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NewBay Media

FM Class C4 Would Bring Welcome Relief

Why small commercial broadcasters should embrace Commissioner Pai's speech

COMMENTARY

BY MATTHEW K. WESOLOWSKI AND DAVID HONIG

Wesolowski is CEO of SSR Communications Inc., licensee of WYAB(FM) in Flora, Miss. Honig is president emeritus and senior advisor of the Multicultural Media, Telecom and Internet Council and president of MMTC Media and Telecom Brokers. They were co-petitioners for the C4 FM allocation discussed in this column.

Over the past few years, the Federal Communications Commission has pushed forward several major initiatives aimed at helping certain segments of the broadcast community.

Now smaller commercial FM broadcasters may finally get their turn to improve their stations. There is fresh energy behind the adoption of RM-11727, which calls for adding a new 12 kW "C4 Class" FM allocation as well as revising Section 73.215 of the commission's rules.

With all of the press coverage surrounding AM revitalization, FM translator relocation, LPFM expansion and more, it has been understandable that the commission would overlook smaller commercial FM operations. After all, they do not have much of a lobby in Washington, nor are they usually the benefactor of FCC engineering initiatives (or sympathy, for that matter).

In reality, however, many of the remaining "mom and pop" operations are Class A FM stations dedicated to their communities and oftentimes "just barely paying the bills."

HELPING CLASS A

In 2013, SSR Communications Inc. and the Multicultural Media, Telecom and Internet Council petitioned the commission to assist smaller broadcasters through rulemaking RM-11727, citing nearly 800 Class A FM commercial stations in Zone II (rural America, in other words) that, in conjunction with changes to Section 73.215, potentially could upgrade from 6,000 to 12,000 watts from a reference height above average terrain of 100 meters. The commission took formal comments on the proposal in August of 2014; these were

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Pai: Don't Neglect the FM Band

Commissioner spotlights Class C4 Idea

FCC Commissioner Ajit Pai spoke at the 2016 Radio Show in Nashville. He discussed the idea of a new class of FM stations, the status of AM revitalization and his personal connection with radio. Here are remarks as prepared for delivery.

I believe that broadcast radio is the original universal service. It's available to all, regardless of race, sex, ethnic-

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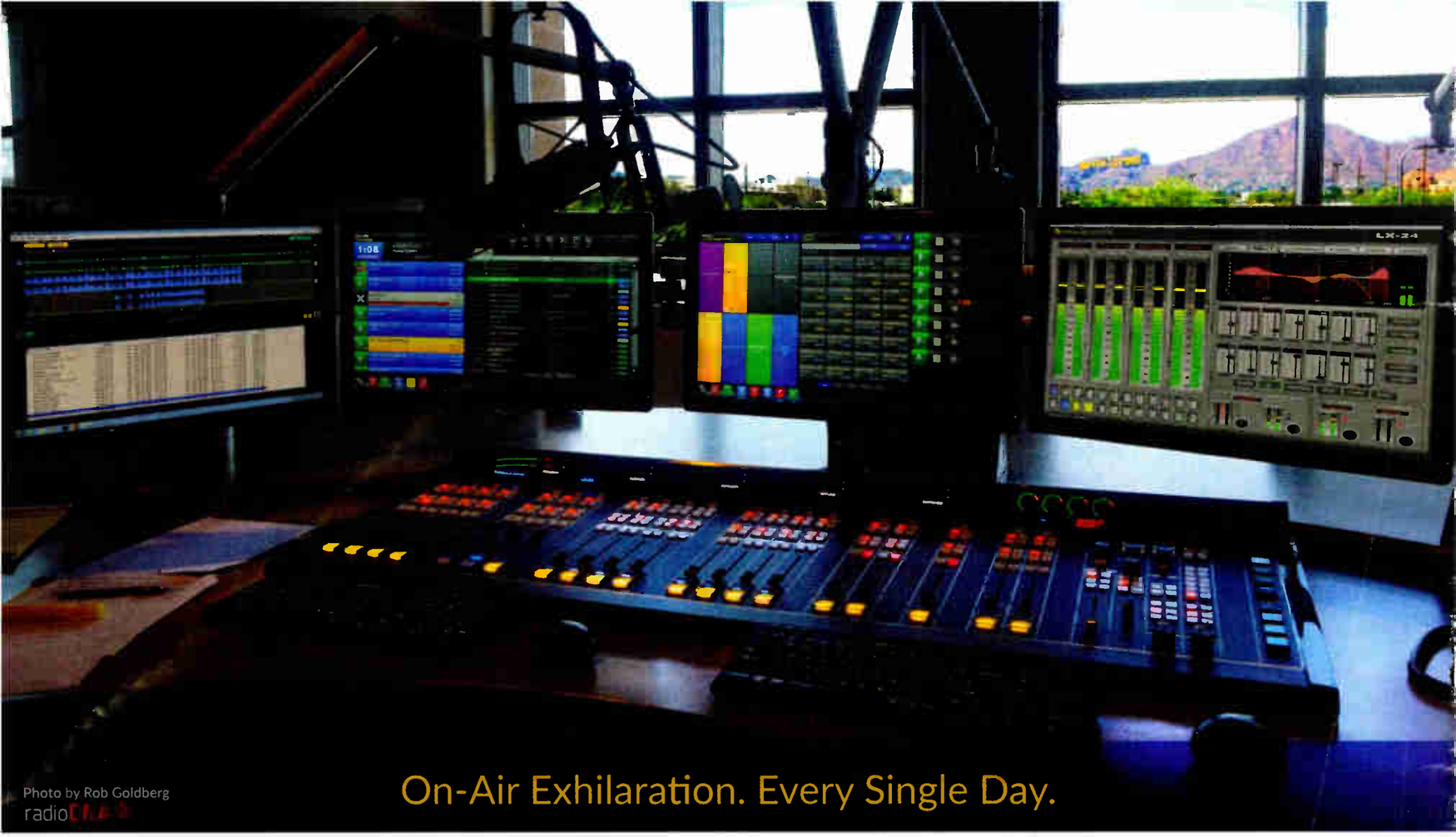
What Can You Learn From 100 Radio Station Tours?

page 14

General Manager Jasmine Catchings outside the on-air studio of Howard University's student-run radio station WHBC in 2015.

Photo by Jennifer Waits



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NewBay Media

Spotify Takes Plunge Into Programmatic

Streamer is among those exploring an opportunistic, automatic platform approach

PROGRAMMATIC

BY JAMES CARELESS

Spotify, a music streaming service with 70 million non-paying subscribers, is now offering programmatic audio 15- and 30-second spots to advertisers.

In doing so, it is the first major streaming service to adopt automation-driven programmatic ad insertion, which its free subscribers listen to in exchange for getting Spotify's content without paying. (Thirty million Spotify listeners pay $9.99 a month to enjoy ad-free audio.)

The automated programmatic advertising approach allows ad buyers to specify the demographic aspects they want to reach with their commercials, then lets the buyers' software purchase specific spot selections on their behalf on an ongoing basis.

In contrast, programmatic's advocates say, traditional advertising requires humans to interact to select and book commercial spots. Not only is the process costlier, but human-based ad buying lacks the real-time responsiveness and optimization of programmatic ad bookings and purchases.

"Our value to programmatic advertisers is based on the first-hand audience information we collect that includes each listener's actual age, gender, genre preferences and the playlists they like to listen to," said Les Hollander, Spotify's global head of audio monetization.

"Using this data, programmatic ad buyers can precisely target the people they want to reach, with their software helping optimize the buying details over time."

VALUE

"Programmatic" has been making business headlines for a while now, in and beyond radio. Still, for salespeople accustomed to convincing local car dealers to buy time on stations, the whole idea of turning more ad sales over to an automated system may seem counterintuitive. After all, relationship-building and the "human touch" has long been viewed as the bedrock of radio spot sales. How could a computer-based system take its place?

The answer is that it can't; but programmatic advertising is not aimed at this market. It is meant to be used to place ads opportunistically and automatically, which is why it is software-driven. Such ads can be purchased directly through advertising platforms, or via online auction sites where the value of the actual ad space goes up and down based on real-time availability and demand.

Spotify has experience in selling non-audio ads (e.g., web banners and video inserts). Meanwhile, "Spotify's move into programmatic [audio ads] started in 2015 when they joined a2x, Triton Digital's first-of-its-kind programmatic digital audio ad exchange," said John Rosso, Triton Digital's president of market development. Spotify's "recently announced addition of other SSPs to the mix just confirms the growing importance of programmatic sales to both radio and internet music services," he said.

SSP stands for supply-side platform, a piece of software that Spotify is using to sell the 15- and 30-second audio spots in an automated fashion. To do this, Spotify is working with cloud-based programmatic advertising platform provider AppNexus, online advertising technology company the Rubicon Project and The Trade Desk, a company that provides an automated buy-sell platform for Spotify's programmatic advertising bookings. All three are helping Spotify execute programmatic advertising in a serious fashion.


Les Hollander

TARGETING

Being able to buy and sell targeted ads automatically makes good sense to advertisers who want to purchase ad space quickly, and to content platforms that have the ad space to sell. But it is the narrow targetability and timeliness that programmatic advertising offers both sides of the transaction that underline its true value. (As well, backers believe, listeners benefit because advertising is more relevant to their demographic attributes and personal tastes.)

Les Hollander makes the point by citing the needs of a company selling yoga mats, a niche supplier that would waste money advertising to the public at large.

"Using Spotify's first-hand audience data on age, gender and preferred music genres, a yoga mat advertiser can buy time on our music channels that yoga practitioners are most likely to be listening to," he said. Spotify subscribers who have compiled personal playlists with the word "yoga" in them are prime candidates for such ads. After all, such listeners probably use mats, understand their attributes and are likely amenable to yoga mat ads that offer them something better than what they already have.

"If need be, we can even tailor the subscriber data down to the cellphone towers that they are downloading their Spotify yoga music playlists from in real-time," said Hollander. "This allows our yoga mat advertiser the ability to target their ad sales on a truly local basis, if that's what they want to do. The result is better value for them, both on the airtime and on the odds of people buying their mats as a result of these ads."

This is one in a series about how radio organizations are exploring programmatic ad platforms. Tell us about your experience; email radioworld@nbmedia.com.

> **Our value to programmatic advertisers** is based on the first-hand audience information we collect that includes each listener's actual age, gender, genre preferences and the playlists they like to listen to.
>
> – Les Hollander

WRITE TO RW

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NYPR Archives Untangle "Series"

A lesson in maintaining a public web presence while showcasing radio preservation efforts

PRESERVATION

BY BENJAMIN HOUTMAN

The author is an assistant archivist at New York Public Radio.

I occasionally have to repeat to myself that "we are fortunate to have such problems."

WNYC has one of the few active radio station archives in the United States, and one of radio's richest histories. The station has been running continuously for over 90 years, only a few of them lean, with the Archives joining in for only the last 16. We have three full-time, dedicated staff members, with expertise in information science, audio production and the intertwined histories of New York City and radio, and, with the help of WNYC's underwriting team, the opportunity to add to that staff for work on other special projects.

We have a seemingly endless supply of historic "hot tape." In my short time here, I've had the pleasure of digitizing recordings featuring "capital-P" poets (Auden), painters (Warhol) and politicians (La Guardia). I've uncovered a rare performance by Leadbelly, captured in his final months; transferred Robert Moses' rawest speeches; and gotten to hear the inimitable Carl Sandburg spin wise on the writer's craft. It's clear that even after decades our hottest tape has hardly cooled.

We have the opportunity to reintroduce to the world those recordings through our WNYC.org Archives and Preservation blog. We can also make use of WNYC's talented Data News team, through whom we've built quizzes, maps, "audiograms" and other useful widgets that color our corner of the WNYC web. And we also get to have many of our classics hit the air, both through WNYC's bi-weekly Thursday morning segment "Way Back," and in helping reporters and producers, often frazzled and frantic, find archival audio which is then seamlessly integrated into shows and reports that will reach thousands upon thousands of WNYC listeners.

We have it pretty good.

SOURCE OF CONFUSION

The "problems" stem from a single word, "series" — a word with many meanings spanning many disciplines — and the confusion it has unleashed upon our archives as we have attempted to maintain a public web presence showcasing our continuing preservation efforts. Again, we are fortunate to have such problems.

"Series" means one thing to archivists — "A group of similar records that are arranged according to a filing system and that are related as the result of being created, received or used in the same activity," according to the Society of American Archivists 2005 Glossary. It is intrinsically linked to the original record-keeping systems made and maintained by the parent organization — something that approaches a near-sacred value in the world of archives.

"Series" means something else for our in-house catalog, which is based on the public broadcasting metadata schema PBCore — "A group of separate items related to one another by the fact that each item bears, in addition to its own title proper, a collective [series] title applying to the group as a whole ..." The word "series" here is maintained as a type of title, and is less clearly a facet of intellectual arrangement. Its main purpose is to facilitate sharing of information with other public broadcasting organizations.

And "series" means still something else for our web developers — a means for producers and other showmakers to arrange content within or across their programs.

That each of these "series" has overlapping meanings, that there are other potential "series" synonyms in play and that there are encroaching colloquial definitions only redoubles our confusion.

That confusion is mostly harmless, until WNYC decides to redesign its website, reworking the look and logic of the station for the eyes and ears of the internet. Then it becomes a "problem," one we are in the midst of dealing with.

