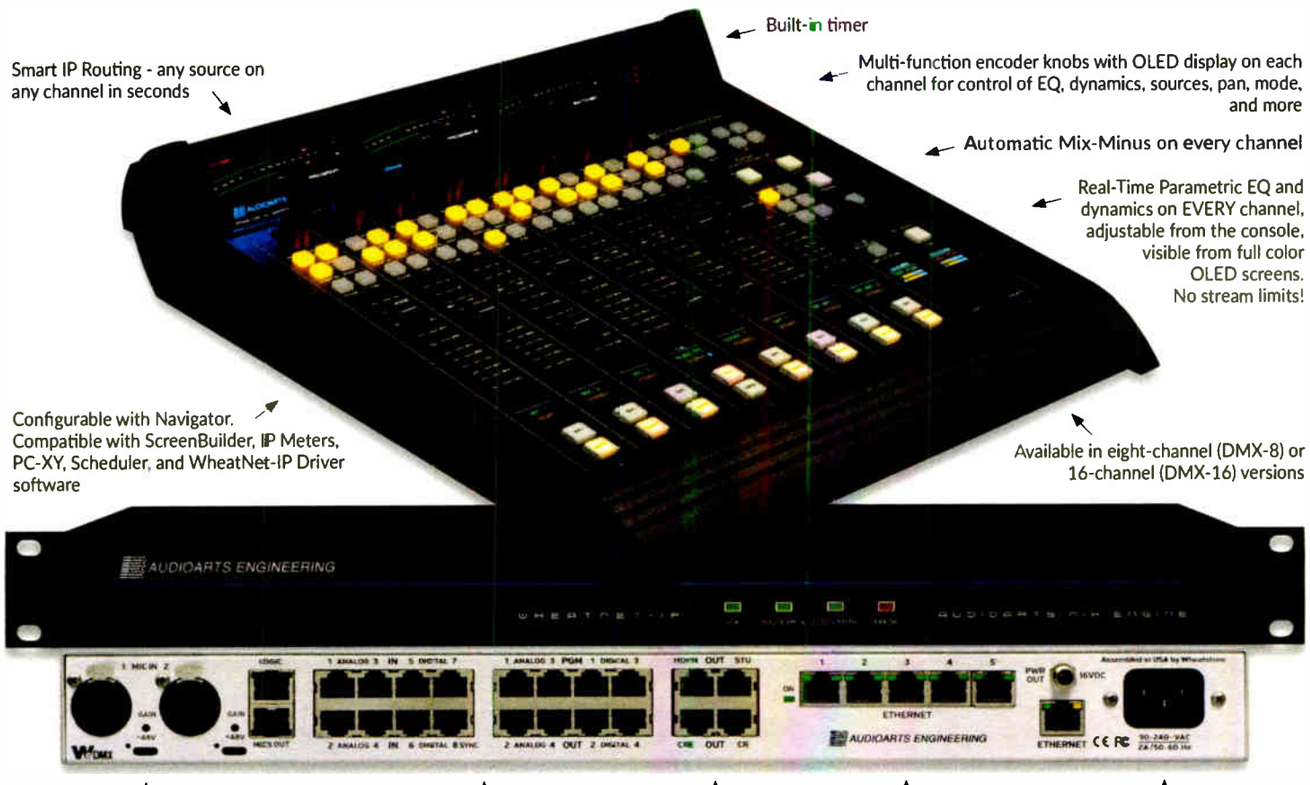
MAKING A DIFFERENCE

Moving to the AoIP production infrastructure has made a big difference to NCRS. "We can do things much quicker, do more things like podcasts that we could never do before, without dealing with failures," said Tran. "Things go much smoother now, thanks to SBE Chapter 93 and their rebuild."

Moving from analog tape to digital production brought its challenges. "Our readers are all volunteers and they know nothing about broadcast equipment," said Gordon. "So we had to train them to get them comfortable with the new system, which they now are."

The generosity of SBE Chapter 93's members has made a real difference to the 150-plus volunteers who keep NCRS running around the clock. In recognition of their efforts, the chapter was honored in the fall at the NCRS Gala dinner, meeting under the theme "Black and White and Read Across North Carolina."

"Thank you, thank you, and thank you to SBE Chapter 93 for your time, dedication and expertise," said May Tran to the gala's assembled guests. "Everything is possible at NCRS because of our wonderful SBE volunteers."



