

# RADIOWORLD

Your guide to radio technology

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## Lonewolf keeps "The Voice of the Arctic" humming

Life as an engineer 33 miles north of the Arctic Circle



### Basics of IT

Wayne Pecena begins a Radio World educational series.

### Workbench

Clean A/C coils are happy A/C coils.

### Mono on FM

Gary Keener says the benefits are worth considering.

FUTURE



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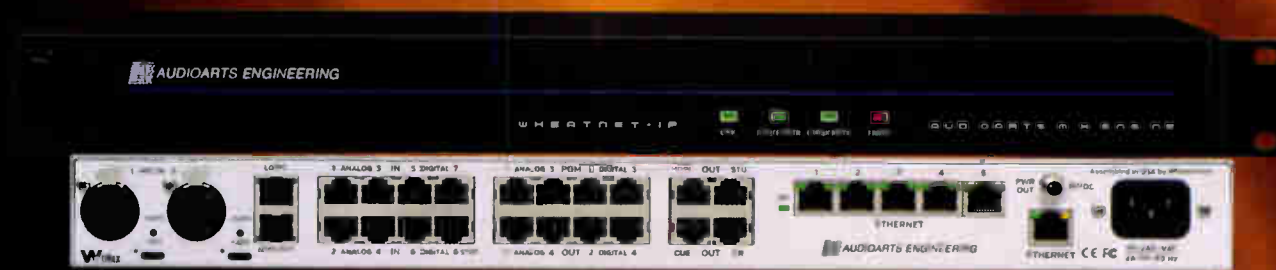
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# SECCs in the spotlight

FCC's new EAS rules seem to be having the desired effect



Paul McLane  
Editor in Chief

**D**id your State Emergency Communications Committee meet the deadline to file its EAS plan with the FCC in early July?

While a majority of SECCs did so, some were still pending after the deadline. Commission officials declined to say exactly how many but offered assistance for committees that still needed it. (If that's you, send an email

to [david.munson@fcc.gov](mailto:david.munson@fcc.gov).)

New rules were put in place last year to tighten up state EAS planning across the country. And in a series of ongoing interviews this summer at [radioworld.com](http://radioworld.com), our contributor Randy Stine has provided insight into how various committees have navigated this process.

"We are a newly formed group and have made significant changes to our state plan," Wyoming SECC Chairman Paul Montoya told him.

"In the past, the plan has been administered by the state broadcast association. The plan has not been very functional, especially for national or statewide alerts and testing. We tried to include a wide cross-section of members on the committee.

"I advise states to make up their committee with representatives from all groups that will be involved with sending and receiving alerts. And to be aware of all people groups that need to be alerted."

Richard Rudman, chair of the California SECC, said, "California, like some other states, needed to look at the real heart of EAS: the relationships between local broadcasters, their contact with local warning centers and the monitoring assignments that EAS depends on."

After the big state's devastating series of wildfires, the legislature saw a need to reinforce public alert and warning capabilities. Rudman has been working with the state Office of Emergency Services and several dedicated local chairs to verify both EAN and local/regional monitoring assignments.

"We found that many chairs have moved to other markets or retired, and several LP stations had changed call letters and frequencies. This is a work in progress."

That phrase probably describes the situation for many state committees.

*Continued on page 4*

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"The Washington SECC has created a training outline that involves three audiences," said Ted Buehner, the chair for Washington state, "those who generate and transmit emergency messages, those who relay them and finally those who receive those emergency messages, the public. We all saw these three components fail during the January 2018 Hawaii false ballistic missile warning. Before and since then, there have been many other warning dissemination failures such as for wildfires, flash flooding and more."

Buehner said the Washington SECC has offered its training outline to FEMA as a part of its overall online training program.

"We hope the concept will be accepted so subject matter experts across the country can collaborate and create an interactive training program for all three audiences, including tabletop exercise scenarios that can be tailored by local authorities and organizations to best meet their needs."

Buehner said the SECC "also recognizes that WA-PAWS is a living breathing document that will always be reviewed and updated as technology, policies and needs arise over time. If topics are not addressed or fully addressed, WA-PAWS is flexible enough to include any new or adjusted topics within the plan."

Read those interviews and other coverage of SECC activities at [www.radioworld.com/tag/secc](http://www.radioworld.com/tag/secc). 

## Newswatch Net Neutrality

Two Democratic senators in late July introduced a bill that would treat broadband internet as a telecom service.


It would reclassify it as essential, authorizing the FCC to enforce rules banning "discriminatory" practices like blocking and throttling certain lanes of internet traffic.

FCC Chairwoman Jessica Rosenworcel issued a statement saying she supports net neutrality because it fosters "openness and accountability."

"The pandemic made clear internet access is no longer a luxury, but a necessity — and that consumers don't just need broadband, they need to be able to hold their providers to account. While I trust the FCC has the authority it needs to adopt net neutrality rules, legislation that helps ensure it is the law of the land is welcome."

Among those expressing strong opposition was former FCC Chairman Michael Powell, now president of NCTA — The Internet & Television Association.

"The breathless assertions over the years that the internet is gravely threatened because ISPs would block or throttle traffic and erect toll booths to charge internet companies to reach consumers have proven hollow and unrealized."

He said the effort would "slap an outdated and burdensome regulatory regime on broadband networks," and that "twenty years into an increasingly stale debate over net neutrality, the justifications for it seem increasingly limp." 

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### Writer



Randy J. Stine

Radio World's lead news contributor interviewed Commissioner Nathan Simington in the Jan. 19 issue.

# “Alaska presents challenges for every broadcast engineer”

For four decades, Pierre Lonewolf has supported “The Voice of the Artic”

**P**ierre Lonewolf's career journey that led him to Kotzebue, Alaska in the early 1980s included a stop in a very large California metropolis,

where he realized big-city living just wasn't for him.

You can't get much farther away from major population bases than northern Alaska. Kotzebue, population 3,283, sits on Alaska's Artic west coast just across the Chukchi and Bering Seas and several hundred miles from the Russian eastern frontier. It's a scenic but scarcely populated place that features abundant wildlife like caribou and moose and bear.

Against that backdrop, Lonewolf, CSRE, CNT, manages engineering

services at KOTZ(AM) and KINU(FM) plus a network of FM translators and low-power FMs serving tiny villages. That service includes seven translators and three LPFMs, added beginning in the mid-1980s to serve small river communities around Kotzebue.

Noncommercial educational KOTZ and KINU are staffed by a few full-time personnel and a volunteer or two. But don't think of the “Voice of the Artic” as unsophisticated, Lonewolf says. For instance, KINU broadcasts in HD Radio with HD2 and HD3 channels. Its FM HD2 offers all-talk programming from NPR and BBC while the HD3 channel carries NPR's Classical 24 programming.

“We went HD probably eight years ago,” Lonewolf says proudly. “It's just

**Above** Kotzebue is on a sand spit at the end of the Baldwin Peninsula in northwestern Alaska, indicated on the map by a small tower icon. A trading location for local natives for hundreds of years, it serves as a supply hub for a dozen or so satellite villages.



another service that we offer to the audience. I believe in public radio and serving the local community.”

### Radio in the blood

Lonewolf, 67, was born on the Turtle Mountain Indian Reservation in North Dakota, where as a child he heard occasional stories in the Ojibwe language from elders and attended several Catholic Indian Mission schools. “Native language was not a priority in those days. I was basically suppressed until about 1973.”

After high school he worked as a lineman/electrician and controls specialist for several power companies, then landed in San Francisco and the School of Communications Electronics in 1977. There he earned his First Class FCC license.

“My dad had started a radio station in Belcourt, N.D., in the mid-1970s and I was hired in as assistant engineer. It was my first radio job. If you’ve never worked for your father, it is way harder than working for someone you are not related to,” Lonewolf said with a chuckle.

“But my father Dallas was a forward thinker. He had no experience in broadcast radio but he just felt it was important for the reservation have a radio station. And that was the reason I went to school in San Francisco — in order to help him at his radio station.”

At KEYA(FM), Lonewolf worked under a mentor, Miles Husted, and eventually succeeded him as chief engineer several years later. Another

job opportunity led Lonewolf to WOBJ(FM) on the Lac Courte Oreilles (LCO) Reservation in Reserve, Wis., and a chance to build what he believes was the first Native American 100,000-watt FM in the country.

“It was a few rough months at sign-on but we worked through it. It was quite the experience for a young man,” Lonewolf said.

