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EDI Media swirls its skirt

After a lengthy silence, AM station KWRM in Corona, Calif., is back on the air thanks to an unusual tower site solution.

Florida builds a BEACON

AI technology is put to use in a new public/private emergency communications platform.

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GPS, PNT and BPS

A new webinar explains how the Broadcast Positioning System works

Paul McLane
Editor in Chief

Have you heard about the Broadcast Positioning System?

The technology, developed by the National Association of Broadcasters, leverages the ATSC 3.0 digital TV system to transmit timing and location data. The association says BPS is a cost-effective terrestrial complement to traditional GPS satellite-based services.

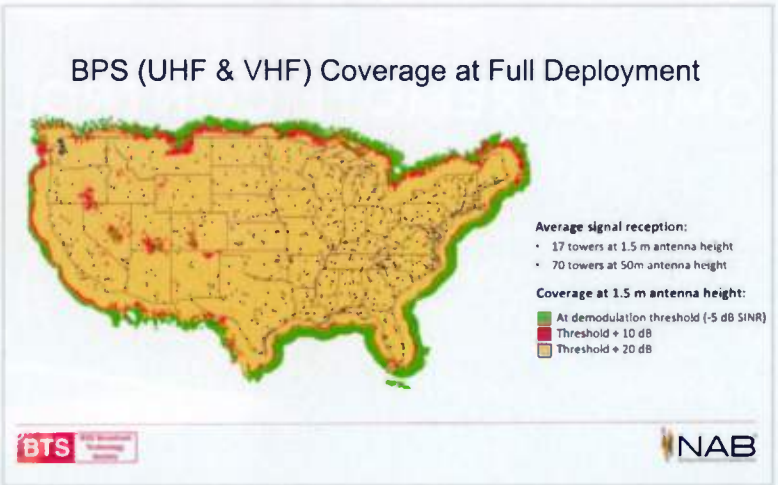
"The reliance of U.S. critical infrastructure on time distributed by GPS satellites presents an incredible and increasing risk for the country," according to an NAB white paper that lays out its argument. "Broadcasters have a long history of collaborating with the government on critical communication services, such as the Emergency Alert System, and the BPS is a terrestrial Position, Navigation and Timing service that can be a new addition to this collaboration."

The IEEE Broadcast Technology Society and NAB have produced a free webinar about BPS, as Radio World's Nick Langan reported on the Radio World website.

In the webinar, released in January, IEEE BTS and NAB highlight advantages that include BPS's resistance to jamming or spoofing and other GPS satellite disruptions, including what is referred to as the Kessler syndrome.

"Unlike a GPS satellite in space, BPS signals broadcast from a TV tower on the earth's surface to transmit time from a known location," according to NAB.

"BPS relies on modern broadcast television infrastructure using ATSC 3.0, an international standard from the Advanced Television Systems Committee, and as a broadcast service it requires only a passive receiver to use (no internet or other two-way connection is required) and can support an unlimited number of simultaneous users."



An image from the webinar.

THIS ISSUE

Among those speaking in the webinar are Sam Matheny, NAB's executive vice president and chief technology officer, Tariq Mondal, NAB's vice president of advanced technologies, and Bob Weller, NAB's vice president of spectrum policy.

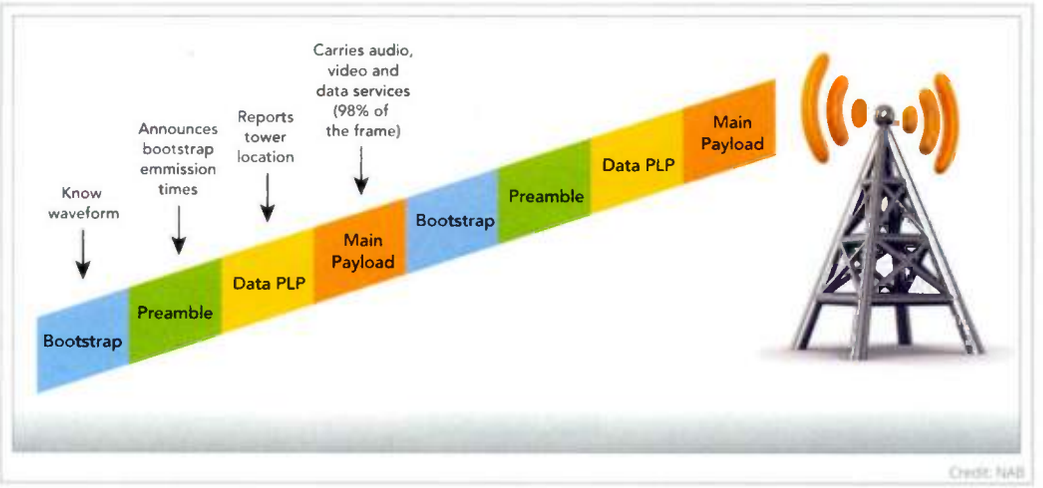
Brett Jenkins of Nexstar and Harvey Arnold of Sinclair Broadcasting also provide perspectives from existing broadcasters. It's a substantive presentation, running about 2-1/2 hours.

According to the webinar, 103 ATSC 3.0 TV stations are operating in the U.S. reaching 80 broadcast markets. Approximately 77% of the country's television households are within reach of these stations.

NAB states it has been instrumental in advocating for BPS's adoption and is collaborating with technology partners.

But it says congressional support is needed for more rapid ATSC 3.0 adoption to enable the ability for stations to use BPS.

The BPS service is being tested in the field. An installation at WHUT(TV) in Washington, D.C., is used as an example, with equipment at WNUV(TV) in Baltimore used to receive the BPS signal. Jeff Sherman of the National Institute of Standards and Technology speaks in the webinar about test results.



Above
BPS signaling within the ATSC 3.0 frame.

You can view the webinar at the IEEE Broadcast Technology Society's website. At *https://bts.ieee.org/*, click on Educational Programs, then Webinars & Podcasts.

If you are interested in the subject but are in more of a hurry, here's a link to an NAB white paper that summarizes it: *https://tinyurl.com/rw-BPS-2*.

Writer

Randy J. Stine

The author wrote recently about efforts to restore the FCC's authority to conduct spectrum auctions.

Do AI and emergency communication mix?

A technology partnership in the Sunshine State looks to answer the question

Above
At the launch event in Gainesville, Fla. From left: Former FEMA Administrator Craig Fugate; Florida Division of Emergency Management Executive Director Kevin Guthrie; Dean of the University of Florida College of Journalism and Communications Hub Brown; CEO of Futuri Daniel Anstandig; and University President Kent Fuchs.

Experts in alerting are keeping an eye on a project in Florida, where emergency management officials are harnessing the power of artificial intelligence in an effort to better protect residents from the threat of hurricanes and other natural disasters.

The statewide project involves technology from Futuri, a company familiar to radio broadcasters for its AI-based services.

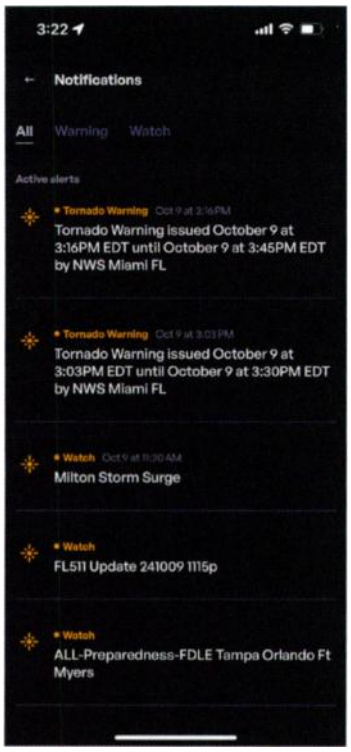
In December, Florida's Division of Emergency Management, the University of Florida and Futuri announced the launch of the Broadcast Emergency Alerts and Communications Operations Network, or BEACON. They describe it as the first AI-driven emergency broadcast system to deliver disaster communications.