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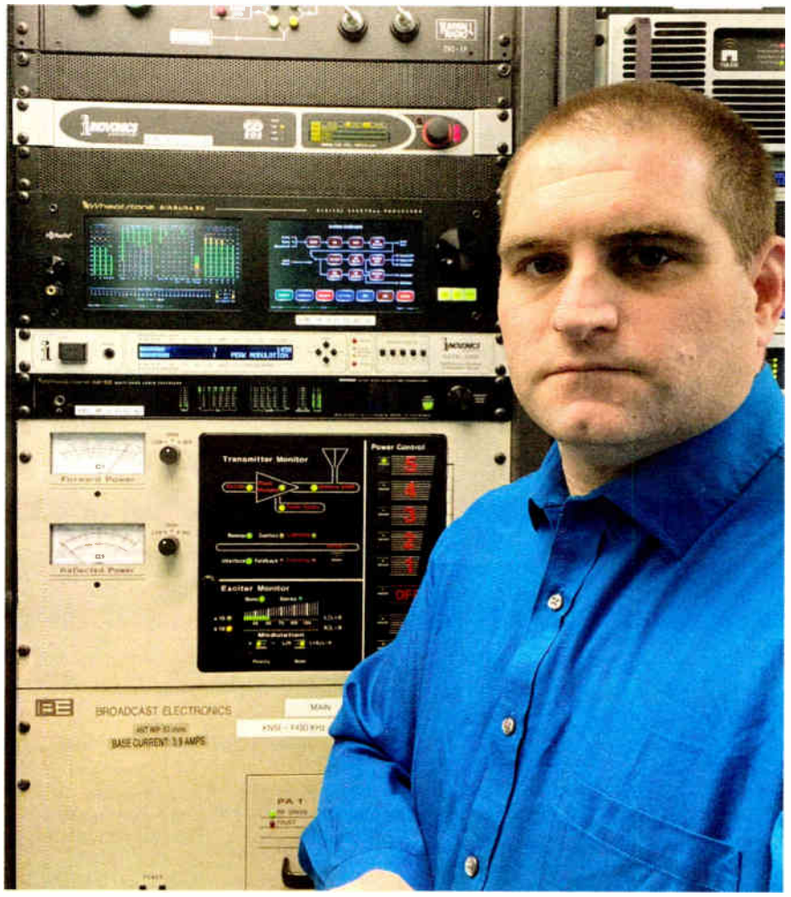
USERREPORT

BY TONY ABFALTER
Director of Engineering
Leighton Broadcasting



ST. CLOUD, MINN. — St. Cloud is ranked as market number 187 by Nielsen. But for those of us at Leighton, it might as well be market #1. This is home to our six stations and the headquarters for Leighton Broadcasting, which owns stations in six other markets in Minnesota and North Dakota.

As a college town, the population of around 70,000 skews mostly on the younger side. There are around 75 stations that can be picked up on the dial here, and competition for listenership can be fierce, especially for our top 40 station KCLD(FM) 104.7.

INSTALLATION

A few years ago, we installed the Wheatstone X3 FM audio processor on KCLD and have been pleased with the performance. KCLD is known to draw a large audience, billed as the most listened-to station in central Minnesota. We regarded the X3 as the best processor on the market at the time, until Wheatstone came out with the X5.

We had heard about some of the new X5 advancements — better highs, in particular — and in July 2019, we decided to take it out for a test drive.

PROCESSING

The unit arrived on a quiet weekday. We know our way around Wheatstone processors, having owned X1s, AM-55s, FM-55s and, of course, the X3. But we immediately saw that the X5 was different. It is probably the company's most complex processor yet, although the UI is surprisingly easy to navigate. Within a half hour, we had the X5 up and running and our settings dialed in for the most part.

Then we started listening. We had heard about the X5's new LimitLESS clipper, that it was an innovative approach to clipping and HF preemphasis that lets you turn up the highs while controlling peaks. But we were in no way prepared for the actual difference it can make on-air. Suddenly, the high-end was very transparent, much more transparent than anything in the market. We were listening to a much wider, fuller sound and most incredible, we couldn't detect any additional IM byproducts as a result of processing.

We drove around and listened to it in our homes, cars and everywhere, including the overheads at the gas station.

This thing really kicks it up a notch or two on the dial. Also impressive is the processor's automatic logger feature, which logs every change to the unit, from remote log-ins to audio failover to preset changes. That feature will come in handy for troubleshooting and for dayparted presets, for example.

The X5 exceeded our expectations. The official stamp of approval came when we not only purchased the X5 for our top 40 station in St. Cloud, but also additional X5s for several other stations in this and other markets.

For information, contact Jay Tyler at Wheatstone in North Carolina at 1-252-638-7000 or visit www.wheatstone.com.

COMING UP IN BUYER'S GUIDE

May 13, 2020
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ABOUT BUYER'S GUIDE

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

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CRP Radios Crafts the Perfect Flavor

Omnia processing and the Peruvian palate

USERREPORT

BY GIANCARLO GARZÓN GUZMÁN
Senior Operations Manager
CRP Radios

LIMA, PERU — CRP Radios is a leading radio company in Peru, the only one 100% focused on entertainment radio, with eight FM brands and two AM brands strategically segmented to connect with Peruvians. In my position I am responsible for the effective performance management of all technical activities, taking overall responsibility for engineering, IT and supply-chain performance nationwide.

We are a customer-oriented organization, hence listeners' and advertisers' satisfaction is placed at the core of our technical and business decisions. Our overall strategy for the radio broadcasting environment is that it's what comes out of the speaker that counts — the perfect mix of content and sound quality.

The FM spectrum in Lima is a very competitive sound environment — a challenge that's not always easy to face. Each of the eight FM brands that we manage has a different format, so that means eight different music formats focused on eight different groups of listeners. All aimed at having the best sound in the segments in which we compete.

When it comes to processing, it's too easy to crank up the levels to be the loudest on the dial, but we know full well that that's not what our listeners want. The Omnia.11 broadcast audio processor has proven to be a flexible device for sound-quality improvements in all our FM stations. We have been amazed at the difference a good audio-processing preset can make for a station's flavor. We are continually aiming to create a sound that keeps listeners listening and feeling that they've got the best flavor of their favorite music.

This sound cannot be created in a silo, it's an ongoing process that relies on customers' and engineers' feedback alike, and each step has brought us closer to that golden sound.