### “Logistics is everything in Alaska”

Lonewolf went north and started at KOTZ in 1983. His time in San Francisco had shown him that he didn’t like the urban environment; he decided that a rural outpost amid the ruggedness of Alaska might be a good fit. Since then he has helped direct major radio technology advances at the stations in Kotzebue through nearly 40 years in charge of engineering.

“In that time we have gone from tube transmitters to solid-state systems. Computers have become the workhorse of radio. Consoles are now networked. And all those wires we ran yesteryear are down to one network cable.”

His responsibilities as a small-market chief may sound familiar to readers in similar circumstances.

“Like most public radio engineers in small markets, I do everything. From roofing to the plumbing, to wiring and electrical. When you are a rural bush engineer, you just take care of all those things yourself. You

**Above**  
“Like most public radio engineers in small markets, I do everything,” Pierre Lonewolf says. “From roofing to the plumbing, to wiring and electrical.”

typically don’t call for help unless you really need it. I’ve acquired a lot of skills outside of the normal role of broadcast engineer. And that’s OK.”

Lonewolf finds his biggest challenge is obtaining parts when things break. That was true even before the global supply chain issues exacerbated the problem.

“And logistics is everything in Alaska. You can plan for everything on a project, but it’s just hard to get anything moved right now. And the expense of everything — we put in some lighting trusses in our AM studio. They cost \$1,200, and the shipping was \$2,800. And then it was missing the clamps so we had to wait again for those,” he said.

Fuel jumps around in price dramatically in Alaska, Lonewolf said, and \$12 a gallon for gas isn’t uncommon at certain times of the year.

IT work has become a larger part of his duties in recent years. He has had a love of computers since being introduced to them. Like many engineers he has learned most of his IT skills on the job.

“Computers have taken over everything, obviously. In the old days I spent a lot of time working on studio gear and transmitters. Now it seems I mostly do computer work.”

### Dramatic seasons

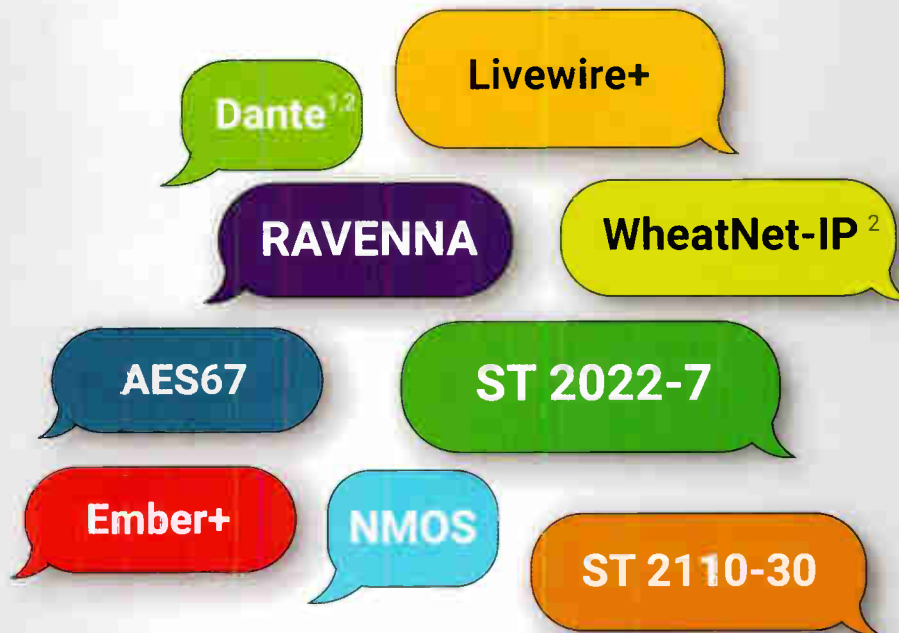
A U.S. Army veteran who participated in Desert Storm and has served in the National Guard in Alaska and North Dakota, he has faced all sorts of challenges in maintaining broadcast sites despite rural Alaska’s weather.

“The coldest I’ve ever seen it here is negative 65 degrees. And of course the wind was blowing. The winters are very long and dark here,” he said.

“Obviously the weather and the climate present challenges. Mostly the only way to get to some of these villages is by boat, plane or snowmobile in winter.”

Kotzebue Broadcasting’s radio network framework consists of FM translators and low-power Nautel transmitters, in villages like Selawik,

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## Radio Engineering



his radio stations in rural Alaska is an important component to everyday life in the Kotzebue region.

"When you go out to rural Alaska things are different. Yes, they get cell service in the villages now. But internet speed is very slow typically. The villages are small. From several hundred people to maybe 500 in population. We fill a very important role in rural Alaskan life."

### Wolves as neighbors

Lonewolf lives with his wife, Rosie, in Kotzebue, which is approximately 550 miles northwest of Anchorage. He finds many benefits to this life in a countryside where he has hunted, hiked and fished.

"I'm too old now to climb mountains and cross the tundra. I leave that for my sons and nephews now. I still run into musk ox and wolves occasionally at transmitter sites though."

Lonewolf has been active with the Association of Public Radio Engineers, currently serving on its board and helping to oversee its scholarship program. APRE uses outreach to encourage others to pursue a career in broadcast technology.

"I tell people this is an awesome career path, if you like technology, audio, music and sound. It's a unique skill set, knowing computers, transmitters and audio chains. But if a person loves it, this is the perfect job. Now the pay is something different, but I think the pay scale will shake itself out with the next generation of broadcast engineers."

He credits a brotherhood of fellow public radio engineers across Alaska for helping guide him through a variety of technical challenges.

"I couldn't do my job without the support of all my fellow engineers anyway. The small public radio crowd of engineers. And we all help each other out and give each other moral support. I may look at an issue and I think that's the way to do it. Then I'll pop it on the email list and somebody will give me a better idea. We engage quite often. I thank my peers for that support." 🙏

Kiana, Noatak and Red Dog Mine. The feed to the translators and LPFMs is via the KOTZ web stream through Triton Digital with Telos Z/IP Stream R/2 encoding.

"At one time we were using AT&T via SCPC for the village feeds, basically a nailed-up voice-grade circuit. Then the internet came along. Our earliest feeds were via Barix Exstreamer 110s. The only issue that has come up ... was when our ISP upgraded the system and the reliability of the connection became problematic, and we are still searching for a why.

"It's interesting that we have gone from SCPC [single channel per carrier], which was very reliable, to DAMA [demand assigned multiple access], which was ok, and now to IP connectivity. I sometimes wish for the old days, but we are where we are."

The stations in Kotzebue have replaced studio consoles in recent years with Wheatstone IP-12 and IP-16 surfaces and WheatNet-IP Blade infrastructure.

"We are digital across the board now. Everything is going VoIP. We now have the Telos VX VoIP system. And we have

a Nautel AM solid-state transmitter.

"It's funny, in the old days I spent a lot of time working on transmitters but not anymore. It's very reliable. We've also recently changed out our automation software to PlayoutOne, which offers cloud backup."

Next up, the stations plan to jump on Bionic Studios from Broadcast Bionics for social media curation and audience engagement. "That is where people live now. You have to be on social media."

He expects that the future will bring more integration of fiber optic connections in studios and the use of artificial intelligence and voice cloning, with implications for radio. "We are probably not that far from a computer DJ that sounds pretty good."

The vastness of Alaska doesn't leave Lonewolf "feeling isolated" like he did prior to the arrival of internet. "When you had to wait for the parts catalogue to arrive, now that was the old days. But staying up with current technology and news is pretty easy now."

Lonewolf says the noncommercial education programming delivered by

#### Above

Above the Alaskan bush on a trip to install Inovonics Internet Radio Monitors that will feed audio to LPFM transmitters in the villages of Selawik, Noorvik and Kiana.

#### Below

Lonewolf, center, is shown at the Public Radio Engineering Conference with scholarship winners and colleagues DeShun Nance, Jacob Isham, Ivy Sheppard, Marley Horner, Lindsay Lounsbury, Gavin Nelson, Rachel Haggerty and Friend Weller.







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World Radio History



**John Bisset**

**CPBE**

The author has spent over 50 years in broadcasting and is in his 32nd year writing Workbench. He handles western U.S. radio sales for the Telos Alliance and is a past recipient of the SBE's Educator of the Year Award.