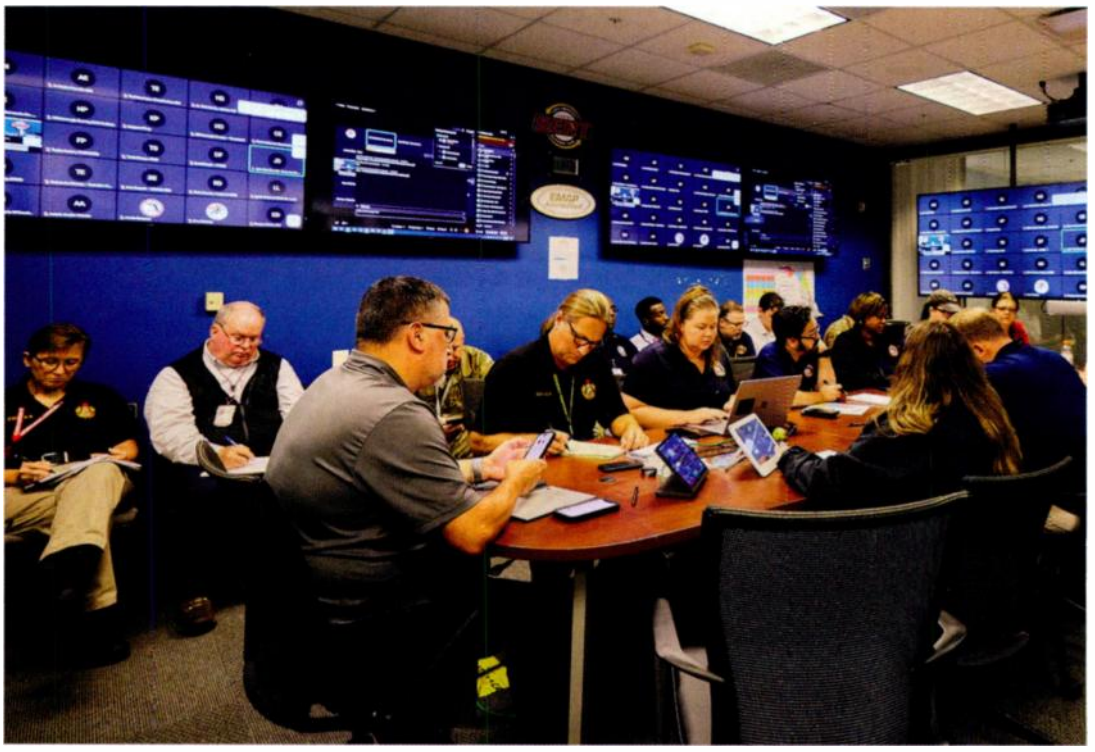
They say the platform combines the benefits of AI with the resiliency of broadcast technology to allow emergency managers and first responders to communicate with communities.

"While existing systems provide basic early warnings, BEACON revolutionizes emergency communication by delivering comprehensive, multi-lingual alerts throughout the entire lifecycle of an emergency — from initial warning through recovery," according to the project's website.

Former FEMA Administrator Craig Fugate is an executive consultant to BEACON and said it could be a model for a national system. Futuri, after testing its reliability in Florida markets this year, expects to offer the emergency system to other states.

The system automatically captures, prioritizes and translates public safety information from authorized sources, localizing the content based on geography and using AI to voice radio broadcast updates and advisories. It





Above
At left, sample notifications. At right, BEACON technology is displayed in the control center of the Florida Division of Emergency Management.

can also translate them into multiple languages, something the FCC has been hoping to do for EAS messaging.

BEACON has rolled out on 12 radio stations owned by the State University System of Florida, but the system also can be used by any commercial station in the state. It integrates into newsrooms and studios through a secure dashboard, allowing broadcasters to access real-time content.

It also is integrated with the Integrated Public Alerts and Warning System, so alerts in IPAWS messaging are captured in BEACON without a manual process, its developers said.

Valuable followup

EAS experts contacted by Radio World for their reactions say this new communication system can be a compliment to EAS. They say state-based alerting systems can help "fill in the gaps as long as they are not splintering emergency alerting in the country."

As one put it, "The more tools in the toolbox, the better, as long as the message is accurate and timely."

Another observer said the system in Florida will likely serve as an "aggregator" to feed emergency information to broadcasters and across social media. "They are welcome for development, but they should not take away from traditional alerting methods."

Adrienne Abbott, chair of the Nevada State Emergency Communications Committee, told Radio World that with so many radio and TV stations operating frequently on automation, an AI platform like Futuri's could allow those stations the ability to serve their communities by providing follow-up information after an EAS activation even though their station doesn't have the resources of an on-air staff or a news department.

"EAS is the headline for an emergency or disaster. That's what it was designed to be, but what's been missing for generations is the follow-up information," she said.

"Of course, any AI system will have to find some way to assure the public that information presented is coming from an authorized source," she said. "And the information gathered by the AI system will only be as good as the person who entered that information in the first place."

Richard Rudman, the chair of California's SECC, said Craig Fugate's involvement lends a great deal of credibility to the

> **"If, and this is a big if, the instructions that an AI system is to disseminate to the public are clear and comprehensible, AI's language ability can be a great time-saver."**

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project for him. Fugate also is former director of the Florida Emergency Management Division.

"AI is coming into our lives whether we like it or not," Rudman wrote in an email. "I would hope before we let AI into the front door of alert and warning that some thought is given to the implications both good and bad."

He said many emergency managers do not "use all the tools in their toolbox," specifically referring to using EAS. "(EAS) is still a great and last resource that must be preserved to help protect those at risk when cell phones and Internet are taken out by disasters."

Mike Langner, chair of the New Mexico SECC, said the Futuri system raises the usual questions about the dependability of AI.

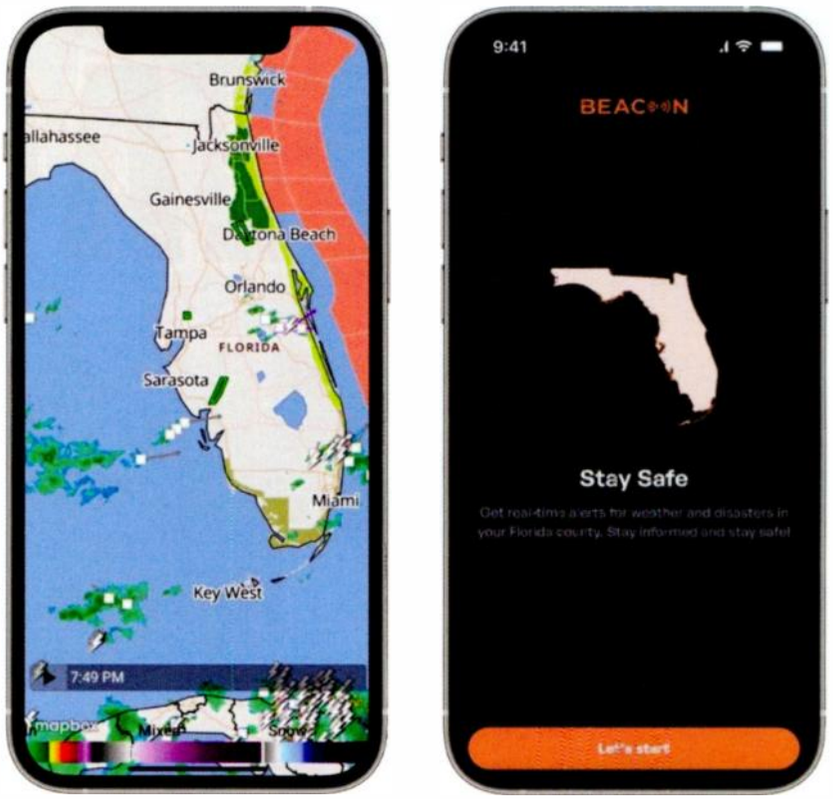
"Given that the AI role in the Florida implementation is limited to communications — primarily to text-to-speech conversion with multi-lingual capability — not much could go wrong. If, and this is a big if, the instructions that an AI system is to disseminate to the public are clear and comprehensible, AI's language ability can be a great time-saver," he said.

He says using AI to translate the message means it must be "quality-controlled for accurate translation to make sure the message is accurate and timely is critical in emergencies."

However, Langner openly questions if AI's involvement will stop there. "If AI, at its current stage of development, is given a significantly greater role in alerting, hazards abound," he says.

Another alerting expert says AI is already being used to a certain extent in the existing EAS. AI in emergency notification is being used to figure out to which stations what emergency messages should go, and in what language they should be provided when the hazard is in a multi-lingual area, this person said.

