



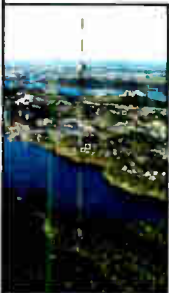
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INSIDE

NEWS & ENGINEERING

- Jay Adrick about a fresh delivery platform for radio: ATSC Mobile DTV. — Page 7
- 'Worst site' pix: A messy RF plant turns into a desert showplace. — Page 16



DABBLING IN DAB+

- Sweden explores a new digital direction. — Page 10

TIME MANAGEMENT

- Buyer's Guide looks into verification, logging, delays and timeshifting. — Page 24



Westwood One Preps For Winter Olympics

Network Plans for Exclusive Radio Coverage of the Games

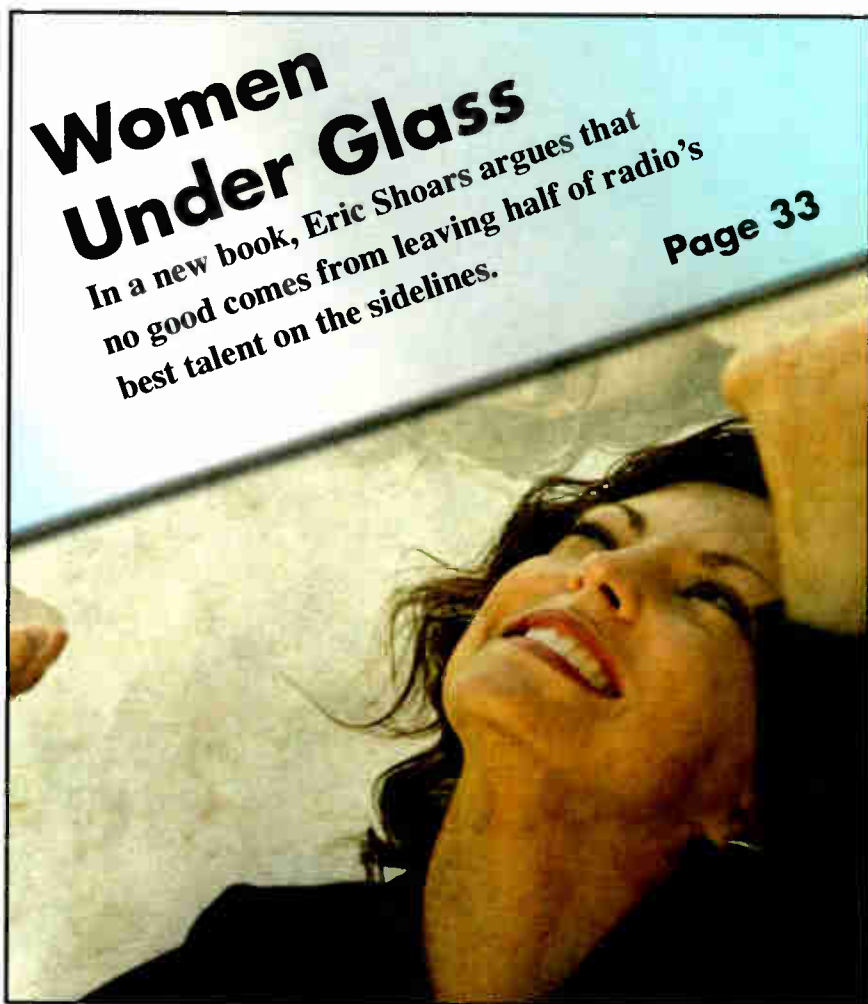
BY RANDY J. STINE

NEW YORK — Mitch Glider and his team of broadcast engineers at Westwood One have spent months putting together a technical plan they believe is worthy of the world-class athletes the radio network will cover in Vancouver at the Winter Olympic games.

They hope their prep work will help the broadcast network deliver 17 consecutive days of flawless coverage.

However, one thing Glider, vice president of engineering at Westwood One, has learned from his work at previous Olympics is that telecom can be balky at times regardless of planning.

"ISDN, T1, the Internet, it all acts up



Women Under Glass

In a new book, Eric Shoars argues that no good comes from leaving half of radio's best talent on the sidelines.

Page 33

when you least expect it and when you're short on time to fix it," Glider says. "Covering the Olympics is like managing one giant remote for over two weeks."

Experience is an advantage for Westwood One, which has held the exclusive radio coverage rights dating to the 1988 Summer Olympics in Seoul, South Korea.

The company — which is one of the largest producers of radio programming in the United States and distributes the news operations of CBS Radio Network, CNN

and NBC Radio — declined to release details about how many affiliates have cleared its Olympic coverage. Overall it serves some 7,500 stations with approximately 150 programs and is known for its coverage of live events including National Football League games.

Technical planning for the Vancouver Winter Games began in the fall, with input from Westwood One programmers including Howard Deneroff, vice president of sports.

(continued on page 3)

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OLYMPICS

(continued from page 1)

The engineering staff “really can’t move forward until we know what the programming schedule is going to look like.” Glider said.

Westwood One plans to provide short-form updates to its affiliates three times an hour, 24 hours a day from Feb. 12–28, according to programmers. Long-form coverage will consist of two hours of wrap-up coverage, analysis and interviews each evening. John Tautges and Kevin Kugler will host the “Olympic Roundup.” In all, the radio network will send approximately a dozen announcers to Vancouver.

Play-by-play of some hockey games and live coverage of figure skating, speed skating and skiing also will be available to affiliates, network programmers said.

EFFICIENT OPERATION

Glider, who oversees broadcast and satellite uplink facilities at Westwood



Westwood One used several gutted studios at its broadcast center in New York to stage equipment for use in Vancouver. At right, Mitch Glider with a rack that’s headed for Vancouver.



Mike Eaby also will handle some technical duties.

“It is a very expensive undertaking to cover the Olympics,” Glider said. “It’s expensive for international travel, for accommodations. We obviously have a budget to stay within and it’s pretty tight.” The United State Olympic Committee

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One, will not make the trip to Vancouver. The Westwood One technical department will send broadcast engineers Lenny Proscio and Wally Tienken about a week in advance of the games; only one will stay for the duration. Producer

estimates costs of around \$200 to \$300 per day per person for lodging, meals and transportation for these games.

More than 4,000 TV, radio and online journalists are expected to call the International Broadcast Centre home dur-

ing the Olympics. Westwood One will operate from studios in space leased in the NBC Television complex within the IBC.

The radio network will work from several small soundproof suites built to

(continued on page 5)

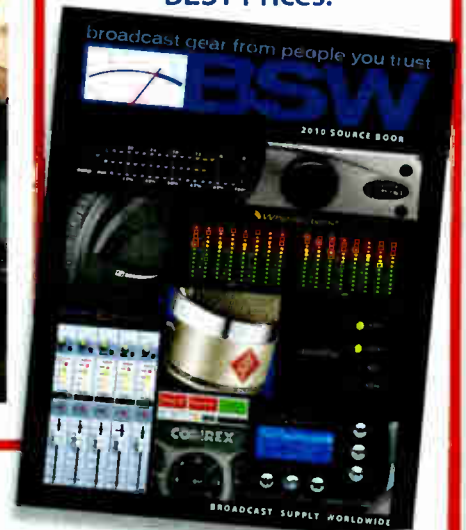
HEADED TO VANCOUVER

	Equipment	Model #	Description
4	SAS Sierra Automated Systems Intercom Head	ICM-32	IFB Venues - IFB New York-Listens-Intercom to Engineering TX/Editor
1	SAS Sierra Automated Systems System Controller	AXC-8 Alpha	X-Y controller for Router
1	SAS Sierra Automated Systems Control Panel	CP-16	Single Output controller X 2 for test meters/studio in Engineering
1	SAS Sierra Automated Systems Automation	RIO Link	32 X 32 SAS router (Rio in Standalone mode) Data/GPI/O
3	SAS Sierra Automated Systems RJ45 Break Out Panels	RM2116X3	Audio/Data/GPIO all break out to rack mounted RJ45
1	McCurdy Audio Meter Test Set	ATS-100	Analog audio metering
1	Wohler Analog Audio Monitor Panel	AMP2A	Monitors for test buss
1	GoldLine Audio Test Set	TSIRMX	Tone generator
3	CCS Corporate Computer Systems	CDQ Prima 120	ISDN Codec
3	Symetrix Dual Compressor Limiter	425	Brick wall limiting across ISDN inputs
1	Mackie Mixer	1604	Long Form mixer
2	Dixon Mixer (With USB sound card)	NM-250 MKII	Short Form/Editor mixer
3	Telos Hybrid	Telos One	Phone hybrids at each position
1	Dell Computer	Optiplex 745	SAS server/software
4	Lenovo Laptops	T600	Adobe Audition/SAS soft heads (router control)
4	Marantz Flash Recorders	MAR-PMD620	Recording interviews and nat sound

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AM's Successes Vary Widely

But 'Mom & Pop' Doesn't Have to Mean 'Nickel and Dime'

Our ongoing series of articles and opinions about AM radio's business outlook continues to generate plenty of interest. The latest responses are to a commentary by Scott Taylor in the Jan. 1 issue: I suspected his observations might trouble some people but I felt they were too important not to share.

Taylor has visited a number of AMs while doing contract engineering work; he wrote that he has seen multiple mom-and-pop stations that are "limping along," essentially operating on little more than a "whole lot of wishing and hoping that things will improve."

Based on what he's seen, Taylor feels some owners are "delusional" about the value of their small-market AM stations. He also has heard from several who were considering simply turning in their licenses or selling for the value of their land.

One reader took strong issue with Taylor's conclusions, describing

him with a term I won't repeat:

"The [individual] who wrote 'AM, Losing Its Grip on Reality' needs to talk to those of us who continue to be meaningful in the community and profitable. It takes determination, creativeness and persistence but it is being done."

I invited this reader to tell us more about his own success stories; he said he'd consider.

A different kind of reaction came from a man in New Jersey, who wrote: "Just wanted to say *great editorial* on AM!"

"We're looking into the possibility of buying an AM in southern New Jersey/Pennsylvania and have been dumbfounded by what owners are asking for their stations," he said. "They're thinking someone is going to pay a ton of money for their AMs, and that's not going to happen ... not in this market and not any time soon ... probably never."

"Thousand-watt AM stations in my opinion are probably worth not much more

than the land they sit on, even in fairly populated areas. The world has changed," he continued. "We're looking to buy, but it's got to be at a price that's a steal."

For this reader, "delusional" valuations for AMs are part of a larger problem:

"The truth is, no matter how much the economic cheerleaders talk up the notion that the recession is over, the evidence dictates that more and more people are being foreclosed on, business is drying up, radio will never have the same viability, China continues to gain the advantage on manufacturing and our political leaders have no idea how to turn this country around (which would be to force every multinational corporation to come back to America)."

This would-be broadcast licensee concludes: "Radio — and America, for that matter — are in for a tumultuous ride."

Meanwhile, our friend and vocal reader Jerry Arnold, DOE for Midwest Communications/WPRS(AM) in Terre Haute, Ind., offered a more detailed reaction to the article.

"Yes, as Scott Taylor says, there are many small mom-and-pop stations on the verge of bankruptcy. Some have put themselves into that position. But I also know of many that are doing quite well."

Jerry wanted me to know about a station for whom he does occasional contract work, WNDI(AM/FM).

"Sullivan is your quintessential one-horse town in southwest Indiana, population around 5,000. The AM is a 250 Watt station and the FM is a 3,000 Watter.

"John and Teresa Montgomery, who bought this combo a few years back, run it as a business all by themselves. He does most of the sales work, the programming — much of which is *live* and *local* — and most of the announcing and voice work. She does the billing and office work.

"They were able to pay off the note on the two stations, including real estate, in less than 10 years," Jerry says. "Their spot loading is nearly maxed out months in advance on both stations. And while he doesn't have a brand-new super whizbang board, it is a quite serviceable one, for which parts, if they're necessary, are still available."

And don't assume that due to their rural location, no other city-grade signals appear on AM or FM in Sullivan. Jerry says at least 10 FM stations and five AMs in nearby cities blanket Sullivan.

"To me, one of the *biggest* mistakes many small-market stations make, regardless if they are AM or FM or both, is to try to run the station as automated

(continued on page 6)

FROM THE
EDITOR

Paul McLane



ALL ABOUT AM'S RELEVANCE



I've posted the articles in our series about AM, as well as reader commentaries, in one place so you can review them easily. They are at www.radioworld.com/article/92680. Here's a list of what you'll find there:

"AM, Losing Its Grip on Reality"
Commentary by Scott Taylor
(Jan. 1, 2010)

"It's Time for an AM Radio Revival"
Commentary by Stephen Winzenburg
(Dec. 16, 2009)

"AM, and How! Not All Stations on the Senior Band Are Struggling"
News analysis by Randy Stine
(Nov. 4, 2009)

"AM: Talk About the Passion"
From the Editor column by Paul McLane
(Nov. 4, 2009)

"Here We Go Again"
Commentary by Ed De La Hunt
(Oct. 7, 2009)

"AM Remains a Vital, Important Medium"
Commentary by R.V. Zeigler
(Oct. 7, 2009)

"AM's Relevance: 10 Steps to Fix AM's Problems"
Commentary by Mark Heller
(Oct. 7, 2009)

"Is AM Radio Still Relevant?"
News analysis by Randy Stine
(Sept. 1, 2009)

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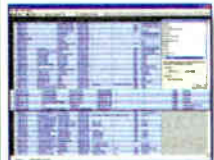
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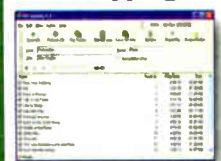
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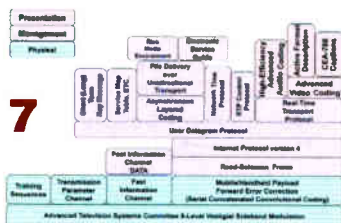


THIS ISSUE

JANUARY 13, 2010

NEWS

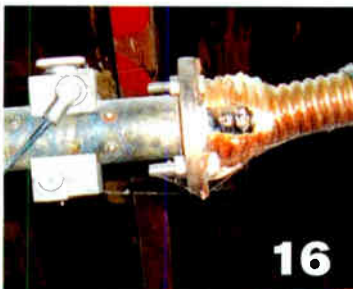
- Westwood One Preps for Winter Olympics 1
- AM's Successes Vary Widely 4
- Snowe Wants More FCC Technical Experts 6
- The Other Way Radio Can Go Mobile 7
- NewsWatch 8, 17

**DIGITAL RADIO NEWS**

- Sweden Resumes DAB Interest 10
- Digital News 12

FEATURES

- Workbench: Messy Site Becomes Desert Showplace 16
- Walker, Still a Joyful Boy 17
- May I Climb This De-Energized Tower? 20
- Who's Buying What 21
- Protect All Those Connected Assets 22

**BUYER'S GUIDE**

- 25-Seven PDM Bans Bad Words in Boston 24
- School Simplifies Logging With Sonifex 26
- BSI Eases Life for Contractor 28

**OPINION**

- Reader's Forum 32-34
- How to Grow More 'Best and Brightest' 33
- A Call to Gather Young Minds 34

OLYMPICS

(continued from page 3)

record short- and long-form sessions. A small bullpen area will include an audio workstation for editing pieces. A small control room also will be built.

Glider, who served as technical manager for Westwood One during the past two winter Olympics, began the Vancouver planning process by using Visio diagramming software to conceptualize and draw the broadcast studios the network will build.

"(Drawings) are done before anyone picks up a punch tool or wire stripper. Then we put together our gear setups. The emphasis around here is on pre-wiring.

