

TV

THE DIGITAL TELEVISION AUTHORITY

TECHNOLOGY

Serving the Broadcast, Cable, Production, Post Production, Business and New Media Markets

WWW.TVTECHNOLOGY.COM

VOLUME 22, NO. 20 • OCTOBER 20, 2004

WHAT'S INSIDE

NEWS

Award-winning newscasts

• page 20



FEATURES

The Masked Engineer

• page 30

EQUIPMENT
REVIEWS

Sony XDCAM

• page 42



Barton Buffaloes Broadcasters

Congressman plays Dan Rather card

by Deborah D. McAdams

WASHINGTON

If Joe Barton plays cards like he plays politics, he goes straight for the showdown. The Congressman from Ennis, Texas, recently told a room full of broadcasters at the MSTV Annual TV Conference that he would initiate hearings into the Dan Rather debate once the election was over.

Rather, the senior CBS News anchor, went to air with a report critical of the president's National Guard service based on unauthenticated documents. Barton, Republican Chairman of the

House Commerce Committee, scolded CBS for allowing Rather to be both news director and anchor. (Rather is actually managing editor and anchor of the "CBS Evening News." According to CBS News, Bill Felling serves as news director.)

Ignoring a long and venerable record of media transgressions, Barton lamented the current state of American journalism.

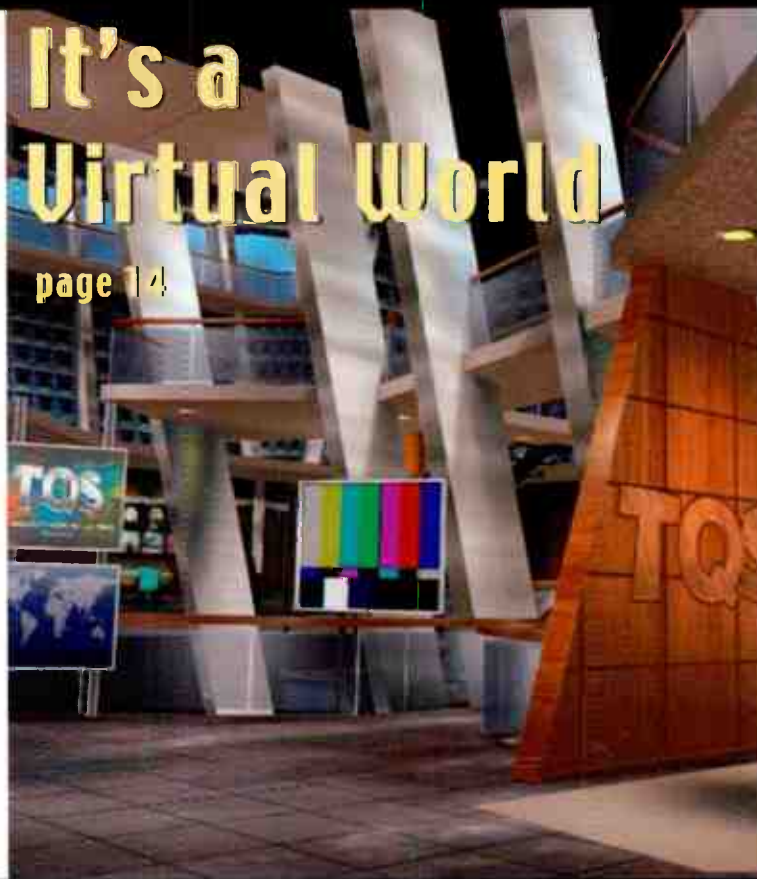
"I personally don't see the same standards of authentication we once had," he said after extolling the sanctity of the First Amendment.

Barton was chintzy about just

BARTON, PAGE 21

It's a Virtual World

page 14



Compression Conundrum

VC-1, AVC battle it out for next-generation codecs

by Andrew Morris

DENVER

Acronyms are flying and manufacturers are posturing as the battle for the next generation of coding technology prepares to hit the marketplace. As is often the case, an acronym war may very well presage a format war. The H.264 standard, aka MPEG-4 Part 10 AVC and now generally known as simply AVC or Advanced

Video Coding, is a fully defined standard with soon-to-be-shipped products. Microsoft is offering a competing codec technology that is in the process of development toward becoming an SMPTE standard and is known as VC-1 (Video Codec One). Based on the video codec in Windows Media 9, this standard was originally called VC-9, but SMPTE decided to call it VC-1 since it was the first codec to be standardized by the organization.