SHOWS VS. SERIES

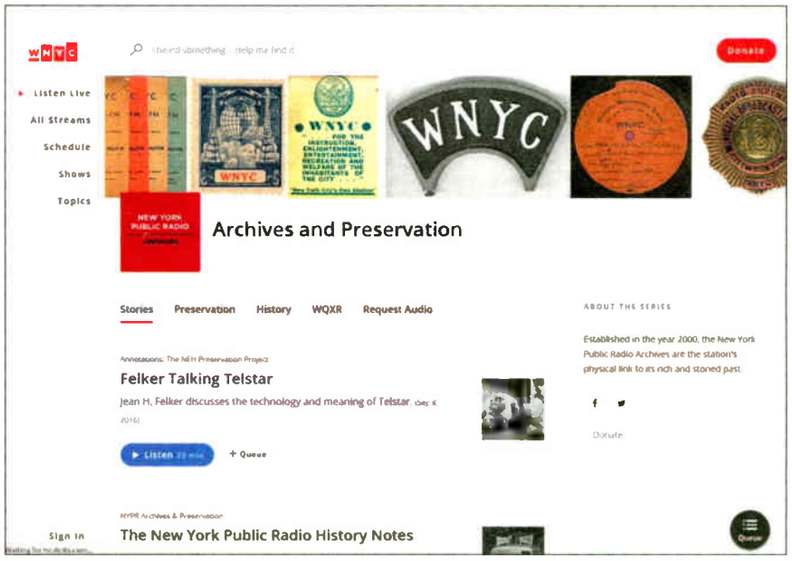
"Series" in our catalog maps to "show," "not "series" on WNYC's website. This is because only "shows" allow us to avoid redundancy by segregating audio pulled from our catalog from pieces that have been written about as features for the Archives blog. This is done through the creation of "Article Channels," which are themselves muted on the website. "Article Channels," mind you, can only be made through "shows." "Series" is the one concept malleable enough (on the website) to allow us to create "collections," which is a separate field in our catalog *and* a

(continued on page 5)

FROM THE EDITOR

We continue our recent special series about preserving the history of radio, in conjunction with the Library of Congress' Radio Preservation Task Force (http://radiopreservation.org).

— Paul McLane



The home page of New York Public Radio Archives. Learn more at *www.wnyc.org/series/archives-preservation.*

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separate concept in archival arrangement. "Series" (on the website) is thus capable of being conceptually both above (as an archival "collection") and below (as an archival "subseries") the website "show" (which is an archival "series"). Whew.

Most of our colleagues have to manage one "show," and maybe a few "series." We have dozens, potentially hundreds of "shows" and "series," and as we delve into our stations past, mining the Municipal Archives' WNYC Collection as part of our current NEH grant project, we are continuing to add to list. We've also made "new" "shows," ("series" both archivally and in our catalog, ignoring a conceptual tension), based on the activities of "the mayors," many of whom had an actual "show" of his own. The process of going through laboriously tweaking each "show" would somehow be both tedious and complex, so the more automated the process, the better. The intellectual distinctions are important to maintain, but as you can see, get quite confusing.

Our "problems" stem from a single word, "series" – a word with many meanings spanning many disciplines.

WNYC's website is and should be periodically refashioned to live in a modern world on a modern web. While it should and does give a nod in our direction, WNYC.org audiences are rightfully best served if living media are not crowded out with the hundreds of extinct shows, programs or, yes, "series" WNYC has produced throughout its lengthy history. So the WNYC Archives are quite reasonably subtly segregated from the rest of WNYC's content, but we must integrate our activity with a website designed for a certain type of modern use, one that emphasizes *the new*, to present a more fixed historical view of our station's and city's history.

Maintaining the public face of radio preservation within a living media organization offers unique challenges as the past and present continually redefine their relationship — and the "series" struggle is but one of many worries. But we are fortunate to have such problems.

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

NEWSROUNDUP

DTS SALE: Tessera Technologies Inc., which makes imaging and semiconductor packaging and bonding technologies, will acquire audio tech developer DTS Inc. in a cash deal valued at about $850 million, pending regulatory and DTS stockholder approval. DTS itself recently acquired HD Radio parent iBiquity Digital Corp. DTS head Jon Kirchner becomes president of the combined company. "Our complementary technology portfolios are ideally suited to deliver the next generation of audio and imaging solutions to mobile, consumer electronics and automotive markets while expanding our ability to address incredible new opportunities in IoT and AR/VR," Tessera CEO Tom Lacey said.

EAS: The first national test in five years — and the first ever using the IPAWS infrastructure as an overlay on EAS — was deemed a success based on initial feedback. The test was run in late September by the Federal Emergency Management Agency; it verified successful transmission and broadcast of a national test message. The ability of the U.S. president to send such a message remains an important part of the nation's alerting infrastructure, though such a message has never been sent.

GORMAN-REDLICH: The FCC's Public Safety and Homeland Security Bureau said "no" to a request from Gorman-Redlich for an EAS rules waiver. The manufacturer said some legacy equipment is not able to process alerts with the "six zeroes" national code. The FCC has stated that it believes implementation of "six zeroes" would present negligible costs because most equipment in the field already supports it, but owner Jim Gorman had asked to allow users of legacy equipment to use an "entire state" location code instead, and a half-dozen broadcasters wrote in support. Gorman said the outcome will hurt numerous small-market stations whose budgets may not allow for upgrading to newer gear.

C4

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almost universally positive.

At this year's fall Radio Show in September, Commissioner Ajit Pai gave vocal support to ideas similar to those in RM-11727, including the creation of a new C4 12 kW power class. Pai has moved this issue to the FCC's front burner, which will be welcome news to hundreds of Class A FM operators. Even a modest increase in power for the lowest-wattage commercial stations would be well worth the added expense for most licensees.

The positive effects would be felt across the industry. Equipment manufacturers, tower companies, programmers, and above all, radio listeners will benefit from the added investment in broadcast radio.

Most important, all of the provisions of RM-11727, including the creation of a C4 12 kW FM allocation, can be enacted without affecting the existing service areas of other FM broadcast stations.

NEW CLASSES, NEW OPPORTUNITIES

The C4 allocation would be especially useful as a method of curing the abysmal state of minority broadcast ownership, which now stands at about 8 percent even though minorities constitute more than a third of our population. Minority owners, especially new entrants, need these C4 facilities to enhance their competitiveness by expanding their coverage.

In 2004, the FCC's own group of outside experts, the (former) Advisory Committee on Diversity for Communications in the Digital Age, issued a Recommendation on Ownership Diversity that found that minority radio entrepreneurs "face significant competitive disadvantages due to their ownership of facilities having inferior engineering parameters."

The committee recommended that the FCC should consider "new classes of stations" to provide greater access to capital and facilitate investment in new entrants. Notably, the committee concluded that new classes of stations would be "particularly beneficial to minorities by making possible cost-effective geographic niche service in large markets, and by making possible full market coverage in medium or small markets where new entrants often begin to build their companies."

Ultimately, over 50 national organizations, including virtually all of the national civil rights organizations, endorsed this proposal.

TRANSLATOR IMPACT

Although the C4 proposal received broad support from a wide mix of broadcasters, including many low-power FM proponents, there have been a handful of dissenting opinions. The arguments of licensees of secondary stations, such as FM translators, revolve around the notion that the C4 proposal would somehow displace these services.

Even though no formal studies have supported that conclusion, it is a topic worth addressing.

As an initial matter, RM-11727 calls for the FM Class C4 allocation to be assigned to facilities in Zone II of the United States, the states generally considered to be "flyover country" and rural. In Zone II, there are generally several potential open translator frequencies in any given area, which means that it would be nearly impossible for a C4 station to displace a translator station completely.

Additionally, translators nested within the primary service areas of second- and third-adjacent full-power stations would welcome the C4 allocation, as it would allow these secondary services to specify greater facilities that would be unlikely to cause interference to the affected primary stations.

SPEAK UP NOW

Seldom is radio given the credit or attention it deserves by Congress or the FCC. But we can change that by being the squeaky wheel.

Remember, radio is the ultimate first responder: In an emergency it's the technology of first and last resort. When everything else goes down, radio stations stay on the air with generators, and radio listeners with battery-powered receivers stay tuned. When local news happens, radio is nimble enough to report it first.

Our industry is irreplaceable. We all know that. But if we want it to continue to grow and thrive, we have to step up and make sure that proposals like C4 — the building blocks of radio's future — get "attention paid" and get approved and implemented by our Federal Communications Commission.

We hope a notice of proposed rulemaking will come in the next few months. The commission needs to hear from you. If you have an opinion, favorable or otherwise, please take to social media and let the commissioners and their staffs know your position on RM-11727.

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

Even a modest increase in power for the lowest-wattage commercial stations would be well worth the added expense for most licensees.

NEWS ROUNDUP

WEA: The FCC pushed ahead with a plan to expand and improve the Wireless Emergency Alerts system in order to better target alerts sent to wireless phones in specific geographic areas. The order allows an increase in the maximum length of WEA messages from 90 to 360 characters for 4G LTE networks. Local and state authorities that send WEA alerts also will now be able to include embedded phone numbers and URL links to improve message clarity. For example, AMBER alerts could include a link to a victim or possible suspect photo.

ALERTING: A new best practices report from the FCC's Communications Security, Reliability and Interoperability Council includes a shout-out to the life-saving capabilities of radio-enabled smartphones. CSRIC, which consists of public warning professionals and equipment manufacturer representatives, called on the FCC to "encourage the ongoing voluntary efforts between device manufacturers and the wireless industry toward enabling FM radio in smartphones." Activating the chips enables the FM tuners in smartphones with the NextRadio app to receive local radio signals, which "allows users to access life-saving emergency information, even when wireless networks are down," the CSRIC report states.

More Radio, More Voices

Make Radio World part of your day every day. Visit our website for great Web-only Radio World content, including the following recent posts and stories:

"Muffley Looks Back on 39 Years in the Industry" — Ron Muffley recently retired as the Bible Broadcasting Network's engineering manager. What's next? RW's sister publication Radio magazine asked him. See *radiomagonline.com/blogentry/1280*

"FCC 'Concludes' a Decade of Quadrennial Reviews ... for Now" — "Given the length of time the FCC routinely takes to decide items like this, and the length of time the courts take to review the FCC's action, and the FCC's chronic inability to satisfy the courts (leading to remands requiring further FCC action), you can presumably understand the seeming futility of the quadrennial process." *See radioworld.com/quadrennial*

"Keeping Tabs on Translator Logistics" — Looking beyond the current window, questions begin to swirl about the anticipated 2017 AM-exclusive FM translator auction filing windows. Radio World explored one such question with attorney and regulatory expert John Garziglia. See *radioworld.com/translators-next*

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PAI

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ity, religion or sexual orientation. It's free. And radio stations are widely dispersed throughout the rural, suburban and urban areas of our country.

Dolly Parton once said, "If you talk bad about country music, it's like saying bad things about my momma. Them's fighting words." Well, in my office, the same goes for radio.

Especially AM radio. Four years ago, at the Radio Show in Dallas, I called on the FCC to launch an AM radio revitalization initiative. Notwithstanding the overwhelming support for the idea, getting the initiative off the ground wasn't easy. Indeed, as I waited for action, some of the lyrics from Dolly Parton's "9 to 5" resonated with me: "Want to move ahead. But the boss won't seem to let me. I swear sometimes that man is out to get me, hmmm."

And once an order was circulated to commissioners, the negotiations within the FCC were tough. During this time, I had to keep in mind the wise words of Kenny Rogers: I had to "know when to hold 'em, know when to fold 'em." But after a lot of hard work, the commission unanimously issued an order last October to begin the process of revitalizing AM radio.

"VITAL BRIOGE"

The aspect of that order that has received the most attention involved FM translators. In January, we opened a window in which Class C and D AM stations had greater flexibility to move an FM translator purchased in the secondary market. And now, we are in the middle of a second window where all AM stations without a translator have the opportunity to do the same thing.

Some people have asked me why the FM translator issue is so important. After all, translators aren't the answer for the technical problems plaguing the AM band. I agree, and have long said that translators aren't a panacea. But AM's problems aren't going to be solved overnight, and an FM translator can serve as a vital bridge to the future for some AM broadcasters as we work on fixing those problems.

Numerous AM broadcasters spoke to me about the importance of expanding the availability of FM translators. I heard firsthand how FM translators have helped some stations expand listenership and boost advertising revenue. And I also heard from others who wanted to obtain an FM translator but couldn't find one.

So I wasn't surprised by the tremendous response by AM stations to the translator windows. In the first window, the commission received 671 applications, and as of last week, we had granted 624 of them. So far during the second window, we have already received 268 applications and granted 200 of them. In sum, that's 939 applications received and 824 applications granted.

The stations that have received translators help to illustrate the diversity that is found on the AM band. Right here in Nashville, for example, WNLV, a Spanish-language station with a regional Mexican music format, has obtained a translator. To our west in Memphis, WAVN, a gospel music station, has obtained a translator. So has a Punjabi station in Yuba City, Calif., and two stations in Chicago that broadcast programming in Polish, Russian, German and Korean.

Stations that play country music have also benefited. In my home state of Kansas, for example, KOFO(AM) obtained a translator earlier this year and began using it in August. The station is located in Ottawa, a small town about 50 miles southwest of Kansas City. Besides broadcasting country music, the station serves its local community by airing local news, weather, agricultural programming, Ottawa University sports, high school sports, and, perhaps most importantly, Kansas City Royals games.

After the FCC granted KOFO's translator application, its owners issued a statement saying that the addition of a FM signal "gives KOFO another avenue to further our mission in becoming *the* information and entertainment source for east central Kansas. Our listeners will enjoy the increased coverage and

(continued on page 10)

"So far during the second window, we have already received 268 [translator] applications and granted 200 of them. In sum, that's 939 applications received and 824 applications granted."

The remote revolution is here

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(continued from page 8)

quality sound, as well as the ability to listen via their smartphone through the NextRadio app."