## Clean coils are happy coils

Also, here's a useful wireless charger to install under a desk



### Tips Are Cool!

Workbench submissions are encouraged and qualify for SBE recertification credit. Send to [johnpbisset@gmail.com](mailto:johnpbisset@gmail.com).

#### Above

An image from a Nu-Calgon video about best practices for coil cleaning.

#### Right

Nu-Brite is a coil cleaner that foams up and lifts dirt out of the coils. It is sold in traditional and concentrate forms.

**W**ayne Eckert works with the Rural Florida Communications Cooperative. Expanding on our discussion about getting the most out of your A/C, he shared thoughts about cleaning the coils.

He uses a product called Nu-Brite, an alkaline-based cleaner that can strip aluminum oxide off the condenser coils. That's important because aluminum oxide insulates the fins, causing them to become less efficient and lowering the cooling of the air conditioner.

Lower coil fin efficiency increases the compressor's head pressure, resulting in a draw of higher amperage. This causes the compressor to run hotter, shortening its lifespan while also raising the electric bill.

Nu-Brite is sold in traditional or concentrated form; the latter must be mixed and sprayed using a handheld sprayer. Wayne has found that the best application method is to use a pump-up "insecticide" sprayer, which has more pressure than a handheld sprayer. This ensures that the cleaner is pushed completely into the surface of all the coils.

Nu-Brite can be used on any type of finned coil. It can be used on evaporators, too; however, they need to have a clear drain because the product

must be rinsed off thoroughly to prevent damage to the aluminum coils. Anything alkaline can damage aluminum, so proper, complete rinsing is mandatory. And because this is an industrial cleaner, you need to wear safety glasses and Nitrile gloves.

The product is made by Nu-Calgon (<http://nucalgon.com>); Wayne gets it from Appliance Parts Co. ([www.appliancepartscompany.com](http://www.appliancepartscompany.com)).

He adds an important note. There's a type of condenser coil referred to as a "fuzzy" coil. This type is unbelievably fragile, even more so when they get old. These should never be cleaned with a chemical coil



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**Above**

A "fuzzy" coil system looks as though bottle brush bristle had been wrapped around its coils. It is fragile and should be cleaned only by a professional.

**“ Lower coil fin efficiency increases the compressor’s head pressure, resulting in a draw of higher amperage. ”**

cleaner, as they can literally dissolve; the coils should be cleaned by a professional A/C technician.

If you try to clean one and the fuzzy fins fail and fall off — which you might do just by spraying them with water — your reputation itself will become fuzzy (and your wallet may get a lot thinner).

## Clear that drainpipe

Wayne mentions another major problem with A/C units, which is that their evaporator drains can clog up.

This is the result of algae building up in the drainpipe. Once the pipe clogs, the drain pan overflows, which can cause some rather expensive water damage, especially when the evaporator is installed above a suspended ceiling or critical equipment.

The solution is to place drain cleaning tablets in the drip pan. The tablets are made from algacide that eliminates the algae before it can collect in the drainpipe.

These come in all types and sizes. Just be sure to purchase ones that last a month or more between applications and are odor-free. For instance on Amazon search for "AC safe pan tablets."



**Above**

These tablets prevent algae from blocking condensate drains.

**Right**

Mockett's under-counter phone charger.

## Desktop charger

Wayne's final tip addresses the problem of cellphone chargers falling off desks.

A company named Mockett sells an inductive charging puck that mounts in a hole that you drill under a wooden desktop.

This is a wireless cellphone charger that uses inductive coupling to eliminate the clutter of having cables strung across the desktop. Because it is fixed in place, it can't slide off (or walk away). A decal is provided to affix to the top of the desk to identify phone placement within the charging zone.

What's nice about this kit is that a drill bit is provided, with a built-in stop, to prevent puncturing the wooden desktop.

At [www.mockett.com](http://www.mockett.com), search WCS4-95 for the kit that includes the bit and other tools to help you mount it. It sells for \$74 or less in quantity. Or search for WCS10-90, which is just the charging puck and costs less.

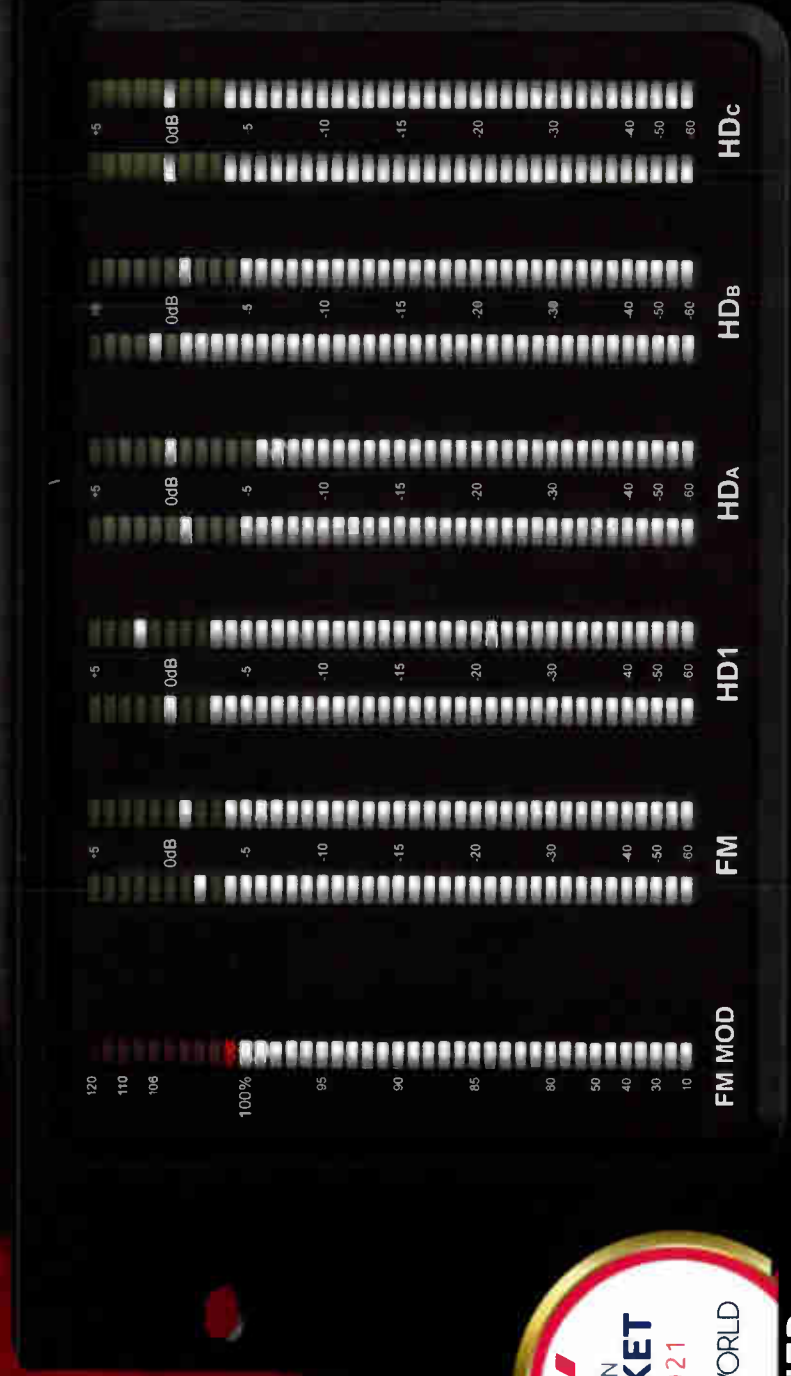
This is a great idea, though I'll offer a caution. I thought an inductive charging stand would be a great accessory but I learned that putting your phone in a plastic protective case may prevent the inductive charge from working. As the cell phone rep explained, the case was too thick for the coupling. So I've chosen "protection" over charging convenience. Paul McLane, our editor in chief, says he had the same experience.