"I'd rather our guys not have to wire anything on site. Less and less work is done at the site with each Olympics we broadcast."

Covering the Olympics is like managing one giant remote for over two weeks.

— Mitch Glider

Armed with his scaled space drawings for the studios within the NBC Universal complex, Glider orders chairs, file cabinets, lamps and any other pieces of office equipment that Westwood One might need in its studios. Those requests are placed through NBC.

"The local host committee provides the space for us, but NBC handles all of the construction, electrical and telecom on site. We just pick, a la carte, the materials we need. Olympic Broadcasting Services Vancouver is the host broadcaster." The International Olympic Committee created Olympic Broadcasting Services, beginning with the Beijing Summer Olympics in 2008, to serve as host broadcaster for future Olympic games.

Once the scope of facilities is determined, Glider next moves to the broadcast gear required for 17 days of 24/7 operations.

"We decide on consoles, routers, intercoms and the kinds of connectivity we want. We are going with ISDN in Vancouver, partly because of cost considerations. We then order any new equipment we might need."

Cold weather in Vancouver, barring a blizzard or ice storm, does not concern Glider, who said previous winter Olympics have not presented many weather-related challenges to the equipment.

STAGING

Westwood One, which is owned by private equity firm The Gores Radio

Group, used several gutted studios at its broadcast center in New York City to stage the equipment going to Vancouver. The broadcast equipment was assembled in mid-December in an attempt to simulate an actual broadcast from Vancouver.

"Our approach is very modular. Everything is in the rack already. And nothing left New York before it was tested.

"Wally (Tienken) and Lenny (Proseco) built all of the harnesses. Everything is pre-wired and color-coded. Then we packed it and shipped it," Glider said.

A Sierra Automated Systems RIO routing system will be the backbone of

the Vancouver operations at the IBC, Glider said. SAS integrated intercom and talkback systems will enable producers and talent to communicate between venues, the IBC and New York. Westwood One uses CDQ Prima 120 ISDN codecs.

"We've used the SAS 32KD router for previous Olympics but will use the SAS RIO in Vancouver. It's a 32 x 32 router that is a stand-alone, a 32-square mono router. We'll also be using four brand-new ICM-32 intercom heads.

"Overall, we'll be taking less equipment this year than previous Olympics.

(continued on page 8)

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SNOWE WANTS MORE FCC TECHNICAL EXPERTS

The "FCC Commissioners' Technical Resource Enhancement Act," introduced by Republican Sen. Olympia Snowe of Maine in December, is interesting.

As we've reported, the measure would add a staff position to each of the five commissioner offices at the Federal Communications Commission. The staffer would be an electrical engineer or computer scientist.

In her statement in the Congressional Record, Snowe said it's "imperative" commissioners have staff with the technical expertise to make informed decisions as telecommunications technology advances. Having both legal and technical staff is essential when

commissioners are addressing increasingly complex technical and legal matters, she said.

"While the Office of Engineering and Technology, OET, has been and will continue to be a valuable resource, there has been concern in the technical community about the depletion of engineering expertise at the commission.

"From 1995 to 2001, the FCC's engineering staff dropped by more than 20 percent. And at the time, more than 40 percent of the engineering staff were to be eligible for retirement between 2001 and 2005."

More recently, Snowe points out, the agency's managing director has found that the commission has a shortage of network engineers.

Several engineering membership and standards bodies have weighed in voicing concern about what they say is the lack of technical depth at the FCC.

The Institute of Electrical and

Electronics Engineers sent a letter in 2008 to then-Chairman Kevin Martin, writing: "Despite the generally excellent nature of its internal staff, given all of the technical issues within the FCC's jurisdiction, it may be prudent to seek means to supplement the internal technical capabilities of the commission."

The Society of Broadcast Engineers has set as one of its legislative goals to promote the maintenance or increase of technical expertise within the commission "to ensure that decision-making by the FCC is based on technical investigation, studies and evaluation rather than political expenditures."

Years ago there were engineers on the staffs of each commissioner. Adding more technical experts at the agency can only be a win-win and I'm thinking may lead to quicker decisions in some cases. Let's hope the Commerce Committee takes up the measure soon. Tell me what you think at Lstimson@nbmedia.com.

AM

(continued from page 4)

as possible," Jerry believes.

"On initial investigation, it looks attractive due to the lack of human (read: paid) interaction that is required. But as has been proven time and time again, that alleged benefit is rarely realized for several reasons."

He cites the cost of acquiring an automation system and what he believes is its "pre-determined point of obsolescence" as well as "the 'turn-off' factor of the listeners who *want* to be able to know they are listening to some guy *at* the radio station, and possibly contact them. This cannot be over-stated.

"When listeners tune out for this reason, so do sponsors, and there starts the 'domino effect,' which *will* inevitably lead to the bankruptcy about which we have already spoken."

Jerry concludes: "So in a way, Scott Taylor is correct, except he should rewrite the title of his article to 'Broadcasters Losing Their Grip on Reality,' and note my reasons why. One more time for those who have missed my many articles on this subject in the past: *It's not the medium, it's the message.*"

Thanks to all who continue to comment on this topic.



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The *Other* Way Radio Can Go Mobile

ATSC Mobile DTV Offers Radio Broadcasters a Fresh Delivery Platform

BY JAY ADRICK

The author is vice president of broadcast technology for Harris Broadcast Communications.

There has been much discussion among broadcasters and equipment manufacturers about the benefits of ATSC

COMMENTARY

Mobile DTV for terrestrial broadcast TV stations — yet radio has an opportunity on these new mobile devices as well.

The ATSC M/H (Mobile/Handheld) standard offers the local TV broadcaster the opportunity to leverage a slice of its station's bandwidth to terrestrially deliver digital mobile TV channels alongside regular DTV and HDTV services. There are also opportunities for the local broadcaster to generate new revenue streams through intuitive software widgets and more traditional business opportunities.

Radio broadcasters have an opportunity to take advantage of the ATSC M/H standard. The standard is proven to support up to 50 mobile radio services on a

TV channel in lieu of mobile video service. While it is unlikely a TV station would want to carve out space for 50 radio services, there are opportunities to create a balance of mobile TV and radio services within the same bandwidth allotment.

A typical radio channel occupies between 24 and 48 kilobits per second of bandwidth. This means that a TV station with 900 kbps of available bandwidth for mobile services likely has space for audio-only services. It presents an excellent opportunity for radio and TV broadcasters in the same markets to partner for the benefit of both their stations and the consumers, who would receive both services on the same device.

ATSC M/H

The ATSC Mobile and Handheld (M/H) standard enables the delivery of IP data to mobile devices. That data could be real-time streams of video with audio, audio only or the delivery of files in non real-time. The data is arranged in ensembles or clusters of data that are coded with the same appropriate error correction.

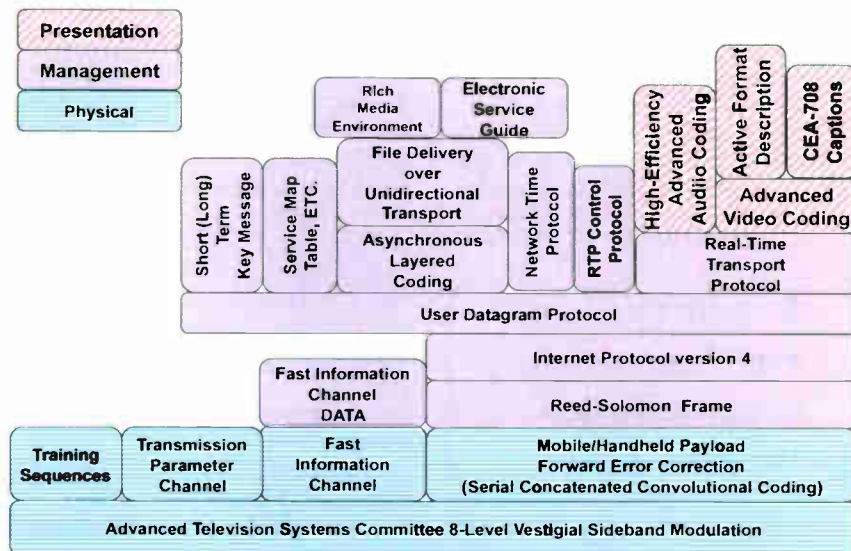
Depending upon the amount of transmitted bandwidth required for delivering

this data, a piece of main transport stream in the ATSC digital television signal is reserved to accommodate both the payload data, as well as the error correction and coding used to harden the data for mobile service.

The resulting IP stream could vary

anywhere from several hundred kbps to several Mbps depending upon how much mobile payload the broadcaster wishes to transmit. The audio system employed for this service is HE-AAC version 2.0 — the high-efficiency version of the Dolby Digital Advanced Audio Codec. It is typically encoded somewhere between 24 to 48 kbps for a stereo audio channel, with the option to transmit 5.1 surround sound audio on that same channel.

(continued on page 8)



ATSC M/H Layer Stack Acronyms, Deciphered



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World Radio History

ATSC M/H

(continued from page 7)

The ATSC M/H standard allows for a range of audio bitrates to fit the desired quality, provided they are coded with the HE-AAC format. This allows for plenty of content flexibility in what is ultimately transmitted to consumers. A radio broadcaster could also supply still images of an album cover or a host to coincide with the current audio program (similar to Music Choice or another TV audio service or what's soon to be possible with HD Radio). These images require very low bitrates. Images correlating to advertisements are not out of the question.

The software-defined nature of the ATSC M/H standard has been an attractive lure for local broadcasters. The standard provides room for an Electronic

A radio broadcaster would likely need to partner with a local TV station.

Service Guide to accompany mobile TV channels. Similar to a cable or satellite TV service or to the electronic program guide being developed for HD Radio, the ESG delivers program information, channel changing and other software-driven features for the benefit of the consumer. This same service can also be used for radio programming, providing consumers with in-depth information about the current service and future broadcasts.

At the 2009 NAB Show, Harris announced a partnership with Roundbox for an Electronic Service Guide system that will deliver a variety of software widgets to broadcasters that are delivered as files. Roundbox provides software to broadcasters, mobile operators and device manufacturers to deliver mobile television as well as enable new data services. The widgets essentially are pop-ups that appear in the lower portion of the viewers screen on the mobile device display. Consumers click on the widgets to receive local information that can include sports updates, news bulletins, weather and traffic information or more.

The widgets also present a revenue-generating opportunity for broadcasters in the form of advertisements or interactive services with richer graphics. At any rate, the widgets provide a Web-like, on-demand content experience that is delivered over the terrestrial broadcast model using technology that is being standardized by the ATSC as part of a future NRT (non-real-time) standard. Any content a broadcaster might post to its Web site is an ideal candidate for publishing as a widget over the mobile broadcast network.

Television stations with an existing M/H-capable system will find it easy to accommodate radio services within the same infrastructure.

A typical Harris MPH (Mobile-Pedestrian-Handheld) system for ATSC M/H Mobile DTV includes a Harris NetVX audio/video encoder and SynchronyMNA mobile network adapter to encapsulate and multiplex the IP video, audio and data services together; as well as a Roundbox ESG server that imports guide data and widget information from a station's Web server.

The services are multiplexed with the main ATSC services and transported to the Harris Apex M2X software-defined exciter. The exciter's signal is ultimately amplified in the transmitter for terrestrial delivery to both home and mobile consumer devices.

The entire solution adds about \$120,000 to the cost of a digital television transmission system. It should be noted that the MPH system can be used with virtually any digital transmitter, Harris or otherwise, and that there are other brands of ATSC M/H-capable solutions on the market.

A simple audio encoder is added to the NetVX to enable radio services. This encoder costs approximately \$12,000. The ROI for adding a radio service is easy to envision considering the initial, relatively minor, investment.

BUILDING RELATIONSHIPS

It's clear that to make this happen, a radio broadcaster would likely need to approach a local TV station as a partner. There could be business tradeoffs. One scenario might require that a radio station broadcast promos for the host TV broadcaster. A TV station without HD network commitments may have more bandwidth at its disposal, and may have an easier time providing space for radio broadcasters in its service lineup.

Broadcasters with ownership of TV and radio stations in the same market can clearly play a leadership role. With an abundance of programming to consider, there is an excellent opportunity for these broadcasters to set an example of how TV and radio channels can co-exist on the same mobile service.

The consumer is the winner in the end, with television, radio and perhaps phone and/or high-speed Internet consolidated onto a single device. Harris has demonstrated the ability to transmit multiple services within the ATSC M/H standard at the 2008 and 2009 NAB Shows, as well as CES 2009. We believe this an ideal opportunity for broadcasters to team up and offer a robust, mobile-oriented consumer service that can potentially open new business partnerships and revenue streams for the broadcaster.

E-mail the author at jadrick@harris.com.

OLYMPICS

(continued from page 5)

The technology is such that we just don't need as much gear. The overall reliability and flexibility of what we have has improved," Glider said.

Broadcast positions at venues like BC Place Stadium, site of the opening and closing ceremonies, Richmond Olympic Oval and Whistler Mountain will be equipped with a four-wire system and an AEQ ISDN box with three headset plug-ins, a line-input level control and level control for IFB.

Westwood One will be provided raw natural sound from various venues, Glider said, and can integrate that into short- and long-form reports.

Glider said Westwood One's studios at the IBC will feature Mackie 1604

mixers, Dixon NM-250 MKII newsroom mixers, Telos One phone hybrids and Lenovo T600 laptops. Reporters will carry Marantz PMD620 recorders with 4 GB of flash memory, Glider said.

Producers and reporters will share onsite editing duties working from the soundproof suites on laptops loaded with Adobe Audition digital audio editing software. Westwood One will not use wireless mic gear at this year's games.

Olympic programming will be back-hauled out of the International Broadcast Centre via ISDN to New York, where commercials will be inserted and the content sent along for distribution to affiliates.

Company officials would not disclose what Westwood One paid for the radio rights to provide exclusive coverage of the 2010 Winter Olympic games.

NEWSWATCH

HANDHELDS GAIN IN WI-FI

Wi-Fi handset shipments will continue to show strong growth over the next several years. That's according to a study from In-Stat.

With the increasing prevalence of Wi-Fi-enabled handsets, hotspot use by handheld devices has increased significantly. As a percentage of total connects, handhelds increased from 20 percent in 2008 to 35 percent in 2009, bringing total worldwide connects to 1.2 billion, according to the research organization.

By 2011 handhelds are anticipated to account for half of hotspot connects, reports In-Stat in "Wi-Fi Hotspots: Cellular Handsets and Portable Devices Drive a Market Renaissance."

Other factors are affecting the growth of handhelds: Mobile carriers are promoting the use of Wi-Fi-enabled handset devices on their networks. New dual-mode Wi-Fi phones are coming to market and growth of applications, such as content download, will drive the use of handheld devices over the coming years, says In-Stat.

The ubiquity of Wi-Fi has created hotspot coverage as an expected amenity at many places of business, says In-Stat analyst Frank Dickson. While consumer or leisure users do not often carry laptops, they do have Wi-Fi enabled handhelds and are using these devices to access hotspots. This, coupled with the service being bundled with mobile

plans, is making hotspot access more consumer-oriented.

NEWS ROUNDUP

MUSIC LICENSING: The group that negotiates music licensing fees for much of the radio industry with performing rights organizations agreed with ASCAP and BMI on temporary fees to be paid by radio operators. The Radio Music License Committee said the temporary fee is a 7 percent discount from 2009 station music license fee levels; it went into effect Jan. 1. Absent a negotiated settlement between the RMLC and ASCAP on long-term fees, the U.S. District Court in New York will determine interim and permanent fees for the new contract period, according to the RMLC.