Omnia processing gives you the ability to craft the sound you want and contributes to bring out the most from content and create long-lasting engagement with listeners, which after all is a key part of broadcast service.

We are consistently seeking out the best-in-class platforms and support professionals. Our partnership with The Telos Alliance has proven to be powerful forthe challenge of achieving a signature sound that suits our listeners' tastes. Great platforms are just as important as proper professional support in the operations arena, and we have received great technical assistance on every project or technical issue that we have faced over the last few years.

Having Axia consoles plus Omnia processors is the technical solution that is supporting us to be able to create our own unique style and more importantly the one that suits our listeners. During 2020 we will continue to migrate to Axia consoles and we are in the process of optimizing all our audio connections through Livewire + AES67 to create a more flexible and smarter I/O topology.

We feel that the partnership that we have built with The Telos Alliance continually contributes to our efforts to improve audience engagement and bolster ratings.

For information, contact Cam Eicher at The Telos Alliance in Ohio at 1-216-241-7225 or visit www.telosalliance.com.

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Looking for a remote backup solution? Zetta offers a wide array of Disaster Recovery configurations, ranging from transmitter site backup systems to cloud based storage and playout. With these integrated Zetta DR features, a station's content is automatically backed up and ready at a moment's notice for playback.

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- Schedule logs control the station and add new audio and voice tracking

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Orban XPN-AM Improves Coverage for Rural AMs

"Magical" processor spreads a clean signal far and wide

KTBI engineer Bill Glenn operates the Orban XPN-AM.

USERREPORT

BY TOM READ
President
American Christian Network
ACN and LBS Radio Networks

SPOKANE, WASH. — Our part of the country is dotted with large farms located great distances from any size city. Therefore, our AM stations, which are affiliates of our faith-based radio network, are critical for reaching our listeners. Our terrain encompasses many high hills and mountains, so FM does not work well for the large areas that we need to serve.

Our programming comes to us from many sources and at a huge variance of overall volume. Our old processing simply couldn't keep up with the changes that well. In attempting to maintain a high level of modulation, I could not eliminate the rushing sound or what listeners say is "heavy breathing." Frankly, those artifacts drive me nuts and have to be avoided!

When I heard through Broadcast Supply Worldwide that Bob Orban had developed a new AM processor that would allow correct modulation, balance low- and high-input signals without distorting, all without the rushing sound of breathing, I wondered how that was possible technically. But having met him when I was a director of the NAB, I knew he was brilliant and if anyone had found an answer to this problem, it would be Bob.

I asked BSW if I could test the new Orban XPN-AM processor at KTBI, our 50,000 watt clear channel daytime station on 810 kHz, located in the Wenatchee/Ephrata region of Washington state. They agreed and sent Orban's Mike Pappas to assist with the installation. When Mike arrived, I told him I was somewhat doubtful that all of my concerns with AM modulation could be solved, but I was ready to learn.

Mike installed the XPN-AM at KTBI and trained Bill Glenn, our engineer, on its use. Not only did the XPN-AM ensure proper modulation and eliminate the "heavy breathing" artifacts, it improved our coverage! While I could always tell KTBI was on the air in my car around Spokane (about a two-hour drive from the transmitter), now I could actually listen to KTBI there … and areas where I was not able to hear KTBI well at all, were now listenable.

On a recent trip back from California, I was amazed at areas in Oregon where KTBI, once hardly audible, was now really listenable. I drive that same area several times a year so I knew what our 810 signal was like.

Needless to say, I was immediately "sold" and told BSW to forget the test. I was keeping the XPN at KTBI.

Next, I wanted to see what the XPN-AM would do for a great low AM frequency, 630 kHz, that was hampered by limited daytime power, 600 watts or so. Mike was again enlisted to install the unit at KTRW (known as KTW) in Spokane. We had a loyal listener in a rocky area in a little town to the northwest of Spokane who could receive our 630 signal, but with a lot of noise. I contacted that listener the day before Mike installed the XPN-AM and told her I wanted a comparison with her reception the next day.

After Mike got the XPN-AM on the air, I emailed our listener and learned she was thrilled that now she could hear 630 without all the background noise.

In case you're wondering, when we were testing the XPN-AM we wanted to make sure that we were comparing our former processing when it was operating at its peak performance, so I asked Mike to adjust the old processor before he switched over to the XPN-AM

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TECHUPDATE

DEVA DB6400 OFFERS VERSATILITY, EASY USE

DEVA Broadcast's DB6400 is an "essential piece of equipment when it comes to reliable, high-quality sound processing," says the company.

The DSP-based, low-latency unit promises high performance and offers a host of features along with a user-friendly web interface, according to DEVA.

One of the unit's main qualities, says the company, is the quality of sound it offers, no matter the source material. In addition, it adds that the DB6400 features an "intelligent silence detector and a dependable fallback function with email notifications." Moreover, it features a built-in MP3 player and the multiformat IP audio player. Additionally, users can easily update the backup content via any PC through a standard FTP client.

The DSP-based stereo encoder promises MPX signal precision with advanced peak control and two independently-configurable composite MPX outputs, says DEVA. DB6400's processing includes wide band AGC with "intelligent gating," a four-band parametric EQ, advanced bass and treble controls, a four-band sound processor with fidelity control and sound impact, a four-band limiter, FM limiter with advanced distortion and pre-emphasis control, as well as an HD lookahead limiter.