The staff of the Media Bureau's Audio Division, which is led by the tireless, dedicated Peter Doyle, deserves an enormous amount of credit for their work in quickly processing KOFO's application and those submitted by hundreds of other stations. I am very grateful for all of their efforts, and radio broadcasters across the country should be as well.

"REAL DIFFERENCE"

Last October, we also reformed many of our technical rules pertaining to the AM band.

The details of those changes are difficult for anyone who isn't an engineer to understand. But they will make a real difference to AM broadcasters. They'll make it easier for stations to improve their signal quality. They'll give stations more flexibility when it comes to site location. And they'll reduce AM broadcasters' operating costs.

Of course, the commission's work on AM revitalization is far from over. For those AM stations unable to purchase a translator in the secondary market during the first two windows, the commission will open up two more windows where AM broadcasters can apply to the FCC for new FM translators. While the commission has not yet specified when that will take place, I will press for those windows to open in 2017.

Last October, we also teed up a number of additional technical ideas suggested by stakeholders to help revitalize the AM band. The comment cycle closed on those proposals earlier this year. There was widespread support for some of these ideas, such as relaxing the main studio rule. Other ideas were more controversial. But rather than waiting until we can figure out how to resolve those thornier issues, I believe that the commission should take action in early 2017 to advance those proposals where there is broad consensus.

C4 "WORTH CONSIDERING"

Now, the AM band is most in need of the commission's attention these days. But we shouldn't neglect the FM band, where the substantial majority of terrestrial radio listening takes place. If there are ways the FCC can modernize or update our regulations to help improve the quality of FM service, we should be open to them. And I'd like to discuss one such proposal with you this afternoon.

Over two years ago, the FCC sought comment on a petition for rulemaking that asked the commission to create a Class C4 FM allocation. Class C4 FM stations would have more power than Class A FM stations but less power than Class C3 FM stations. Specifically, Class C4 FM stations would be allowed a maximum effective radiated power level of 12,000 watts from a reference antenna height of above average terrain of 100 meters. Under this proposal, it's likely that hundreds of Class A FM stations could upgrade to Class C4 FM stations. That means they could broadcast with increased power and provide service to more Americans so long as they didn't impact the existing service contours of other stations.

The feedback that the FCC received on this idea was generally positive. In particular, there was broad support for the idea from FM stations in rural areas and small towns. For example, the owner of KVPI(FM) in Ville Platte, La., said that proposal would mean his station's Cajun French and local music programming "would reach a larger area of south central Louisiana." The proposal also has been endorsed by the Multicultural Media, Telecom and Internet Council, which says that "expanding coverage areas to connect with a broader audience could help small and minority-owned stations gain access to capital and strengthen their foothold in the broadcasting arena."

I believe the idea of Class C4 FM stations is worth considering. I therefore support the commission taking the next step in the administrative process and issuing a Notice of Proposed Rulemaking. An NPRM would allow us to ask the right questions, explore the advantages and disadvantages of the proposal, and receive the views of all stakeholders. Then, we would be in a much better position to determine whether to implement this idea.

Another important issue for FM radio stations involves FM chips in smartphones. As you know, the vast majority of smartphones sold in the United States contain FM chips. But most of them aren't activated. According to recently released data, only about 35 percent of the top-selling smartphones in the United States have activated FM chips. That percentage is much higher in many other countries. In Mexico, for example, it's almost 80 percent.

"DO THE RIGHT THING"

Last week, the Communications Security, Reliability and Interoperability Council, an FCC Advisory Committee, "recommended that the FCC encourage the ongoing voluntary efforts between device manufacturers and the wireless industry toward enabling FM radio in smartphones to the extent commercially viable for all parties."

CSRIC pointed out that "[h]aving access to terrestrial FM radio broadcasts, as opposed to streaming audio services, may enable smartphone users to receive broadcast-based EAS alerts and other vital information in emergency situations — particularly when the wireless network is down or overloaded." CSRIC also noted that "listening to FM radio broadcasts extends battery life by up to six times when compared to streaming audio ... and is not contingent upon the availability of wireless networks. Thus, a smartphone with FM radio may be an emergency information source for longer periods of time when the power is out or when the wireless network is unavailable."

I wholeheartedly support CSRIC's recommendation and will continue to urge the wireless industry to activate FM chips in smartphones.

Fortunately, we've been making progress on this issue. It was just announced this week, for example, that the percentage of top-selling smartphones in the United States with activated FM chips rose from 31 percent to 35 percent between the fourth quarter of 2015 and the first quarter of 2016. And last year, AT&T and T-Mobile followed Sprint's lead and announced that they would be activating FM chips in their Android phones.

I remain optimistic that the market will continue to move in a positive direction. As more and more Americans use activated FM chips in their smartphones, consumer demand for smartphones with activated FM chips should continue to increase. And as an FCC commissioner, I will continue to speak out about the public safety benefits of activating FM chips and ask the wireless industry to do the right thing.

"I wholeheartedly support CSRIC's recommendation and will continue to urge the wireless industry to activate FM chips in smartphones."

NEWSROUNDUP

iStockphoto/ktsimage

FOREIGN: The FCC streamlined the process by which foreign owners can buy U.S. broadcast properties, making it easier for broadcasters to attract new sources of capital. The unanimous vote extends to broadcasters the streamlined foreign ownership approval process that applies to common carrier wireless licenses. This includes no longer requiring them to survey or sample shareholders, which broadcasters said was impractical. In ascertaining the level of foreign ownership, broadcasters will only have to take reasonable measures to identify foreign shareholders that have a predictable ability to influence the company. The FCC's previous presumption was that any unknown shareholder was not a U.S. citizen. The item codifies that broadcasters can request that a controlling parent company have up to 100 percent foreign ownership of a broadcast property subject to the FCC's public interest review, as well as the "team telecom" review, an interagency review team vetting foreign ownership deals for national security issues. It allows a non-controlling foreign ownership stake to be raised to 49.99 percent without having to petition the FCC. It does not require FCC approval of non-controlling foreign interests of 5 percent or less, or 20 percent in certain circumstances. In 2013, the FCC lifted its ban on foreign ownerships above 25 percent. Foreign ownership can now be as much as 100 percent, so long as it is found to be in the public interest. The item does not change the prohibition on foreign government ownership in broadcast stations.

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

Jocks, fingers and knobs don't always mix in the broadcast environment. I've seen studios where engineers have mounted critical gear high up in racks — requiring a stepstool for adjustment — or locked it in a rack room.

Nashville engineer Matt Aaron needed to mount equipment in a small studio but sought to discourage any adjustment. His solution was an enclosed rack fitted with snap-type brackets to hold a cover in place, similar to a transport case. As seen in Fig. 1, the cover snaps over the front of the rack, protecting the equipment from tampering.

Fig. 1: The cover snaps in place to keep curious fingers from sensitive control knobs.

Marvin Walther is chief engineer for Carroll Broadcasting in Tawas City, Mich. He registers his disdain about the USB connector taking the place of the mini jack in audio applications.

Marvin writes that the average audio guy will no longer be able to simply wire up a cable for an audio input and output. Another problem is the stability of USBs, such that it can't be used in a pro audio setting.

Why? USB can disassociate from a particular port when rebooting the device; then your software mapping for the device goes out the window. Also, USB fails for no apparent reason because of fake power drains on the USB buss created by devices plugged into it — even when those devices aren't taking power from the buss.

Another issue: USB drivers don't always operate at top speed. USB is as slow and clunky to implement as any serial device, which impairs the transfers of high-frequency analog signals.

The humble analog audio or video jack may seem low-tech, not hip enough for modern-day interfacing, but it sure is a lot cheaper, simpler and more reliable than putting another weak-kneed piece of digital tech between your signal and transmission device or recorder.

One last point. At least analog cables are simple and can be serviced easily for opens or shorts. An analog cable requires no batteries or power sources to go bad. When USB goes flakey, how does a jock service that when on a live remote?

All good points about a pertinent issue for broadcasters.

USB drivers do, however, have their uses. Most stations I visit have performance areas — often sponsored — where listeners are invited to live performances, strengthening the bond between audience and station.

Alpha Media San Antonio Engineering Manager Jeff Caudell mounted several large 50-inch Samsung monitors in one room, a good way to display branding, client spots or upcoming station promotions. Jeff's concern was allocating and mounting individual computers to drive the monitors.

Fig. 2: Use USB drivers to loop ads on monitors in your station performance area.

As shown in Fig. 2, his solution was a 60-inch Samsung model that included a USB port and built-in media player. He set the screen to loop the slideshow or MP4 video. The promotions and IT folks then produced brief promo videos and slides, transferred them to USB sticks and inserted them in the ports.

The process is simple, and content can be changed easily on any of the monitors.

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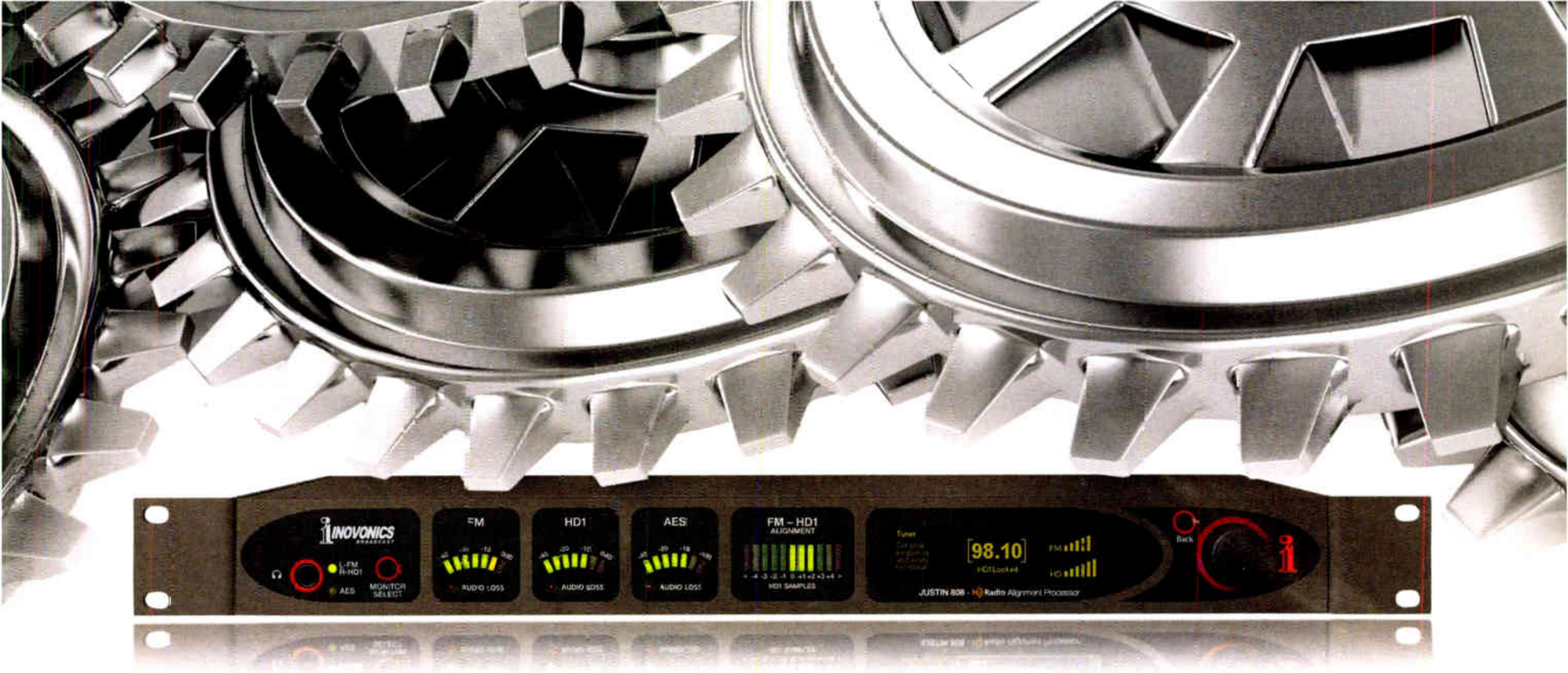

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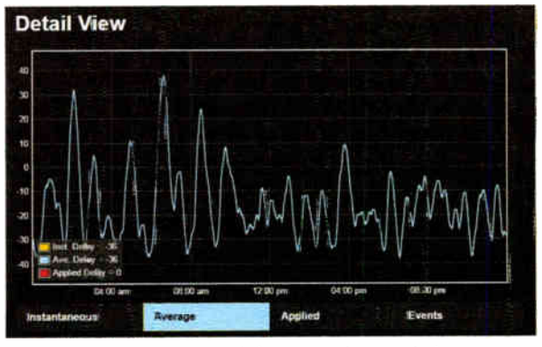
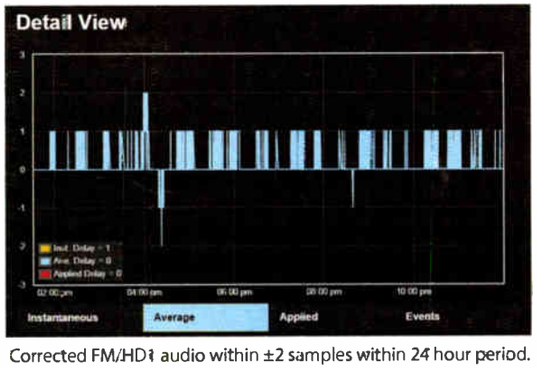


Typical FM/HD1 drift over a 24 hour period.



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INOVONICS BROADCAST

100+ Station Tours: What I Learned

No two stations are the same, and their histories often are mysterious

BY JENNIFER WAITS

In March 2008, I visited Emerson College's tiny campus-only radio station WECB in Boston. Although I'd heard of its well-known sister WERS(FM), I was intrigued by the under-the-radar nature of WECB, the history of which dates to 1947.