OWNERSHIP: The Federal Communications Commission again suspended use of new Form 323 for commercial broadcast licensees. As a consequence, the agency postponed the Jan. 11 deadline to file Biennial Ownership Reports. Those who had already started filling out the new forms can still turn those in. The commission said it would announce the reactivation of the new form and the new filing deadline in a subsequent notice. The commission released the electronic version of the new form on Dec. 9 in CDBS. It has fielded numerous inquiries prompted by complaints of data being lost with the new form as the information was being uploaded into the FCC's electronic data system. The agency is trying to resolve the problems.



“Go ahead caller... you’re on the air.”

Telos was first to use Mp3 technology, first to see the possibilities of ISDN, first to bring a DSP-based product to broadcasting, a hybrid by the way. Breakthroughs and innovations adopted years later by everyone else.

So, let's take our next call, shall we?

It's the Nx12, our most powerful performer, giving you the one-two punch of the latest Telos hybrid technology and audio processing by Omnia for the cleanest, most consistent call quality ever.

Nx12 has four advanced digital hybrids, each with its own AGC, noise gate, and caller override dynamics using carefully tuned DSP algorithms. Each also includes DDEQ, a sophisticated multi-band equalizer, which analyzes and adjusts received audio spectral characteristics so that calls sound smooth and consistent despite today's wide variety of phone sets and connection paths.

Let's face it, most people today are calling in on a cell phone. We get it. So, the Nx12's hybrids incorporate special echo cancellation for tricky cellular and VoIP calls. Unique to Telos, the Nx12 has an adaptive function that reduces the possibility of feedback in open speaker applications. So go ahead... put that talkshow on remote with an audience.

Available in analog or ISDN Versions. Nx12 can connect to as many as 12 analog POTS lines or up to 6 ISDN BRI lines (which would provide 12 caller channels). A digital switch matrix inside the Nx12 connects the lines to hybrids. The Nx12 works with all Telos control surfaces including the Desktop Director, Call Controller, and Console Director. Talent and producers benefit from the unique Telos features, such as our exclusive Status Symbol visual call management icons which clearly show line and caller status.

And, it's backed by the best support team in the business. The highly caffeinated 24/7 support techs.

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Sweden Resumes DAB Interest

DAB+ Tested in Three Cities as Country Begins New Licensing Period

BY MIRZA ZAMETICA

STOCKHOLM, SWEDEN — The Swedish government halted digital radio investments in 2005 due to low consumer response. However, interest in digital radio remains.

Network operator Teracom has been conducting tests of DAB, DAB+ and T-DMB. The tests include programming from commercial, community and public service broadcasters.

According to the WorldDMB Forum, DAB+ is an additional DAB audio codec based on the audio coding technology MPEG-4 HE-AAC v2 developed by Coding Technologies, often referred to by the tradenames eAAC+ or aacPlus v2.

DAB+ is backwards compatible to the current DAB standard. DAB, DAB+ and T-DMB are all part of the Eureka-147 family of standards; T-DMB was designed for the broadcasting of multimedia applications such as mobile TV to handsets and mobile devices.

According to WorldDMB, the organization promoting Eureka-147-based technologies, more than 1,000 services are using some form of DAB in 25 nations. DAB technology has achieved its greatest penetration in the United Kingdom where 16.6 million adults report living in a household with at least one DAB receiver, according to British audience measurement firm RAJAR.

During 2009, DAB+ services had a wide-scale launch in Australia and Switzerland; at the same time, France put off its rollout of T-DMB-based audio services from year-end 2009 to mid-2010.

JOINT VENTURE

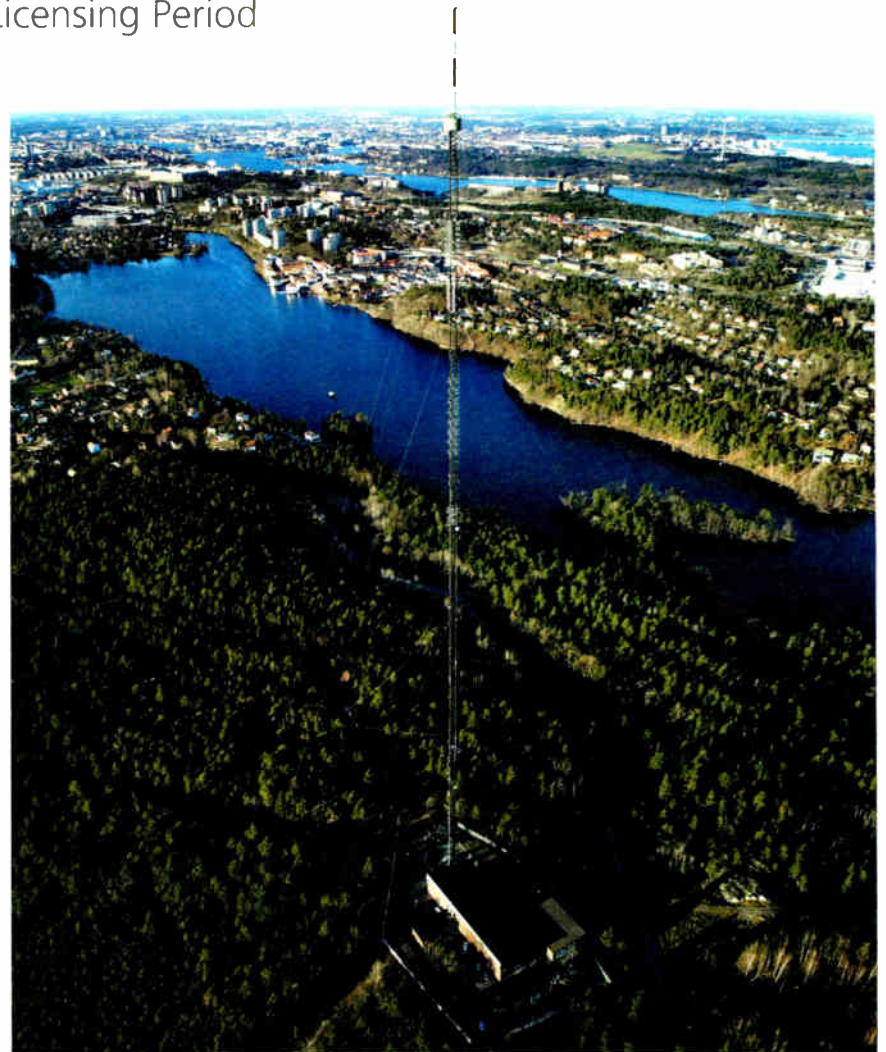
When the Swedish government reviewed terms for an analog licensing period that starts this month, major broadcasters all stated that digital radio should be part of the future radio landscape and that the coming licenses should encompass both digital and analog radio operations.

Meanwhile, Sweden's national publicly funded radio broadcaster, Sveriges Radio, continues to transmit DAB digital radio; and licenses for commercial broadcasters remain an unsolved issue.

Sveriges Radio shares many characteristics with its British equivalent, the BBC. SR is a public limited company, owned by an independent foundation, and funded through a licensing fee determined by the Swedish Parliament. No advertising is permitted.

The new Teracom digital broadcast trials began in May 2009 using DAB+. This pilot is a joint venture involving broadcasters, network operators, retailers and receiver manufacturers.

Teracom set up a DAB+ network in three cities in the central and eastern portions of the country — the capital city of



DAB+ test transmissions originate from the Nackasändaren transmission site near Stockholm.

Stockholm, as well as nearby Uppsala and Gävle — serving a total population of about 2 million. The aim is to evaluate commercial and technical issues before a possible public reintroduction of digital radio in 2010–11.

Market research will focus on a limited listener group of about 500 people who received DAB+ receivers.

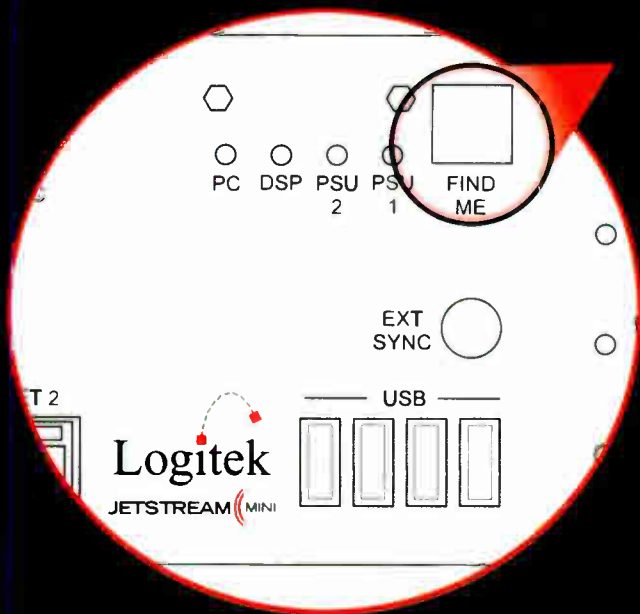
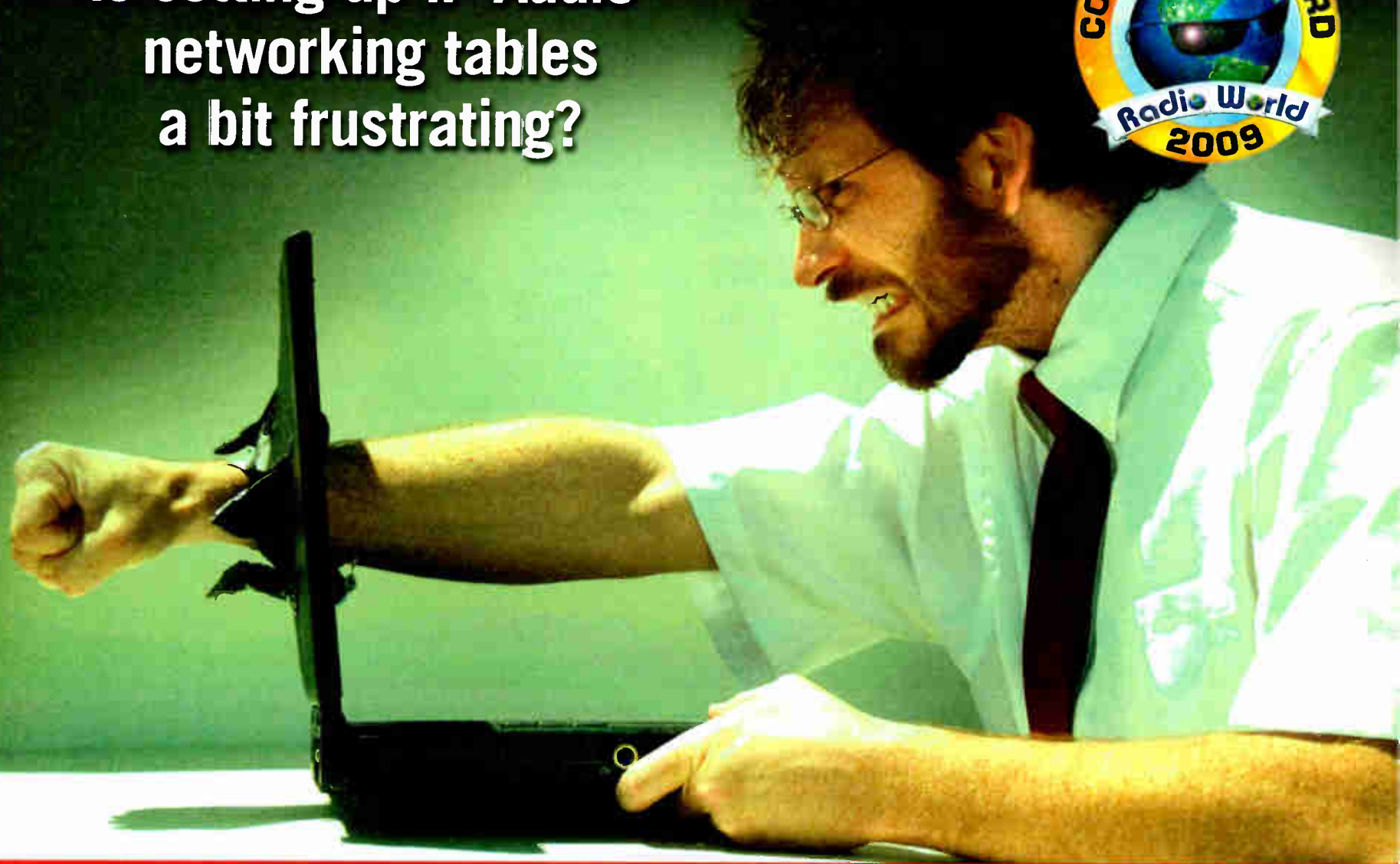
MORE PROGRAMS

Test content includes four SR channels; programming from commercial broadcasters NRJ, Rix FM, Bandit Rock, Lugna Favoriter, Radio DeeJay, Radio Seven, Dansbandskanalen and Skärgårdsradion; and programming from community stations based in the three cities.

“We had great interest in joining the pilot from players who currently only have Web radio, and today do not have FM licenses,” said Teracom pilot project manager Per Werner.

(continued on page 12)

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SWEDEN

(continued from page 10)

According to Werner, commercial FM operators sense an opportunity with digital radio: the possibility to distribute their channels more broadly. DAB+ in Sweden would offer FMs a new national footprint because their content would be carried via a projected national network of local DAB+ transmitters.

"There have been thoughts that it would be interesting to add mobile TV channels in a situation when an existing network has been built up for DAB+," continued Werner.

"However, when such a situation occurs, there might be other solutions which are better suited for mobile TV — our current priority is to create an opportunity for radio to develop."

Werner also said that, in a recent survey, 45 percent of Swedes said they wanted access to more programs on their radios.

"Another aim of the pilot is to verify listener interest in text-based additional services made possible by digital radio," he said. "A further aim is to demonstrate to decision makers that the Swedish radio industry is ready for digital radio and that there is demand for new regulations allowing the industry to enter the digital era."

Proposed legislation, Werner said, will provide the financial and regulatory conditions for the commercial radio industry. If approved, the radio industry will be able to form a strategy on how to take digital radio further.

"If a decision is made to build a DAB+ network on a larger scale, a natural consequence would be to migrate the current DAB network to a DAB+ network," said Werner. "This is a decision for Sveriges Radio, which is currently using the DAB network in a limited coverage area."

Though the old DAB network is still in operation, few listeners have shown interest. Observers blame the limited range of program channels and limited coverage area.

"There is consensus in the industry that a wide range of programs from public service and commercial radio, as well as community radio, will be necessary to provide a compelling offer to listeners," Werner said.

MAIN ADVANTAGE

For a country with the topography of

Sweden, Teracom network studies have shown that, with digital distribution, it is possible to transmit twice as many channels at half the cost of the analog network.

The main advantage with DAB+ is that roughly twice the number of channels is possible compared with the traditional implementation of Eureka-147 DAB. In analog FM, one channel per frequency is possible. In DAB+, 15 to 20 channels per frequency are possible.

DAB+ receivers in Sweden have

DIGITAL NEWS

WORLDSPACE SWITCHES OFF IN INDIA

SILVER SPRING, Md. — Digital satellite radio service WorldSpace halted its service in India at the end of 2009. Its 150,000 or so Indian customers were informed of the shutdown via e-mail during the last week of December.

The move means the loss of 300 jobs and brought a call for the Indian government to intervene.

The e-mail stated that "this action is an outgrowth of the financial difficulties facing WorldSpace India's parent company, WorldSpace Inc., which has been under bankruptcy protection since October 2008."