"If the AI system has true and proper knowledge of which media outlets reach which populations, and if AI knows the language and culture of those populations, it can certainly be a valuable, time-saving tool," one EAS observer said.



Above
Sample images from the project website.

"But will the AI knowledge base be kept up to date? AI can only know what it's been taught or trained on. Everything else is pattern discernment that the AI program deems to be correct, and sometimes, perhaps in very critical times, isn't."

Lowell Kiesow, chief engineer for KNKX(FM) Public Radio in Tacoma, Wash., is vice chair of that state's SECC. He said a service like Futuri's seems to make perfect sense for Florida, where there is a propensity for severe weather. However, he continued, private/public systems typically have a downside.

"Unfortunately, such services come at a high cost, and many states and local governments just don't have the money for public warning systems. EAS fills in because it can be made to work effectively without much cost," Kiesow said.

He said the language capabilities of BEACON are intriguing.

"Multi-lingual alerting is a technical challenge for EAS and WEA, for which we haven't had any good solutions. Message originators are hard pressed to just get the alert out in English, let alone multiple languages. And computerized language translation, as we've known it in recent years, just isn't good enough to trust with public warning. Too many details get mangled in the process."

How Does It Work?

This description is from the BEACON website:

"BEACON's proprietary technology aggregates official public safety information from trusted, encrypted government sources, categorizes it based on urgency, and then delivers it in real time to television and radio broadcasters for immediate distribution. Citizens can also access all of BEACON's content through the BEACON mobile app for iOS and Android, which includes interactive maps with real-time tracking information on severe weather events, Amber alerts, wildfires, earthquakes and more. BEACON is a 24/7 public safety channel, always localized and translated into multiple languages to ensure no community is overlooked."

Information about the initiative can be found at *www.beaconalwayson.com.*

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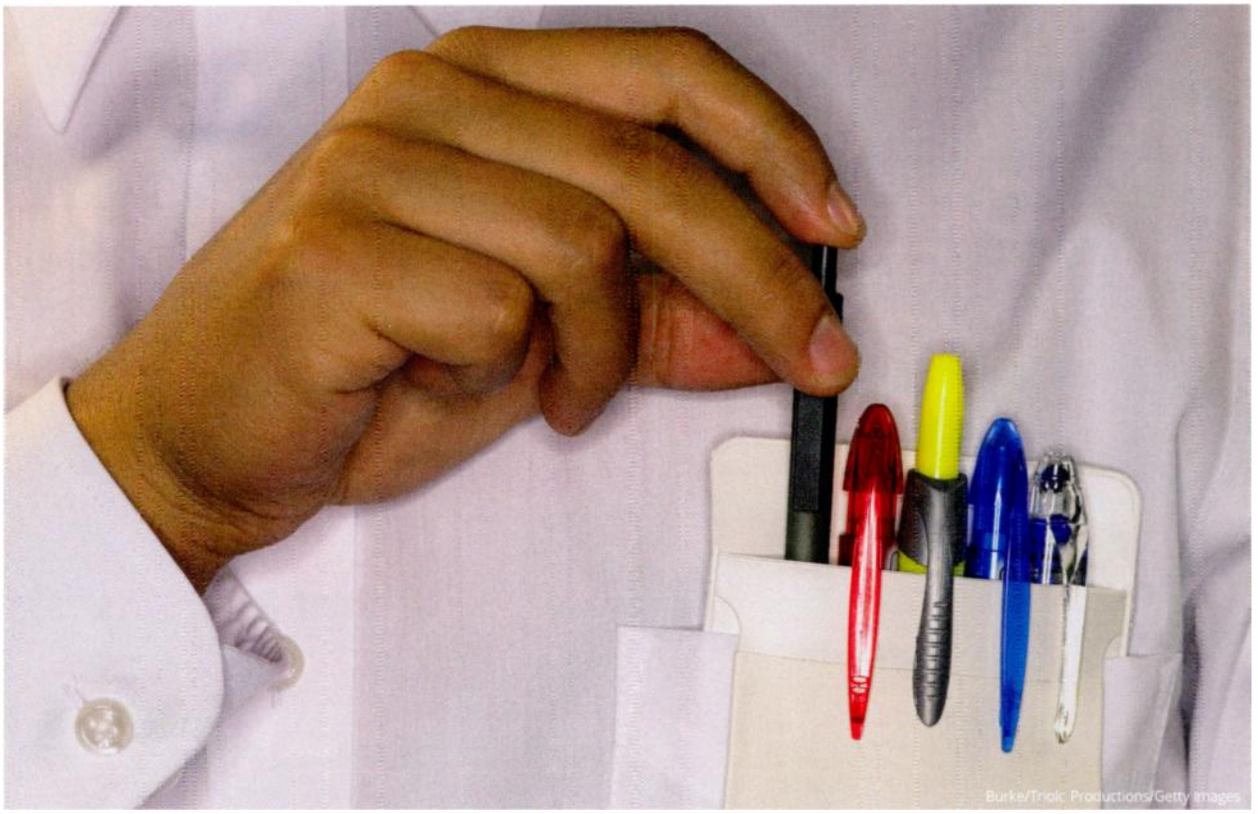
John Bisset
CPBE

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

Tips Please

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



Burke/Triolo Productions/Getty Images

Create a weekly report for your stakeholders

Keep colleagues in the loop (and keep yourself visible)

Chuck Bullett, CPBE, oversees Audacy's San Francisco stations as market director of technology and engineering.

With five stations and associated transmitter sites, there's a lot going on at any given time. Chuck and I talked about ways engineers can manage to keep the lids on multiple boiling pots.

Chuck is in the habit of writing a weekly document that he calls the "Pocket Protector Report." It's an email that helps him keep staff and management current on projects and any problems.

Above
Chuck's weekly email is called "The Pocket Protector Report."

Chuck divides his report into sections. He gives an assessment of the market, followed by a brief bullet-point summary for each station and ending with the status of ongoing projects.

It's a great time-saver. Imagine how long it would take Chuck to meet regularly with the management of each station to relay this information. Regular emails also give staff an update of everything engineering is up to.

I've touched on this idea before, but winter is a good time to reestablish your weekly habit, if for no other reason than to help maintain your sanity.

Also, the biggest complaint I hear from station owners and managers is, "I don't know what my engineer is doing; he's never here." Management should have no cause to question your worth. Document with a weekly report.

Site inspection memories

Former broadcast engineer Archie Stulc, enjoying retirement in Texas, writes in with more tips about what to look for during that next transmitter site inspection.

First on his list is the coil on the AC unit. This is the "box" with a fan usually mounted on top that sits outside the building. Air flow is through finned coils on the side and out through the top, where the fan is mounted. Are the fins clogged with leaves or grass? Archie once found a unit

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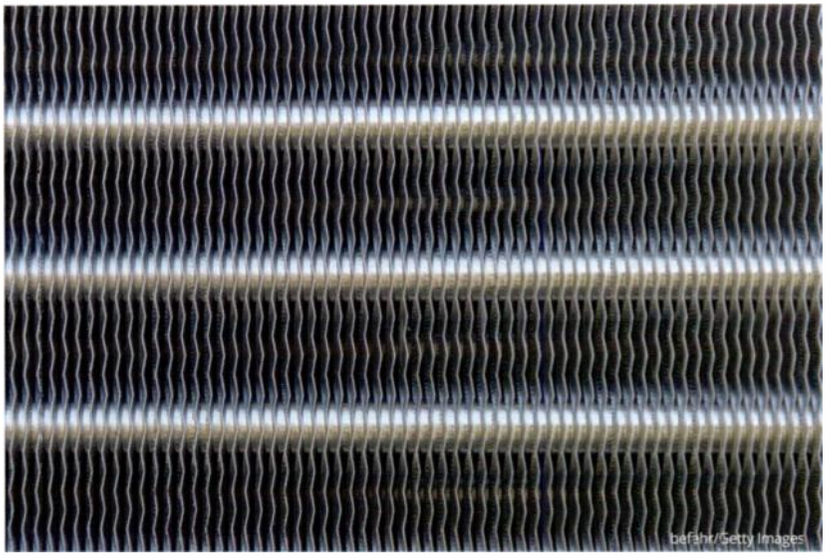


covered with a cozy baby blanket of cottonwood seeds. Luckily the compressor was still under warranty.