Unlike its more competitive, tightly formatted sibling, WECB embraced a free-form ethos, and student DJs could play whatever they wanted from the station's basement digs. Having gotten my start at a scrappy college radio station myself, at carrier-current WHRC(AM) at Haverford College, I was charmed.

That visit set in motion a long series of station tours. Although I'm still drawn to lesser-known, under-the-radar college stations like WECB, I've expanded my project to include all kinds of stations.

Eight years later, I've surpassed 100 station tour reports for the Spinning Indie and Radio Survivor blogs.

It's been a fascinating journey (with no end in sight) and after reaching this milestone, it's a good time to reflect on what I've learned from all of these visits.

I've been to 69 college radio stations, a half-dozen high school radio stations, three commercial radio stations not affiliated with colleges and 19 community/public radio stations, including some online-only outlets. I visited a religious station, NPR headquarters and a pop-up station put on by the Red Bull Music Academy.

My travels have taken me to 14 states, the District of Columbia and Ireland.

Sticker-covered filing cabinet full of CDs at KWVA(FM) at University of Oregon, 2015

Since I'm based in San Francisco, I've been to more radio stations in California (32) than any other state; but I've also managed to see stations in Illinois (10), Oregon (eight), Massachusetts (seven), Pennsylvania (six), New York (six), Washington (six), Georgia (four), Kentucky (four), D.C. (four), Minneapolis (three), New Jersey (two), Maryland (two), Indiana (two) and Virginia (one).

RADIO IS DIVERSE

The most obvious thing that I've learned along the way is that radio is diverse, particularly college radio. Even though I like to joke about some of the items that I regularly see at college radio stations — sticker-covered cabinets, stinky couches, graffiti, vintage equipment and hand-made call letter signs crafted by musician Leo Blais — no two stations are the same.

Physical locations vary tremendously, from the tiny storefront studio of East Village Radio in New York City, to the large complex at Radio K — KUOM(AM) — in Minneapolis, to SCAD Atlanta Radio's dorm-based home in a converted mid-century motel.

Some stations are pristine and corporate-looking, whereas others scream creativity, with every inch covered with posters, band flyers, scrawled messages, music and pop culture artifacts. I've been to many stations with large physical music libraries, full of LPs, CDs, 7-inch records, cassettes and even reel-to-reels; I've also been to all-digital stations that may have a few CDs or records here and there, largely for decoration.

Station purposes and philosophies are all over the map. Some college and high school stations are deeply connected with curriculum and function much like a lab for a radio, communications or electronic media program. Others are campus clubs with little administrative oversight. At some stations, DJs are given the freedom to program their own shows, whereas others have prescribed playlists. Some are completely run by students, others may have professional leaders and DJs from the community.

Community radio stations also vary considerable. I've been to a number that are mostly music-oriented, including WFMU(FM) and BFF.fm in San Francisco, while others have a smorgasbord of music and public affairs shows. A few hybrid stations, like

(continued on page 18)

BFF.fm founder Amanda Guest in San Francisco.

Photos by Jennifer Waits

WORKBENCH

(continued from page 12)

This tip saves money over installing an individual computer to drive each monitor.

Lewis Callaway is a full-time student who does part-time engineering for KCMR Radio in Mason City, Iowa. The station was paying a large monthly fee for a low-bit-rate, low-listener-count Icecast streaming service.

As a self-described tightwad, he knew he could do something cheaper. Lewis ended up building his own Icecast server using a virtual private server so he didn't eat up all the bandwidth at the studio.

When he was told the station needed stats, he thought he was going to have to write some complicated script but then found a great package called Centova Cast. Not only does it do all the stats the office staff needed, but it makes managing an Icecast server much easier. It's only $60 a year for one station, a small price to pay for its convenience. Lewis says this is a great way for stations to save money on their web stream. A screen shot of Centova Cast is seen in Fig. 3.

Great Workbench tips often don't need a workbench. Share your own ideas about streaming, apps, network management and other modern-day workplace challenges.

Send Workbench tips to johnpbisset@gmail.com. *Fax to (603) 472-4944.*

You'll help your fellow engineers and qualify for SBE recertification credit.

Author John Bisset has spent 46 years in broadcasting and is still learning. He handles West Coast sales for the Telos Alliance. He is SBE certified and a past recipient of the SBE's Educator of the Year Award.

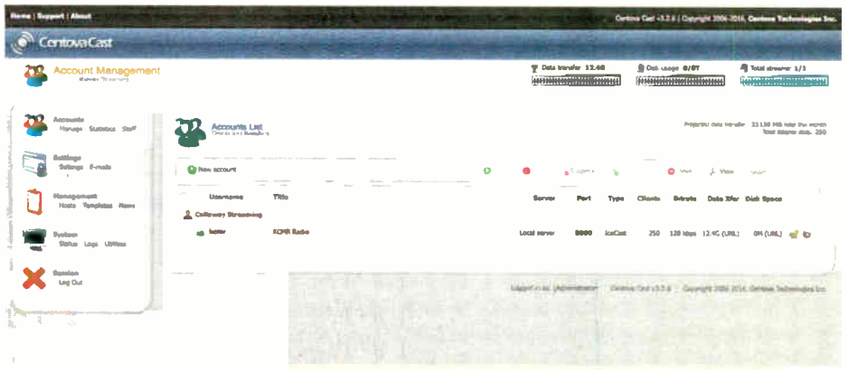
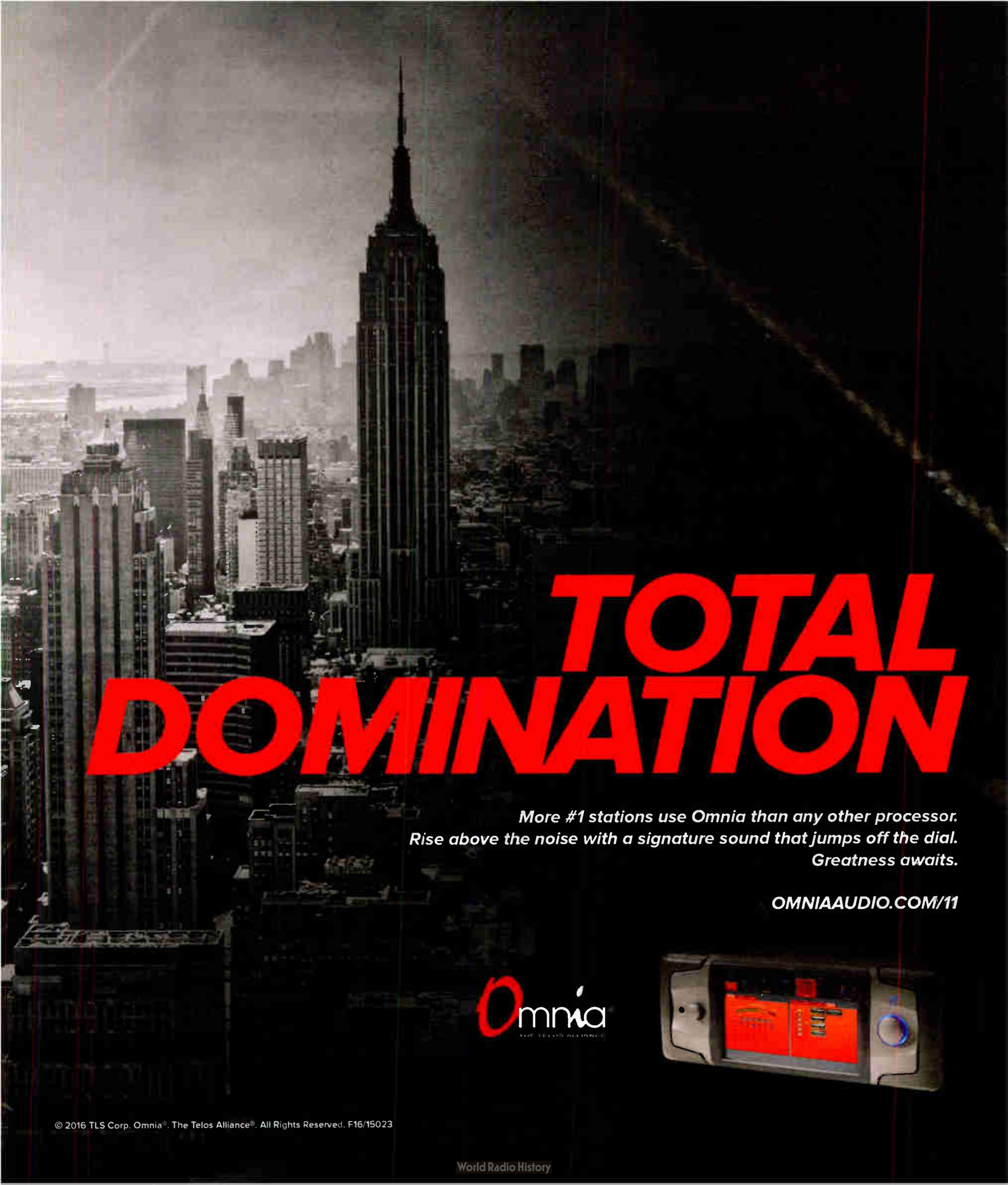
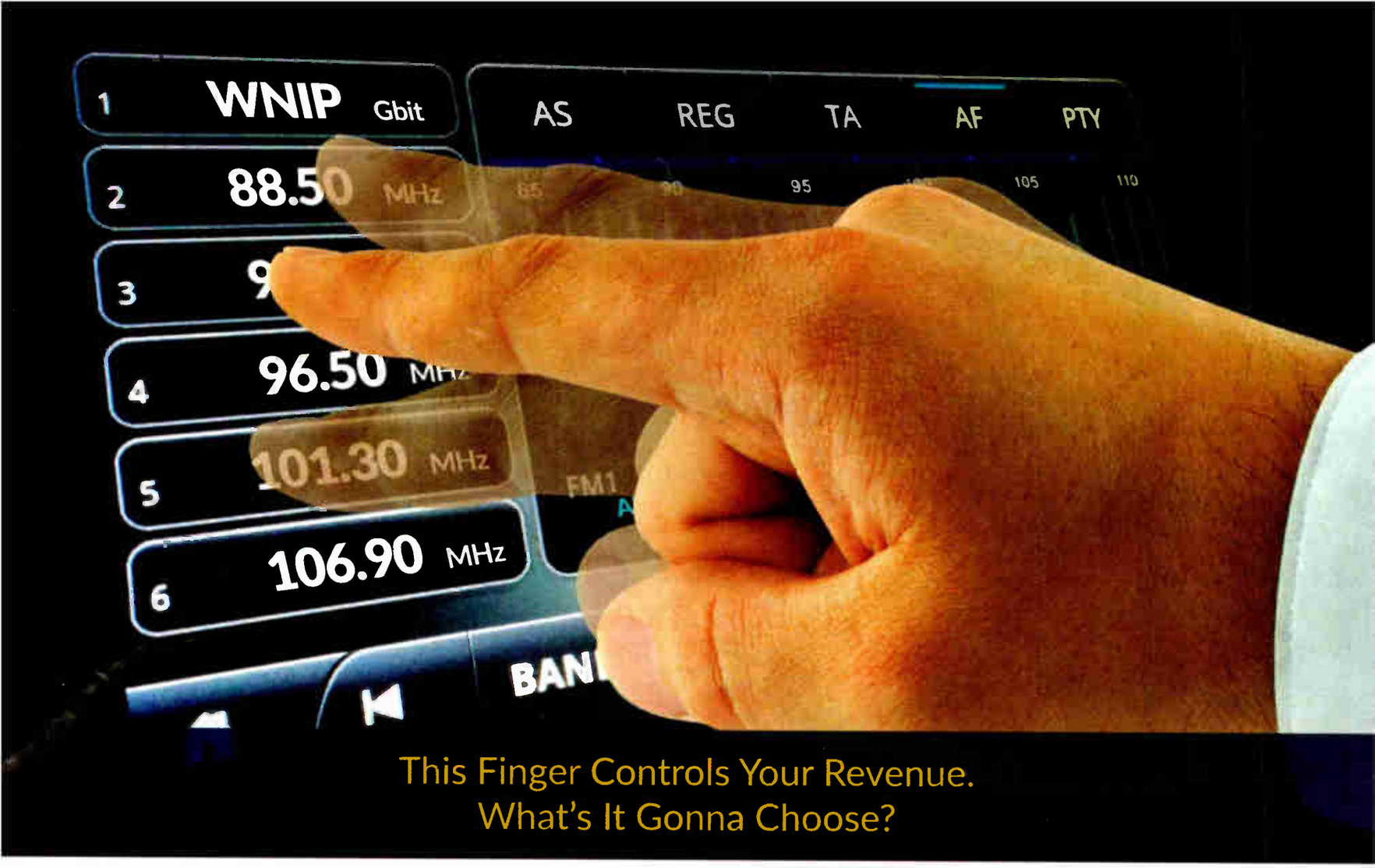


Fig. 3: Centova Cast helps reduce streaming costs.





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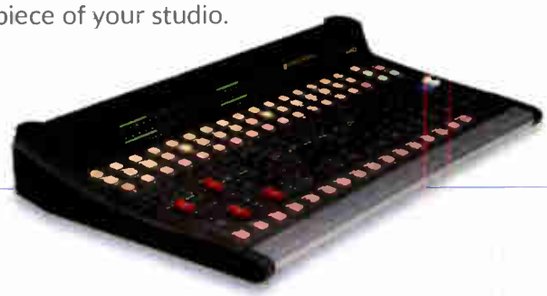

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KUOM (AM/FM) licensed to the University of Minnesota in St. Paul.