Liberty Media rescued U.S. satellite radio broadcaster Sirius from a possible bankruptcy filing earlier this year with a loan of \$520 million. In return, Liberty secured a 40 percent equity stake in Sirius XM.

Through its subsidiary Liberty Satellite Radio, Liberty Media recently purchased all of WorldSpace debt, leading to speculation that Liberty Chairman John Malone intends to combine the two satellite broadcasters.

In a notice on its Web site, and without using Liberty's name, WorldSpace stated that the potential buyer of the WorldSpace global assets decided not to purchase those assets connected with the Indian operation.

In fiscal 2008, WorldSpace India reportedly had revenues of about \$6 million.

In the wake of WorldSpace's withdrawal from that market, the Indian Information & Broadcasting Ministry put on hold a planned draft policy for satellite broadcasting. WorldSpace was the only operator in the sector there.

In the announcement about ending its service in India, WorldSpace noted that it was unable to refund in full or part subscriptions, but that subscribers could seek redress

started to appear among consumer electronics retailers, even though official transmissions have not yet started.

One Scandinavian chain, HiFi-Klubben, markets a DAB+ receiver for the equivalent of about \$209. That chain markets high-end products; average DAB+ receiver prices are expected to drop as receiver sales grow.

During the DAB+ trial, Teracom is using IP in a contribution network. Contributions come together at a common DAB+ head-end platform in Nacka,

from where the signal goes out via a new high-power transmitter and is further distributed to transmitter stations in Uppsala and Gävle. The radiated powers for the pilot network range from 15 kW to 20 kW.

At least one other digital radio technology has made inroads in Sweden. One broadcaster in Sweden, Radio Sunshine in Lucerne, has an ongoing test of FM HD Radio.

Mirza Zametica is a broadcast technology specialist based in Stockholm.

through the bankruptcy courts. Some WorldSpace India subscribers prepaid for up to 24 months of service. Some 300 WorldSpace employees' jobs were eliminated when the Indian operations ceased. Employees have called upon the Indian prime minister to ensure that WorldSpace India operations are wound down in an orderly manner and that the company's local debts are satisfied. Reports place the India debts of the company at 450 million rupees.

FORD TO ADD TAGGING TO HD RADIOS

DEARBORN, Mich. — Ford said it will offer factory-installed HD Radio receivers with iTunes Tagging capability this year.

The move makes Ford the first auto manufacturer to offer the tagging capability in a factory-installed in-dash radio. With iTunes Tagging, users select songs they want to buy and download. The automaker will also offer Internet radio.

HD Radio, along with its iTunes Tagging capability, will be in the Ford dash, alongside AM/FM and Sirius Satellite Radio.

Ford will also offer Internet radio through its connectivity system SYNC from a Bluetooth-streaming audio-capable smartphone. SYNC allows users to operate most MP3 players, Bluetooth-enabled phones and USB drives with voice commands.

The first implementation of iTunes Tagging in a factory-installed HD Radio receiver will launch in 2010 on certain Ford vehicles; the company has not said which models will get receivers with the iTunes Tagging capability.

Through SYNC, iTunes Tagging will let Ford customers capture a song they hear on the HD Radio receiver for later purchase. By pushing the displayed "Tag" button, the song information will be stored in the radio's memory. Up to 100 tags on SYNC can be stored until the iPod is

connected. When the iPod is then synched to iTunes, a playlist of "tagged" songs will appear. Customers then can preview, buy and download tagged songs from the iTunes Store.

All HD Radio-enabled receivers in Ford vehicles also will provide Program Service Data.

DIGITAL NEWS ROUNDUP

HD RADIO ALLIANCE: The alliance began a new flight of ads highlighting benefits of HD Radio. The ads stress features such as more channels, iTunes Tagging and the absence of monthly fees. Listen to the commercials at www.hdradioalliance.com. Consumers can visit www.hdradio.com to see local market-specific HD Radio Station Guides at the site. The variety of HD Radios and retail locations can also be found on www.hdradio.com. The ads are slated to air on 600 alliance member stations through March 28.

HD RADIO RECEIVER SALES: In the year 2009, through early December, some 734,000 HD Radio receivers had been sold, or twice as many as sold in 2008. That's according to iBiquity President/CEO Bob Struble, who told the Virtual Event's "Monetizing Audio Technology" conference that nearly a half million HD receivers were sold in 2009 through September, and a quarter million more in October and November.

In 2006, 28,000 HD Radio receivers sold, according to Struble. That increased to 140,000 in 2007, and then 366,000 in 2008. That means about 1.3 million total receivers have been sold to date.

The conference focused on how sports teams use station's HD Radio multicast channels to expand reach and coverage of sports franchises. Execs from Penguins Radio and Dallas Cowboys Radio were some of the featured sports, radio and advertising speakers.

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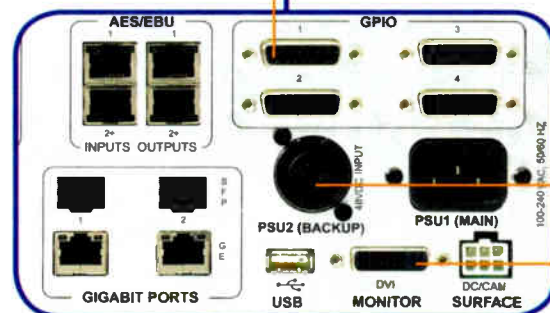
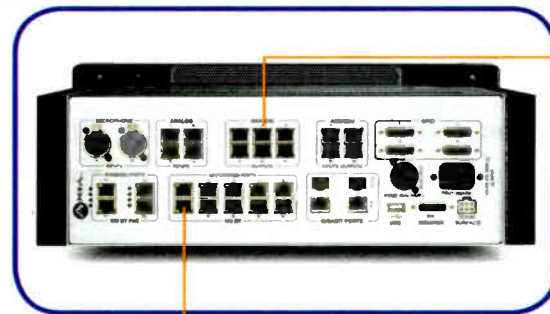
Because there's no such thing as too much uptime.

All stops removed • Twenty years from now, you'll have forgotten this ad. But you'll still have your PowerStation, the full-featured one-box IP-Audio console/router system hardened with **industrial-grade components** and redundant power capabilities. Tough enough to take a football to the groin and keep on going. PowerStation **minimizes setup** and **maximizes "bang for the buck."** Engineered without compromise for broadcasting without interruption.

Easy as π • PowerStation combines a console DSP engine with audio and logic and a network switch, **all in one box**. As its name implies, there's a whole lot of muscle inside that burly frame, but that doesn't mean it's complicated. In fact, setting up PowerStation **couldn't be easier**: connect your studio gear with standard CAT-5 cables, connect your console with just one cable, name your sources and set preferences with a browser, and you're ready to rock. PowerStation makes building studios about 3.14 times easier than ever.

GPI Oh! • **GPIO ports are built in** to PowerStation — no breakout boxes or add-on converters needed. One day, you might not even *need* logic ports: more and more products from companies like 25-Seven Systems, Audio Science, ENCO, Google Radio Automation, International Datacasting, Omnia Audio, Radio Systems and Telos (to name just a few) use the Livewire™ standard to send their audio and logic control directly to Axia networks over a **single CAT-5 connection**.

Everything's included • Yeah, we said *everything*: PowerStation combines half-a-dozen essential tools into one compact unit. No hidden extras to buy, no "gotchas" after purchase. Inside that muscular chassis you'll find a **bulletproof mixing engine** capable of handling consoles up to 40 faders, a beefy power supply (with optional **redundant power**), machine control ports, and **audio I/O**, all in one box. And of course, since it's from Axia, the IP-Audio experts, a studio built with PowerStation can stand alone — or it can become a part of a large network quite easily. Thanks to **PowerStation Simple Networking**, you can daisy-chain up to 4 PowerStations directly for easy multi-studio installation without the need for a separate core switch. Just another way Axia makes IP-Audio easy.



E-I-E I/O • Finding space in the equipment racks is like living in a barnyard: too many chickens, never enough coops. So our team of obsessive designers fit **an entire studio's worth of inputs, outputs, logic and network connections** — plus an advanced DSP mixing engine and a massive console power supply — into just 4 RU. There's inputs for 2 mics, 4 analog inputs and 2 AES/EBU inputs, with 6 analog and 2 AES outputs. 4 GPIO/O logic ports round things out. Want even more? Just connect the PowerStation Aux to instantly **double** the I/O — or plug some Axia Audio Nodes into its **built-in Ethernet switch**.

Fan free • PowerStation is **silent and fanless**. Because studios today are already full of PCs, laptops and playout servers clicking, whirring and generating heat — who needs more of that? Not only is there no in-studio noise with PowerStation, those **big extruded heat sinks** are just plain cool. No pun intended (or maybe it was. We're like that, you know).

Built like a tank • Remember when consoles were built to last? We do. At Axia, we're all about the long haul. **There are no compromises**: PowerStation uses only best-of-the-best components. Like studio-grade Mic preamps and A/D converters. A rigid, steel-framed, EM-tight chassis that shrugs off RF like Walter Payton brushing off tackles. An industrial CPU designed for high reliability in harsh environments. Beefy extruded heat sinks. Big, brawny handles to make rack-mounting easy. (And it looks cool, too.)

Redundant power redundancy • The power supply is the heart of any broadcast equipment, right? That's why PowerStation is **hardened against failure** with a **super-duty power supply** that sports enough amps to power an arc welder. And for those of you who like to wear a belt *and* suspenders, there's even a connection for **redundant auxiliary backup power** — with automatic switchover, naturally — that kicks in if it's ever needed.

Screen play • Yep, that's a DVI connector. **Your favorite monitor** — standard or widescreen — plugs in to present the console operator with Axia's "so easy an overnight jock could do it" **info-center display**. Meters, timers, fader assignments, mix-minus settings and more, all on-screen, on-demand.

You're covered • Axia has the most comprehensive warranty in the industry — **5 years parts and service**. And (not that you'll need it), **free 24/7 technical support**, 365-days-a-year. We've got your back, my friend.

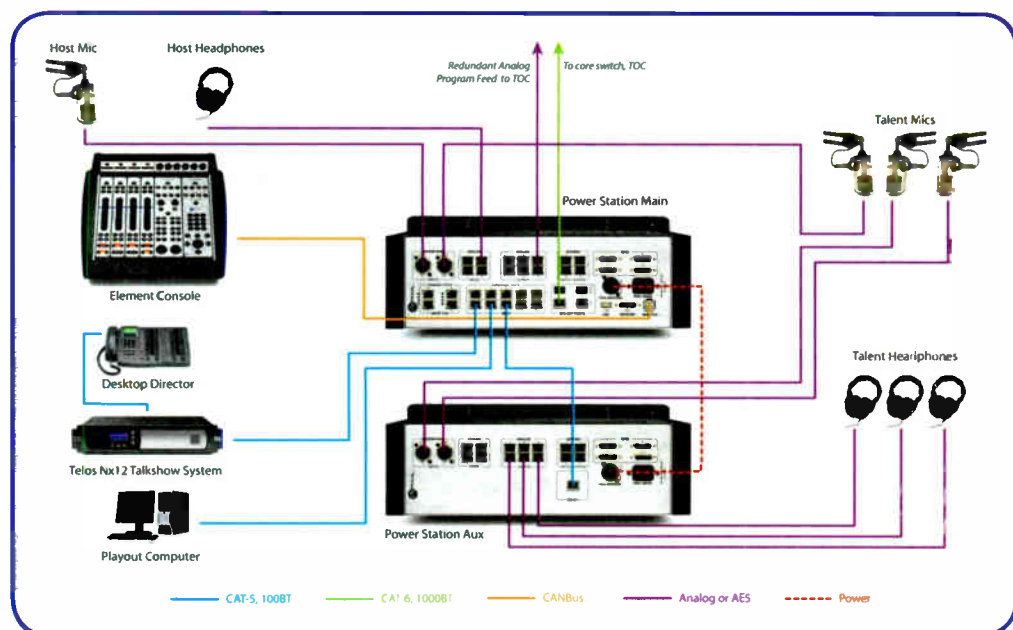




Element 2.0 • With more than 1,000 consoles already on the air, Element is a huge hit. And now, thanks to suggestions from our clients, it's better than ever. Element 2.0 has cool features like Omnia™ **headphone processing** presets to give talent that "air sound", **super-accurate metering** with both peak and average displays, **one-touch phone recording** with automatic split-channel feed, **automatic mix-minus** for every fader, an eight-channel **Virtual Mixer** that lets you combine multiple audio streams and control them with a single fader, and metallic bronze or silver module overlays. And we haven't even begun to tell you about Element's **Show Profiles** that instantly recall talent's favorite settings, its **built-in Telco controls**, fully-integrated **talkback/IFB** and **Mic processing** by Omnia. And durable? Element is nearly indestructible, ready to take whatever pounding ham-fisted jocks dish out and keep going. You want examples? Element's **avionics-grade switches** are rated for more than two million operations. What look like ordinary rotary controls are, in reality, **bullet-proof optical encoders** — no wipers to wear out or get noisy. The silky-smooth **conductive-plastic faders** actuate from the side, not the top, so dirt and grunge stay out. The **high-impact Lexan** module overlays have their color and printing applied on the back, where it **can't wear or chip off**. The frame is made from **thick aluminum extrusions** that are stronger than truck-stop coffee. To find out even more about Element, visit AxiaAudio.com/Element/. Grab some coffee and prep for a good, long read — remember, our marketers get paid by the word.

Come together, right now • Now that you know what you can do with PowerStation, let's build a studio. The diagram below shows how a typical Talk Studio might look. Mics and headphone feeds plug into the built-in Mic inputs and Analog outputs... your playout PC, using the **Axia IP-Audio Driver** for Windows®, connects to a built-in Ethernet port... and so does the Telos Nx12 Talkshow System (which sends 12 lines of caller audio, mix-minus and take/drop/next commands over **one skinny CAT-5 cable**). Send a **backup audio feed** to your TOC for extra peace of mind. And after all that, there's still plenty of I/O left to plug in the turntables for the Saturday night Oldies show.

The standalone network • You want your console to be more than just reliable — you want it **built like a battleship**. You want the absolute peace of mind that comes from knowing your gear will **never let you down**. And if you take one studio down for maintenance, you want the rest to be completely unaffected. So we designed the **first networked broadcast console that does**... it plays nice with others, but unplugging it from the network doesn't affect the rest of the studio, or a dozen, at any pace you choose.



Note to people planning studios:
 Have you read the new book **Audio Over IP: Building Pro AolP Studios with Livewire** by Steve Church and Skip Pizzi? If not... Axia can save you 30% when you purchase a copy. Just visit AxiaAudio.com/book/



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Messy Site Becomes Desert Showplace

Send Us Your Own Pictures of 'Before and After' Site Projects

Ralph Jones does contract work in California. When he read our request for pictures of "worst sites," one came to mind.

When Ralph took over contract work for the facility pictured in Fig. 1, it didn't

WORKBENCH by John Bisset

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look bad at first — until he realized that the black lines visible in the dirt, leaving the bottom edge of the building, are wires for the 220 VAC feed.

It gets better. Ralph opened the door and was greeted by the mess seen in Fig. 2. It looks like the building had been used more to store junk and trash than house a transmitter. We've all been there at one time or another, haven't we?

Fig. 3 shows a field-expedient RF connection that probably had been used to get the station on the air in the absence of a proper connector flange fitting. Perhaps a good idea at the time; but like so many quick fixes, it was left to become permanent.

In this case, the 1-1/4-inch coaxial cable is connected to a 1-5/8 EIA Bird line section. The outer conductor on the coax had been peeled back, like a banana skin, then bolted to the flange! Ralph found the inner conductor loosely connected to the bullet with two hose clamps.