For information, contact DEVA Broadcast in Florida at 1-305-767-1207 or visit www.devabroadcast.com.

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so that it would be a fair comparison. Without a doubt, the XPN-AM has outperformed the older processor. Our audio quality is also cleaner than it was. It has always been good, but the XPN-AM is very clean and is able to handle a wide variation of gain from a range of programming sources without distortion. I am fussy about our audio because I still find time to do some on air work as "talent."

I don't know what sorcery Bob Orban developed for AM processing, but it is magical. We run the same program on one of our FMs and an AM with the XPN-AM and it is difficult to tell the difference in audio quality. I don't hear that from other stations.

I have to say, too, that Orban's customer service is second to none. I could not have conducted these tests without their expert help. A little "mom and pop" operation like ours — a growing rarity these days — really needs this kind of expertise and it's greatly appreciated. I can't say enough about their support.

Bottom line? The XPN-AM is worth the price for both high- and lower-power licensed AM stations.

For information, contact Mike Pappas at Orban in New Jersey at 1-856-719-9900 or visit www.orban.com.

TECHUPDATES

INOVONICS UPGRADES THE DAVID IV

Inovonics has announced what it calls a major upgrade to the firm's flagship DAVID IV FM/FM-HD Radio airchain audio processor.

Marketing Manager Gary Luhrman explains that the processor's network interface has been reconfigured for full IP interconnectivity, no longer requiring a dedicated PC software routine for remote control and monitoring of the unit.

The new DAVID IV model 719N (N for "networked") now includes a full web server that can be accessed with an internet browser from any Windows, Mac or Linux PC, or with any Android or iOS mobile device. Strong password protection is included. Additionally, the DAVID IV now offers full SNMP support, making it addressable for integrated control by other equipment on the station's LAN.

All setup parameters, factory and user processing presets, metering, alarms and housekeeping functions are readily available in intuitively-arranged webpage format. Analog and AES digital audio loss alarms have been expanded to offer input failover, which can switch to a secondary program source when incoming audio is lost.

The new 719N will begin shipping in June. Existing units can be upgraded to the new N version; contact the factory for details.

For information, contact Inovonics in California at 1-831-458-0552 or visit www.inovonicsbroadcast.com.

JT COMMUNICATIONS RELEASES SEPSONIX BROADCAST PROCESSOR

JT Communications gets serious in the broadcast processor market with the launch of the SEPsoniX FM broadcast processor.

Jim Trapani of JT Communications explained, "The SEPsoniX was designed to basically parallel the old Orban Optimod 8100 features, but with additional features (like AGC, compression "freeze" composite clipper, post processing output, FM signal generator). I was concerned that many broadcast processors have inherent delay; this delay prohibits air talent from hearing the processed audio. This is particularly important when air talent is live. Typically they like to hear the processed audio."

He adds, "It was not designed to compete with high-end processors with all the bells and whistles. It was designed for rapid setup, simple adjustments, and easy operation. This the word SEP (Simple Easy Processing) is what makes up the name SEPsoniX."

The 19-inch rackmount hardware box features dual-band stereo compression, compressor-derived AGC, compression "freeze," "ultrafast" pre-emphasis high-frequency limiter, pilot level and phase controls, stereo generator with adjustable transient suppression (composite clipper), master composite output drive level, 6-pole 15 kHz low-pass and 19 kHz audio notch filtering and 50/60 Hz operation.

The company says that there should be no processing delay.

There's also an SCA/RDS input and a stream/processor output. There's also optional PLL programmable FM signal generator for local monitoring of processed audio.

The SEPsoniX has a microprocessor-free design with all adjustments made via front-panel controls.

Price: $1,049.95; with FM tuner — $1,249.95.

For information, contact JT Communications in Florida at 1-352-236-0744 or visit http://sepsonix.jtcomms.com.

BROADCAST EQUIPMENT EXCHANGE

RADIOWORLD April 15, 2020

ACOUSTICS

ANTENNAS/ TOWERS/CABLES

WANT TO SELL

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

AUDIO PROCESSING (INCLUDES ON-AIR)

WANT TO BUY

Used Orban Optimod 1100 PC card working when removed. Email davidcorzo@hotmail.com PN (865) 332 9407.

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

Wanted: real plate reverb. abgrun@gmail.com.

MICROPHONES/ HEADPHONES/ SPEAKERS/AMPS

WANT TO SELL

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

WANT TO BUY

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

MISCELLANEOUS

WANT TO SELL

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

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

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

CONSULTANTS

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

WANT TO BUY

Wanted: ITC interconnect cables between ITC cart machine and record amp. Manual and idlers for Harris CB-1201 turntables. Don, k8drs1@gmail.com

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

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

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

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

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

DISTRIBUTOR DIRECTORY

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

MISCELLANEOUS

WANT TO BUY

I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSFX, KOBY, KCBS, KQW, KRE, KTIM, KYA, etc, I will pay for copies… Feel free to call me at 925-284-5428 or you can email me at ronwtamm@yahoo.com.

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

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

RECEIVERS/ TRANSCEIVERS

WANT TO SELL

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

WANT TO BUY

AM Stereo radio. Call 417-881-1846.