TOUR

(continued from page 14)

KZYX(FM) in Philo, Calif., air a mix of local music and talk shows as well as syndicated public radio programming.

HIDDEN HISTORY

I've always been interested in radio history, and one thing that I've learned is that often radio participants have a vague understanding of their station's history.

There's lore, of course, including tales of famous college radio alumni — from Howard Stern at Boston University's WTBU to Dr. Demento at Reed College's KRRC — as well as rumored visits by famous bands and celebrities.

Sometimes I'm able to do research in advance of my visits, and sometimes I reveal historical tidbits that were unknown to my tour guides.

I also like to see every nook and cranny of a station, and in the course of those explorations, gems are often uncovered in closets and file cabinets. Because I've asked questions like "What's in that room?" staffers and volunteers have pulled out photo albums, old program guides and even 1940s transcription discs at high school radio station KBPS(AM) in Portland, Ore. I've seen so many fascinating historical objects, and in the past few years, I've started imploring stations to document their history, and in the case of college stations, to work with their campus archivists to preserve materials.

RADIO PASSION IS INFECTIOUS

As a long-time radio station volunteer, I'm comfortable in stations. When I plot out my travels, I get giddy with excitement thinking about all of the stations that I'd like to visit.

While the physical settings are intriguing to me, it's the passion of radio participants that leaves a lasting impression. I usually meet with station managers who practically live at their stations. Their stories always inspire me.

While the physical settings are always intriguing to me, it's the passion of radio participants that leaves a lasting impression.

University of Maryland's WMUC Programming Director Sung-Min Kim stands in the Record Library.

Countless college radio station managers have recounted tales about bringing their stations back from the brink of death, and more recently, I've met with brand-new low-power FM operators who are part of an exciting radio renaissance thanks to the Local Community Radio Act.

I think of CHIRP Radio founder/General Manager Shawn Campbell. Since she was a little kid, she knew that she wanted to work in radio; after a series of jobs in commercial and noncommercial radio, she set out to create a new community station in Chicago. Work began in 2007, focused on advocating for the Local Community Radio Act so that more low-power FM licenses could be made available to community groups.

CHIRP launched its online stream in 2010 and was granted a LPFM construction permit in 2014 for its new station, WCXP(LP), which will hit the Chicago airwaves over 107.1 MHz soon.

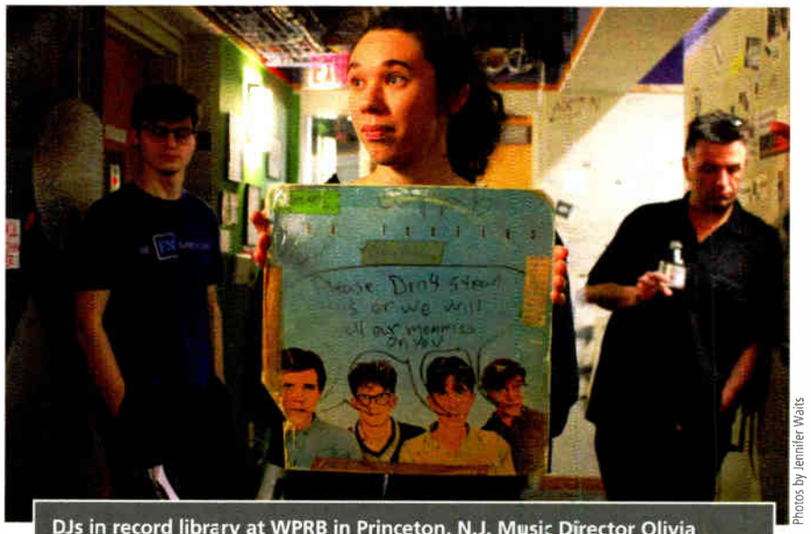
It's also incredible to meet young people who are at the beginning of their radio journeys and hearing their tales about being on the air for the first time. Just this summer a student mentioned to me her excitement and fear about going solo on the radio. Others have shared stories about great times at their college radio stations, from sleep-deprived 24 hour marathons to scoring an interview with a favorite band.

My heart is warmed when I show up to a station and historical artifacts are waiting for me. WHCS General Manager Sarah Settineri greeted me with a stack of vintage photos and an old station manual when I visited the Hunter College station in February of this year. Our conversation about the importance of radio history left such an impression on her that she accepted my invitation to come to the Radio Preservation Task Force conference in Washington the following weekend. I couldn't have been happier.

Throughout my travels, I've been welcomed with open arms and my love for radio has been reinforced. It's no surprise that I can't wait to get back on the road.

The author is co-founder of Radio Survivor and co-chair of the College, Community and Educational Radio Caucus for the Library of Congress' Radio Preservation Task Force.

Comment on this or any story. Email radioworld@nbmedia.com.



DJs in record library at WPRB in Princeton, N.J. Music Director Olivia Bradley-Skill in center (holding record), DJ Joshua Becker on the left and Educational Advisor Michael Lupica on the right.

Photos by Jennifer Waits

Station Manager Russell Tanzillo in front of wall of CDs at WONC, licensed to North Central College in Naperville, Ill.

LAWO

You know that playout computer in your studio? It's only using about 10 per cent of its brain. It could be doing a lot more for you than just playing music. Like taking phone calls, managing remote talent, generating audio streams – even mixing your station's program audio. Why depend on expensive, dedicated hardware? Today's PCs, with the proper suite of professional audio software tools, let you finally say "goodbye" to those racks full of power-hungry hardware.

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2016 Best of Show Radio World

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The platform's visual appeal is an ideal pairing with broadcast marketing

PROMO POWER

Mark Lapidus

Who just turned six years old and has over half a billion monthly followers? It's not a cute kiddie country music star or a cat. It's a social media platform.

Say "happy birthday" to Instagram! She was born Oct. 6, 2010, and has grown up to be a mainstay for nearly half the people in the United States with a smartphone.

As of June, when the most recent official stats from the company were released, Instagram claimed 500+ million monthly active users. They report 300+ million daily actives, 4.2 billion daily likes and 95+ million photo/video posts daily.

Critics are quick to point out that 80 percent of users are outside of the United States. Okay … so is most of the world's population. Even so, the number of Instagram users is at 100 million in the United States.

Why is Instagram such a natural for radio stations? Instagram enables radio stations to communicate emotions visually and connects with listeners in an environment where they're having fun and spending a lot of time.

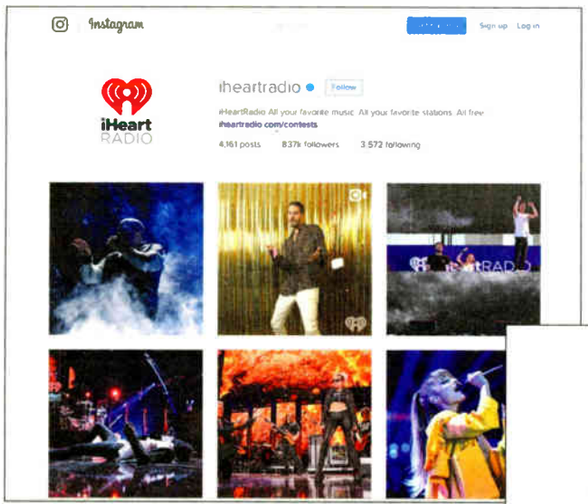
PAY TO PLAY

The only unwelcome aspect of connecting with your listeners on Instagram is that meaningful reach and engagement come with a price. You may not realize that Instagram is owned by Facebook, which, like any company traded on Wall Street, is held accountable to drive profit.

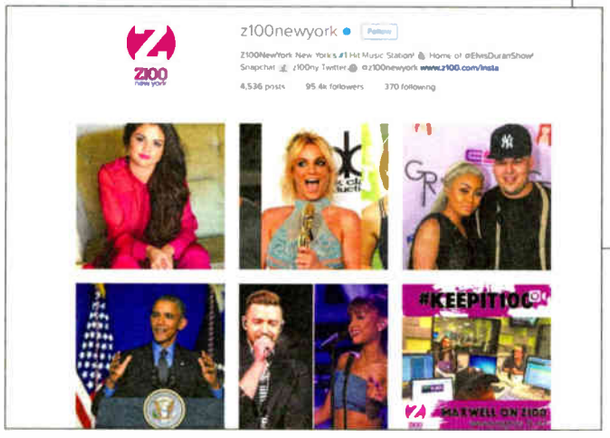
To generate greater revenue, Instagram began cranking back organic reach in 2015; it seems inevitable that the platform will, in the end, be totally pay-to-play.

As a reminder, organic reach allows brands to reach consumers for free. But now Facebook and Instagram require an advertising investment that "amplifies" whatever you've decided are your best photos or posts. The good news here, however, is that the advertising you do purchase on either of these platforms can be highly targeted and cost-efficient.

I agree it's a shame that Instagram has reined in its organic reach, but don't let the idea of purchasing social media advertising for your radio station rub you the wrong way. If you do, I'm afraid that deep down you truly don't believe that media advertising works. I mean, that's a bit hypocritical for anyone who works in commercial broadcasting, isn't it?



iHeartRadio keeps it simple: all music stars, all the time, many of which appear to be candid shots.



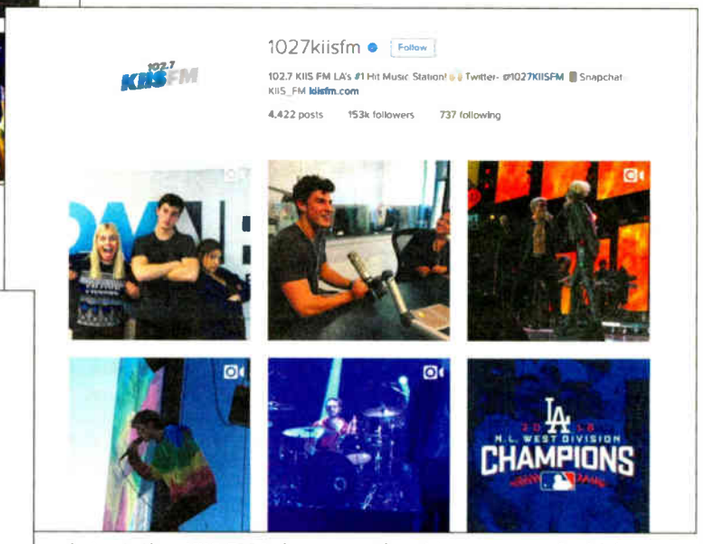
Z100 New York's account features pop stars, memes and event promotions.

CONTENT

Let's talk content quality. I know that many radio stations have had Instagram accounts for years, but even a cursory peak shows an abundance of self-serving promotional graphics, pics with little relevance and just plain poor photography.

Every image that you "amplify" through advertising counts! Here are a few suggestions for images.

1. Star power performs very well on Instagram, so utilize the stars of your format whenever possible. This can have huge payoff if your on-air talent is seen with celebs during interviews, at a show signing autographs or just enjoying a beverage together.



L.A. station KIIS FM is heavy on the videos, many of which were shot at concerts.

2. Utilize Instagram to supplement on-air contesting by offering key clues with interesting imagery that make it easier to win.

3. Present listeners with an insider view of something they'd never get to see unless you showed it to them. Take them behind the scenes, such as backstage at a show or present some extra-cool photos from a news event.

Video works great on Instagram as well and the same rules apply. When creating video, you gotta make it count. If you haven't tried the new Quik app (free from GoPro), you'll be amazed at what you can produce quickly yourself.

Who produces your content for Instagram? It should be somebody who has excellent photography skills, understands social media's potential emotional impact and has been educated about radio's local mission.

Do not choose a person to be in charge of this just because they're young and use Instagram a lot. That would be like hiring someone to host your afternoon drive because he or she listens to a lot of radio. Take the hiring of your Instagram producer seriously, whether a part-time, 10-hour per week role or an agency that sources content for you.

I've received flak from station managers for suggesting even a minimal focus on social media because it doesn't generate direct advertiser dollars. They typically argue that station staffs are small and the minute they don't concentrate on the core product of broadcasting, the station will suffer. To naysayers and haters, I say that avoiding reality is not healthy for ratings and that you as an individual manager or owner will eventually be labeled as "out of touch" sooner than you can imagine.

So be smart. As she blows out her candles and thinks about how popular she is, little Instagram's birthday wish will be that you'll choose her as yet another way to communicate with your listeners — by sharing memorable imagery right where they're hanging out and having fun.

The author is president of Lapidus Media and a longtime contributor. Email him at marklapidus@verizon.net.

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outdoor unit

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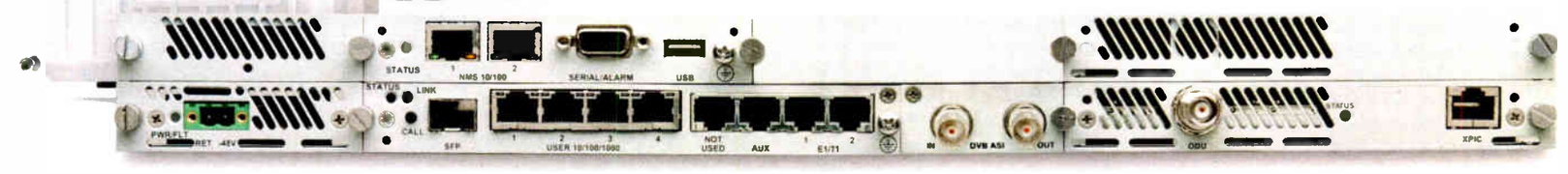
indoor unit



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Campus to Career: Rising to the Top

José Valle and Tim Clarke give advice for how to be a good leader

CONTINUING ED

BY DICK TAYLOR

The National Association of Broadcasters took an active role in this year's Broadcast Education Association Convention, held concurrently with the NAB Show in Las Vegas with three "Campus to Career" sessions for students interested in the radio broadcasting profession.