Cleaning compounds sold by big box stores can help you remove the dirt and debris easily. Don't use a pressure washer; you don't want to deform the little cooling vanes/fins by blasting them with high-pressure liquid.

What about your back-up generator, is it clear of growth? Inspect the inside for insect or rodent nests. How is the fuel level? Does the generator work properly under load? What would be more embarrassing for an engineer than to have to explain to management why the generator didn't start when it was needed?

Finally, if you maintain a multi-tower AM directional, walk the perimeter regularly. Look for evidence that local high schoolers have been messing around your field.

At one site, Archie discovered that an impressive clubhouse had been set up just past the tree line. Inside he found beer cans, a keg and an empty box of .22 shells. (That also prompted him to take a closer look at the site's guy wire and tower base insulators, which like beacons are common targets for gun practice.)

What an exciting life we lead.

Above
Keep the cooling fins on your air conditioner systems clean.

Below
Common USB jacks (center) and corresponding plugs. Center connectors beginning from top, clockwise: USB A male; USB micro; USB A female; USB C female (note symmetrical/reversible plug).

USB ABCs

Rolf Taylor, principal of Rocket Engineering & Consulting, has been doing a deep dive into practical aspects of USB. He notes that there are several types and advises us that there's a lot more going on than one might guess.

Most USB-driven devices do their own DC-to-DC conversion of the input power. Running analog devices directly from a USB supply can be noisy, as these are switching power supplies and generally without much in the way of filtering.

Rolf also learned that a USB-C power source is unlikely to provide power to a non-USB-C device, adapters notwithstanding. USB-C PD (power delivery) supplies need to handshake; they will ignore non-USB-C PD devices.

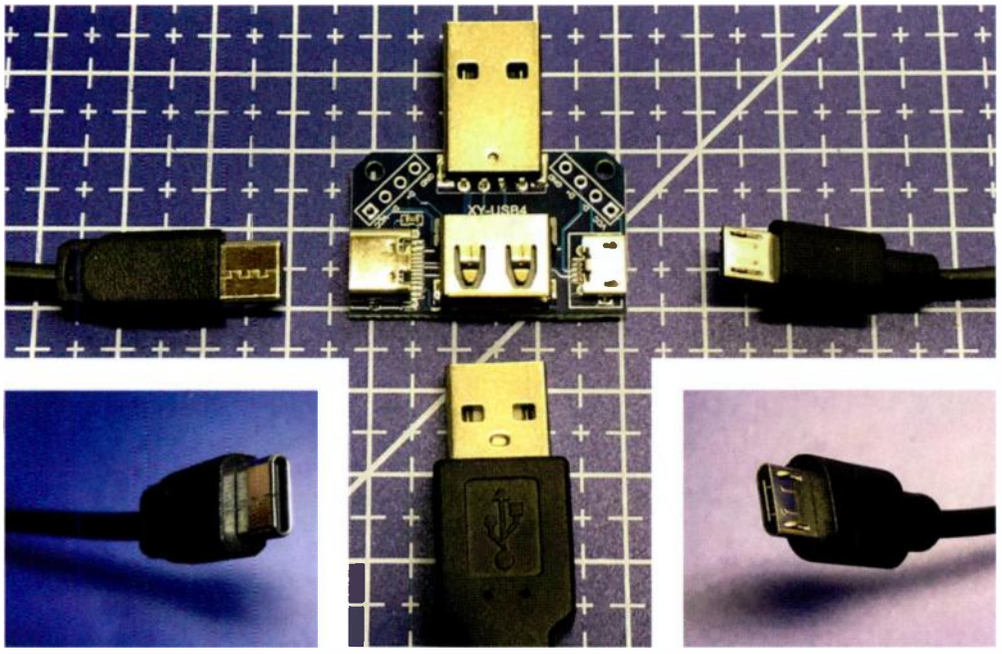
Conversely, many devices with a USB-C connector won't work when connected to a USB-C PD power supply. That's because they are not PD-compatible, they just happen to have a USB-C connector. Generally you can determine this initially by looking at the cable supplied with the device. If it comes with a USB-C to USB-A cable, odds are a USB-C to USB-C cable won't work.

Many devices support fast-charging protocols other than PD. QC2 and QC3 are common. These protocols use voltages on the data leads. In this case a charge-only cable will result in slow charging. A data cable will be required for fast charging.

And speaking of charge-only cables: If you have no option but to charge on an airport kiosk or hotel room lamp, you should use a charge-only cable. Bad actors have been known to replace such chargers with smart hardware that could compromise your device. Better to be safe than sorry.

PD-rated USB-C to USB-C cables have ID chips built into them. For high-wattage applications only, such as powering a PC, these types of cables are required. The resistance of the cable and the required current are also factors. If the voltage drop is too much, the device at the receiving end will think the power supply has insufficient current available and either slow-charge or just not accept the power source. Remember, Ohm's Law rules!

Rolf recommends screening every cable for resistance and for C-to-C, whether or not a smart chip is present.



Writer

Nick Langan

The author wrote recently about the successful radio program at a high school station in Maryland.

Above
The completed 100-foot tower.

Skirt antenna helps reimagine AM radio in SoCal

1370 KWRM looks to serve L.A. and San Bernadino with innovative setup

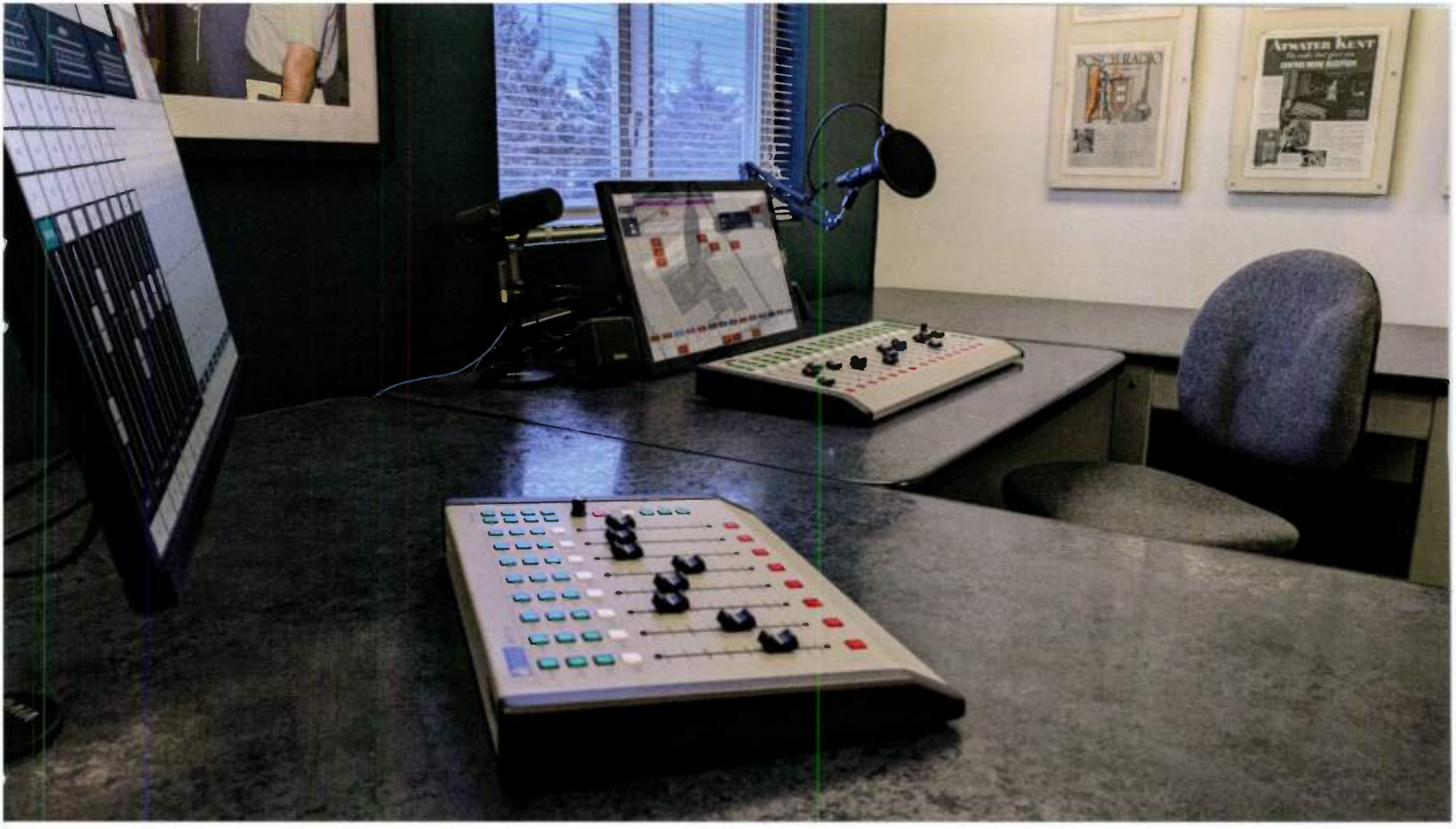
What would an AM transmitter site look like today if built from the ground up, on a piece of property constrained in size and shape? That's a question Lowell Homburger, principal at Abernat, Roxben & Boggs, and his colleagues needed to answer.