But Wayne installed one of these for a friend who telecommutes from home and she loves it. He adds that the Mockett catalog has a lot of desk-related products and is well worth a browse. 📱



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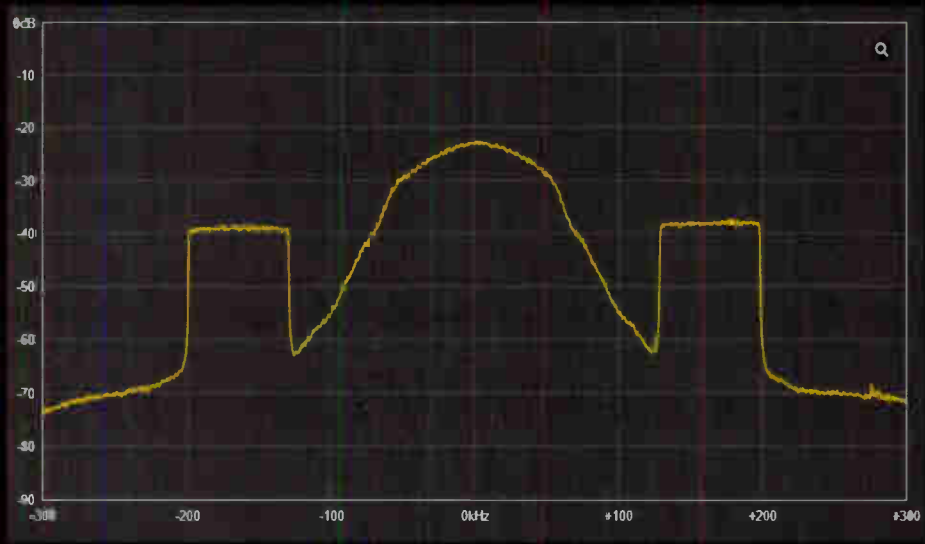
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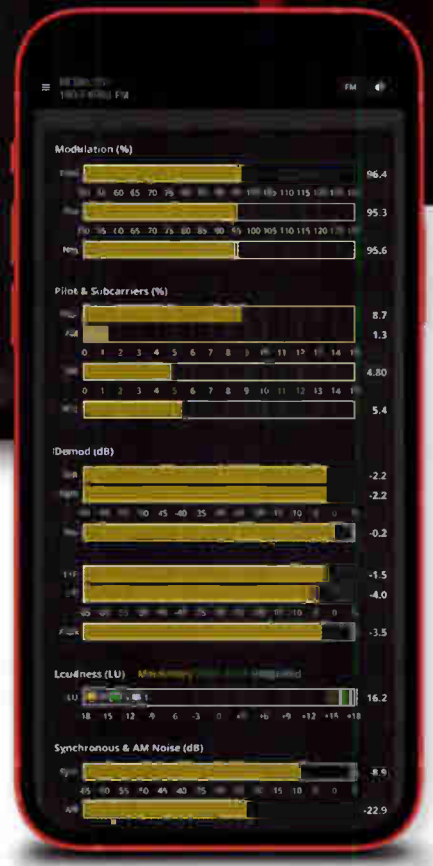
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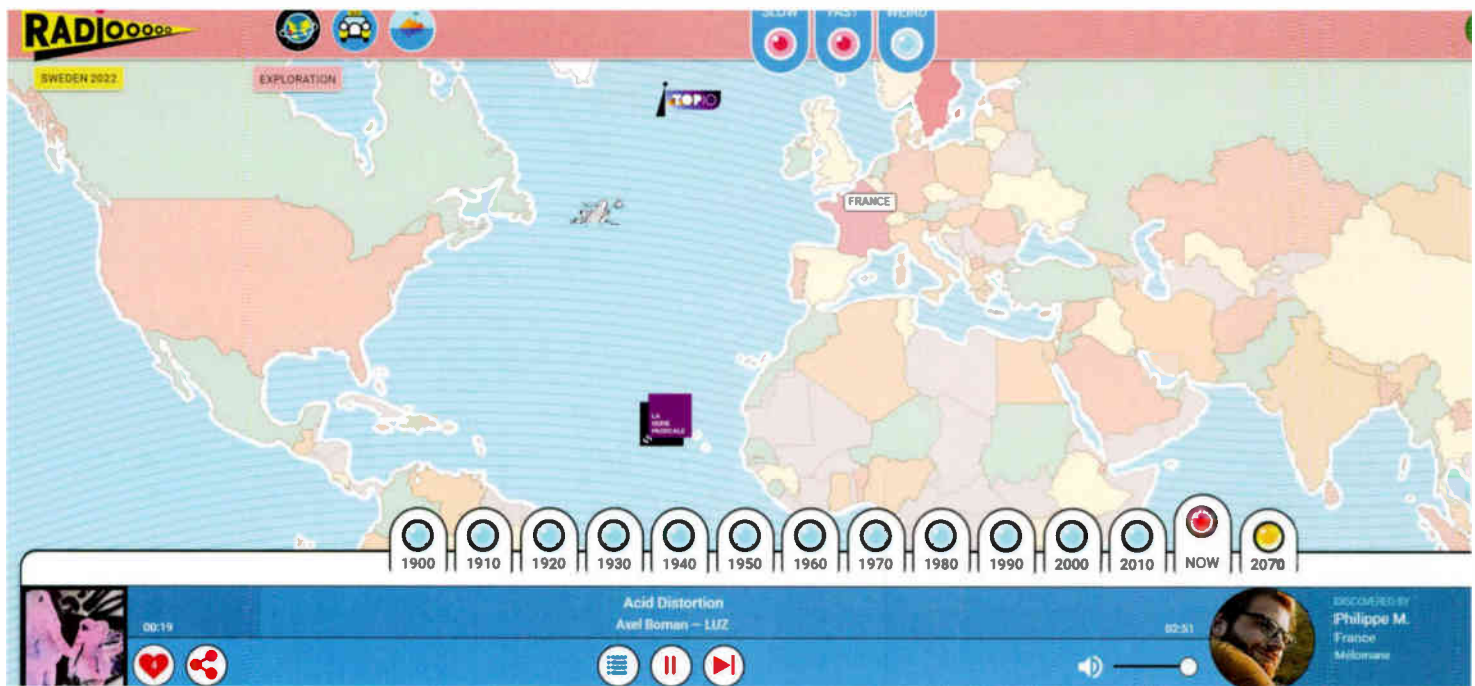
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## Writer



## Dan Slentz

Chief video engineer for the Cleveland Orchestra, he has been working in and around radio and TV engineering since age 14.

There are thousands of radio stations, thousands of streaming stations, thousands of podcasts and thousands of listening options — with most, if not all, offering their services online. It's not too often, however, that a website stands out as pretty unique and very creative in design.

But may I present "Radiooooo" ... or the word radio but with five o's ... or radiooooo.com.

Radiooooo, the website, is special because it's both international and designed to represent the various decades of music style. You can click on a country, then click on a decade, and suddenly you're hearing music from, say, Ireland in the 1920s.

It's simply a fascinating trip through music history, although I do wish it offered a few other choices of audio programming to make it more like radio.

According to its website, Radiooooo started in 2013, "dreamt up by a little family of friends, both DJs and music lovers, who decided to share their record collections and the fruit of many years of research, for all to enjoy. 'Sharing and discovering, 'curiosity and pleasure,' these are the foundations of this musical time machine."

There is a free basic version as well as a paid premium one. The latter offers history and full tracks and allow for rewinding audio and bookmarking. But with or without the paid version, what this website shows us is a creative way to reach listeners with unique programming.

The difference between services is the playlist's size and

those bonus options. The rate is \$4.99 per month or \$49.99 per year for the premium service.

The name may be a bit of a misnomer as great radio is anything but just a bunch of songs. As we know, it's personalities, local information, at times "theater" and so much more. But we'll assume that maybe there'll be more than music in the future of the Radiooooo.