RECORDING & PLAYBACK HARDWARE

WANT TO BUY

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

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

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

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

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

RF CONNECTORS

WANT TO SELL

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

SERVICES

Offering traffic and billing services for radio stations. Through remote access from my home office in Oregon, I will enter advertising contracts and accounts receivable, produce daily logs, prepare monthly billing, and provide other needed services. Twenty-five years of experience working with American and Canadian broadcasters. Monty Nicely 541-361-6578

TAX DEDUCTIBLE EQUIPMENT

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

TRANSMITTERS/ EXCITERS/ TRANSLATORS

WANT TO SELL

BE-2ST 2SKW FM transmitter 2007 frequency agile tube transmitter in good working condition on 90.7 (all its life) when pulled from service. Approx. 6 mos. on rebuilt tube and a newly rebuilt fan motor, also spare optical modules, manuals and maintenance logbook. $17,500/OBO. As-is, where-is: Hayward, CA, Jeff Cotton, 530-279-6262 or info@kdup.org.

TUBES

Several Optimod 8100As available for sale. In working condition when removed with little or no cosmetic blemishes. $500 or best offer. May require recapping and alignment. Steve Tuzeneu 704-973-0438 (9 a.m. to 4 p.m. Eastern, Monday-Friday) or stuzeneu@bbnmedia.org

QEI FMQ 3000GB. Working when removed. Make an offer. Steve Tuzeneu 704-973-0438 (9 a.m. to 4 p.m. Eastern, Monday-Friday) or stuzeneu@bbnmedia.org

BE 3SkW FM. Make an offer. Working when removed. Steve Tuzeneu 704-973-0438 (9 a.m. to 4 p.m. Eastern, Monday-Friday) or stuzeneu@bbnmedia.org

EMPLOYMENT

POSITIONS WANTED

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

SITUATIONS WANTED

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

How Streaming, Smart Speakers Could Save AM

If broadcasters can weather the transition, these technologies can bolster listenership and sales

Getty Images/Rosshelen

COMMENTARY

BY DAVID BIALIK

Today, in the third decade of the 21st century, I am noticing disturbing things about our industry and AM radio. We are seeing stations being turned off and licenses turned in because owners are not making enough money to cover operating expenses. It is a shame to hear that an antenna's real estate value exceeds the value of a station business.

AM radio reception is not getting better, especially in cities where high-rise structures dominate the skyline. In the "old days," one would try to position an AM radio by the window to get good reception. Today, many structures have reinforced glass in their steel structures, which does not allow reception.

Second, the stations' audio fidelity has not improved. Once again, in the old days, the station cared about fidelity (granted, most were transmitting music). Today, a station is sending anywhere from 10 kHz to 15 kHz of bandwidth (if they're lucky) to the transmitter, and it's compressed with almost no dynamic range.

This is a recipe for listener fatigue, and nobody wants that! Listener fatigue causes the audience to block out the content, including advertising.

Third, and this is a generational problem, the sales departments do not understand AM reception and thus have difficulty selling it. A high-power AM may have better coverage than an FM, but AM has an image of the radio your grandparents listened to.

Granted, there are some successful AMs out there, but not many.

In contrast, streaming is growing, with a lot of the credit going to the smart speakers (thank you, Amazon and Google). The internet is prevalent in homes and the workplace, where radio reception may be limited.

SUGGESTIONS TO THE STREAMS

Many AM broadcasters are streaming audio but only going through the motions. Some are promoting it! Some are even selling it! Will listenership grow? It is inevitable.

What do these stations need to do?

First, realize that the parameters of a stream are not equal to broadcast.

Adjust the audio processing of your stream differently from your over-the-air broadcast. Let it have an audio signature!

The days of a tuning knob to go up and down the dial are gone. There is no need for a loudness war; streaming is now a destination!

If you are playing music, ensure all the instruments can be heard. How often can you say you hear the cymbals, oboe or the cow bell? If you are a talk station, let the transients of the host's voice be heard with dynamic range.

This can improve total listener hours. All stations want to tell their advertisers that people are listening more. Who knows — the station may even make more money.

Second, many stations are doing dynamic ad insertion. The internet allows for ads to be targeted to the specific listener and location. This can sound good and natural, if done right. The station needs to match the loudness level of its content with the inserted ads, which is not easy but possible. The station must have reliable metadata to cue the ads and adjust the timing so the breaks sound good. These adjustments take time but are well appreciated by all.

Also, the announcer can no longer talk up to the post of the commercial. This sounds great on the air, but is a train wreck on the stream, since the commercials are different than over the air. Yes, this is a downfall of dynamic ad insertion.

SMART SPEAKER ADVANTAGE — THE FUTURE IS NOW

The fastest adoption by the public of a new technology has been the smart speaker. Significantly, sports leagues like the NFL recognize the value of smart speakers and are restricting sports rights, since they realize this is a new profitable market.

Many people use smart speakers to listen to radio stations. Here's a revelation — this is streaming. You are not seeing a growth in radios in the home, but you are seeing more smart speakers. In fact, the technology is even beginning to creep into cars.

Smart speakers are the new home radio. Can they sound good — yes! Will more models emerge — yes!

Can streaming save AM radio? Maybe. For many years, radio has said they are now content providers, now radio has to believe it. Currently, many are calling for AM to be turned off. Others are calling for AM to go "all digital."

Why turn it off if AM can eventually evolve into a streamed source with growing listenership (not today, maybe tomorrow)?