For decades, 1370 KWRM had operated from a five-tower array near the interchange of Interstate 15 and Riverside Freeway. But James Su, president of licensee EDI Media, was notified by the landowner that it planned to sell the property.

The station needed to find a new location as well as a new air chain. EDI brought in Homburger to coordinate the leasing of a location from San Bernadino County.

Generally speaking, Homburger feels that little or no attention is paid to the quality and efficiency of RF plants at today's AM stations.

"There just aren't a lot of people around anymore who understand AM. A lot of pressure is being put on Congress to mandate AM for all car radios, yet with the exception of a few top-rated news stations in major markets, the bulk of AM stations are staying together with baling wire and bubble gum."



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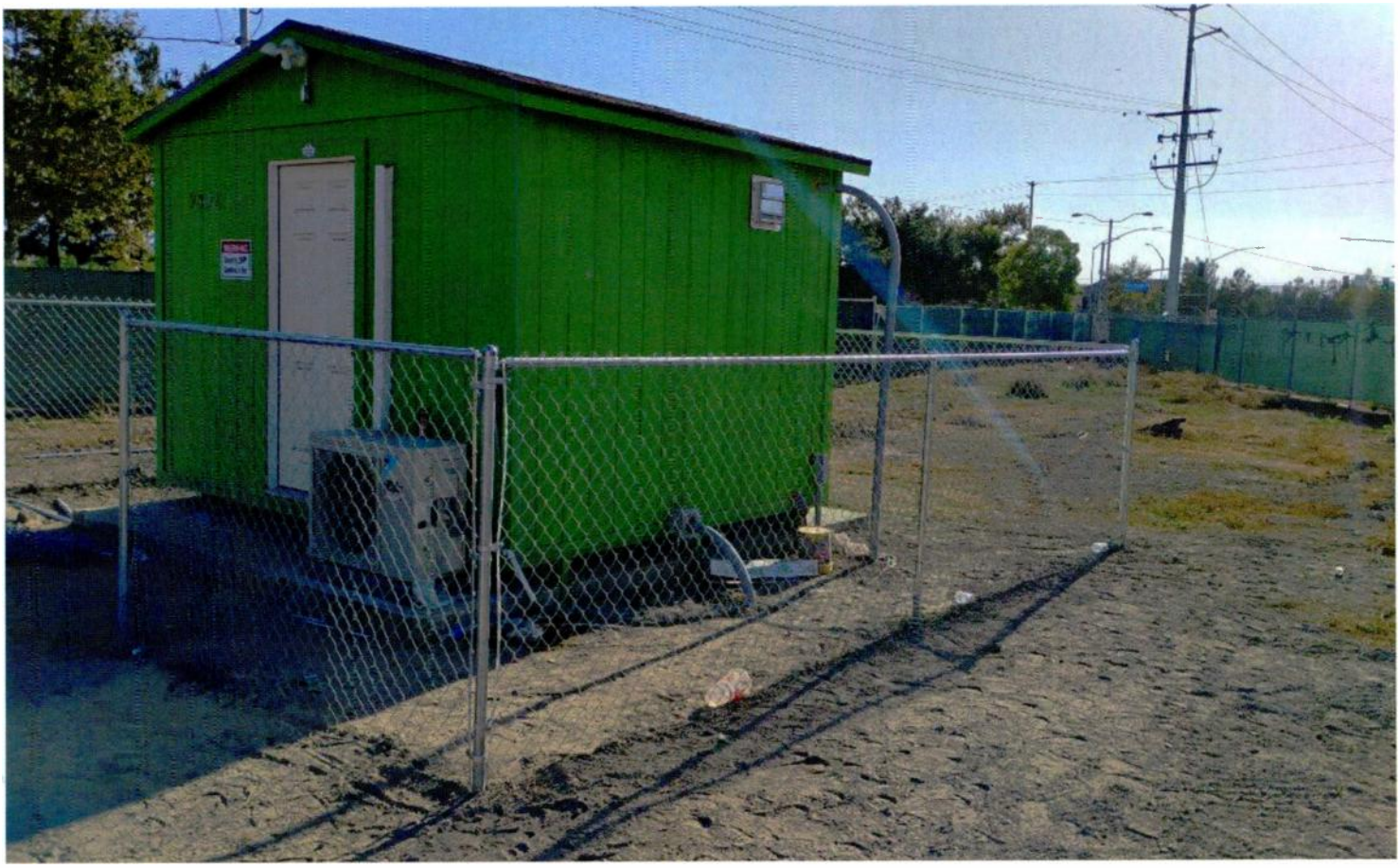

Above
The transmitter building is 10-by-12-foot structure purchased at Shed World.

Right
Chief project engineer Ashley Wallen, left, and studio design engineer Bob Burnham test the new Broadcast Electronics AM 1-A transmitter.

The FM dial in southern California is packed, so a translator was not a realistic option for KWRM. Yet its Chinese-language news, music and consumer-focused talk content offered an option otherwise unavailable on the radio in the San Bernardino-Riverside and Los Angeles markets.

"If you are offering a product people really want to hear, whether it's AM or FM I believe makes no difference," Homburger said.

Tight fit

With the help of Mueller Broadcast Design of LaGrange, Ill., a suitable new home for KWRM was found on property owned by the county, eight miles northwest of the previous site. Homburger said Su's connections in the county helped the process.

The site is about 1,500 feet from a runway serving Chino Airport along Kimball Avenue and is constrained in shape and size. How could KWRM go about deploying an antenna here?

The process has been complicated. The station secured special temporary authority to be off the air and has been renewing it since 2021. The land, surrounded by industrial parks, is an active sod farm. The plot would

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not support a very tall tower, much less more than one structure.