Things weren't much better out by the tower. Fig. 4 shows the transmission line just waiting for copper thieves.

How does the building look now?

Ralph had a lot of help straightening the place out. With the coaxial feeder lying on the ground, one bright idea was a transmission line cage, seen in Fig. 5. Station ownership resisted due to cost; but with a

(continued on page 18)



Fig. 1: The transmitter shack — complete with live AC wiring running along the ground.



Fig. 2: It's not a transmitter building, it's a trash dumpster.

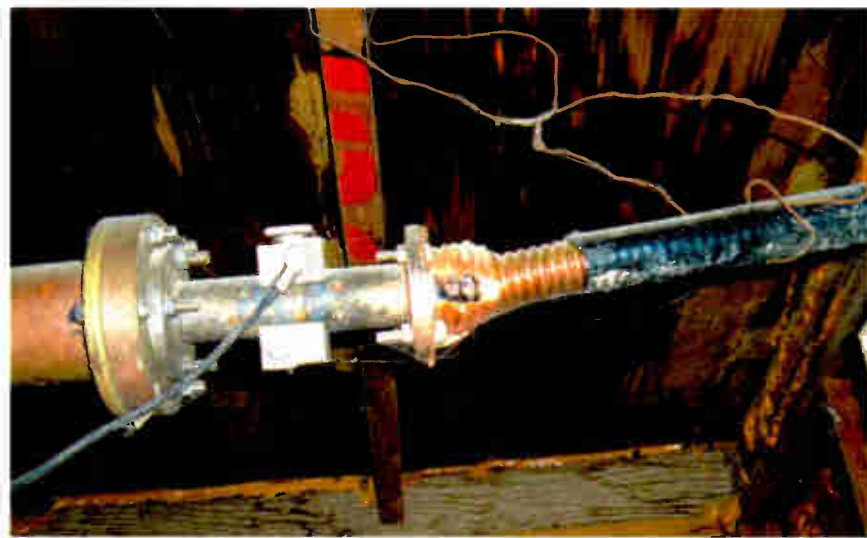


Fig. 3: This temporary fix for a missing connector has become permanent. Note the cobwebs.



Fig. 4: In a day when copper theft is rampant, it's amazing this gold mine wasn't tapped.

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WALKER, STILL A JOYFUL BOY

Ed Walker, at left in photo, veteran Washington radio/TV personality and a 2009 inductee into National Radio Hall of Fame, appears with former broadcast partner Willard Scott at a December ceremony recognizing Walker's induction and accomplishments.

Blind since birth, Walker began his broadcasting career by helping launch a student radio station at American University in 1950. He teamed with Scott in 1955 at Washington's WRC(AM) in an improvised comedy program, "The Joy Boys." The program

remained on the air until 1974, with a move to WWDC(AM) in 1972.

Walker, now 77, continued his career at several other Washington-area stations. He currently hosts "The Big Broadcast," a weekly four-hour program on WAMU(FM) that features shows and music from radio's "golden age." The reception honoring Walker was hosted by the Radio & Television Museum of Bowie, Md., and George Washington University's Global Media Institute.

— James O'Neal



NEWSWATCH

BROADBAND: Fewer households will add broadband this year. That's according to research firm Pike & Fischer, which thinks about 4 million homes will become new high-speed Internet customers, a 10 percent decline in subscriber growth. The total number of broadband-connected homes will pass 77 million or about 65 percent of U.S. households, it believes.

TOP SPOTS: Geico ran the most spots on U.S. radio in 2009, according to Media Monitors, with 1.9 million. Home Depot was second with 1.7 million. McDonald's and Verizon also surpassed the million mark. Others in the top 10 included AT&T, Autozone, Wal-Mart, Safelite Autoglass, OnStar and Kohl's. This year's list excluded spots from the HD Digital Radio Alliance.

PPM: Arbitron said it will not roll out the PPM in New Orleans until further notice. It had planned to do so this year. The firm said it will continue to estimate audiences in the market using diary methodology. It delayed PPM "in part to help broadcasters in the market continue to rebuild from Hurricane Katrina," it stated. It did not list other reasons.

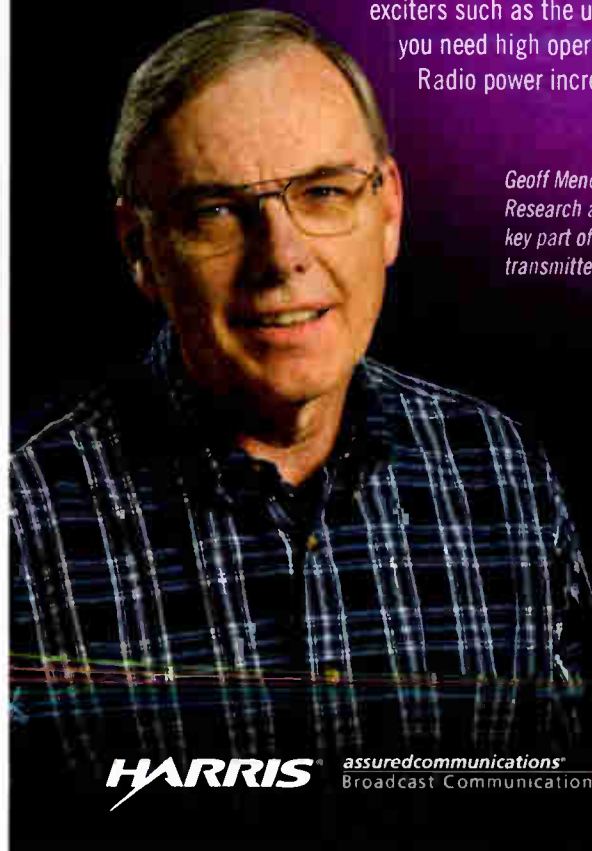
TRAFFIC: Sigalert is now part of Westwood One. It was launched by Jonathan Berke and Joel Johnstone, who stay on. The seller is Jaytu Technologies. Westwood One, which owns the Metro Traffic brand, hopes this will beef up its online and mobile offerings and graphics. Sigalert, most active in California and Arizona, displays road maps with traffic speed and accident details on the Web, mobile phones, PDAs and TV reports, and provides personalized alerts. Westwood One plans to expand Sigalert's traffic products from eight to approximately 65 markets in 2010.

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WORKBENCH

(continued from page 16)

subdivision less than 200 yards away, Ralph says he was concerned about lawsuits and copper thieves.

The fenced cage, with barbed wire along the top and the cable now elevated off the ground inside, is an effort to protect the line from theft or vandalism. So far it's worked.

Nothing's perfect, however. Budget constraints would not allow use of a rigger to tie down the coax on the tower, so it snakes around as it makes its way to the antenna. I guess you can't have it all.

The particle board shack has been replaced with an insulated shipping container, shown in Fig. 6. The dual-staged air conditioning system means no inside temperatures in excess of 100 degrees F. Ralph added a sliding patio-style door just inside the steel container doors. This allows the security doors to be open during maintenance sessions, while keeping the dust and heat out of the building.

Ralph is looking for work (not because of these "before" pictures, he adds with a chuckle). While enjoying time at the beach, Ralph Jones can be reached at f_a_beaker@yahoo.com.

Got a before-and-after site you want to share? E-mail the high-resolution photos with details to johnbisset@myfairpoint.net.

Hal Kneller is market development manager for Nautel, where I work; he also has experience at iBiquity and Harris and is a great resource

for engineers.

Hal received an inquiry recently regarding replacement FETs (field effect transistors) used in the Harris Gates and SX series transmitters. A good number of these transmitters remain in service but the FETs, which are no longer manufactured, are getting harder to find.

About 10 years ago, Hal sent in a tip that International Rectifier's IRF350 generic replacement FET worked just fine in these transmitters. In fact, Hal used them in an SX-1 at an AM station he owned at the time. Hal's original source, Mouser, no longer carries this model FET, but Newark does; visit www.newark.com and enter International Rectifier IRF350 in the search block.

The Newark price is about \$12 if you order a quantity of up to 24. Search around the Internet and you may find other sources as well. Consider future needs so you have a supply if existing sources dry up.

With that in mind, Hal reports that Harris has re-spun the PA boards, which use a newer plastic device today. As for the IRF replacement, Hal verified this number with Harris service. So tuck this information away if you maintain these transmitters or do contract work.

Hal Kneller can be reached at hal.kneller@nautel.com.

John Bisset is international sales manager for Europe and Southern Africa for Nautel and a past recipient of SBE's Educator of the Year Award. Reach him at johnbisset@myfairpoint.net. Faxed submissions can be sent to (603) 472-4944.



Fig. 5: Here's a means of protecting cable against vandalism when it can't be buried.



Fig. 6: After improvements, a transmitter building of which we can be proud.



ACS 8.2 Plus Audio Control Switcher



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\$3299./EAS package

The **SAGE 3644 Digital ENDEC** was designed for single or clustered analog and HD radio stations as well as analog and HDTV facilities. It uses an Internet connection to allow remote, secure activation, system monitoring and uploading of software releases and redundancy.

DAYTON's AFC3 Receiver System is designed for EAS and other monitoring requirements. Holds three receivers, AM, FM, Weather, or Public Service. Use with receivers:

- AF200AC3 - FM/SCA Receiver
- AF225C3 - FM Receiver
- AF315C3 - AM Receiver



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The **ZX series of transmitters** offers an ideal solution to stations requiring 50 watts through 5 kW. These transmitters use the field-proven Harris Platinum Z™ transmitter amplifier modules in a small rack-mount footprint. Further, these transmitters are lightweight and easily installed by one person. ZX transmitters include popular options like sliding rack rails for the 500- and 1000-watt units. **And much more!**



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DEVA Band Scanner Pro is the tool to evaluate FM broadcast band congestion and to log station identification parameters. Can measure RF level, MPX deviation, Left & Right Audio levels, RDS and Pilot injection levels. System is powered by the USB port of any Windows PC. Free Windows software sweeps the receiver across the FM band, logging every carrier and generating a spectrum display of carrier level vs. frequency. It then analyzes each carrier and creates a station list. Stations with an RDS presence are further refined to show all the radio data groups being transmitted. **And much more!**



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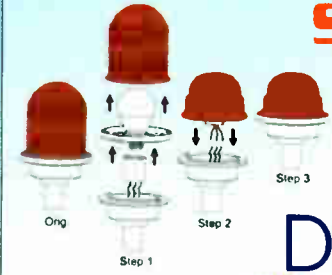
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BY RICHARD STRICKLAND

Question: In a previous column you discussed the RF safety hazards associated with climbing a "hot" AM tower. I have a three-tower array that allows me to operate any one of the towers singularly in omnidirectional mode while personnel climb one of the other two towers. What are the RF safety concerns in doing this?

Climbing a de-energized tower in an AM array while another tower in the array is energized presents the same concerns as climbing an energized tower, albeit at somewhat lower levels.

The previous column ("Should I Climb That AM Tower?," see *radioworld.com* under Columns/RF Safety) described

May I Climb This De-Energized Tower?

the two major health concerns: RF shocks and burns (electrostimulation) that can occur when getting on or off the tower and induced currents that flow through the human body and are concentrated in the wrists and ankles when on the tower.

Induced currents are a result of the climber forming a branch circuit with the

tower but does allow for a very useful work technique.

You can short the tower to ground when getting on or off to virtually eliminate the shock and burn hazard. This is the technique recommended by Tom Jones of Carl T. Jones Corp. Tom has a great deal of experience designing and

detune the tower. In fact, it is even better to detune the tower before you begin work and then simply short the tower when personnel are getting on or off the tower.

What about power levels?

Well, the recommendation for climbing energized towers is to limit the transmitter power level to an absolute maximum of 500 Watts to keep induced current levels in the wrists and ankles to an acceptable level. For non-energized towers in the same array, it is difficult to arrive at a level that I have total confidence in because of the many variables involved.

The best advice that I can give you, absent of specific modeling, is to detune the tower and to limit the transmitter power fed to the energized tower to a maximum of 5,000 Watts. When possible, use a tower at another location or get somebody competent like Tom Jones to run some models before you begin work.

Radio World offers a recurring series of Q&As with Richard Strickland of RF Safety Solutions, who has presented numerous public and private seminars on RF radiation safety and has written widely on the topic. The series is archived at radioworld.com.

What are the safety issues involved in climbing a de-energized tower when another tower in the array is active?

tower. Most of the current flows through the highly conductive steel, but some of it flows through the climber, and it is most concentrated where the cross-sectional diameter is the smallest: the climber's wrists and ankles.

Any tower in a multi-tower array is going to make a very good receiving antenna for the operational tower unless you detune it. Therefore, it will pick up a great deal of RF energy. Getting on and off the tower presents the same type of RF burn hazard as a directly energized

working with AM transmission sites. He normally uses a heavy auto jumper cable to ground the tower.

With this technique, many people might be tempted to leave the short in place. But that is often not a wise decision.

There are so many variables — tower spacing, power level, antenna design — that it is difficult to give specific recommendations. But based on several computer models run by Tom and his engineers, it appears that the best technique generally is to remove the short and

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WHO'S BUYING WHAT

Logitek said two JetStream Mini IP Audio Networking systems with two 18-fader Pilot consoles were sold to the **University of Minnesota** for KUOM Radio K.

Logitek also said **WKHG(FM)** in Leitchfield, Ky., ordered three JetStream Mini routers along with Mosaic and Pilot consoles. **WRMFF(FM)/Cobalt Communications** in West Palm Beach, Fla., ordered three JetStream Mini units along with a Mosaic console. **Marshall University/WMUL(FM)** in Huntington, W.Va., ordered a JetStream Mini along with a Route-XY control head. They plan to use the unit as a router. **MTG Radio** in Sweden ordered an Audio Engine, four Remora consoles and vScreen through Logitek's distributor SoundWare. ...

Nautel said **Ad Astra Rocket Co.** reached a milestone in its VASIMR VX-200 plasma rocket project, which uses solid-state RF generators made by Nautel. It reached a 200 kW maximum power mark in September in tests at Ad Astra's Houston laboratory. VASIMR is an acronym for Variable Specific Impulse Magnetoplasma Rocket. ...

Wheatstone said **Evanov Radio Group Toronto** installed a Wheatnet IP system to help move into a new facility for stations CIDC(FM), CKDX(FM) and CIAO(AM) as well as corporate offices. An E-4 control surface, four IP-88a analog Blades, an IP-88ad Blade, Navigator system configuration software and PC-XY Site License (configuration PC router control software) were purchased from **Ron Paley Broadcast**.

Also, Evanov Radio Group renovated facilities for recently acquired CKPC (AM/FM) in Brantford, Ontario, using Wheatnet IP. Adman Robinson is director of technologies, Leanne Browne is chief engineer; they use two E4 control surfaces, three IP-88a Analog Blades and Navigator software also purchased from **Ron Paley Broadcast**. ...

OMT Inc. sold iMediaTouch radio automation for **Corus Entertainment's** three-station Toronto facilities and said Corus will use the system in its new waterfront headquarters this spring. Jack Hoepfner is national director of engineering for Corus Entertainment.

Streaming delivery network **Liquid Compass** signed **Salem Communications** and **Saga Communications**. It said that combined, the multi-year contracts add 154 stations in major and top-50 U.S. markets to its network.