The "Rising to the Top" session featured José Valle, president of political and advocacy sales at Univision Communication and former president of Univision Radio, and Tim Clarke, senior director of the digital audience — radio for Cox Media Group.

Both men shared their personal radio career stories and the things they learned along the way.

LEARNING TO LEAD

José Valle started his radio career at Heftel Broadcasting as a receptionist for two radio stations in Los Angeles. From that start, he moved on to sales assistant, account executive, promotions, production, sales management — in short, he did it all.

When Heftel went public, it began expanding its radio company. When it bought a station that was off-the-air in Las Vegas, the company asked 27-year old José Valle to become general manager.

It was building this radio station, hiring staff and introducing a new station to the Vegas market that gave José his first lessons in leadership. Success in Vegas would lead to bigger and bigger markets. When José was made president of Univision Radio, two of the radio stations he now oversaw included the very stations where he started as a receptionist.

THREE LEVELS OF LEADERSHIP

The first level of leadership is the body, he says. José says these are the concrete supervisory things: short-term focus, initiatives, the quarter, tell people what you want done and getting people to follow commands.

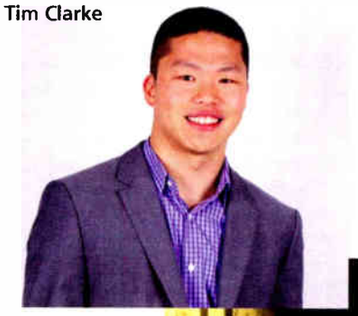
Campus to Career

The second level is the mind. Mid-range focus, yearly budgets, organizational designs and systems, review of data and rationales, talking through different perspectives based on different experiences.

The third one is the heart. This is leadership or partnership. It's long-term focus. It's about your personal skills, transparency and making sure organizational culture comes first. It's what "we," as a company, want to be about. It's about managing values, assumptions, beliefs and expectations … envisioning purpose, honesty, openness, storytelling and tending emotions.

What this means is that you're open and honest about the good, the bad and the ugly at all times. You tell people the truth, you're transparent. When you mess stuff up, you tell them. When you're scared, you tell them. You get close to your people and have everyone focused on the same goals.

Tim Clarke



José Valle addresses the crowd at the BEA convention.

Sometimes you have to be at level one leadership, like if the building is on fire, and yell for everyone to get out now. Sometimes you have to be on level two, strategically weighing the pros and cons, the opportunities and the risks.

But it's at level three where you want everyone to feel comfortable. It's where your people know they can share their concerns. You don't want to have an environment that encourages the meeting after the meeting. You want those issues to be discussed at the meeting. You want those discussions to be open, so there isn't a second group or a third group in your company.

TIM'S STORY

Tim Clarke is 28 years old. He started as an intern at age 17 in Long Island with Cox Media Group. His ultimate goal was to be a disc jockey.

From his internship, he was hired to be a part-time disc jockey. He quickly learned that to rise through the ranks you needed to be able to do everything. You had to become a "Swiss army knife." You needed to be able to accept any job. You always needed to growing your skills and acquiring new skills.

Generalize Then Specialize — Tim's first tip is to first generalize and then specialize. Eventually in your career, you're going to have to become the expert at something, to be known for something; but you can't do that until your first generalize. For Tim, that meant doing production, traffic, on-air, engineering, programming and talent development.

Advocates — Tim's second tip is to cultivate advocates. They could be bosses, peers or people who work for you. They could be friends, people who work in the industry or outside the industry. People who can tell your story, people who understand you as a brand.

Raise Your Hand — Tim's third tip was in order to keep growing, you need to raise your hand and ask for your next opportunity. You can't just wait for people to come to you. Be proactive.

Know Your Style — Tim concluded his talk with what he said may be the most important tip: Know your style, so you can identify the type of culture in which you will thrive. Your career success will in large measure depend on how you fit in with the company you choose to work for.

"I'm crazy. I'm nuts," said Tim. "I love the Mario Andretti quote that says 'If you're in control, you're going too slow.' That type of style might never work for, say, GE, but Cox loves it about him, Tim told the room.

Career Paths Are Not Linear — In today's world, career paths are no longer a straight line. A big reason for this change is the simple fact that your next job might not even exist today. Tim said only three years ago, the job he holds today didn't yet exist at Cox Media Group.

In conclusion, Tim said, what's most important is to find someplace where you can have an impact. If you're not somewhere where you can make a difference, make a change.

Dick Taylor is a Certified Radio & Digital Marketing Consultant and assistant professor of broadcasting at Western Kentucky University in Bowling Green, Ky. He joined the faculty of its School of Journalism and Broadcasting after a 42-year career in radio. He is director of the KBA WKU Radio Talent Institute and remains on the board of the New Jersey Broadcasters Association.


Peter Howarth
AEQ


Jim Wood
Inovonics


Bob Orban
Orban Labs


Vincent Defretin
Sound4


Frank Foti
The Telos Alliance


Mike Erickson
Wheatstone


Gregory Mercier
WorldCast Systems

Industry Roundtable: Processors

BY BRETT MOSS

The mighty processor. Like so many parts of the air chain it has undergone changes over the past decade; and the promised land of IP audio beckons to it. Where is the processor today and where is it going tomorrow?

Seeking answers, Radio World sought a sampling of expert manufacturer opinion. Participating were Vincent Defretin, product & project manager, Sound4; Mike Erickson, systems and support engineer, Wheatstone; Frank Foti, CEO, The Telos Alliance and founder, Omnia Audio; Peter Howarth, director of sales, special markets, AEQ; Gregory Mercier, product manager, Ecreso and HQSound, WorldCast Systems; Bob Orban, founder, Orban Labs; and Jim Wood, founder, Inovonics. Each replied individually via email; answers are excerpted below.

Radio World: It seems like recent audio processor model upgrades and introductions offer nuanced improvements, some new monitoring and UI tools compared to their predecessors. Has the technology of audio processing reached a plateau of diminished returns? Put another way, is there any blood left in the "getting louder and cleaner" turnip?

Jim Wood: Whenever someone says "We've taken this as far as it's possible to go," someone else comes along with either a significant or an incremental improvement in the subject technology. Big changes come rapidly, eventually giving way to modest ones, and then, more often than not, that technology is displaced by something totally revolutionary.

Take sound recording, for example. Acoustical recording was refined until electrical processes consigned it to the junkyard. Shellac records gave way to microgroove LPs, which yielded to digital CDs, internet downloads and music collections saved in solid-state memory.

The drive for "louder" radio spawned the loudness wars of the 1960s, which sadly are still with us, much to the detriment of the listener's enjoyment through aural fatigue factors. Certainly the historic, blatant artifacts of audio processing have been reduced or obscured, but the concept of "louder and cleaner" is a farce. Program material can always be made louder, but cleaner? No, certainly not cleaner than the unprocessed source, which is what the performer intended the listener to hear in the first place.

Mike Erickson: The marketing answer will always be yes, there is more blood. But the reality is we're getting smarter about processing, particularly how the processor handles the differences in source material. Anyone who has been reading processing Q&As since the dawn of lossy audio has heard about the importance of linear audio. Linear audio is important, but we realize it's not always practical. Then there's the stark reality of source material that continues to be overmastered. Getting louder and cleaner with each new update is important for sure, but the algorithms and ideas needed to do that (especially the cleaner part) are much different than what everyone was doing 10 years ago.

At Wheatstone, our AirAura X3 processor upgrade in 2013 was the first broadcast processor to really tackle cleaning up lossy audio files to make them more presentable after aggressive processing. The algorithms we needed to do that were at the front of the processor as opposed to the back-end clipper, where much of the improvements in loudness and making the box sound "cleaner" have traditionally taken place. The same goes for our first-generation SST dynamics management and our second-generation iAGC dynamics management technology. SST and iAGC help adjust the processing based on a three-platform approach, and not just the traditional adjustments of spec-

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tral balance and amplitude. Here, the dynamic range of the source audio is also considered. These algorithms, like our approach to lossy audio management, are found in the front end of the box and that makes a huge difference.

So the short answer is, yes, there is blood left, but not in places and ways we've traditionally gone to maximize the turnip.

Gregory Mercier: Is there a need to increase loudness yet further? Definitely not! Is there any need to make it cleaner? In most cases, yes, although some may disagree.

Many processors, including those from WorldCast Systems, now enable you to reach very loud levels with minimum audible distortion when properly adjusted. For some formats, loudness is fine and can increase the audience but there is a point where it no longer makes sense to compete on loudness. High audio quality also includes dynamics. Our first priority should not be to always offer maximum loudness but to ensure maximum quality at each stage of the signal chain. So, while processors are a key element, the other devices through which the audio passes are also important. We need to look at the complete solution.

Bob Orban: It's very hard to predict the future of technology. In the late 19th century some eminent scientists warned that the patent office might soon need to close because everything useful had already been invented. Despite Orban's 40+ years in the FM processing business, innovations like our MX peak limiter and "multipath mitigator" phase corrector were developed in the last few years. While it is certainly true that "all of the easy stuff has been done," there are certainly people working hard in our labs to significantly improve the radio experience and push the boundaries of FM processing.

Frank Foti: Ahem ... Not quite so sure our latest effort known as "G-Force" fits this category of "nuanced improvements." We basically introduced a whole new processor that loads into the existing Omnia.11 platform. End users proclaim it's our best work yet. We introduced a novel dynamic EQ system, which further improves sonic consistency, further enhances the intermodulation-reduction methods in the dynamics processing, along with offering the Perfect Declipper as an optional purchase. This, by the way, is not an upgrade. We refer to it as a plug-in, and all for a very affordable cost.

In this fashion, an existing Omnia.11 customer does not need to shell out big dollars for an entire new box. They can add this plug-in, and basically have a new processor for pennies on the dollar.

The end result is an audible improvement on the air, as it offers additional clarity, and does not compromise loudness. Likewise, we have further improved the interfacing of Omnia.11 with the Nielsen PPM watermarking system. If you think these items are nuanced improvements, then you might also think the Cleveland Browns will win the Super Bowl!

Is there any more blood left in the "louder and cleaner" turnip? The answer is — Yes, there is! Actually, I'm working right now on some new research that deals with how the ear perceives sonic annoyance (distortion), and methods to eliminate it before it gets created. Just as Captain Kirk was always looking towards that "new frontier," we do the same thing here at Omnia.

Vincent Defretin: Audio processing has not reached a plateau! Yes, getting louder and cleaner is the goal of each manufacturer. Just have a look at MPX power: 10 years ago it was very difficult to go higher than 8 dBr (in many cases, distortions above that were not acceptable). Then 9 dBr! And today, we reach up to 10 dBr! Of course, not all brands have reached this ... Today we have such nice clipper designs, the game is moving before the clippers for more punch, more clarity and more and more sound consistency, and this is where we have a real advantage compared to our competitors! And yes, we have a lot more blood left to put into audio processing.

We have a feeling that we are at a point where the technology is adapting to the transmission channel – internet or FM/AM.

– Peter Howarth

Peter Howarth: We have a feeling that we are at a point where the technology is adapting to the transmission channel — internet or FM/AM. All advancements so far have been related to the FM/AM transmission. Now internet is the big thing and algorithms and processing is focused on this media and trying for all it can to sound as good as FM — subjectively.

Radio World: Are the less-expensive "lite" processor models offered by many manufacturers achieving comparable quality and loudness as their more expensive high-end big brothers? What does all the extra money for the high-end boxes really buy the user?

Orban: Orban's "lite" processor, the Optimod 5500, performs better than Orban's top-of-the-line 8200 from 20 years ago. Nevertheless, the 5500 cannot compete with the MX limiter technology in our higher-end 8600 and 8700 processors, which offer lower distortion, greater transient impact, and up to 3 dB more high frequency power handling capacity compared to the 5500.

Howarth: Certainly not. The "extra money" gives you flexibility and processing power to customize your signature sound and to dynamically change with your program content and hours. You sound as good as your budget — more or less. Another thing is that the gaps between the extremes are really closing in. That's the way technology goes.

Foti: It's always about competitive audio quality. Always has, and always will be! To date, I have not heard a "lite" box that can stand up on the dial with an Omnia.9 or an Omnia.11. Any broadcaster who wants to sound the best on-the-air will achieve that performance with one of our top-of-the-line products.

Defretin: This is a real question. In some cases, both big and affordable models use the same final clipper stages, so in fact, again, everything comes from the stages before clippers. Compared to big models, there are fewer processing stages and less processing power in less expensive processors. The result is not bad, but sound consistency and sound signature are not the same thing!

Mercier: It's hard to answer for all brands, but in general, "lite" processors provide less processing power, quality, loudness and/or customization settings. One of those criteria, or several combined, can make a significant difference. Additional features may make a processor more expensive when compared to a "lite" version but they can save the broadcaster money or time elsewhere in terms of monitoring, redundancy and reliability.

Erickson: Low-cost processors are (or should be) designed with a few things in mind. The first is that the person adjusting it may not have the time or processing know-how available to them. So the controls have to make sense and the interface cannot be overwhelming. It has to be easy to set up, put on the air and use. Wheatstone's FM-55 is that. But it also has to actually work and *be* competitive. It has to have that no-nonsense, great sound. Some low-cost processors are stripped-down versions of bigger

boxes that are purposely designed not to be as competitive as their bigger brothers. We thought there had to be a better way. When we designed the AM/FM 55 series, we built these new budget-priced boxes from the ground up so they could stand on their own merits at their price point. Our expensive boxes add obvious features like a second audio processing path for HD that helps users manage the HD codec, but you also get plenty of extra tools in a bigger box. If you look at Wheatstone, our bigger boxes add visual *and* audible tools like audio analysis displays not found in other big boxes as well as extra refinement of our iAGC dynamics and lossy audio source management systems I mentioned, plus the ability to really customize bass and stereo enhancement along with extra controls for the tweakers who really want (and maybe *need*) to dig in!