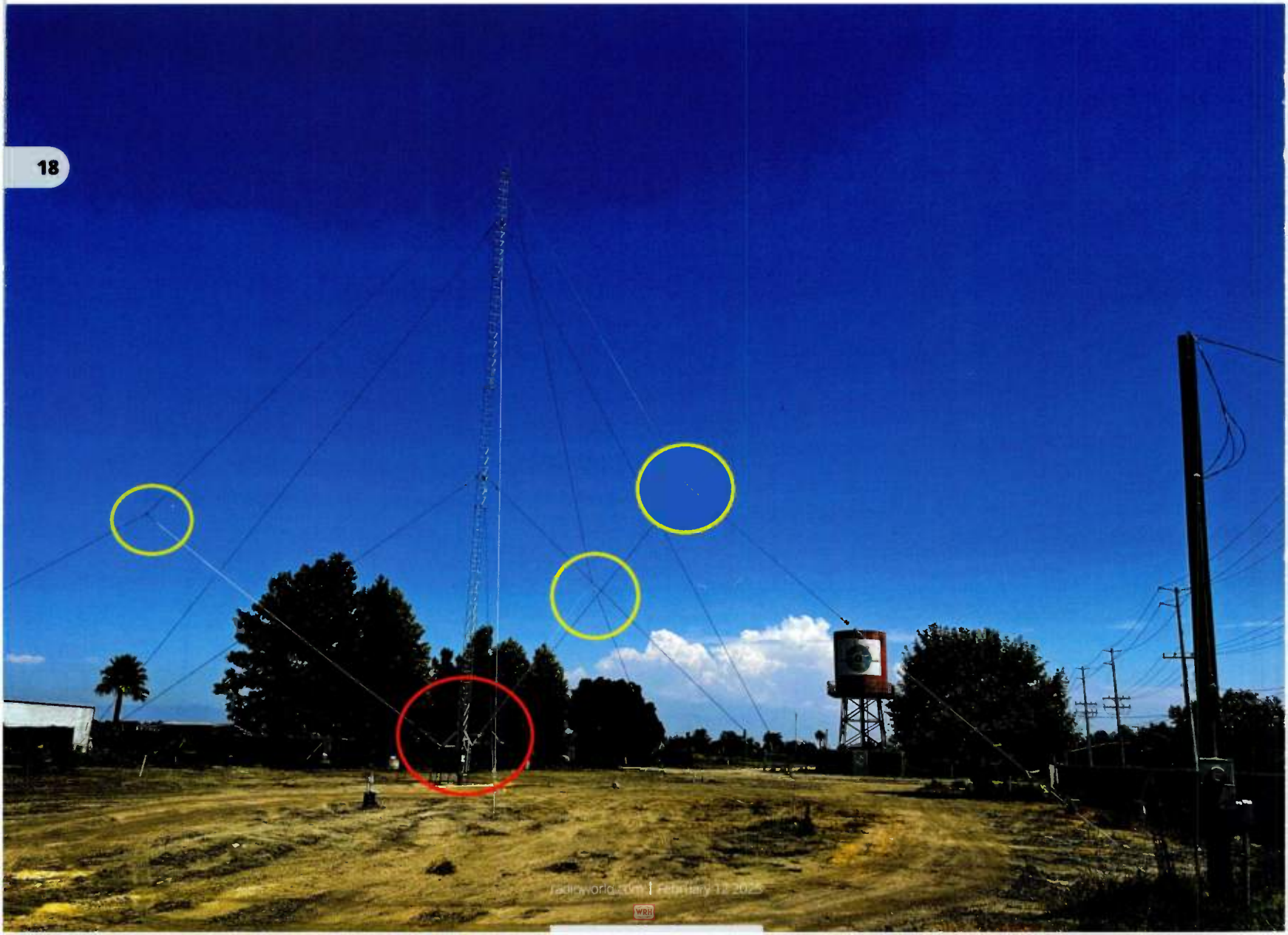
His firm keeps a list of engineers for both AM and FM. Longtime engineer Warren "Jerry" Smith, based in Jacksonville, Fla., casually suggested broadbanding the tower using a skirt-fed design.

Homburger noted that in an engineering paper at an NAB Show, Ben Dawson, P.E., of Hatfield & Dawson and Dr. Bobby Cox of Kintronic Labs had described the concept of the umbrella-spoke or "flared skirt" antenna that has been implemented here. Dawson said that, like the basic skirt feed system, the concept has been used internationally for many years, particularly for very short or very high-power antenna systems.

KWRM's engineering team, under the stewardship of Ashley Wallen, has been innovative in getting the site up and running. An experienced engineer who has worked in jungles in Central America and Africa over a 17-year career for VOA, Wallen designed the transmitter site layout. The physical work was done by Tower Engineering Professionals of Raleigh, N.C.

Below
The KWRM tower. Flared skirt wires are attached at three points to lines leading to anchor points. This keeps the wires away from the tower, necessitating a total of six anchor points.

> **If you are offering a product people really want to hear, whether it's AM or FM I believe makes no difference.**



The piece of land EDI obtained is rectangular, not square. The radials would normally be about 120 feet long, but the system could not be equally spaced; thus some extend only about 80 feet to the north and south, while a few others are longer than 120 feet to the east and west. Homburger feels this has improved the signal and credited Wallen for the idea.

With southern California's climate, water is an important commodity. The sod farm has an irrigation system. Wallen wondered if it could be tapped to give the land enough moisture; farm management agreed, so spigot heads and water supply lines were installed.

All equipment at the studio and transmitter is new. The studio is 22 miles from the antenna, in West Covina; its console is an Arrakis Systems H-10 and DJB automation supports on-air programming and operations.

Left
A fisheye view in the transmitter building during construction. Equipment includes Omnia processing, Delta ammeter, Broadcast Tools remote control, Furman line conditioner, Inovonics mod monitor and Comrex codec.

Smoothing the sound is an Angry Audio Chameleon, which Homburger likens to a modern Compeller: "It brings up the average modulation without sounding overly taxing." The internet stream uses a Telos Z/IPStream encoder and processor.

At the tower site, an Omnia Volt AM audio processor supports the Broadcast Electronics AM-1A transmitter. The tower itself was provided by Magnum Tower; P&R Tower erected it and installed the components. Bobby Cox at Kintronic implemented the design he and Dawson had described in their paper for the skirt antenna and ATU. Blueprints for its mechanical design were created by Paul J. Ford & Company of Columbus, Ohio.

Homburger believes no tower has been built recently like this in the U.S. The skirt design fit well, improving the bandwidth of the system while not adding excessive mechanical load to the tower.

Above
Inside the KWRM studio in West Covina, with Burnham setting up the new Arrakis H-10 console.

Satisfying results

On Oct. 6, KWRM finally went live from the Chino site. Homburger says the air chain has outperformed expectations. The 1370 signal can be heard at LAX some 53 miles from the antenna. In downtown Los Angeles, about 35 miles away, the signal is not great, though Homburger was pleased it made it there with daytime power of 1.1 kW. The signal has been heard as far west as Santa Barbara, north close to Barstow, and east to within miles of Palm Springs.

Most importantly, in the eastern L.A. suburbs with their significant Chinese population, KWRM's signal is excellent. The previous location did not provide nighttime signal there; now, Homburger says, the signal is local-like at night, and daytime coverage is improved. He said the skirt antenna has provided better bandwidth. With a broadband AM receiver, he said, fidelity is analogous to that of an FM signal.

A few other cool gadgets are helping KWRM's setup.

Frontier fiber-optic service is the primary connection at the site but was not in place when the station wanted to get on air, so an alternate method for signal delivery was needed. Homburger said the station used Simetry's IoT service through a BR1 Mini Cat-7 cellular router. For KWRM's IP-based STL, they've kept the connection as a backup, with a Titus MLW4 audio switcher. He encourages clients looking for backup data connections to use this as opposed to other cellular hotspots.

Su plans to add call-in shows for the Chinese-American community, along with spoken-word programming offering financial and medical advice. At first, EDI eschewed putting the station on an eight-second delay, but Homburger said it plans to install an Eventide system and Telos Hx2 digital phone hybrid.

EDI promoted the station launch at the annual Chinese American Film Festival, which it produces. KWRM will tap

> **“The signal has been heard as far west as Santa Barbara, north close to Barstow, and east to within miles of Palm Springs.”**

Learn More

"A flared skirt is a set of symmetrically spaced cables around the tower, which attach electrically near the top of the tower, extend outward from the tower along a path similar to the top guy cables, and then turn back in toward the tower base at a point roughly halfway down the tower," wrote Bobby Cox of Kintronic Labs and Ben Dawson of Hatfield & Dawson Consulting Engineers in a 2022 Radio World article.

"Insulators at this midpoint insulate the cables from ground. The cables terminate on an insulated feed ring encircling the tower base above ground level, similarly to a conventional skirt feed. The antenna is driven between this feed ring and RF ground. The resulting flared skirt takes the shape of a diamond, looking rather like umbrella spokes."

These systems are used to provide a feed arrangement for grounded towers that is mechanically simple but has certain attractive aspects.

"The wide bandwidth characteristics of the flared skirt make these antenna designs extremely useful for multiplexing several AM stations onto a common antenna," said Dawson.

"Many such systems are in use outside the United States for high-power AM broadcast, both in non-directional and in directional stations. Many of these operations are also multiplexed and are fully compatible with digital modulation, such as DRM," he said.

Read more at *https://tinyurl.com/rw-skirt*.

KWRM AM1370
ICTI
美國城市電台
洛杉磯 LOS ANGELES

into the ICITI TV cable network in southern California — also a part of EDI Media — which has its own news department.

Is the station's experience a model for others? Homburger says any broadcaster looking to downsize or move elsewhere should consider the umbrella-spoke/flared-skirt antenna.