Pepperdine University in California upgraded studio facilities with **Axia IP-Audio** equipment and networked broadcast consoles. The school owns student-run **KWVS(FM)**. The package includes two 22-position Element 2.0 consoles, several

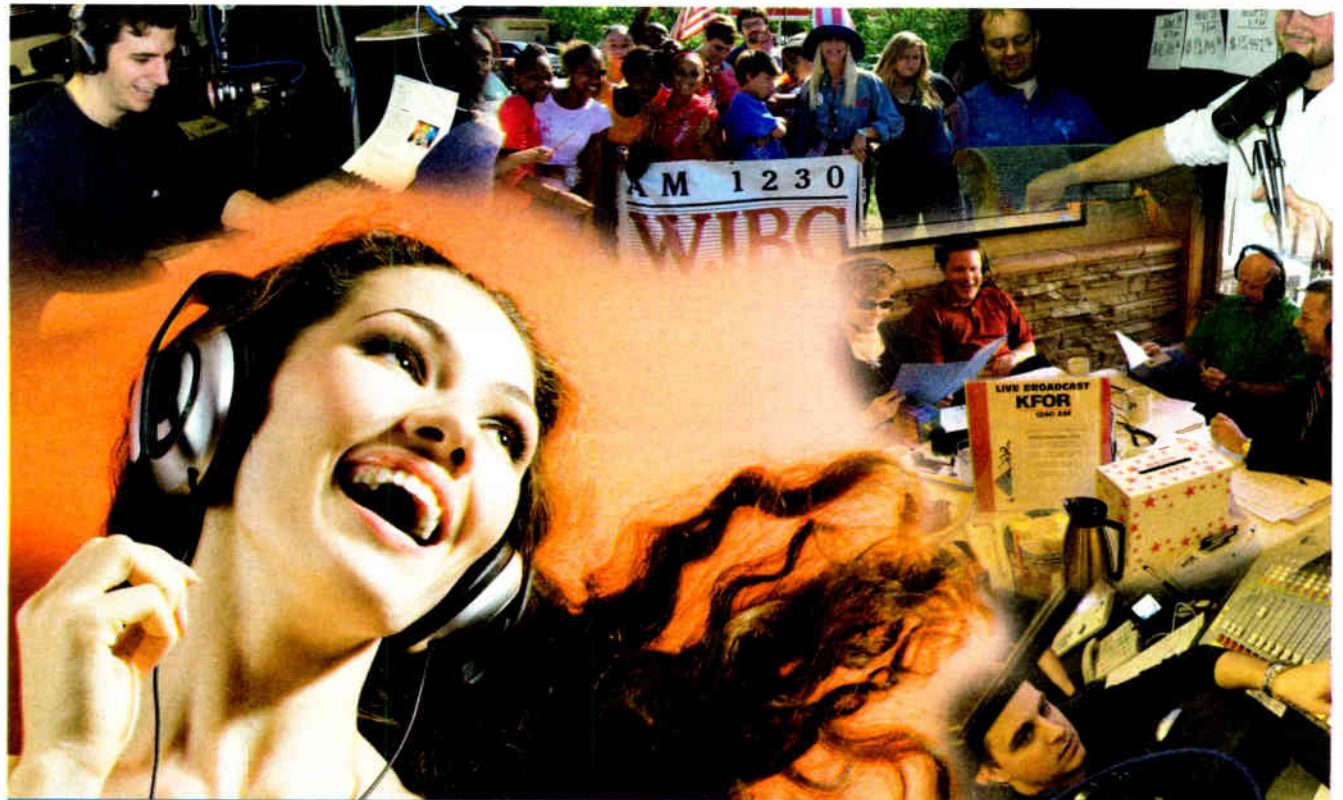
AES/EBU, Analog and Microphone audio nodes, mixing engines, Call Controller modules that interface with Telos Talkshow systems and Axia iProFiler networked audio logging software.

Studer won a contract from the **BBC** to deliver approximately 85 OnAir digital audio mixing consoles over the next two years. Some will be deployed in the Portland Place London headquarters, where about 50 studios are to be built for



FM 105 in Guarimirim, Santa Catarina in Brazil is using a recently installed Nautel NV5 FM transmitter. Fernando Parizotto is technical manager.

use by the BBC's World Service and News divisions.



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Protect All Those Connected Assets

Maintaining a Good Antivirus Program Is the First Step in Prevention

BY BRIAN CUNNINGHAM

As I take a mental overview of all the IP-based equipment we utilize in the broadcast industry, it is a wonder that we haven't been compromised in some

RADIO IT MANAGEMENT

way by hackers looking to make our lives miserable.

With our automation systems, remote controls, IP-based remote broadcast equipment and even transmitters, we have to be cautious in the manner in which we attach our equipment to the World Wide Web.

There are thousands of Internet users out there just looking for a way into your equipment to install trojans, malicious viruses and worms. Once these attacks are released, their destruction can cause thousands of dollars in lost revenue, not to mention the time it takes to clean up after an attack.

Protecting our equipment from these malicious invaders is not rocket science. There are excellent programs out there that will protect your system from intruders and provide immediate updates to ward off a possible attack.

I'll give you some tips on how to keep your system and network safe.

THE WORM TURNS

Let's take a look at some of the techniques employed in the past to avoid detection and deceive security tools.

Armored viruses and worms: Armored viruses attempt to prevent analysts from examining their code by using various

methods to make tracing, disassembling and reverse detection of their code more difficult.

Stealth viruses and worms: As the name suggests, these attempt to conceal their presence from antivirus software in many ways. They gain access to your system by finding a known vulnerability and plant

Polymorphic viruses and worms:

Similar to most kinds of self-encrypted viruses, polymorphic viruses mutate, creating varied but fully functional copies of themselves as a way to avoid detection by using different encryption schemes, a variety of instruction sequences and even inserting random blocks into the virus code. By doing this they modify their signature with every new infection. Each new mutation or variant of the original polymorphic viruses can look like a completely different program to virus scanners and other security tools.

Self-encrypting viruses and worms: Self-encrypting viruses try to conceal themselves from detection by encoding themselves differently each time they infect a new computer. Most antivirus software finds viruses by looking for certain

patterns of code, known as signatures, which are unique to each virus. A self-encrypted virus utilizes a decryption algorithm at the beginning of its code, followed by encrypted code that changes with each new infection. By doing this, it fakes out the antivirus software that is looking for the signature.

SIMPLE STEPS

Those are but a few of the ways hackers can gain access to your network or computer.

A lot of the programs now being written by hackers are targeting the antivirus software itself in an attempt to avoid detection and enhance virus longevity. They do this by attempting to delete files that are associated with antivirus and firewall programs and shutting down scheduled security processes, such as updates and patch installations.

What can you do to protect your network and personal computers?

The safest thing you can do is to lock down your network. Before a worm or virus can do any damage to your system, it must be able to find a way to get in. After several failed attempts to get in, most hackers will move on to easier pickings.

Here are suggestions to help protect your computer or network from unwanted guests:

- Install and maintain an antivirus pro-

gram on each computer or network gateway. Regularly check with the software provider for updates and security patches. Most will query for updates on their own if programmed to do so. *Never* turn off the auto check for updates function of the antivirus program.

- Work with the least possible system privileges. Only use the root or administrator privileges when absolutely necessary.
- Turn off all unnecessary services and programs.
- Never open an e-mail from an unknown source or one that has an attachment that looks suspicious. This is the easiest way for an attacker to unleash a virus or worm into your system. Most will compromise your address book and send the virus out to every e-mail address contained in your mail address box.

- Apply and enforce strict password policies to each of your computer users. Never use simple words or plain text as a password. Use a combination of letters/numbers in your password, and to make it even harder for a hacker to decipher your password, use random capital letters along with lower case letters.

- For critical systems, such as servers or streaming encoders, install and run the antivirus software from a disk so that no executable code from the machine can be run.

- Utilize additional security tools such as Tripwire or Chkrootkit for Linux systems and other intrusion detection systems (IDS).

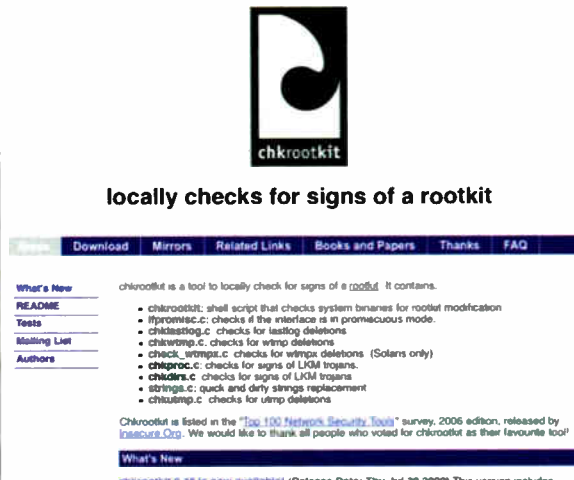
- Periodically check your antivirus software to ensure that no changes have been made to disable or remove automatic updates to the software.

Following these procedures and tips will help ensure a healthy and safe environment for all your broadcast data and programs.

There is so much more involved with protecting your networks and computer systems from intrusion, and space limitations prevent me from going into further detail on site security, but installing and maintaining a good antivirus software program is the first step in prevention of the possibility of an attack.

Send your radio IT tech tips to radioworld@nbmedia.com.

Brian Cunningham, CBRE, is a chief engineer for Crawford Broadcasting and is based in western New York. This is a version of an article that appeared in the company's Local Oscillator newsletter.



chkrootkit

locally checks for signs of a rootkit

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What's New

chkrootkit is a tool to locally check for signs of a rootkit. It contains:

- **chkrootkit.sh**: shell script that checks system binaries for rootkit modification
- **ifpromisc.c**: checks if the interface is in promiscuous mode
- **chklastlog.c**: checks for lastlog deletions
- **chkstmp.c**: checks for stmp deletions
- **chkstmp.c**: checks for stmp deletions (Solaris only)
- **chkproc.c**: checks for signs of LKM trojans
- **chkldr.c**: checks for signs of LKM trojans
- **strings.c**: quick and dirty strings replacement
- **chkstmp.c**: checks for stmp deletions

Chkrootkit is listed in the "Top 100 Network Security Tools" survey, 2006 edition, released by [Insecure.org](#). We would like to thank all people who voted for chkrootkit as their favourite tool!

What's New

chkrootkit 0.42 is now available! (Release Date: Thu Jul 30 2009) This version includes

Explore security tools such as Chkrootkit, Tripwire and other intrusion detection systems.

themselves in the root of the system. Once there, these viruses could almost completely obscure their existence.

Most stealth viruses intercept disk-access requests so when an antivirus application tries to read files or boot sectors to locate the virus, they present an uninfected image of the requested item, therefore making their presence almost invisible to the anti-virus software.

One other way stealth viruses work is to hide the actual size of the infected file and display the file size information before the infection incurred.



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25-Seven PDM Bans Bad Words in Boston

Greater Media Talk Station Likes How It Captures and E-Mails Audio Files

USERREPORT

BY PAUL SHULINS
Director of Technical Operations
Greater Media Boston

BOSTON — Over the past four months I have been using a demonstration model of the 25-Seven Systems Program Delay Manager (PDM).

This is a fancy name for a digital audio profanity delay. But this unit is different than any delay I have used in the past. It brings additional capabilities that have not been seen in traditional delays, the most significant one being the ability to capture and e-mail actual audio files containing the audio that was dumped and did not make it to the air, as well as the “finished” product that did make it out to the listeners.

TIME STAMP

One of our five stations in Boston, WTKK, runs a talk format on FM. We are now live and local all day, and rely on a delay to give us time to “correct” or delete audio that in our judgment is inappropriate for the airwaves.

The PDM has functioned well as a standard delay for us but has also allowed us peace of mind because the PD Alert feature gives us proof that our producers are doing their job.



Paul Shulins points at the 25-Seven Systems Program Delay Manager in the rack at WTKK(FM).

The audio cuts generated by the PDM are time stamped (and the internal clock in the PDM can be synched to a time server over the Internet so it is always accurate). There is no doubt that we have the knowledge of what actually transpired on the air by reviewing the WAV files that are automatically and instantly e-mailed to the program director, and are stored in the unit and available through a Web page interface.

Speaking of Web pages, we found the unit easy to control and configure entirely by a Web interface. Because it also offers GPIO logic on the back panel to hook up indicators and buttons, we found no problem making an adapter cable to allow the PDM to use our existing buttons and enunciators already installed once we programmed the logic functions from the GPIO appropriately via the Web page interface.

If you happen to be one of those stations that use audio over IP transport, the PDM is compatible with systems like the Axia Livewire, and likely other Ethernet audio transport methods that may be defined in the future.

I like the fact that it is a single rack unit, with a simple physical layout.

Honestly I found most of the other features in the unit to be somewhat standard and are what you would expect for today's state-of-the-art digital delay, like how to build or exit delay and the garden variety cough, dump and bypass controls.

The LED audio level meter only has four segments but gets the job done. The unit is compatible with analog or AES digital audio input and output as well as the aforementioned Livewire interface.

Having used it for several months, I can say that it has performed for us in Boston as advertised. We get a daily dose of e-mails documenting the “dumped audio” and the device has not failed or locked up to date.

Manufacturer 25-Seven Systems will be coming out with regular firmware updates and they have built in a way to allow the unit to “phone home” to get an update from the factory, eliminating most firewall issues for support. The disadvantage is having to take the device off-line during an upgrade. I have found it mandatory to have a backup delay on the shelf ready to go anyway, so that helps get around the “taking it off line for an upgrade” problem.

Having only flash memory and lack of a hard drive also makes the unit startup quicker and the overall reliability better than the traditional spinning disk.

The unit does have a finite and limited capacity for storing audio clips, but so far we have not found this to be an issue. (Editor's note: 25-Seven says internal audio file storage capacity is about 750 MB.)

After demoing the product, we became convinced that going back to the old way with a traditional delay would be like taking a step backwards. We purchased the unit and so far we have not had any second thoughts.

In this age of tighter FCC regulations for program decency and content, the PDM has provided my station with an extra level of proof that we are on top of that issue, and gives us confidence our producers are trained properly and on top of their game.

For information, contact 25-Seven Systems in Massachusetts at (888) 257-2578 or visit www.25-seven.com.

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 -Leslie Whittle, Program Director
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USERREPORT

BY PETE FLYNN

Technical Instructor, TV & Radio
Birmingham City University

BIRMINGHAM, ENGLAND — I am the technical instructor for TV & Radio at the Birmingham School of Media at Birmingham City University in England. As part of an ongoing project I have recently upgraded four of our radio studios from analog to digital.

Our students run small radio stations throughout the year as a part of their curriculum. In turn my colleagues and I then archive the broadcasts.

In the past we would record gigabytes of programming onto a PC, manually edit eight-hour recordings into 10-minute segments and then upload them to a server for students to access as resource files. This was quite a chore until we bought two Sonifex Net-Logs to automate the process.

LIFESAVER

The reason we chose Net-Log is that it did all of this for us whilst no other product could. It is a genuine life- and time-saver. We met with some of the Sonifex sales team who gave us a demo and I was sold within five minutes.

The Sonifex Net-Log is a dedicated four-channel audio logger that can record weeks of programming onto a large internal hard disk. Playback software, on a networked PC, streams the audio to the desktop, where it can be



Pete Flynn

played out or saved as a Windows Media Player-compatible file.

Regarding the scheduling, we no longer have to come in and start everything up at 5 a.m. The Net-Log software allows you to set up programs to predefine when the unit starts and stops, so we can just leave it running. I feel confident enough to let the Net-Log do exactly what we have told it to do.

We also use it in a non-broadcasting capacity to archive students' live radio assessments. Net-Log has a feature called Auto-Archive that allows recordings to be automatically saved in the background to a separate server on the system so that others can get access to the audio and also so that we can archive audio

files for as long as we want. The beauty of the Net-Log's Auto-Archive function is that it gives us more time to devote to other activities without having to supervise the archiving process and teaching staff can access the archive from whichever server we specify. The Net-Logs certainly are paying for themselves every day.