Wood: From a hardware standpoint, audio processing has become a relatively simple matter. The onus of squeezing program dynamics without destroying program quality has moved from FETs and op-amps to strings of numbers. It's cheaper than ever to manipulate the audio program without regard to circuit board real estate and the cost of esoteric analog parts. Digital processing algorithms may be stacked end-to-end without introducing additional noise or, in most cases, additional distortion.

And because sources for digital signal processing chips has multiplied, and the cost of the parts plummeted, the manufacturing cost difference between a "lite" audio processor and its high-end big brother is more about how fancy it looks, and how many features want to be excluded from the lesser offering for marketing considerations. (You sure don't want to kill sales of the high-end model!) So, yes, "baby" processors can be made just as functional as their more expensive siblings. Spending really big bucks may give the broadcaster peace of mind, thinking that expense equates to quality, but a Honda will take you from Omaha to Minneapolis as quickly, and even perhaps in greater comfort, as a Ferrari. It's just that you may not be perceived as "competitive" by your broadcaster peers. Listeners won't know the difference.

Radio World: Is the day of the hardware processor, the single-application box, coming to an end, to be replaced by processing cards in the transmitter, soft processors inhabiting PCs or an app based in a section module on an IP network?

Foti: Good question. The shift has begun towards locating the processing inside a transmitter, and at some point it could become cloud-based. But, with just about all technology, there will always be those whose comfort level will be having a "box" mounted in a rack somewhere. Omnia Audio will always support that platform. In fact, we will support all platforms that our customers feel are important.

Mercier: I am not a fan of hardware integration, especially inside the transmitter. Given that, in WorldCast Systems, we have the three brands, APT, Ecreso and Audemat, it would have been easy for us to combine all our broadcasting expertise into a single device. However, our core priority in transmitter design is to ensure that the Ecreso FM range remains as simple, robust and as easy to service as possible. For small to medium-sized stations, pricing is also an issue. So, overall, moving a processing board from a standalone device to a transmitter has no significant benefits. On the other hand, software integration, when possible, can make sense both in term of design and savings.

Erickson: I think, in the United States, you'll start to see that coming in smaller markets and with processing enthusiasts, and it will work its way up to medium and larger markets. We are flooded with all different kinds of PC-based processing right now that is very inexpensive. Some of it is quite good and might be suitable for people who want to tinker with DIY processing and who have the know-how and the PC hardware and sound cards needed to properly use this software in place of a traditional hardware box. With all that said, the vast majority of customers are still looking for that purpose-built hardware box for AM and FM and we are fortunate enough at Wheatstone to control our own destiny in that respect. Doing everything in-house, working with our processing team and our own algorithms, we can design those algorithms to work on whatever platform the market decides it wants, without having to worry about the whims of third-party designers. Right now we are focused on our hardware boxes because that's what is in highest demand.

Howarth: This is coming more and more and is natural for the internet radio and TV stations. Again this is related to budget. For the "traditional" TX chain we don't see all the transmitter manufacturers being interested in

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adding modularity to their products if they can avoid this. In essence, modularity is adding cost and that results in a higher list price. The soft processors or "apps" on the IP network may be a future product, but the reason for using dedicated hardware is because you seek reliability so for the time being, we believe that critical operations will continue relying on dedicated hardware solutions rather than risking the "blue screen — I am rebooting."

Wood: Certainly the transportation and delivery of the broadcast signal is undergoing changes on all levels as we migrate from an analog to a digital broadcasting world. As Bob Orban taught us decades ago, modulation efficiency (loudness) initially demanded the integration of audio processing with the generation of the stereo multiplex signal. Thanks in large part to fallout from the digital revolution, we now are able to use a more "distributed" approach to the program signal. This, and the fact that multiple delivery channels (AM/FM/HD Radio/streaming) each require slightly different treatment, means that we will see more bits and pieces, here and there.

Defretin: I'm not sure if it is the end of box-processors but yes, for sure this is the end of single-application boxes for three reasons: First, customers are looking for less expensive chains, so getting a multiple-application box is the right answer. Second, today we can create versatile platforms where we can host more and more applications. Sound4 was the inventor of multi-application products in this field when we launched our PCI and later PCIe cards Year after year, we have been adding new applications (RDS, IP codec, streaming backup player, SNMP ...). Third, it takes up less space in racks. This is a real demand from the market

The market is slowly moving to new architectures. Often there is a PC inside the chain and stability depends on hardware quality and OS. Yes, some manufacturers hide a consumer PC inside their boxes and this is a shame. At Sound4, we are thinking differently: for all PCIe products, audio never passes inside the PC — the OS can crash or reboot with no effect. A great advantage is also the boot time — at Sound4, we are on air in 2.5 seconds, while some others may need up to a minute. For the new in-box products, we don't use any PC or PCIe cards. We have created dedicated hardware made in a robust way and it will always be versatile for upcoming future applications.

Radio World: Most audio processing companies have decried the amount of heavy processing and clipping being applied to new music releases in post-production by record companies. Is there any evidence this practice is abating and if not, what if anything can be done to combat that with broadcast processing techniques? Are concepts like "unprocessing," "unclipping" and other so-called distortion removal schemes effective or are they marketing ploys?

Wood: It is a sad state of affairs that the "loudness wars" migrated upstream to the source of our entertainment. The same mentality that prompted paranoid program directors to demand a louder sound now permeates the recording industry. CD "authoring" and mastering labs advertise their ability to cram more and more level into a mix, and the performers are buying into it.

With a linear companding system, level compression can be "undone" by complementary level expansion. Complementary companding was the basis for Dolby and dbx noise-reduction systems used for analog recording. But it is near-impossible to reverse audio compression and remove distortion without knowing exactly what was done in the first place. The best one can do is to introduce even more processing artifacts that may, or may not, be perceived as some form of "sonic restoration."

Defretin: On paper, it sounds really interesting. Today's processors which do this do a sound expansion in a detected clipping zone and to be efficient, they need a long latency ... During shows, manufacturers demonstrate this in operating mode or in bypass. They never compensate levels to reach the same peaks as the input, so everybody is impressed ... Do a test: Compare with the exact peak level, and improvements will be hearable in 5 percent of the cases! So yes, for us it is more for marketing purposes than for reaching a real improvement, and on our side, we have some other ways of waking up such clipped sources.

Erickson: Unfortunately, it is not abating. The challenge of dealing with overmastered material is why at Wheatstone have spent so much time developing and refining a front-end-like iAGC that recognizes this type of material and reacts appropriately. Any type of clipping restoration or repairing of overmastered audio is best done on a cut-by-cut basis when you're ingesting audio into your playout system. We can fix a lot more today than we could 20 years ago, but developing good standards at the station will always give you an edge in the end. I'll run into situations where levels are all over the place from song to song and spot to spot. Even the best AGCs are not going to sound smooth when you have a 20 dB-level difference between cuts. Setting standards for ingesting audio at proper levels, using proper sources and adding clip restoration when needed should be paramount. It's the foundation to your signature sound!

Foti: Hypercompression still exists, and it's random, based on the artist and producer. But, it seems the only processing company that has done anything about this is Omnia. We are the only ones to offer "Undo" and "Perfect Declipper," which restores audio quality to source audio at the input of the audio processor.

As Bob Orban taught us decades ago, modulation efficiency (loudness) initially demanded the integration of audio processing with the generation of the stereo multiplex signal. Thanks in large part to fallout from the digital revolution, we now are able to use a more "distributed" approach to the program signal.

– Jim Wood

The term "marketing ploy" regarding this topic only seems to emanate out of our competitors. Since they don't have any tech like this, they have to resort to FUD (Fear Uncertainty Doubt) as a way to discredit our innovative efforts. The proof is in the details. All a user has to do is switch the Perfect Declipper on, and you can hear the improvement in audio quality. It's as simple as that.

Orban: Declipping is a complicated issue. Information is 100 percent lost in flat-topped areas and cannot be recovered. A flat-topped waveform is a mathematical "singularity." Declippers must make educated guesses about what's missing based on interpolation from material surrounding the clipped samples. The interpolation must use a model of the clipping process. But many waveforms that look they have been hard-clipped have, in fact, been peak-limited by more complex limiting processes with sidechains and memory. Each limiter manufacturer has a proprietary way of computing the sidechain. For competitive reasons, these are seldom made public. Even if the sidechain is public knowledge, if the compression ratio is infinite, it is still impossible to deduce what the limiter's input was.

Declippers can increase punch on transients by increasing peak levels by guessing what the missing waveform is. But this is not the same as cancelling IM distortion. Distortion cancellation depends on having a precise, invertible model of the peak limiting process. This is usually impossible.

Because declipping is a nonlinear process, it can make its own IM distortion that adds to any IM distortion present in the original track. The better the original peak limiting algorithm, the more likely it is that declipping will add IM distortion, not cancel it. If simple peak clipping was used on a given track, then declippers can help. But sometimes they make things worse. Therefore, the proper place for a declipper is in the production studio, so that human ears can determine if the declipper is helping or adding another layer of distortion. It is unwise to put it in the on-air processing chain and just "let it rip." Moreover, in the broadcast processing chain, declipped waveforms force the on-air processor's peak limiter to work harder. So use declippers with care!

Howarth: This is the fashion and the purist discussion, I suppose. Honestly, if someone spent a fortune on post-production in a recording studio, it is probably because this is the sound that they believe their product should have. If subjectively this sounds "crap" then, is it correct to try to alter that sound in for example an FM transmission? Is your signature sound of your station more important than the artist/composer's piece of work? In any event this is probably a discussion that we should not have as manufacturers. It's like shooting yourself in the foot. If the practice is subsiding, I am sure we will find other ways of treating the signal than trying to subjectively restore something that many hours was spent on creating.

Your thoughts? What questions would you want audio processing makers to answer? Email radioworld@nbmedia.com *with "Letter to the Editor: Processing" in the subject line.*

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

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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, 925-234-5428 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.

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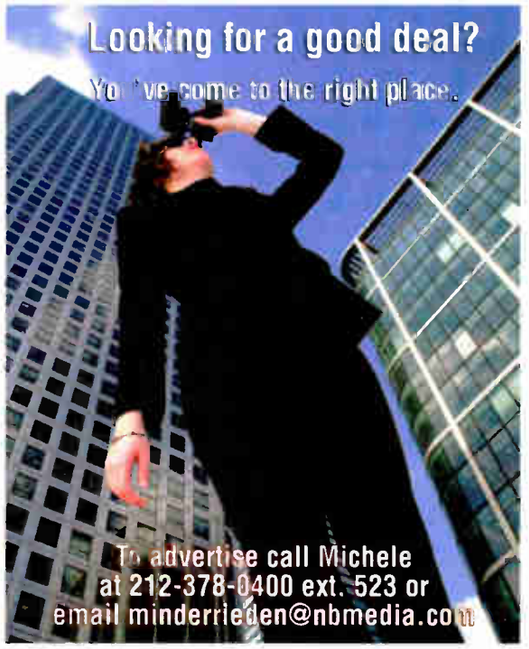

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Is It Time to Rethink Part 11?

EAS security issues are among many causes for concern

ALERTING

BY WARREN SHULZ

In 1775, Paul Revere took a midnight ride through the Massachusetts countryside to warn residents that British regulars were approaching; he'd been tipped off by a pre-arranged lantern signal. We might think of him as the precursor to our modern Emergency Alert System — the first EAS volunteer.

President Truman in 1951 created the Emergency Broadcast System with Executive Order 10312, setting the stage for a national alerting plan in reaction to the threat of nuclear war. Over 65 years, subsequent executive orders were issued so that the president could address the nation if necessary. The modern Emergency Alert System was established in 1997 under the Clinton administration.

Millions of dollars have been spent on plans, equipment purchases and regulatory actions to prepare for presidential messages — though oddly, the system has seen few end-to-end tests.

Communication infrastructure has seen dramatic changes over those six-plus decades. We have multiple cable news channels dedicated to 24/7 news coverage; we have radio and TV news networks linked via satellite. In short, we have multiple channels ready to delivery video/audio real-time alerts.

But in their design and redesign work, EAS regulators have created a nationwide wireless daisy chain of radio/TV/cable carriers intended to activate on a presidential EAN header — providing for an immediate rude takeover of their facilities — in order to deliver a message that has never been sent in 65 years!

One has to ask, "What is the message?"

SECURITY ISSUES

A quarter of the 104 pages in the recent FCC notice of proposed rulemaking focused on security discussions. Migration to Common Alerting Protocol and the Integrated Public Alert & Warning System opened the door to the internet for alert transmission; now we have the legacy continental U.S. daisy chain and the IPAWS internet represented in one encoding/decoding device.

But barring a total system redesign, the legacy daisy chain isn't going anywhere soon. The legacy component exists to carry real-time presidential message audio. A benefit is you don't need a data decoder to be aware of alerts like severe weather warnings. Just monitor your analog audio. After replacement of legacy encoder/decoders we now have the ability to cross-check FIPS code — one for all of the continental United States was just added — as well as originator ID and date stamp. The original legacy equipment looked only for an EAN header and the trigger was immediate, with no cross-checks. With the replacement hardware, the IP input alert also include cross-checks of FIPS location code, date-time and originator. EAN header is the only code that has no time limit (others alert headers all have a time out of two minutes).