"The value of land is too hard to pass up," he said, "and if you can't diplex somewhere else, this is a feasible way to make a station sound and propagate even better using a minimal amount of land for a short tower. It's an opportunity to cover your community with a wonderful signal from a small piece of property and an improved level of bandwidth."

About Buyer's Guide

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

Audacy's winning formula: Detroit Lions + Tieline

Its Tieline audio roster includes Gateways, ViAs and the Cloud Codec Controller

In the nearly 21 years he has been with Audacy, Ryan Sczomak has seen a variety of technology.

"Working with all six of our Audacy Detroit stations, Tieline is instrumental for us," the engineer said.

"We use Tieline as the backbone of the Detroit Lions Radio Network on '97.1 The Ticket' WXYT-FM, helping us ensure Detroit Lions listeners all over the state of Michigan can hear the Lions go all the way — hopefully to winning a Super Bowl."

His championship aspiration now will have to wait at least 'til next season. But in its game day Tieline roster, Audacy uses a Gateway 16 at Ford Field to broadcast all home games.

"We do this by using several stereo streams including main program audio, a producer communication channel, a feed to the stadium that is distributed to the concourse, and a feed to the Audacy suite," Sczomak said.

"The Gateway at the studio has a fifth stream that sends to our uplink provider. Having the functionality of multiple stereo channels on a single codec is extremely helpful, as the NFL is the most complicated to run of the four major sports. We utilize the ViA codec for our pregame remotes on 97.1 The Ticket, the Lions radio flagship; and on the road we travel with a ViA for play-by-play coverage."

Though they rely on a LAN connection in stadiums, having the LTE as a backup is a welcome feature.

Right
Audacy Engineer Ryan Sczomak with the Gateway codec at Ford Field.

"The dual internal LTE cards in the ViA make it an invaluable piece of equipment for us. We use SmartStream Plus redundant streaming for the stadium link to the studio and Fuse-IP data bonding from the studio to our uplink provider."

A Mackie VLZ mixer feeds the Gateway at Ford Field, while on the road the ViA is fed from several types of mixers. They utilize the Gateway on the studio side with Livewire, and the Lions network studio has an Axia Quasar board.

"For a typical Lions play-by-play broadcast, we encode using MusicPlus at 128 kbps. On the return path, we use a mono mix-minus feed and producer communication on the second channel. This allows us to integrate programs, mix minus and communications with a single codec."

They use the Cloud Codec Controller for every Lions road game. This allows Sczomak to remote in to configure the codec if the engineer is having any issues, something that happens as some road engineers are less familiar with the ViA.

"This gives both of us peace of mind knowing that I am able to check on the codec before the game to ensure that the send and receive numbers are appropriate and that both sides of the SmartStream Plus redundant streaming are connected."

He said ViA's audio quality is top-notch and very low latency.

"Having shows that are very heavily caller-based makes low latency a must. Our market's other two engineers have found the systems simple to configure, and the news and music personalities have made easy work of them, too. When I do have a question, Jacob Daniluck and the tech support staff at Tieline are always quick to help get us pointed in the right direction."

More Info
https://tieline.com

Tech Update

On-the-Go Broadcasting With a Single Button

Jutel has introduced the RadioMan Lamppu solution as part of its RadioMan6 system. Journalists covering news or sports can participate directly in FM or web broadcasts using a smartphone without additional equipment.

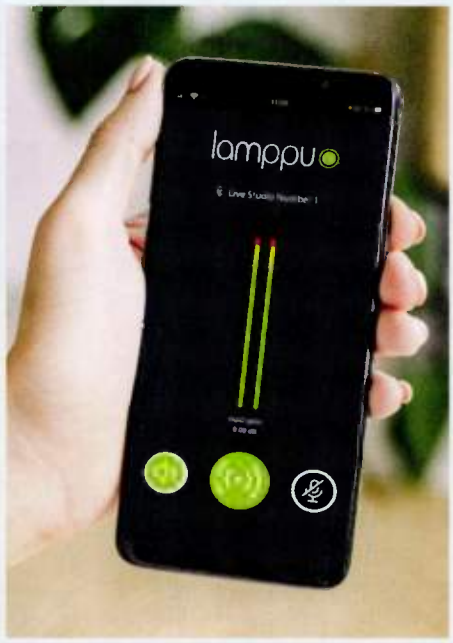
Lamppu is available as a browser-based tool or app for Apple IOS and Android platforms. It is based on the cloud-hosted RadioMan6 system, which supports simultaneous use from multiple locations via a browser-based application and audio interface.

"For example, an individual journalist can use the browser-based RadioMan-ON Air to play music while heading out to interview athletes on the field," the company stated.

"When the journalist activates the broadcast function on the Lamppu app, the music automatically fades out and switches to the interview. Once the interview concludes, the music resumes seamlessly. In a studio setting, the radio program producer can select specific Lamppu users to grant permission for direct commentary during the program."

The RadioMan user can access tools for production through a browser, including an audio editor, program planning, music selection and on-air broadcasting. RadioMan supports simultaneous operation across multiple production points.

In RadioMan, broadcasting and audio mixing are handled by a media note that can be located in the cloud or in a physical studio. The latest version node includes an audio processor that provides audio compression and level adjustments for FM or streaming.



Info: *jutel.fi/radioman-lamppu*

Access NX frees up a sports host

Audacy's Adam Epstein takes his Comrex IP codec with him

Adam Epstein is a local sports radio host working in Richmond, Va., on Audacy's WRNL 910 The Fan. He hosts a three-hour midday slot every weekday in the market as well as a Saturday morning show in Washington, D.C. Epstein also handles VCU basketball coverage including pre- and post-game shows live from the stadium.

Prior to June of 2022, Epstein didn't have a good solution for producing high-quality remote sports coverage.

"Several times we tried to use Zoom or traditional phone calls, but the quality was too poor to go out on the air," he said. "If I had to do something that sounded like a remote, I'd have to pre-record the segment in the studio and pretend I was live."

Getting a Comrex Access NX opened up opportunities, both for programming and for revenue.

"Now, if the sales team can sell an on-location show, I know I can reliably do it with no problems." For the majority of his broadcasts, Epstein uses MiFi and has also taken advantage of Ethernet connections when necessary. "We do our Monday and Friday shows from a bar and a bowling alley, respectively, and that's helped us make more revenue."

He found it easy to use the codec. "The touchscreen was very self-explanatory. I had one 20-minute meeting with my engineer to set up the WiFi connection and talk about access points. Since then I haven't had to do any troubleshooting. I just turn it on, connect to my MiFi and then connect to the station."

He feels Access NX has made his college basketball coverage more comprehensive and exciting. "I can go to any game now. Before, I had to stay in the studio; now I can travel because I know I have a reliable connection to do the pre- and post-game shows."

That ability to travel has opened other opportunities. "This year, we were lucky enough to take a trip to Vegas to be on Radio Row for the Super Bowl," Epstein said. "We did five live shows that week and had a ton of celebrity guests and superstar ex-NFL players come through. All we needed was the Comrex unit and two headsets. It was the best trip I've taken."

More Info

www.comrex.com

Above
Adam Epstein is courtside at the 2024 A10 Men's Basketball Championships in Brooklyn.

Right
Epstein interviews NFL agent Sean Stellato at the 2024 Super Bowl media week in Las Vegas.

The codec has even improved Epstein's quality of life. "I do a Saturday show on 106.7 The Fan in Washington D.C., and I used to have to either go into the Richmond studio or all the way to D.C. to do it," he said.

"With the Comrex, however, I can do my Saturday show from my house. And I love that it's not clunky, I can fit my Access NX in a carry-on bag with some padding to keep it safe. It's easy for me to take it on trains, planes, in my trunk — it doesn't take up too much space."

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Chiefs TV and SportsCaster are a winning team

High school students embrace their new Henry audio system

Chiefs TV, the student-led broadcast team at Sequoyah High School in Canton, Ga., recently began using a Henry Engineering SportsCaster Broadcast Audio Control System along with two Sports Pods.

"We are a small high school broadcasting class with limited resources," said Educational Specialist Brad Madd, instructor of audio, video, technology and film.

"We had been using an audio mixer and headsets that we connected to our broadcast kit. The original system was bulky and complicated for high school students to operate. It prevented us from having communication with our announcers, gave us limited control of the quality of sound and was cumbersome to set up."