How fun would it be if you had a choice of not just music, but on-air personalities from each decade (as in untelescoped air checks), radio commercials and newscasts from each country and each decade? Though certainly quite an effort to program so much content with limited availability, it still would be a fun addition! 🎧

**Click on a country, click on a decade, and you're hearing music from Ireland in the 1920s.**



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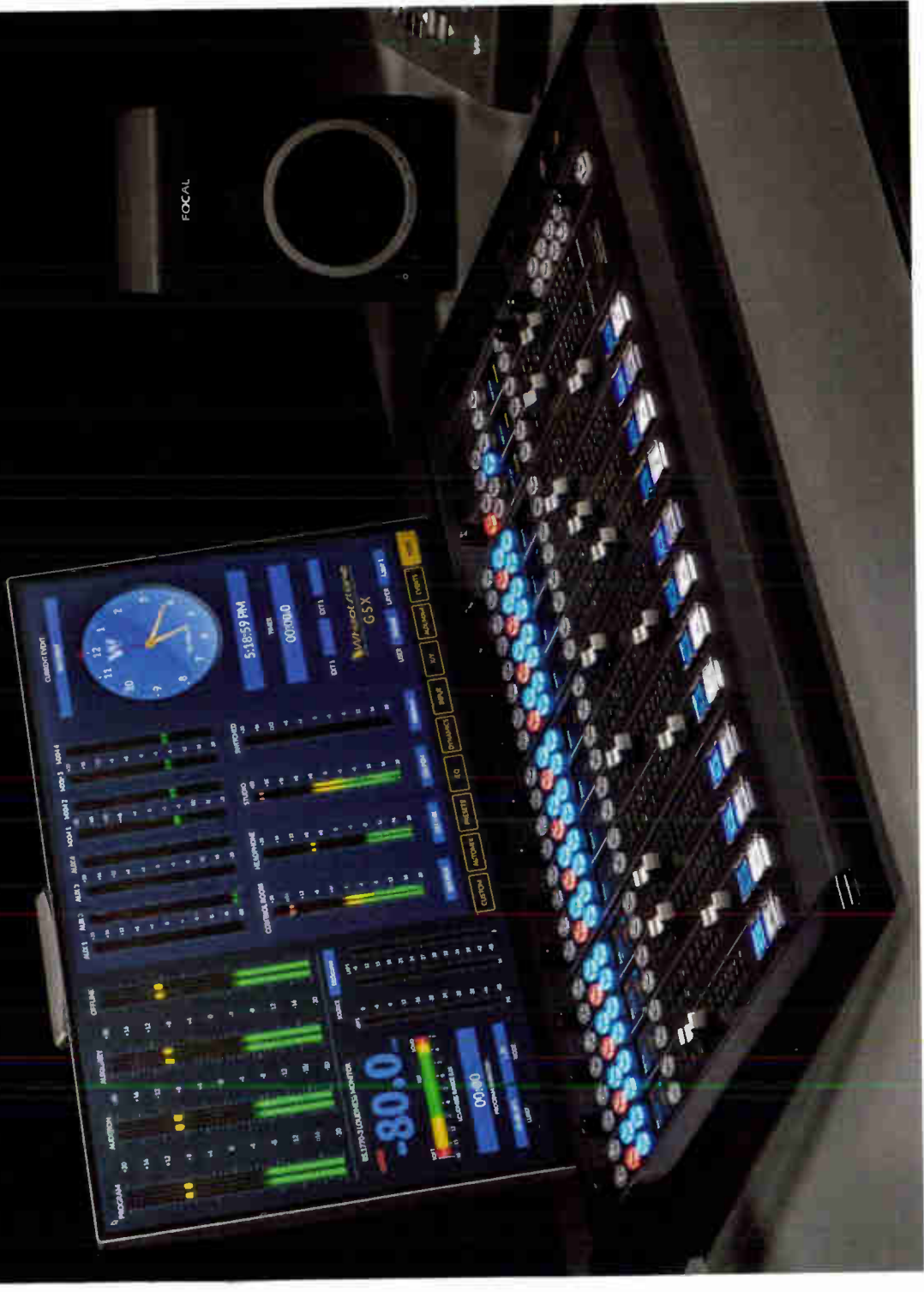


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**BLADE-4  
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## Writer



Wayne M. Pecena  
CPBE, 8-VSB,  
AMD, ATSC3,  
DRB, CBNE  
Member, SBE  
Education  
Committee

# Basics of IT for radio engineers

Wayne Pecena begins a series on useful concepts

**E**thernet cabling may not be the most exciting topic, and as a result it can be taken for granted when a broadcast engineer builds the information technology infrastructure of a broadcast station.

But industry research suggests that the most common causes of Ethernet failures in a network or IT system are found in the cabling and connectors.

An Ethernet cable is just an Ethernet cable, it might seem; however, that is far from reality. There are several varieties of Ethernet in use, and choosing the right cable is important to ensure a reliable network that meets the performance capabilities.

Understanding industry terminology is often the key to applying technology correctly. The days of coaxial cable-based Ethernet are long gone from our broadcast systems, with the bus-based architecture replaced with a star-based

topology utilizing a twisted-pair copper cable between a host device and an Ethernet switch port.

## Classifications

So what are the differences in Ethernet cables? The question can be answered in a couple of ways.

One approach is to look at the various cable category classifications to choose an Ethernet cable based on the required bandwidth performance characteristics for your application.

Performance characteristics commonly include bandwidth, transmission speed and maximum cable length, as illustrated in the accompanying chart.

Unshielded twisted-pair (UTP) cable can be used up to 100 meters in length if Category 5e (CAT-5e) cabling is used. Shielded twisted-pair (STP) is capable of 10 Gbps up to 55 meters in length if Category 6a (CAT-6a) cabling is used. And even 100 Gbps up to 15 meters is possible over twisted pair copper if Category 7 (CAT-7) cable is used, which shields

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individual pairs in foil and an overall cable braided shield (S/FTP).

Another approach is to consider the cable installation environment and choose the physical construction of the Ethernet cable that fits the application and environment.

Environmental considerations include the use of plenum-rated cable to meet building fire-code regulations. It is likely these cables would be required when the cabling

is run through air circulation space in buildings. Plenum cable is manufactured with an overall, fire-resistant jacket such as Teflon so that if exposed to heat, the cable will not emit dangerous fumes. Plenum-rated Ethernet cable will have a CMP-rated jacket that is certified by Underwriters Laboratories.

Other environmental conditions might require outside cable installation where ultraviolet-resistant (UV) cable should be used. Outdoor-rated cable is also desirable due to the moisture-blocking characteristics and life expectancy that will vary in temperature extremes.

Direct-bury cable is available, providing a heavier overall jacket and additional moisture protection by wrapping waterproof tape around the conductors and impregnating or flooding the cable with waterproof gel. Outdoor and direct-bury-rated Ethernet cable will have a CMX-rated jacket.

One consideration often overlooked when selecting Ethernet cabling is the use of Power over Ethernet, or PoE. IEEE 802.3xx PoE standards provide a nominal 48 Vdc to powered host devices with different PoE power capability ranging from a 12.95-watt limit under 802.3af standard to up to 100 watts under the 802.3bt standard.

Factors that must be considered include the temperature rating of the cable due to heat rise resulting from resistance loss of the conductor pairs and overall power insertion loss.

## “ The most common causes of Ethernet failures in a network or IT system are found in the cabling and connectors. ”

Use of 23 AWG-based conductor cable is preferred over the more common 26 AWG conductors when PoE is used.

When installing Ethernet cabling, I would look to CAT-6a or CAT-6 category cabling with the appropriate environmental rating. CAT-6 should be preferred over the shielded CAT-6a when PoE is utilized, especially when the higher-wattage PoE devices are used due to the ability of shielded cable to dissipate less heat.

Proper cable installation is also critical to ensure performance, especially in higher-bandwidth applications. Common recommended installation practices specify a minimum bending radius of the cable, bundling cables together (especially when PoE is utilized), and placement adjacent to other cabling such as AC power cables.

Use of the proper connector is critical to maintain system reliability. Shielded cable requires a shielded RJ-45 connector to maintain the noise immunity performance.

Not all Ethernet cables are created equal. The age-old twisted-pair copper cable can transport an increasing amount of data (and power) in our technical plant if the proper cable category and rating is chosen for the application. And the popularity, cost, ease of installation and termination of twisted-pair copper cannot be beat!

Stay tuned for my next article, which will focus on the Ethernet switch. Questions and comments are welcomed at [wpecena@sbe.org](mailto:wpecena@sbe.org).

	Cable Type:	Maximum Transmission Speed:	Maximum Length:	Maximum Bandwidth:
Category 3	UTP	10 Mbps	100m	16 MHz
Category 5	UTP	10/100 Mbps	100m	100 MHz
Category 5e	UTP	10/100/1,000 Mbps	100m	100 MHz
Category 6	UTP or STP	10,000 Mbps	55m	250 MHz
Category 6a	STP	10,000 Mbps	55m	500 MHz
Category 7	S/FTP	100,000 Mbps	15m	600 MHz

### About This Series

This article is based on an excerpt from the Society of Broadcast Engineers' CBNT/CBNE Study Topics webinar series, designed to assist those seeking SBE certification and to provide others a broad overview of IT as used in broadcast engineering. This webinar and many others are available to anyone for a modest fee, with members receiving a discounted rate and free to those with the SBE MemberPlus upgrade. Consider joining if you are not a member at [sbe.org](http://sbe.org).

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## Writer



### James Careless

The author wrote here recently about emergency radios.