In the legacy system or IP input, no security checks for the EAN are monitored except for originator, FIPS location code and date-time stamp. If you set "strict time" to OFF, the date stamp check is void. The encoder/decoder will relay (forward) EAN unimpeded if strict time matches. EAN is the only code with no time limit; all other alert codes time out in two minutes — that is to say, the message cannot exceed two minutes in duration.

But the internet involves passwords, fire walls and so forth. I don't trust any of that, and signing off on security becomes a leap of faith.

The FCC proposal to require a "certifying official" to declare that an EAS participant is following "best security practices" creates a moving target involving software patch updates, account management, network segmentation and CAP message certifications. It's much more than "just changing passwords."

iStockphoto/zhudifeng

The author says regulators have created a nationwide wireless daisy chain in order to deliver a message that has never been sent in 65 years.

Regulators have created an EAS toolbox so complex it could crumple under its own weight.

The proposal also estimates the time involved at 15 minutes of recordkeeping. In reality it is more like four hours. Such a certification is difficult to sign; I myself would never do so, knowing what I know about the security weaknesses.

The FCC also proposes to require EAS participants to report the issuance or retransmission of a false EAS message. I suppose if a broadcaster does not catch an anomaly and report it, a fine will follow? What defines a false alert? Does a mistimed or missed Required Monthly Test sent from governmental authorities qualify? Will a report result in a fine? Will there be a fine for failure to report any anomalies from a flawed system?

The commission also wants to require participants to report instances in which their EAS equipment causes a "lockout" downstream. But broadcasters may not even *know* what equipment they locked out. Further, this requirement would dissuade broadcasters from becoming or staying a Local Primary, given the liability issues involved. (On the other hand, FCC proposals regarding alert authentications and alert validations are reasonable and good processes that would help make the system more resilient and secure.)

NO MORE BOBBY BONES INCIDENTS

This leads to the subject of iHeartCommunications and its $1 million civil penalty and consent decree last year to resolve an FCC investigation into misuse of EAS tones.

This is a case study of how inadvertent action can have big consequences. A syndicated host wanted to demonstrate how critical minutes of a baseball game were interrupted by a monthly EAS test. A quick YouTube search brought up a 2011 "hot code EAN" from a planned end-to-end test to air over all of the continental United States.

Airing the outdated test apparently was deemed harmless by the show staff. Little did they know that many hardware boxes down the daisy chain had their "strict time" set to OFF. (Again, why is this even an option?) So the hot code EAN took on a life of its own and interrupted many stations downstream. To make matters worse, this involved a network feed to 82 stations, and the incident ultimately affected 32 states, per the FCC.

Given a penalty of this magnitude, it's clear that errors and omissions, trivial or not, can take on massive consequences.

In this instance the safe road for radio/cable/TV operators is to do the minimum required: Relay EAN (with "strict time" set to ON), as well as Required Weekly Tests and Required Monthly Tests — and no more. Clear out all filters. This will make any incoming alerts as "log only" events for analysis. Instruct operating staff to be at the ready to abort any alert that could be suspicious. Educate staff that no EAS tone should make it to air in any commercial, PSA or show segment. If necessary use the iHeart case as a classroom training aid. (Search "EB-IHD-15-00018252" to find the

(continued on page 30)

PART 11

(continued from page 29)

FCC document.)

CONCLUSION

Where is all this heading?

Wisconsin State Emergency Communications Chair Gary Timm identified about 166 action items in the NPRM. When last I checked there had been 101 comments filed, with an estimated 5,500 pages of comments! You would need to read 21 pages a day for a year to cover them all.

Regulators have created an EAS toolbox so complex it could crumple under its own weight.

I researched an earthquake auxiliary communications recovery plan for eight Midwest broadcast associations and found that the critical LP station — the area's critical message relay station that all downstream stations monitor — would be the regional station to support by the local county emergency management agency.

We also concluded that a Ku band dish type subscription (wireless) to monitor cable news services would provide an insight for that critical LP station of how bad conditions are after an earthquake.

Could one of these national satellite services be the replacement for the daisy chain of hundreds of stations handing off an EAN? The necessary hardware is an off-the-shelf consumer Ku band antenna and set-top box; now you have a direct connection for the EAN. A side benefit for the LP station is that your newsroom gets a national news service feed for breaking national stories.

Maybe it's time to rethink Part 11?

Warren Shulz is a retired major-market radio engineer who chaired the Illinois State Emergency Communications Committee for 16 years and served on the board of the Primary Entry Point Advisory Committee for 15 years. He is a life member of IEEE, AES and SBE.

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READER'SFORUM

NEXT-GEN ENGINEERS

The days of local engineers economically repairing the majority of equipment used in the broadcast industry was over a decade ago ("Broadcast Engineers Under 40," *www.radioworld.com/under40*). I saw the same thing happen in land mobile when I worked there. Component-level repair became replaced by board replacement more and more to the point I could train anyone walking in off the street to do it in a day or so (or at least I believe so).

In the "Engineer vs. IT Tech" debate, the latest EAS Test Reporting System project by the FCC has brought something else to light.

"Back in the day," the local engineer kept all of the FCC regulatory information at his fingertips and could answer questions or provide guidance when needed. This was something more or less passed on from engineer to engineer, as it was not really formally taught anywhere. The local engineer understood the necessity for following the regulations and keeping their station running in a "legal" fashion.

I highly doubt that many IT-centric people come into the workplace with a full understanding of those rules and regulations. This has become evident from recent articles that contain complaints about not knowing what make, model and software version their EAS box is or has.

It also becomes evident from complaints in which it is evident that there is no one on staff who can read and understand their own broadcast license. Part of this is due to the dwindling numbers of engineers and broadcasters who call a contract engineer only when flames are showing.

In an age when regulatory agencies are increasingly changing the rules of the game, having someone on staff who is not paid like an FCC attorney and can deal with these ever-changing regulations seems like a fiscally responsible action.

Maybe "regulatory and compliance contract engineer" would be a new field that a few of us could get into as we enter our dotage! No midnight calls for transmitters, but nice office-hour gigs to fill out forms and check for other regulatory issues that other engineers would come in and handle.

R.V. Zeigler
Director of Engineering
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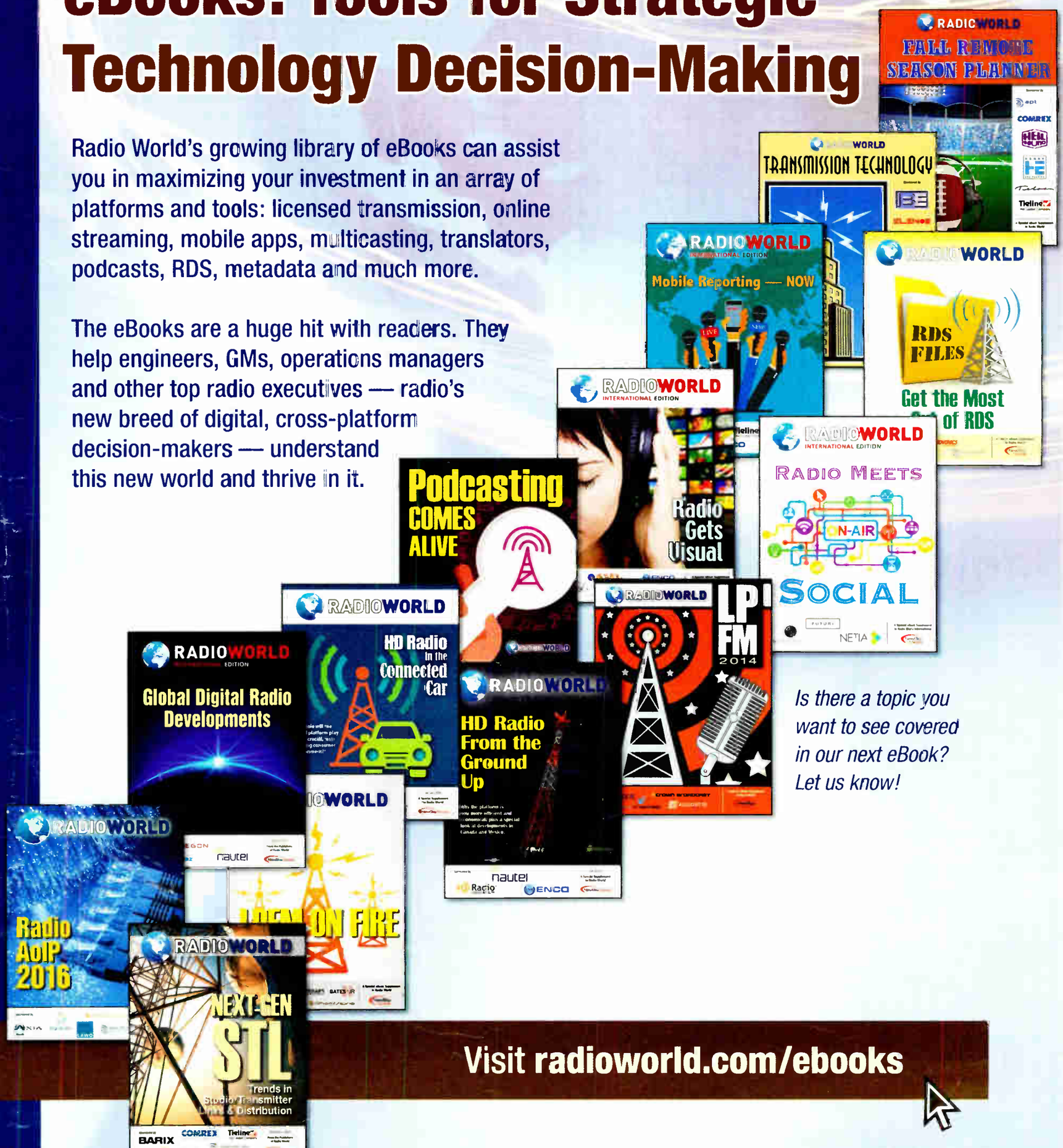

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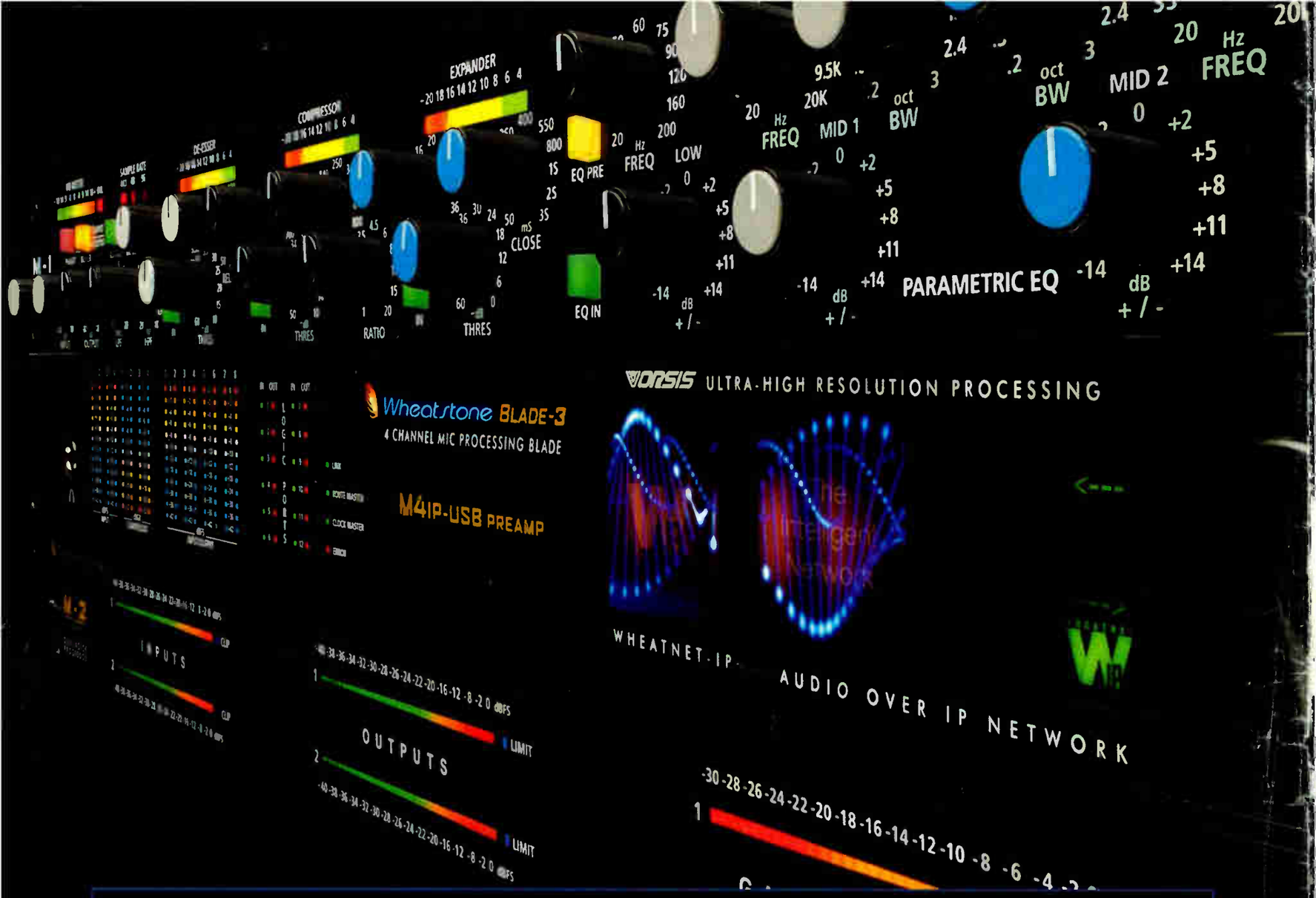

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