One difficulty was that the broadcasters were outside of the press box, a short distance from their broadcast crew. With the SportsCaster system and Sport Pods, they have been able to have a seamless connection with a minimum number of cables. "This switch has enabled us to display a greater amount of professionalism."

Above
Max Swain and Jake Jira call a game. Sports Pods are on the table in front of them.

Below
Front and rear of the Henry SportsCaster

More Info
https://henryeng.com/sportscaster/

Mann and company liked that SportsCaster worked essentially out of the box.

"Setup and breakdown times were cut in half. We are in a different venue almost each week and we cover multiple sports. We are now able to set up quickly, and our high school students now have a setup that is user-friendly and allows them to work independently."

The students found the design and controls easy to use. They've been able to expand the show each week, starting with two commentators, then adding crowd and referee mics and sideline reporters.

"Unlike our previous setup, the SportsCaster allows our broadcasters to focus on the sports event, rather than continuously having to monitor audio and deal with technical issues," Mann said.

The Talkback-Intercom system allows the team's coach to be "in the ear of the commentators," filling them in on game-specific situations. Senior Max Swain said this gives him the confidence to include more in-depth commentary. His partner, Jake Jira, likes the ability to ask questions and get the coach's feedback.

Mann said the system also saves on time running cables and tuning audio. "We have been able to utilize that time to add multiple cameras, resulting in more coverage for our broadcasts and taking the hassle out of our audio. We can now include referee mics in our broadcast, so home audience can hear the refs announce game penalties."

Taking the show on the road has helped the program grow. "We have used the system for multiple sports with great results. Our audience from www.chiefstv.org has noticed the changes. We constantly hear from our viewers that our broadcasts have evolved to a much more professional level."

Tech update

AEQ App Supports High-Quality Phone Work

AEQ's Smartalk app enables sports commentators and reporters to use professional microphones via their smartphones, connecting to a station's audio codec for high-quality broadcasts, interviews and reports.

The web-based app generates links sent via email, WhatsApp or QR code. "Clicking the link the application sends an Opus audio codec that connects to the station's AEQ Phoenix audio codec," the company said.

Alternatively, the app, available on Google Play or Apple Store, installs a permanent application for regular professional use, supporting professional microphones and headsets, suitable for talent who work with a station on a regular basis.

The app requires no setup or codec; users can connect from anywhere with internet access. "They simply click the link, activate the connection and are on-air, reducing the need for mobile units."

AEQ Phoenix codec users can try the Smartalk app and later purchase an annual license. Licenses allow unlimited app downloads and link creations for the subscribed number of audio codecs.

The service supports guest management and dynamic channel assignment, with a dedicated administrator window for station setup.

For Venus 4 codecs, channels can be preset for Smartalk, while older models allow manual assignment. The app's Opus encoding also supports music broadcasting via remote PC connections.

Info: *www.aeq.eu/products*

BROADCAST EQUIPMENT EXCHANGE

Prepare your AoIP for wind, rain and fire

Natural disasters should prompt us to think about technical continuity

Writer

Dee McVicker

Marketing Director, Wheatstone

In January 2025 Los Angeles was on fire, causing historic damage to lives and businesses.

Crews at least had managed to push back the inferno to spare the broadcast towers on Mount Wilson, as of this writing. But just a few months earlier I sat on the very same edge of my chair and witnessed — along with everyone else — catastrophic hurricanes, tornadoes and flooding in the east.

We live in interesting times. With such catastrophic events in mind, I asked our support techs at Wheatstone how broadcasters can mitigate the internal risk from disasters on their operations.

Here are a few pointers that might be helpful for AoIP networked studios in particular:

- Keep an up-to-date, full system backup of your studio AoIP system in case a CPU loses power or goes belly up from flood or fire. Trey Bryant, who worked for Curtis Media before joining our tech team, told me: "When I was a CE, I had a flash drive that I carried with me everywhere that had all my software, licenses, drivers, etc, on it—basically a copy of everything I ran in my building and the config files from each of those machines. And I would regularly update that flash drive."
- Keep old soundcards on standby should you lose a computer with a crucial audio driver for the automation. In a pinch, some devices with a USB can be used as a USB interface to a nearby PC for quick audio out.
- Also, keep a backup Gigabit switch on standby as added insurance that you will be able to keep the AoIP system going in the event of an emergency.
- Invest in surge suppressors. Steve Walker, a support tech at Wheatstone who previously worked in the field at Radio One, suggests installing small UPS units in each studio and the TOC as one way to protect studio gear from power surges while keeping things up and running during short-duration power loss events.
- An even better, albeit more expensive, option would be a large UPS system that can power your entire TOC and studio core. Steve said this is easiest to implement when you are planning a new build and might be worth pitching to the decision-makers as a necessary, integral part of your new plant. Also worth implementing: a good studio grounding system (read Steve's article "Some Down-to-Earth Tips on Grounding" from a previous issue of Radio World, at *https://tinyurl.com/rw-grounding-2*).
- If at all possible, network regional locations together. If you already have AoIP networking at most of your studio locations and those facilities connect to their respective transmitter sites via AoIP, interconnecting it all together through commercial IP, fiber or microwave links is the next obvious step. Should one studio or transmitter get hit by disaster, you can continue emergency updates from any other studio location and/or switch to other transmitters in your interconnected network.
- Finally, have a backup audio player at transmitter sites so that if all else fails at the studio, you will be able to broadcast an emergency audio loop from there. This could be a regular recorder rigged to turn on in an emergency (which can be triggered by silence detection via the AoIP), or it could be a clip player that comes with the AoIP I/O unit.

da-kuk/Getty Images

Since I began writing this article, broadcast towers on Mount Wilson have resorted to backup power due to power outages. And just this morning, Floridians woke to almost 9 inches of snow, knocking out electricity and creating impossible travel conditions.

You can never be too prepared these days.

A drastic solution

In a recent online story, Radio World asked "Have You Been Hit by Copper Theft?"

Yes, we were ... three times over a five-year period, in fact (2016–2021).

Our five-tower array is on top of a mountain just outside of town. It's remote enough that anyone there can simply step off the tower field into the woods and you'd never know where they went. The tower field covers about eight acres.

We have a PTZ camera, but at night it still doesn't grab enough to identify anyone. Fortunately, insurance covered all three of these thefts.

The first one was a local guy and Pennsylvania State Police did track him down with video from our local scrap yard. They couldn't prove he stole it, only that he had "come upon it" while he was walking in the woods and thought he'd take it to the scrap yard. Um ... yeah right.

The second time was more coordinated but not very "clean." The third time I believe was professional. They found three ways into the tuning houses at each tower base. Also, they took every little scrap of copper, even 1-inch-long jumper wires. They did not touch anything non-copper. Ground copper straps and screens were completely pulled out.

After the third theft I decided to apply for non-directional day and night. Although insurance covered the full costs, it was becoming more and more difficult to get my ground system company to show up to do the work. I pay all invoices on time or even early, but I was moving down their priority list.

I figured that if someone does steal our copper again, at least I only need one tower repaired, not five.

Although our wattage took a hit with the re-licensing to non-directional, our coverage is better. Being non-directional has given our AM station a more uniform pattern and much better coverage for our community. This is for both day and night patterns.

FYI, we also installed an FM translator in 2018 that has 250 watts to supplement our AM station. We did a survey in 2023 and, at the time, 52% of respondents said they listened to us on the FM translator. We do a lot of local high school sports coverage and people really like the coverage our translator provides as opposed to the previous high- and low-power and directional change we were required to do before going non-directional.

Good luck catching these thieves.

Argie D. Tidmore
Owner/GM
Pottsville Broadcasting Co.
Pottsville, Pa.

How to submit

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

> **They took every little scrap of copper, even 1-inch-long jumper wires.**

Copper with a twist

Paul, none of the stations with which I'm connected have suffered this problem. But here in L.A. we have been seeing an upswing of a type of copper theft that few would have seen coming.

Public EV charging stations are having their cables cut right at the control box. It seems to be confined to charging stations in parking lots (as opposed to on the street), probably to give the thieves some degree of cover.

The thieves appear to know that there is no live current in those cables until the customer authorizes the control box via credit card, app or RFID tag.

At six to 10 feet in length, a cable heavy enough to handle 220 VAC has an amount of copper that apparently is worth stealing.

K.M. Richards
Van Nuys, Calif.

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