# A 'great debate' over radio distribution

European radio experts mull what lies ahead

**W**hen should radio leave AM and FM, if at all? In countries that use DAB, when will radios be cheap enough for consumers to woo them from FM? And is IP distribution the future of global radio?

These contentious questions were bandied about during a session on the future of radio distribution at the European Broadcasting Union's Digital Radio Summit earlier this year.

The discussion was moderated by EBU Senior Project Manager Darko Ratkaj.

He began by asking Dr. Roland Beutler, who is in charge of distribution strategy at Südwestrundfunk, for his views on radio's best approach.

Beutler pulled no punches. "I believe it's necessary to shut down FM in order to reduce distribution costs," he said. "Now the question is, how can you do that? How can

you vacate the FM band, and how can you make it available to other services?"

In his home country of Germany, Beutler said that politicians need to make the case for a replacement service on the FM band that would win public support.

"One thing I could see is actually PPDR (Public Protection and Disaster Relief communications used by first responders), because they are using similar frequency ranges already," he said. A second FM band user could be "smart city" data services, for connecting to gas meters and other devices by radio.

## AM and FM in U.K.

Lindsey Mack was more measured in stating her views as the BBC's senior manager of DAB & BBC Sounds External Affairs.

"We do plan to close AM mid-2020s," she said, due to a

**Above**  
A fanciful image speculates on how consumers will be able to interact with media. Where does radio fit in the future of distribution?

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「 FUTURE 」

## Future of Radio



"consistent decline in listening making it really not viable, and we assume that trend will continue."

According to Mack, the threshold for both the BBC and U.K. commercial AM stations to start shutting down is when AM listenership falls to 3% of total U.K. listenership.

However, matters are not so clear when it comes to shutting down FM in that country.

"This is always a topic that causes quite a lot of alarm especially in the U.K. ... and the reason for that is 36% of radio listening is still via FM," Mack said.

"It remains really valuable to many listeners, particularly those who are older and vulnerable, and to those who may live in areas with limited DAB and/or broadband coverage, and also to the car listener where 50% of car listening is still tuned to analog."

Peter MacAvock, the EBU's head of distribution, platforms and services, said, "In terms of broadcast radio distribution, FM still dominates." It also remains popular with local broadcasters as a vehicle for selling local advertising, aided by a cheap ubiquitous receiver. In fact, when the cost of FM and DAB receivers are compared head-to-head, "FM is dirt cheap," he said.

On the other hand, DAB provides much more content variety for listeners and better advertising sales options for broadcasters, said Hanns Wolter, technical director at DAB Italia.

"If you have [targeted] local advertising, you will be able to deliver it locally [via DAB]," he said. "You don't need to go on the internet and compete with a hundred thousand IP stations. You'll be able to get directly to your listener."

### Transitional?

At this point, moderator Darko Ratkaj stirred the pot by asking if it makes sense to "advocate DAB as an AM/FM


replacement" and an overall "good technology," given the belief that "it appears to be a transitional technology to an IP paradise; an IP-only future."

On this point, the debaters agreed that the answer to this distribution question was not at all clear.

For her part, Lindsey Mack sees radio's path lying in "a mixed future with broadcast and IP."

Her uncertainty was echoed by Peter MacAvock. "It's too early to call it," he said. "It's easy to say that it's all going to be IP-based in the future, but there's a whole host of problems associated with IP distribution ... IP will be a factor, for sure. How big? I don't know."

The only sure conclusion to be drawn from the Great Distribution Debate is that it will continue for years to come. As to whether broadcast will continue to hold its own against IP or not? MacAvock's words sum the current situation up nicely. "I'm not backing either horse for now."

You can view the session at <https://www.ebu.ch/home>, type "The Great Debate" in the search field. 

**Above**  
Participants in the session "The Great Debate: The Future of Radio Distribution." Clockwise from upper left: Darko Ratkaj (EBU), Hanns Wolter (DAB Italia), Peter MacAvock (EBU), Lindsey Mack (BBC) and Roland Beutler (SWR).

**“ I believe it's necessary to shut down FM in order to reduce distribution costs. Now the question is, how can you do that? ”**



Mark Lapidus

is a veteran multi-platform media and marketing executive.

# Cookies are coming off the menu

## What should your station team know about this change?

**R**emember the first time you realized that a banner ad for a product was following you from website to website? I was impressed. I had never witnessed such perfect

personalized advertising. Not surprisingly, however, most non-marketers were a bit creeped out.

It was 1995 and a new cute term was all the buzz. Maybe the word itself was supposed to keep the public calm. After all, how malicious could a "cookie" be?

But wild rumors flew about these so-called "cookies." Some people claimed cookies could scan your hard drive and steal your credit card.

The industry went into action explaining that while cookies are stored on a user's computer, they were not executable programs. While most users relaxed, others formed privacy groups. Cookie blockers arose and, finally, a user's acceptance of cookies became required via a pop-up.

For over 25 years, third-party cookies became the engine behind the digital advertising industry's success by gathering extensive profiles of unique users, including locations, purchases, interests and so much more for use in re-targeting ads.

### Hit those streets

After continued global pressure, in 2023 Google will finally be eliminating third-party cookies in its Chrome browser.

The much less-frequented Firefox and Safari browsers have already said sayonara to cookies.

What's the impact to radio in general and to your website specifically, once Chrome kicks cookies to the can?

As dramatic as third-party cookie elimination sounds, the acceptance rate by the user has continued to drop to the point where many sources say fewer than 25% of users agree to accept them anyway.

Plus, first-party cookies aren't going anywhere. This is important because first-party cookies — the ones served from your website — remember what your users are doing, so they provide a better experience.

Rest assured that first-party cookies




will continue to give you analytics that show the user journey through your site, enabling you to optimize content.

Google's cookie replacement solution for advertisers is their "privacy sandbox." Google says this tool will permit advertisers to publish to targeted audiences without having the same amount of user data. How this will work is still not entirely clear.

To add to the drama, ad agencies are already accusing Google of leaning further into ways of manipulating first-party cookies, which will live on the browser. Meanwhile, agencies are recommending that advertisers collect as much first data as possible on their customers, and to use as much of this data as possible to personalize the on-site experience.

Do you understand what's happening here? Advertisers, especially those local to your city, are going to be concerned and confused, just like you may be now. Understanding this evolution in digital advertising requires attention and time, so I suggest your sales staff learn the basics and start the conversation with clients.

Because radio sales reps have direct and personal relationships, they are perfectly positioned to be perceived as media experts. Just as importantly, there will be a window when advertising budgets are in flux and this is a perfect opportunity to remind your local retailers how terrific radio is at driving actual sales on the local level.

So, arm each of your account executives with a plate of real cookies and start making in-person sales calls! 



### Comment

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# Pandemic forced new workflows in Philly

**P**ro sports coverage is a crucial programming component for Beasley Media's seven-station Philadelphia cluster.

For the Radio World ebook "Remote Contribution," Chief Engineer Rodney Byrd, FF/EMR, talked about his pandemic experience with remote audio.

"Beasley Philadelphia is set up to operate several simultaneous back-to-back broadcasts from multiple locations ... something we do on a regular basis," he said.

"Most of our shows remained in-studio during the pandemic. Any that had more than two people who could not be socially distant while in the studio or were not comfortable being in the facility were set up to broadcast from home."

The cluster repurposed all of

its codecs that would normally be used for on-the-road broadcasts and deployed them where needed. Additional codecs were plugged in to its TOC facilities to allow them to receive more remote signals.

"We also carry the Philadelphia 76ers basketball and the Philadelphia Flyers hockey teams. A majority of sports broadcasters and announcers were not able to travel with their teams."

When a restart of sports was announced, the leagues and local regional sports network for TV and radio worked together to repurpose technology in the venues.

"All NHL and NBA venues have several IP codecs installed as HD video feeds from the venue hosting the game, back to the replay center," Byrd said. "We used the provided video feed from the league for video and connected



**Above** Rodney Byrd at the Wells Fargo Center.

to the arenas where the games were being played for effects and PA. This allowed us to broadcast all games from the Wells Fargo Center."

You can read more about how Byrd and other engineers are handling remote audio in the new normal. Read the ebook at [radioworld.com/ebooks](http://radioworld.com/ebooks).