Why go all-digital with HD Radio? Deep pockets will be needed to fund it, and the shift will require major education to the sales staff and the listeners. And even then, how would sales earn their commissions? Plus, who will teach the local Best Buy clerk that the features exist!

AM is the immediate problem, but issues for FM will follow shortly — especially with translators populating every free spot on the band.

These are some of my reasons for saying that streaming with smart speakers has the capability of saving the AM broadcaster. Of course, I will also say: Content is still king.

David Bialik is the co-chair of the Audio Engineering Society's Technical Committee for Broadcast and Online Delivery and is a Fellow of the AES. He was the director of stream operations for Entercom Communications and CBS Radio. Bialik is available for consulting at (845) 634-6595 or dkbialik@erols.com.

ZoneCasting Will Level the Playing Field for Radio

Why GeoBroadcast Solutions has asked the FCC to allow geo-targeting for FM stations

BY BILL HIEATT

The author is chief technology officer of GeoBroadcast Solutions

The prospect of geotargeting radio transmissions to better serve the public has seemingly been a pipedream for OTA broadcasters, as they've watched their television and mobile competitors improve their revenues through technology that seemed beyond reach. And, although radio still maintains the highest audiences for sources of entertainment, news and information, the elusive goal of localizing its content has been a hurdle it can't leap until the FCC allows separate single-frequency network content.

Think of the highest-powered, largest radio stations in the country and consider their reach and popularity. Now consider how better served their millions of listeners would be — through the very same call letters on the dial — if they could receive a localized early warning weather alert or, simply, a news update or traffic report that was more specific to their region than it is today.

Now recognize the competitive disadvantage radio has to ATSC 3.0 TV or mobile apps because its advertising is too cost-prohibitive for small business or regional political advertisers who only need to reach a limited audience in the broadcaster's signal.

On March 13, GeoBroadcast Solutions requested from the FCC a minor rule change to allow radio broadcasters the ability to air geotargeted programming, including emergency alerts, news and advertising, on a voluntary basis through technology we developed called ZoneCasting.

For radio, localization is a sort of holy grail. With technological abilities to improve signal strength and reach, the only impediment is providing a personalized experience for each listener at every exit on the airwave highway. That elusive "last mile" has just recently been a boon to TV, internet and mobile devices, and it should now be granted to radio.

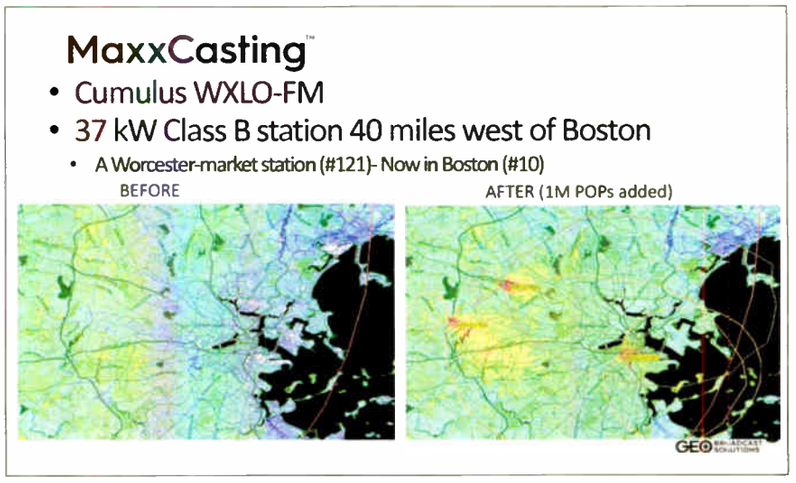
TESTED TECHNOLOGY

GeoBroadcast began in 2011 to explore and design an FM single-frequency network that would create geotargeted coverage areas, or zones, that could deliver separate audio content to those zones.

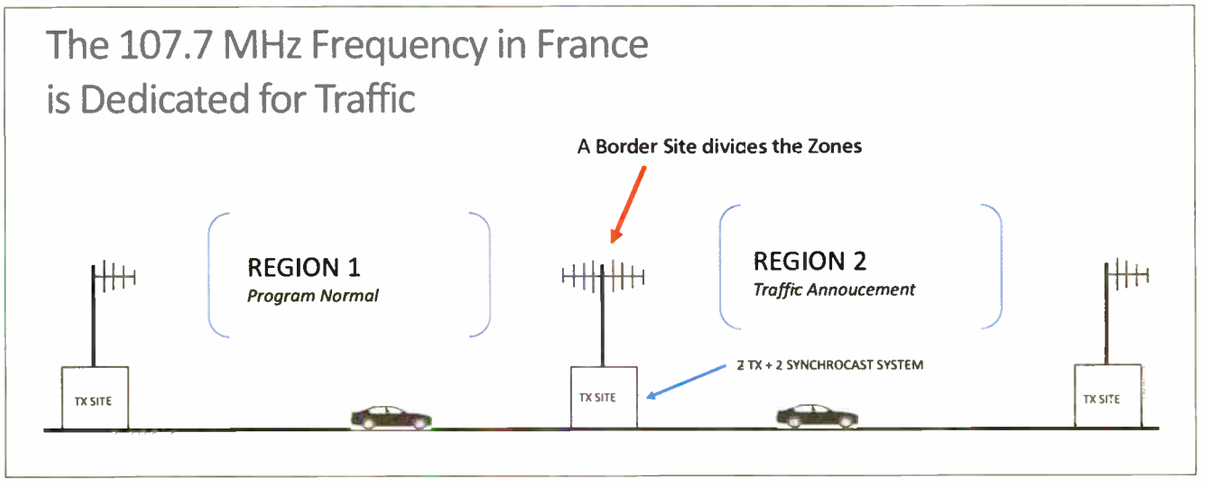
As an outgrowth of this research we discovered new design parameters and processes that could use the same technology to help stations improve coverage in low signal areas. Since the main program audio would be unchanged, and therefore is fully compliant with all FCC rules, GeoBroadcast rolled out MaxxCasting, which further allows the Radio Data System (RDS) screen to carry zoned data for targeted on-screen advertising.