There are many applications for Net-Log, from radio stations recording their broadcasts for regulatory purposes, to small call centers, law firms and security companies using them for monitoring. This indispensable unit offers easy-to-use software, high quality audio, broadcast and Windows-based systems compatibility and continuous automatic operation.

For information, contact Sonifex/Independent Audio in Maine at (207) 773-2424 or visit www.independent-audio.com.

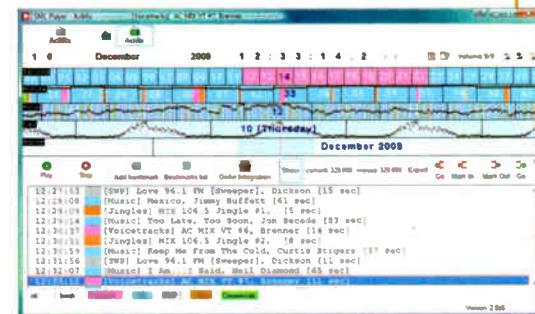
TECHUPDATE

SML LOGGER TRACKS ANY CONTENT

Broadcast Electronics' SML logger for its flagship AudioVault digital media system tracks multiple channels of audio and video together with multiple layers of metadata.

Suitable for capturing, analyzing and archiving audio and video from various sources, the SML logger now includes podcast, PPM, RDS and other metadata capabilities.

Licensed to BE by Stirlitz Media and formerly marketed under the AVLogger name, the SML logger can now import PPM data and display the minute-by-minute audience graph together with program information imported from the play-out system, providing an analysis tool for program decisions.



It can log metadata from HD Radio, DMB/DAB/DAB+, as well as RDS text, station volume and signal output levels and display these data in the SML Player. The player runs on Windows, OS X and Linux machines and will soon do so on smartphones.

The company says the new SML logger can help generate additional revenue by allowing the reuse of logged audio on multiple platforms. Its Podcaster add-on feature operates in an automated mode to generate code and upload various podcasts from one audio source.

The SML logger records at multiple bit rates and has no storage limits. File markers are used for logging events such as the opening or closing of a microphone. A timeline menu lets broadcasters access logged audio by sliding month, day, hour, minute and second bars. Shortcut buttons come in handy to move between locations without restarting the application. Its bookmark feature and event toggle offer navigation and access to archived audio. Users can define personal bookmarks for auditioning audio segments stored on a local hard drive or at multiple station locations, FTP sites or Web sites.

Audio logs can be played back over a network or Internet connection, useful for production and aircheck purposes. SML also e-mails information to multiple e-mail and SMS addresses.

The SML logger is compatible with major automation systems and can be purchased as a standalone application or integrated into the BE AudioVault system.

For information, contact Broadcast Electronics in Illinois at (217) 224-9600 or visit www.bdcast.com.

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BSI Eases Life for Contractor

Simian 2.0 Suite Simplifies Keeping Track of What Airs

USERREPORT

BY TONY POLLICK
Field Engineer
Broadcast Technical Engineering

FORT WAYNE, IND. — Simian 2.0 from Broadcast Software International (BSI) will make your life way easier than it used to be.

The list of features is huge, but first things first is the price. Simian 2.0 Lite starts off at what I feel is a reasonably cheap \$499. This will get users on their feet with professional-grade broadcasting software.

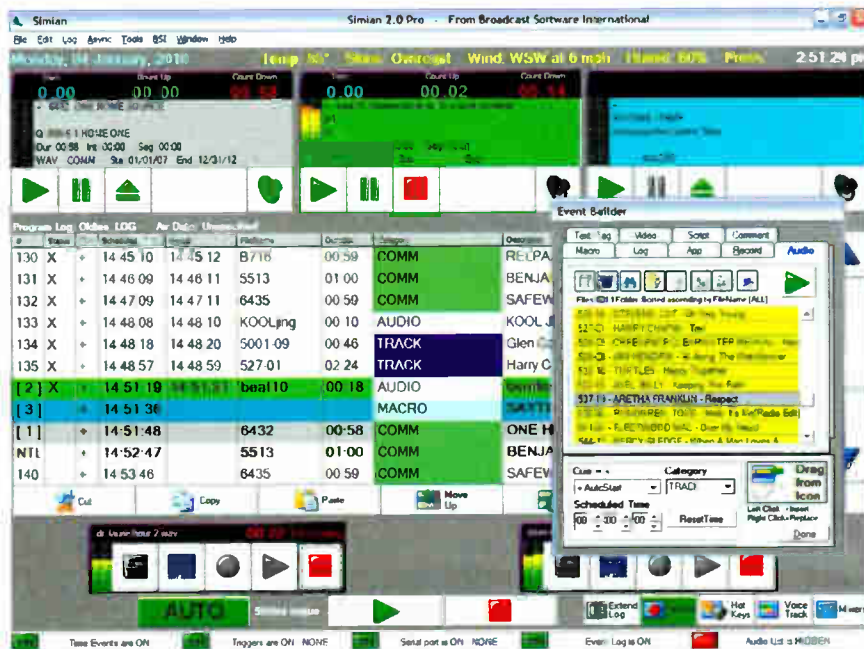
One year of tech support and satellite automation programming, among other features, will bump users up to Simian 2.0 Pro, coming in at \$1,499.

LOGGING

This program is sweet and has saved me tons of time. It offers great log-building capabilities included with the software. But if you already have third-party log generating software don't fret. It won't be an issue because Simian will accept most log creators.

Once a user has made a complete log with no errors, it can be imported and there you will have a broadcast running flawlessly. It is easy to chain program logs together at any point in the day-log to have Simian start the new log. Staff can be home for the holidays and not be off the air. That means making employees happy and sponsors happy. And when your sponsors are happy, you make money.

Event Builder, aka "the event construction kit," is a powerful instrument that lets you find any file from the



Simian also has some great add-ons and apps for no additional cost.

Simian database, from macros to your audio files.

If you access the audio tab on the Event Builder, it displays the database that the SoundHound application maintains. This unique tool runs in the background and keeps an eye on the station's audio files, searching for any changes that might occur. The app then automati-

cally updates Simian to keep your audio files up to date.

Simian also has some great add-ons and apps for no additional cost, including a voice-tracking feature. For stations streaming or looking to get into streaming, Simian can help. With Simian 2.0, users can stream artist and title data to the new and greatest streaming encoders, e.g., WME, icecast, SHOUTcast, SimpleCast.

For an automation suite to perform properly, sufficient and compatible hardware is needed, so let's go over some of the basic equipment needed.

HARDWARE

BSI offers a turnkey system, tower or rackmounted, with a three-year warranty. If your station wants to go the budget-friendly route and build its own, make sure you start with a case with RF shielding and name-brand RAM memory that the motherboard recommends (BSI recommends 512 MB but their systems come with 2 GB).

Make sure to install and use the computer's hard drive for your audio files, and not a network storage location; file servers are not recommended. At least two hard drives should be used (one at least 80 GB for the Simian operating system and another of at least 250 GB for 5,000 songs). Hard drives should be SATA rather than IDE to limit latency issues.

BSI recommends AudioScience 6xxx series card to enable all of Simian's features.

Remember that hard drive space and cooling are important. These machines will be running all the time and the last thing a radio station wants is to be off the air.

Reliability is essential and Simian has my vote.

For information, contact Broadcast Software International in Oregon at (888) 274-8721 or visit www.bsiusa.com.

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TECHUPDATE

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Media Monitors tracks millions of recurring commercials. The company says its teams of spot data specialists research and identify hundreds of new advertisers and commercials every day. Its broadcast monitoring technology reviews top-rated advertising media in major markets so users can see and hear the actual creative.

The combination of human attention coupled with computer hardware and software allows users to create same-day online reports 24 hours a day.

Media Monitors allows users to examine spot break placement, length and spot loads per hour; view any station's log of spots and songs as aired; see actual time each radio spot aired; hear audio of any spot or song from any computer; and monitor client spots on competing stations in a market.

Media Monitors also generates lists of spots and songs; and it can create a combined panel of stations, then analyzes their spot schedules and knows which stations were left off of a time-buy.

Media Rating Council accreditation has been granted for the Media Monitors radio spot service.

For information, contact Media Monitors in New York at (914) 259-4718 or visit www.mediamonitors.com.



MEDIA MONITORS

TECHUPDATES

AUDIOSCIENCE TUNER MONITORS EIGHT CHANNELS



AudioScience's ASI8914 professional PCI tuner adapter for monitoring and auditing HD Radio broadcasts features HD Radio Program Service Data (PSD) decoding and streaming as well as HD Radio multicast support; it is certified by iBiquity. The adapter is a past recipient of the Radio World "Cool Stuff" Award.

The ASI8914 simultaneously provides up to four channels of HD Radio PAD or FM RDS/RBDS data capture from a single F connector antenna input. Additionally, the tuners can be ordered with MCX external antenna jacks so that each tuner can be fed from an external antenna.

An HD50 connector makes available either the mono or stereo audio of each tuner output. Line Out 1 is sourced from a software-controlled multiplex using ASIControl, and may be programmed to Output Tuners 1 through 8.

Additional features include AudioScience's MRX technology allowing each stream to have an independent sample rate of between 8 kHz and 48 kHz, recording formats of PCM, MPEG Layer II and MP3. Up to eight adapters can be placed in one system. Software support includes drivers for Windows XP/Server 2003/7 and Linux in both 32-bit and 64-bit versions.

For information, contact AudioScience in Delaware at (302) 324-5333 or visit www.audioscience.com.

EVENTIDE BD600 IS HD-COMPATIBLE

Eventide's BD600 Broadcast Delay is compatible with HD Radio environments.

The unit offers MicroPrecision Delay mode, which allows up to 10 seconds of delay to be adjusted in real time in 100 nanosecond increments.

"For stations upgrading to HD, providing a high-quality subsample adjustable delay for synchronizing analog and digital is the holy grail for maintaining a seamless experience for listeners," the company states.



"MicroPrecision Delay can be adjusted on-air, and ramped in and out for clean transitions without audible artifacts."

The 24-bit delay unit comes with AES/EBU and provides up to 80 seconds of memory, which Eventide says is twice as much as competing delays. Features include adjustable Delay and Dump, and a Sneeze function that "edits" audio entering the delay, allowing the host to sneeze, cough or make a short comment off-air.

Two types of delay buildup and reduction are provided: Eventide's catch-up and catch-down system, and a fast entry/exit feature that lets you start a broadcast with delay already built up and ending with rapid reduction.

For information, contact Eventide in New Jersey at (201) 641-1200 or visit www.eventide.com.

TELOS/AXIA PROVIDE PC-BASED SOLUTIONS

Profiler and iProfiler are automated programs that log audio, aircheck, skim, remote listen, provide proof-of-play and do audio archiving. They capture audio from live events or contest lines and allow minute-by-minute competition comparisons, among other functions.

Profiler from Telos Systems captures up to four stereo or eight mono channels simultaneously. It uses Telos' professional PCI audio card (with professional, balanced inputs and outputs) and MP3 compression algorithms. Skimming functions activate with a contact closure.

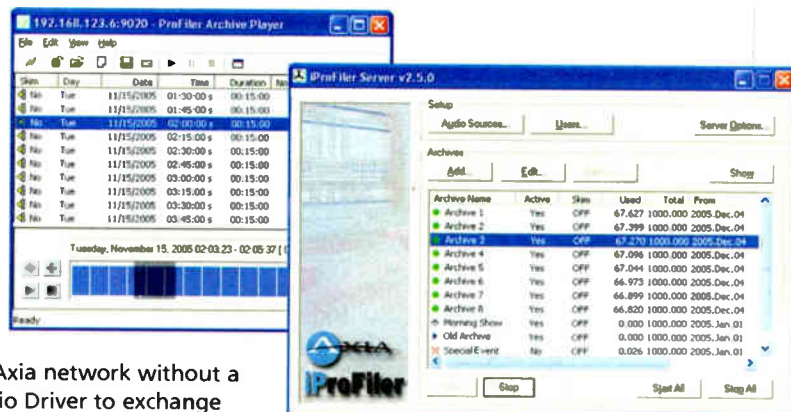
The iProfiler from Axia Audio, a Telos company, archives audio from the user's Axia network without a sound card, using Axia's IP-Audio Driver to exchange audio with Axia networks via Ethernet. It can record 24 stereo streams over a Cat-5e cable.

Profiler and iProfiler are PC-based software solutions. Features include Fraunhofer MP3 compression with choice of bit rates from 16 to 320 kbps; audio archiving to any external drive or device including network storage drives, or CD-R/RW and other removable media (using appropriate third-party software); remote fetching of archived content over any network or Internet connection (if available); and time-stamped audio stored in easy-to-search 15-minute blocks.

Profiler Live Player lets you listen to audio over any IP connection as it's being encoded (dependent upon available bandwidth). ESP pre-roll technology begins capturing audio before the jock opens the mic, and encoded program segments can be automatically uploaded to a Web server via FTP.

Four capture modes are available: Logging (continuous archival storage), Skimming (records only when talent mic is open), Reverse Skimming (records only when talent mic is closed) and SmartSkimming (low-bitrate logging switches to higher bitrate for quality captures when talent is on-mic). A remote monitoring application lets you monitor disk space and audio presence using any network or Internet connection (if available). Audio segments can be selected, exported or e-mailed for external editing or review.

For information, contact Telos Systems/Axia Audio in Ohio at (216) 241-7225 or visit www.telos-systems.com/profiler and www.axiaaudio.com/logging.



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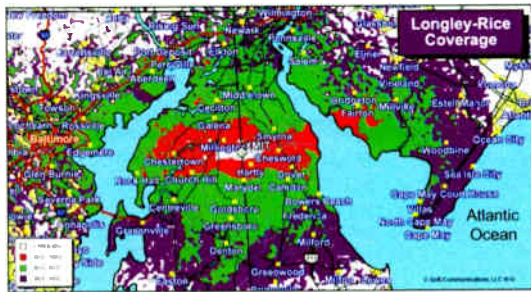
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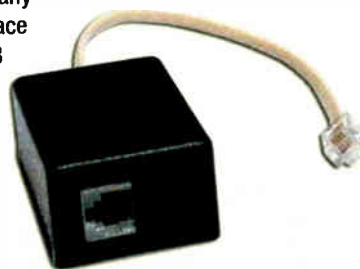
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Bilingual, honest, reliable, friendly and competitive! Loves production/on-air with clear vocals, and strong digital ability plus boards. Musically inclined, and extremely responsible. Yazkara 972-268-4743; lopezyas0930@hotmail.com.

Authoritative voice, with vast knowledge of sports, and teams. Acute attention to detail. Outstanding prep, strong digital ability, and reliable. JP Clark 817-806-6044; clarkjp1978@yahoo.com.

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and creative copywriting. Andrew 469-438-0695; a.henning457@yahoo.com.

Extremely knowledgeable and articulate racing writer/talk show host Adam Amick is available for shows, correspondent, features, etc. Check out www.bleacherreport.com for samples. Call 214-384-5812 or email: adam@rubbinsracingshow.com.

Professional broadcaster. Energetic, strong, digital aptitude, vast knowledge of sports/pop culture. Extensive TV/Radio broadcasting experience. Witty, sarcastic personality that translates well on-air. Kat 505-507-8266; kitkatsturt@yahoo.com.

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READER'S FORUM

ENGINEERS AND LICENSES

In response to John Aegerter's letter in the Oct. 21, 2009 Radio World ("Who Is an Engineer?") and to a recent article by Chris Imlay, Esq. in the August 2009 SBE Signal newsletter, there still seems to be quite a bit of misinformation surrounding Professional Engineering (PE) licensure.