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Writer



Elle Kehres  
Content Producer,  
Radio World

# Oahu stations get a speedy makeover

The mission: finish construction and move operations in less than 90 days

**P**acific Media Group is a privately held, Hawaii-based media company with offices in Honolulu, Kahului, Lihue, Hilo and Kona. Across the islands, PMG owns and operates 20 radio stations, four of which recently found a new home.

At the end of 2021, PMG moved its Oahu operations from a leased space to a new, wholly owned office and studio space in downtown Honolulu. During the switch, PMG set about upgrading equipment and moving its antenna to improve the reach of its programming.

The Oahu operations in Honolulu, Hawaii's capital, consist of four FM stations: Pop/Top 40 KDDB 102.7 Da Bomb; Rhythmic Oldies 94.7 KUMU; Hawaii's Local Hits KQMQ 93.1 FM - HI93; and Soft A/C KPOI 105.9 The Wave. All four stations, as well as two PMG-owned production studios, were part of the move.

To learn more, Radio World exchanged emails with Gregg Garcia, head engineer for PMG, the manager for the project.

**RW** What was the scope of this job?

**Gregg Garcia:** Pacific Media Group's lease at 1000 Bishop Street in downtown Honolulu came up for renewal at the end of 2021. Prior to the lease expiration, PMG CEO/Owner Chuck Bergson purchased the 29th floor of the Alakea Corporate Tower only a block and a half from the Bishop Street facility. The Bishop Street facility housed six studios (four on-air/two production) complete with Axia Element/Fusion surfaces in Omnirax furniture. While the



Bishop Street facilities were a bit over 7,500 square feet, the new Alakea office space is just under 5,000.

**RW** Describe the physical airchain path.

**Garcia:** We moved our various Urban processors out of the studio environment to our various Palehua Ridge transmitter sites. Nearly simultaneously, we were preparing to move the KUMU 94.7 FM transmitter site from a tower on top of the Hilton Hawaiian Village in Waikiki to the same Palehua Ridge site as sister station KQMQ 93.1 FM.

**RW** What was the budget and timetable?

**Garcia:** The timeframe to complete construction and make the move was less than 90 days. While planning began earlier in the year, the closing of the purchase was not complete until late September. The plan was to begin construction in October after the current tenant vacated the space, then spend December moving in.

The project budget was around \$250,000 but was exceeded due to the tight time frame allotted; supply chain issues associated with the COVID-19 pandemic; and being in the middle of the Pacific Ocean didn't help much either.

**RW** Who else was on the team?

**Garcia:** I assembled a team from California that included Mike DaSilva, Keith Bussman, Jesse Castillo and Richard Castillo.



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## Facility Projects

**RW** Did you hire a master contractor? Who did the install and wiring or helped set up the new suite?

**Garcia:** Swinerton was chosen as the construction contractor to build out the offices and "double drywall" the studios for sound mitigation. The team mentioned earlier, along with the general manager [Joshua Mednick], performed all equipment installation, cabling, studio setup, TOC installation and STL path work.

**RW** What were the critical equipment and facility decisions?

**Garcia:** Since the timeframe was so short, we decided to forklift the existing facility into the new facility. Since the project came together quickly, we were unable to get internet, phone and other telco service moved in time. So we purchased a Ubiquity airMAX GigaBeam Plus 60 GHz Radio and also installed a 5 GHz unlicensed link between the Bishop and Alakea buildings to transmit the Bishop telco services to Alakea while GTT through Hawaiian Telcom and Lucent worked quickly to provide new services at Alakea.

**RW** Can you provide a list of the gear selected?

**Garcia:** We didn't purchase much new gear other than a Comrex MultiRack and five Comrex BRIC links, which provided flexibility while we moved our 950 MHz STL transmitters and antennas.

**RW** Anything else that your radio industry colleagues would want to know about the project?

**Garcia:** Yes! This was executed on an extremely tight timeframe. My team performed miracles making this happen. Much credit also goes to PMG's senior leadership and the entire Oahu on-air staff. They were extremely patient while we worked out all of the kinks in the move.

**RW** Is there a design aesthetic for the new PMG-owned facility? How does it meet your needs to make audio, host clients and serve employees?

**Garcia:** Each of the station's logos has a primary color. Each office and all of the common areas have one wall painted with one of the stations' logo colors. Employees with offices were also given the option to have one wall in the red, purple, yellow or blue from the station logos. The remainder of the walls were painted a neutral grey, adorned with plaques and mementos from artists featured on our stations.

**RW** Were there any unique challenges that were presented by the station format, its market position, its location?

**Garcia:** As I mentioned: It was in the middle of the COVID-19 pandemic, the middle of a global supply chain disruption and our studios are on an island in the middle of the Pacific Ocean.

I think there's a reel of 7/8-inch Heliac still wandering the islands looking for a home ... 

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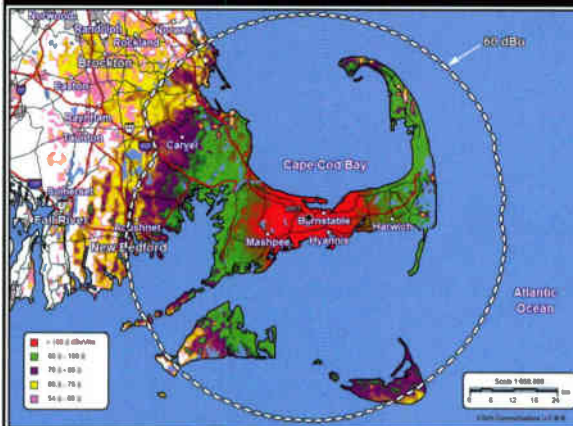
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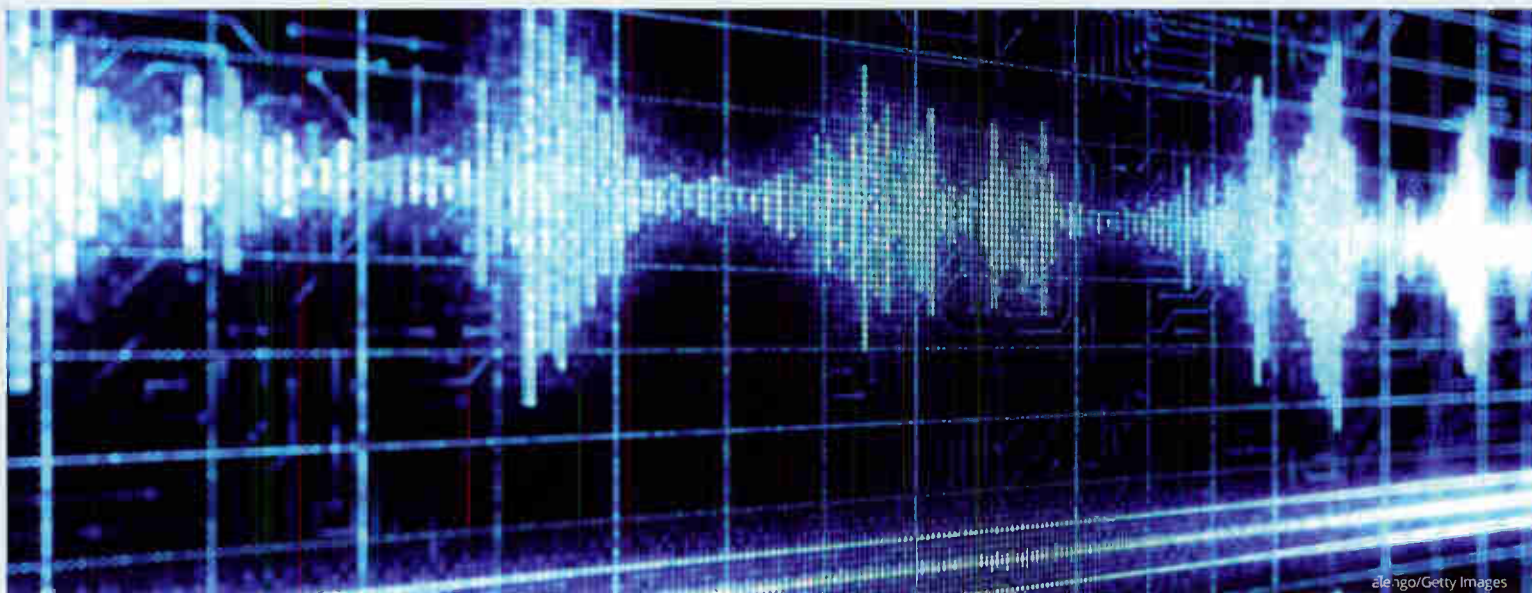
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# Turn off the stereo and see what happens

The benefits of mono on FM are worth considering



**More on Mono**

Read more opinions about this topic at [radioworld.com/tag/mono](http://radioworld.com/tag/mono).