Put simply, MaxxCasting is a system of FM on-channel boosters, otherwise known as a single-frequency network deployed similar to cellular technology, with transmitters fully synchronized to boost the signal from the main transmitter with seamless transitions from the main to the booster nodes. Since the signal level is vastly improved in otherwise spotty areas, the host station enjoys

(continued on page 30)



A single-frequency network can be designed to the necessary specifications for geo-targeting, as illustrated in how our deployment for WXLO(FM) in Boston added a million potential listeners to its signal.



In France the 107.7 MHz frequency is dedicated to broadcast solely along the roadways and operated by different stations through 1,100 transmitters set up to broadcast on a SFN. When not broadcasting the required local traffic and emergency information as needed to drivers, it has music, news and other programming that vary by region.

READER'SFORUM

FM6 STATIONS

Responding to "FCC Weighs the future of FM6 Stations":

There is in my opinion a very simple fix for the FM6 dilemma. For all low-power TV stations operating as radio stations, exchange the TV licenses for radio licenses at 87.7 MHz or 87.9 MHz where there is no interference to Channel 6.

There is according to FCC records one full-service station operating at 87.9 MHz and one translator operating at 87.9 MHz, so adding additional stations and extending the band downward by a channel should not be a problem.

It seems a fair exchange to trade a LPTV license for a radio license and then make it illegal to operate an LPTV as a radio station.

Terry Cowan
General Manager
KNLR/KNLX
Bend, Ore.

ZONECASTING

(continued from page 29)

higher listening — and greater recovery of Nielsen PPM decoding.

If we take a MaxxCasting system and add some additional equipment, we can actually geotarget programming from the station — this is ZoneCasting. The process is made by arranging transmitters in a cluster to allow programming in the zoned area break away from the main signal and transmit geotargeted content.

One of MaxxCasting's recent deployments was at Cumulus's WXLO(FM) just outside of the Boston market. Until implementing the technology the station didn't get a listenable signal into central Boston. Now in place, the signal added about 1 million potential listeners to the WXLO signal and changed the profile of the station virtually overnight. With the installation of its new highly-directional antennas WXLO has added geotargeted RDS information, which will change what the listener sees on his screen. This adds a new revenue source to the WXLO signal and poises it for using ZoneCasting if the FCC agrees with the petition.

We estimate that geotargeting will be active about 5% of the overall time, and will be primarily used during commercials, local news, weather or emergency alerts. Stations can also operate in multiple zones and generate local revenue in each one. When ZoneCasting is not active, the boosters often revert to MaxxCasting, for improved coverage.

As for the listener experience, tests have shown that the transition areas do not cause interference and there is no noticeable change in audio. Transitions are not long enough to be noticeable. For the average listener the change-over would appear as if the station would be switching to a network news feed or different programming.

For station groups and owners, the costs of embracing this new technology would be elective. If the rule change request was accepted by the FCC, there would be no changes to the interference rules requested, and participation would be entirely voluntary.

PROOF OF CONCEPT IN FRANCE

We traveled to France in the summer of 2019. Its national highway system has been using a ZoneCasting-like system.

Station 107.7 is broadcast along the roadways by many different operators, with each operator required to bring local traffic and emergency information as needed to drivers. Its system uses over 1,100 transmitters to create zones every 8 to 10 kilometers on average. When not broadcasting localized information, the network provides music and news that may vary by region or operator. Sometimes it's the same programming and sometimes it's different.

What we learned from the models in France was that the ZoneCasting concept is feasible and that it can be successfully deployed. In France this system of entertainment and zoned information has been very successful.

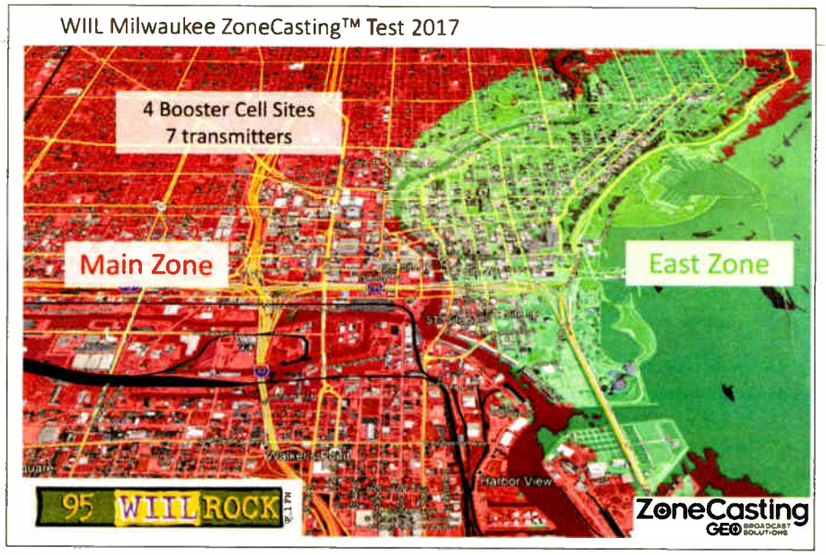
DO LISTENERS CARE? DO ADVERTISERS CARE?