In arguing the relevance of PE licensure, both Mr. Aegerter and Mr. Imlay claim there is little or no electrical or communications engineering in the PE exams. Mr. Aegerter's recollection of the Engineer in Training (EIT) exam goes back to 1971; there appear to be many changes in the exams since this time.

The EIT exam that I took in 1982 had a mix of engineering topics, but also had sections covering electrical engineering. Yes, there were non-electrical questions relating to statics, strength of materials, dynamics, etc., but to be honest, I have used what I learned about those subjects, especially when working with towers and structures, and there is a lot of subject matter overlap in the real world.

The eight-hour NCEES PE exam I took was entirely related to electrical engineering, with the examinee choosing one of three electrical engineering specialty sections in the second half of the exam. The section I selected dealt with electronics, systems and communications.

I took the EIT exam the year I received my BSEE degree and waited over 20 years before taking the PE exam. The reason I took the PE exam after so many years was my attorney telling me "you need a license to practice engineering in this state." It seems that there was a time when buildings burned down, bridges collapsed, mines caved in, etc., due to poor engineering practices. It was then that the states stepped in to regulate the profession and protect public life and safety. They offered a license to individuals who were willing to study engineer-

ing, pass a series of exams, and then practice the profession in an ethical manner.

Another area of misunderstanding is what is known as the "industrial exemption." This is wording in the state engineering codes that exempts individuals from licensure in most cases when they perform engineering for an employer. PE licensure is generally required when individuals offer services directly to the public. So if you work for someone, you most likely don't need a PE to do that work. If you do consulting work for hire, it depends on the type of work you do and the laws of your state.

Many states have their engineer codes posted online.

— Mario Hieb

So what about the FCC? States regulate the professions and the federal government pretty much doesn't interfere. The FCC may issue a station construction permit, but it's the local building authorities who approve the final building or tower design, issue building permits and perform inspections.

In my state, any "final plan, specification and report ... shall bear the seal of the professional engineer or professional structural engineer when submitted to a client, when filed with public authorities, or when submitted to a building official for the purpose of obtaining a building permit." I suppose that the FCC could overrule state regulation of engineering, but that doesn't seem to be in the public interest and I know of no case where they have.

Like it or not, most states require licensure for engineers offering services to the public. I can empathize somewhat with the critics; my life would be simpler if I didn't have to spend time and money maintaining a PE license.

For more information, many states have their engineer codes posted online. Please note that I am not an attorney and this is not legal advice. The laws vary and you should consult an attorney to better explain the laws of your state.

Mario Hieb, P.E.
Consulting Engineer
Salt Lake City

POWERING DOWN

The commentary by Pamal Broadcasting's Paul Thurst about silencing AM radio from midnight to 6 a.m. ("Sign Off, and Save Some Money," Aug. 12) goes against serving the community interest in which a station serves.

Man-made emergencies or natural occurrences know no hours. News and weather that affect the local community would have far more impact if radio were silenced during these critical night-time hours.

If Mr. Thurst deems it necessary to silence his station or group's radio after midnight, I urge the communities in which Pamal Broadcasting serves to remember this at renewal time and to contact the FCC, because his broadcast entity is not serving in the public interest of the community it serves.

Charles Gordon
Myrtle Beach, S.C.


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14-15, 23	Axia - A Telos Company	www.axiaaudio.com
29	Bext, Inc	www.bext.com
18	Broadcast Tools, Inc	www.broadcasttools.com
4, 25	BSI	www.bsiusa.com
3	BSW	www.bswusa.com
6-7, 35	Comrex Corporation	www.comrex.com
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How to Grow More 'Best and Brightest'

Strategic Mentoring for Women Offers Great Potential Payoffs to Radio Companies

BY ERIC SHOARS

"Talentship" is a prime concern for many industries. It is incumbent upon organizations to find and develop the people who will be its future leaders.

COMMENTARY

For radio, the focus on talent development primarily has been on the on-air side. But are we as proactive as we should be as an industry in developing leaders — particularly female leaders — in radio station sales and management?

Consolidation has made it more difficult for women to achieve executive positions in radio because there are fewer of those positions to be had.

According to the April 2009 Mentoring and Inspiring Women Gender Analysis, female general managers have risen from 11.1 percent in 1995 to 15.8 percent in 2008, while female program directors have risen from 8.2 percent in 1995 to 10.9 percent in 2008.

Mentoring and Inspiring Women member Joan Gerberding states:

If station managers had this little amount of growth in their revenues over a 10-year period, they would not keep their jobs. Yet we accept it in areas of diversity growth. Now on the bright side, since 1995, there has been a 21 percent increase in female general sales managers. In fact, women account for nearly one-third of all general sales managers of all radio stations in the country. Clearly we (women) can bring the money in.

Simply getting more women in the managerial pipeline is not enough to ensure that more women will achieve executive positions or even be in the candidate pool for those positions.

In the bottom-line corporate world we live in, many executives are judged upon their ability to increase profitability, revenue and value for their ownership group(s) and shareholders. These executives must not only show value to the company but *create* value for the company.

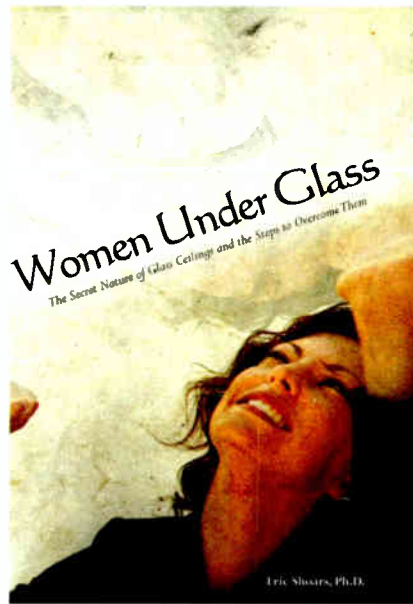
What matters most for women who aspire to executive positions is not to be judged by their gender but to be judged by their ability to show and create value for their organization.

I believe mentoring is an important tool for the radio industry to adopt to help it grow but to also identify and develop talented leaders. At present,

more men than women are in the managerial pipeline. That is a problem for radio as we seek to overcome economic and competitive challenges, as half of our available leadership talent is being kept "on the bench."

EVERYONE BENEFITS

Mentoring in an organization is a private relationship between two individuals based on a mutual desire for development toward an organizational objective.



The author of a new book about 'glass ceilings' argues that radio organizations must become advocates for their best and brightest people, regardless of gender.

The mentoring relationship does not involve formal reporting and in no way infringes on any of the organization's existing communication channels, protocol or hierarchical structures.

A mentor is defined as an experienced, productive manager who relates well to a less-experienced employee and facilitates his or her personal development for the benefit of the individual and the organization.

Mentoring to success is, as yet, a largely unexplored arena for organizations. Within the context of relationships and achievement, mentoring can be particularly beneficial for women and organizations as a whole.

Companies like Fannie Mae have discovered that mentoring is good for business. At Fannie Mae, women account for 60 percent of the participants in their mentoring program.



Fannie Mae mentoring program manager Cecilia Blacutt states:

A main goal of our program is to advance highly qualified employees, particularly women and minorities. Our program provides the opportunity to develop skills and address

personal and professional growth. Mentoring helps employees work smarter, develop themselves and become better at their jobs. And this means more productivity and happier employees to Fannie Mae.

Though mentoring programs pose significant challenges for organizations, the organization is better off with mentoring than without.

The career and psychological benefits women obtain from a mentoring relationship increase the likelihood that they will receive the support and cooperation of peers and subordinates. These benefits increase the protégé's probability of success in the organization. Also, mentoring reduces job stress experienced by professional women who frequently do not have a peer group within the organization to rely on for psychological support.

INTERNAL CHAMPIONS

There are two types of mentoring: grooming and networking.

Grooming-mentoring is the special assistance provided by an older, more experienced professional who grooms his or her protégé during a transitional period. This assistance enhances fast movement up the career ladder for a protégé.

Networking-mentoring, by contrast, entails more flexible and mutually interdependent patterns of training, information sharing and support. Networking-mentoring is characterized by a series of contacts between two or more people in which each plays the role of mentor and protégé at different times and to different degrees. Networking mentors can come from inside or outside organizations, making them company and industry friendly.

Both grooming-mentoring and networking-mentoring are effective methods with which to help employees achieve career goals. The mentor adds instant credibility to the promising executive in the eyes of promotion-deciding executives. The mentor becomes an internal champion for the protégé. This internal champion fights for and argues on behalf of the protégé.

It is vital for women to have a network of "internal champions," given the

lack of women in executive positions across the business landscape. The difference with the "internal champions" of networking-mentoring is the definition of "internal": Internal champions are a network of industry champions.

Whichever type of mentoring you would choose to utilize for your radio station/group, it is important to recognize that no good will come from leaving half of our best minds and talent on the sidelines.

We must become champions and advocates for our best and brightest people in radio, regardless of gender. The initial efforts on mentoring initiatives should be focused on those individuals who will help increase our ratings but our revenues as well: women.

Dr. Eric Shoars' book is "Women Under Glass: The Secret Nature of Glass Ceilings and the Steps to Overcome Them." Visit www.womenunderglass.com.

THE LATEST GIMMICK

It looks like broadcasters are the only people unaware, or unwilling to see, that HD Radio is a bomb.

READER'S FORUM

This iBiquity bandwidth-robbing, adjacency-destroying, spectrum-wasting attempt — to be something radio should not be — needs to shut down and join the AM stereo, FM quadraphonic, RDS and tagging junkyard.

Maybe if broadcasters got back to the business of programming the main channel to serve their communities and stop trying to emulate a satellite service, their bottom lines might come off the floor and make radio again what it is supposed to be: an asset to the community of license.

Here's a letter I received from a buddy who is chief engineer at a large group-owned station:

"Larry, a friend of mine (local engineer) at W--(FM) said they turned off their HD channels. They figured they had 12 known listeners and the electricity was \$1,000 per month!"

Given the state of the economy and their reduced revenues, it was a logical business decision. It's always amused me to watch broadcasters flock to the latest gimmick and forget what they're really licensed to do.

A recent nationally syndicated article referred to HD Radio as "Hum Drum" radio. They were being kind.

Larry Tighe
Owner
WRNJ(AM)
Hackettstown, N.J.

A Call to Gather Young Minds

Tap the Intellectual Resources of the Next Generation at the NAB Show

BY GORDON HASTINGS

Gather in one place the brightest young minds in radio and TV to interface with their counterparts to envision the future of broadcasting.

COMMENTARY

The time is overdue for broadcasting's next generation, ages 30 years and under, to be provided with a platform to develop new ideas. Bring them together with their peers in all new media in an environment where no concept is out of bounds.

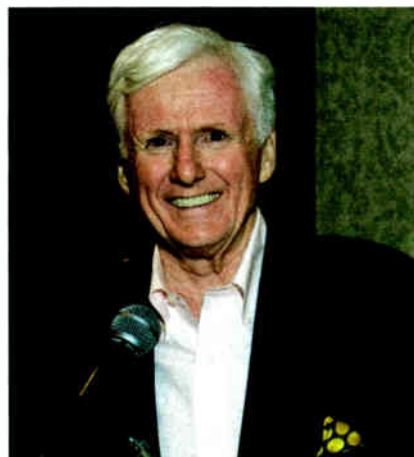
The annual NAB Show is the natural venue for executing this idea.

COMMON CHALLENGES

Broadcasting's future leadership must be united with colleagues from the worlds of wireless, Internet, open-source software, crowdsourcing and social networking platforms.

Such an idea and information exchange would be enormously rewarding to a generation of broadcasters that understand and currently participate in the new world order of communications technology. Participants would return to their respective radio and television stations with renewed enthusiasm for our industry and empowerment to take the lead in driving a renaissance in broadcasting.

The radio and television industries have many common challenges and it is important that everyone in broadcasting gather in one place to exchange resources, technology, cutting-edge concepts and most importantly, to partici-



participate in a dialogue with those in communications who are advancing concepts, content and technological change at lightning speed.

A combined radio and television convention would have greater resources to bring these individuals and organizations together.

Selected participants could engage separately by industry and in joint sessions to hear and meet the most progressive minds to focus on change, direction and strategic planning.

Forums could be created, comprising young broadcasters, placing them in an environment aided by professional facilitators where ideas for revitalizing broadcast media would spring forth.

Prior to the event, participants in teams could be challenged with developing new business plans and pitching their ideas live, in front of an audience of their peers and mentors at the convention. The team

with the best business plan would be provided \$25,000 in seed money by the NAB to begin that game-changing venture.

The program should be organized with the help of outside planning resources to provide the structure for meaningful progress. MBA programs such as those at Wharton, Harvard, NYU and Northwestern in addition to the nation's top communications schools could be an important source in structuring such a program within the framework of the NAB convention. The aforementioned would participate in the judging and awarding of rewards.

The NAB has the staff and resources to organize such a forum within its annual convention. The association can develop a next-generation participant selection process within its membership and reach outside the broadcasting industry to the young achievers working in all other communications platforms. All participants should be invited guests with all costs paid by the NAB.

The benefits of a next-generation concave would result in far-reaching and permanent solutions to current challenges and provide a roadmap for those who in fact will be entrusted with the future of broadcasting. Such a program may well become a permanent center point of the annual NAB Show.

Gordon Hastings is president/CEO of consulting firm ghhManagement LLP, former president of both Katz Radio and Katz Television and the founder and former president/CEO of the Broadcasters Foundation of America. Contact him at gordon@gordonhastings.com.

THE WRONG MENTALITY

As a 38-year veteran of the broadcast engineering field, I can safely state that my colleagues and I have seen numerous "new" technical ideas come and go over the years. Some

READER'S FORUM

of these have provided true enhancements to the AM/FM broadcasting art; others were passing fads, soon to be gone and forgotten.

I have been following IBOC development, most notably in the FM arena, and I have in fact been involved with adding HD to three stations to date. While I admittedly remain on the fence as to the viability of hybrid transmission, I'm trying to be open-minded and unbiased as our industry passes over the various road bumps in settling into a workable system.

My ire was raised, however, by certain comments made in the Oct. 21 Radio World pursuant to the IBOC power increase debate.

The present-day audio quality enjoyed in analog FM broadcasting was established with the underpinnings of much scientific work, along with strict FCC requirements regard-

ing audio distortion and noise. Perhaps this is the time to educate or remind our younger broadcast engineering community that until not so long ago, broadcasters were required to conduct at least annual quality measurements under penalty of FCC rules. If set specifications were not met, it had to be fixed and that was that.

I can bear witness to the fact that some stations cheated and their air sound proved it. Perhaps it was pure coincidence, but my facilities always proofed out and were also number one in the ratings.

While I am making every personal effort to accept change and to get along in our plug-and-play world, I remain astounded by professional commentary now suggesting that FM quality be appraised on the merits of how well system noise is drowned out by an automobile's HVAC system or tire noise. Perhaps then, people listening at home could place a fan next their receiver as well.

If such mentality prevails, we're all in trouble, IBOC or not!

*Steve Konopka
Chief Engineer
WPNE(TV/FM)
Green Bay, Wis.*

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5. Manufacturing quality is very important. Wheatstone is proud to have the best track record in the business for build-quality, reliability and intelligent functionality. With far more up-and-running installations than anyone else, this is where we really shine. An investment in WheatNet-IP and E-Series control surfaces today will reward you with a future-proof, failsafe networking/control environment that's infinitely updatable and in for the long run.

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