I've got a customer who has a daytime AM and a fill-in FM translator. The old owner was an engineer and wisely decided to just run the translator in mono. Yes, mono. This station airs oldies, high school sports and public affairs programming, but it's mostly music.

So why mono? Well, this translator is on a derelict TV tower — he was smart about that, too — and the current CP is 220 meters AGL. With about 200 watts, he's covering all of his home county and parts of four others. So you can get it in a car better than a 3 kW Class A at reference height (100 meters).

But a lot of the coverage needed is pretty far from the transmitter site. He's not blocked by terrain so much, it's just distance.

With stereo, that means noise in the fringe area. Without stereo, you can get it without noticeable noise a lot further out. So he turned off the stereo.

This is a psychoacoustic fact about radio. Noise equals "Gee, what else is on?"

**Real-world questions**

The audience research people tell us about 70 percent of OTA listening is currently in vehicles. People don't listen to radio much if there are other people in the car. They talk instead. If the radio is on, they don't pay much attention. If they're alone, they are driving the car. That means they are sitting on one side of the vehicle, and getting a stereo

image when you're stuck closer to one speaker than the other is pretty much impossible in my car.

If there is a balance control of some kind, maybe you could tweak it, but how many people actually do things like that?


Then there are smart speakers. Even if I listen to a stereo stream on my smart speaker, I only get mono because there's only one speaker. Are there stereo smart speakers? I haven't seen one.

So the only real listening environments where the presence of robust stereo separation might matter are when listening with headphones to a tuner in your home or to a stream app on your phone or laptop.

How many people consume local radio that way? In my family, the only person I know who has a radio tuner in their home is me. Well, I'm a radio nerd, so that makes sense.

I've seen people with earbuds doing something with their phones at the airport. Are they listening to radio?

FM stereo was a clever marketing tool the industry used to sell FM at a time when almost no one even had an FM radio. Then pop and country programmers discovered FM, and the rest is history.

If you've got a 100 kW blowtorch at 600 meters, it probably doesn't matter. Those of us who aren't so mighty and powerful would do well to try just turning off the stereo, not telling anyone, and seeing what happens next. It's working for my customer. 



**How to Comment**

Submit letters to the editor. Email [radioworld@futurenet.com](mailto:radioworld@futurenet.com).

# I have concerns about the cloud

It's a new Wild West — is it good for radio (and society)?

**R**adio World's webcast "Running Radio Today: Produce," which streamed earlier this year, provided an interesting perspective on IT technology and its impact on how we work and conduct business, including how we will be doing radio in the not-too-distant future.

Of course, not only can we eliminate brick-and-mortar studios and offices, we can also eliminate OTA transmitters and towers, and move everything into the cloud and onto 5G platforms.

But we also have to look at what this means for future security, survival and commerce. We've already surrendered ourselves to online shopping. What will happen to our cities and towns and downtown streets? Even supermarkets may vanish due to the competition from the likes of Amazon's perfect robotic door-to-door delivery of goods such as food.

What does this mean for human society? Facebook will be the only live interaction? No local, live radio hosts you trust into your home?

I'm concerned about the impact on human behavior and emotional well-being. Of course, we know some of the worst has already happened regarding the great political divide and so much static obscuring facts from fiction. Much of this polarization has been accomplished by a combination of social media and some broadcasters who gamed the system over the past 20 years.

As for everything moving to the cloud as a service — Microsoft Office, Adobe imaging, video and audio apps and almost everything else has been moving in that direction.

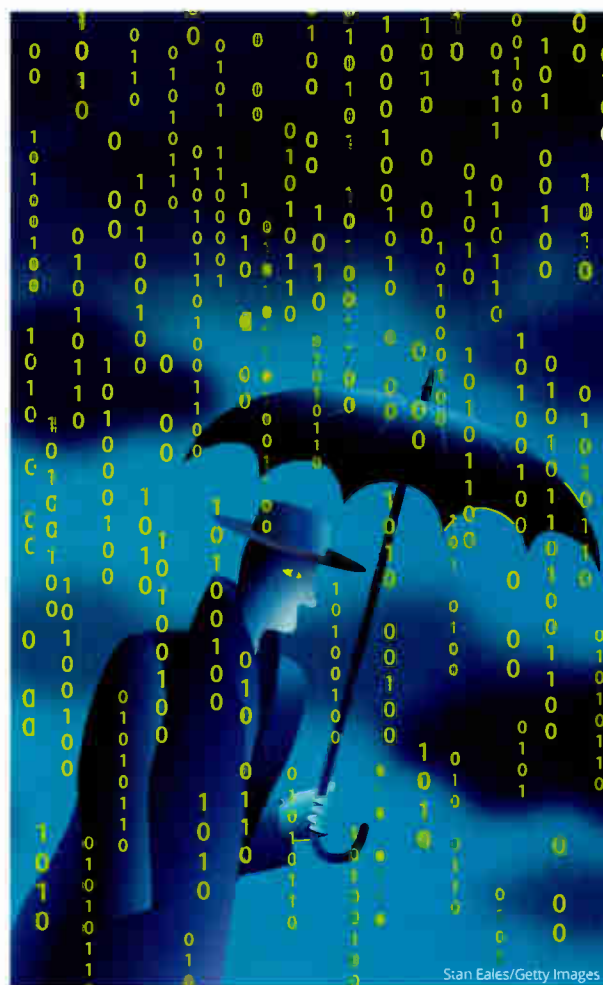
**“ I see this move towards billion-dollar cloud-based server farms as part of the trend to enrich the few by leaving everyone else out on a limb. ”**

## Writer



Ira Wilner

The author is chief engineer of Monadnock Broadcasting Group and Saga Communications. Opinions are his own.



Stan Eales/Getty Images


So what happens when you can't pay for it? You fall on hard times? You're not in the moneyed class anymore?

Older computers with older software that you "owned perpetually" would have still been available to you as long as you paid your energy bill. Not so with the cloud. Miss one payment and you're shut off. Knowing small-market radio, where there were many lean months and bank loans to help pay the bills and salaries, if you miss your cloud automation and audio processor payment, you're gone!

I see this move towards billion-dollar cloud-based server farms as part of the trend to enrich the few by leaving everyone else out on a limb.

A few huge companies will literally run the world and will make government subservient to them! It's already happening globally, even in so-called socialist countries where the oligarchs are the real owners and dealmakers. But unlike the 20th century when our government stepped in to regulate the few giants, AT&T Bell System, the railroads, etc., we have a new Wild West where anything goes.

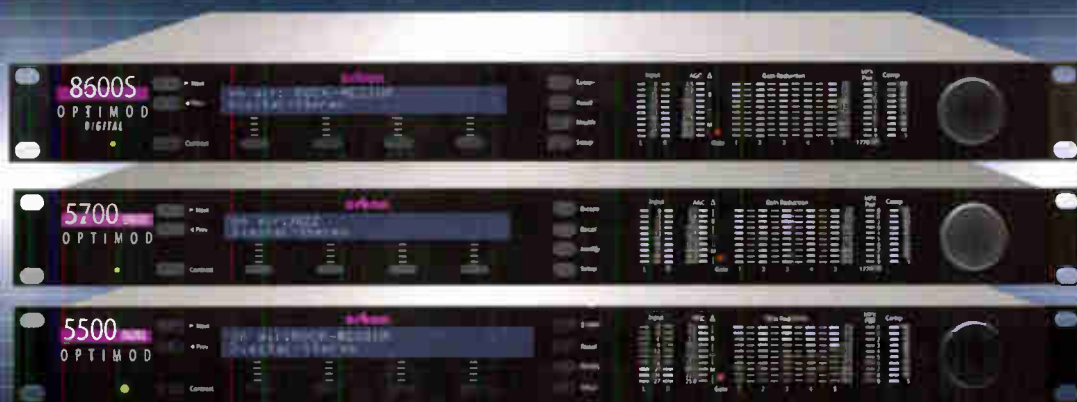
I'm not sure where this is heading us. But I'm trying to look at the broader picture.

*Comment on this or any story. Email [radioworld@futurenet.com](mailto:radioworld@futurenet.com) with "Letter to the Editor" in the subject line. *



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