Yes, and yes. In 2018 Edison Research found that 77% of listeners say they would pay more attention to ads on the radio if they were for local products or businesses, and 72% said they would actually listen more to their radio station if the commercials they heard were better targeted to their local area.

Generations of radio listeners embrace their favorite stations but are used to filtering out the ads, traffic reports and news that do not pertain to them. A geotargeted broadcast would surprise and awaken their listening experience.

Advertisers have begun embracing geotargeting in television and mobile to localize their reach and are looking forward to using radio to reach specific communities. Stations with geotargeting capability would be able to offer lower-cost advertising opportunities to small businesses, restaurants, medical centers and even local political races.

BIA Advisory Services estimates the impact of zoned radio advertising could provide more than $750 million in needed added revenue to the industry. Its recent survey with Advertiser Perceptions found that more than 90 percent of local retailers and two-thirds of national advertisers are poised to put more money into FM radio when geotargeting becomes available.



GeoBroadcast Solutions has performed three ZoneCasting tests under FCC experimental operation. For WIIL(FM) in Milwaukee the main zone is shown in red on the left and the increased zone is shown in green. This successful design is being used full-time in France.

PASSING ALL TESTS

The GeoBroadcast Solutions technical team has been involved in SFN design and deployment for many years. Our patented multiple node FM analog stereo and analog/ HD Radio SFN design has now been successfully deployed across the United States.

In order to obtain design parameters on what listeners will accept for interference. Geo contracted NPR Labs and Towson University for a subjective analog FM listening study (one of the largest ever) to determine objective target parameters Geo used both for Maxxcasting and ZoneCasting geotargeting research and development.

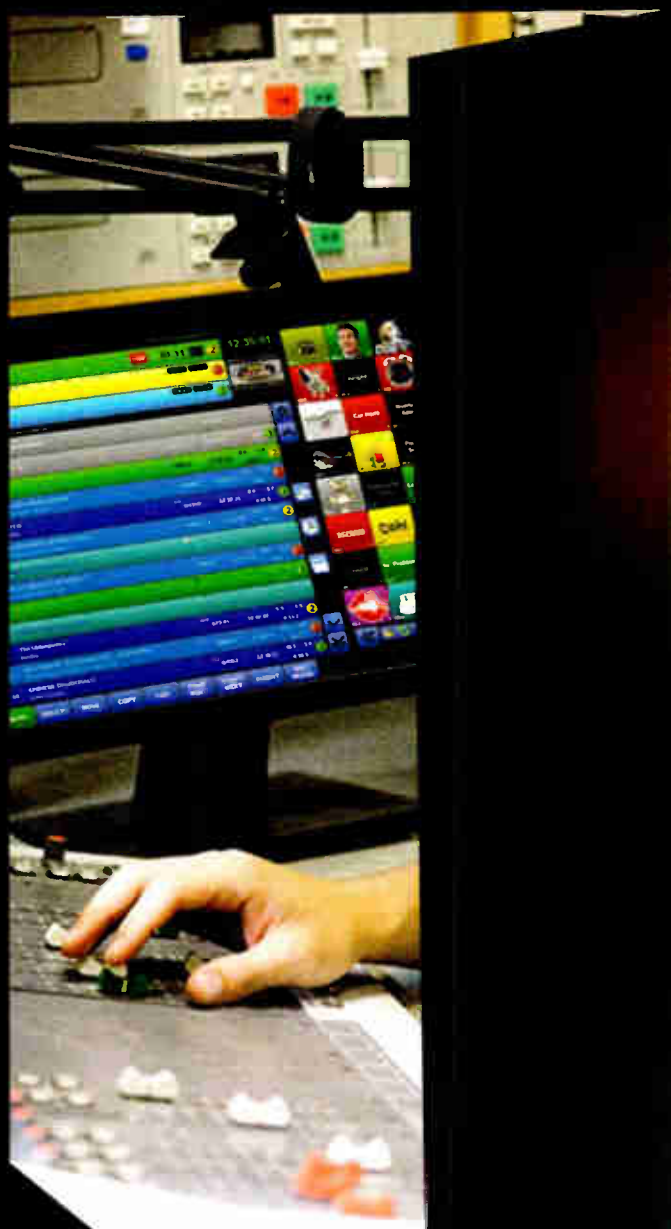
The results were instrumental in the now field-proven successful design for Maxxcasting, and we believe we can now leverage the Maxxcasting specifications to implement Zonecasting when approved by the FCC.

NEXT STEP: PUBLIC COMMENT

This is a forward-moving initiative that now requires industry and public support. Tell the NAB and FCC what you think. The commission is taking comments at *www.fcc.gov/ecfs/filings* (use proceeding RM-11854). Comments must be uploaded in a .doc or .pdf format.

Bill Hieatt oversees GBS technology operations including system architecture definition, network infrastructure design, single-frequency network, RF coverage/field measurements/model tuning, project management, intellectual property development, patent applications and field trials.

Open the door to *your* possibilities!



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