Matthew Goldman, director

of technology for Tandberg Television refers to both of these codecs as ACT, which stands for Advanced Coding Technologies—and that is exactly what each codec is promising. Both are reliably alleged to be at least 50 percent more efficient than MPEG-2, and the result is broadcast-quality standard-definition video coded at below 1.5 Mbps and high-definition video coded at as little as 6 Mbps.

The market for these advanced codecs is potentially huge. The

telcos—unburdened by legacy set-top boxes—will be able to use advanced codecs to deliver video to the home via DSL. The next generation of direct-to-home satellite service, with its emphasis on HDTV, will be able to implement these advanced codecs, as will the next generation of high-capacity DVD players.

"Incumbent services cannot abandon MPEG-2 but new services such as the telcos with DSL and satellite delivery of HDTV

AVC, PAGE 10

If Only Everything In Broadcasting Could Work This Efficiently.

Here's a switch, turn complexity to simplicity in ingest-to-broadcast workflow. The Harris Resource Suite provides a complete set of integrated automation tools that deliver true productivity improvements. From process and asset management to workflow control and movement, the HRS tool set offers

hrs harris resource suite

simple, intuitive resources to simplify management of the broadcast process. Through pre-defined business rules and links between traffic and master control, we make workflow smooth and seamless. And whether it's automating labor-intensive processes, originating live products outside of master control or seamlessly sharing assets throughout your enterprise, HRS helps to take your organization to higher levels of efficiency in the competitive broadcast environment. So turn on a whole new world of productivity with the Harris HRS.

For more information about the ever-efficient Harris Resource Suite, call 1-408-990-8200, or visit us on-line at www.broadcast.harris.com/automation.

www.broadcast.harris.com

HARRIS



1-800-451-1111
#BXNTRG *****AUTOMATION*****
1602742/1# 0408/E/C
PHILIP CIANCI
191 TANGLEWYLD RD
LAKE PEESKILL NJ 10537-1032
39/311

now on the streets of new york



NY1 making big news with P2

Around the clock, around the block, news here happens in a New York minute. That's why NY1 News has taken Panasonic P2 to the streets, covering national events like the Republican National Convention, where reliability is paramount. P2 gets breaking news on-air faster by eliminating digitizing and providing seamless connection of camera original-quality DVCPRO data directly to laptop editors, servers and IT networks. With P2 and Pinnacle Edition non-linear editing, NY1 can cover New York's non-stop news with greater speed and efficiency. How about your city? To find out more about Panasonic P2 news solutions call 1-800-528-8601 or visit www.panasonic.com/broadcast.



Panasonic ideas for life

IN THIS ISSUE

NEWS

- 1 Barton Buffaloes Broadcasters**
Congress plays Dan Rather card
- 1 Compression Conundrum**
VC-1, AVC battle it out for next-generation codecs
- 8 Microphone Sounds Surround Viewers**
As in real estate, it's all about location, location, location
- 14 Virtual Sets Get Mainstream Treatment**
Broadcasters find lower prices, more choices
- 16 Europe Focuses on HDTV Standards**
At IBC, policymakers, vendors debate progressive vs. interlace
- 22 Beyond Video-on-Demand**
SeaChange serves up interactive games
- 26 EAS Codes Defined**
Preparing for DHS Alerts from NWR
- 58 TV Technology Stock Index**
Siemens Seals BBC Tech Deal

SPECIAL REPORT: NEWS TECHNOLOGY

- 18 KLAS Sees the 'Low' Light**
Las Vegas station migrates to HD news one step at a time
- 20 Award-Winning Newscasts**
Natural disaster coverage key to garnering RTNDA awards

FEATURES

- 27 Emmy-Winning Editor**
Focus on Editing, *Jay Ankeney*
- 28 The Age of Innuendo**
The Big Picture, *Frank Beacham*
- 30 Analog Obsolescence Looms**
The Masked Engineer, *Mario Orazio*
- 32 AI: The Holy Grail!**
Count on IT, *André Mendes*
- 34 Anticipating Signal Behavior**
Digital TV, *Charles W. Rhodes*
- 38 Constructing an Instruction Manual**
Production Manager, *Craig Johnston*

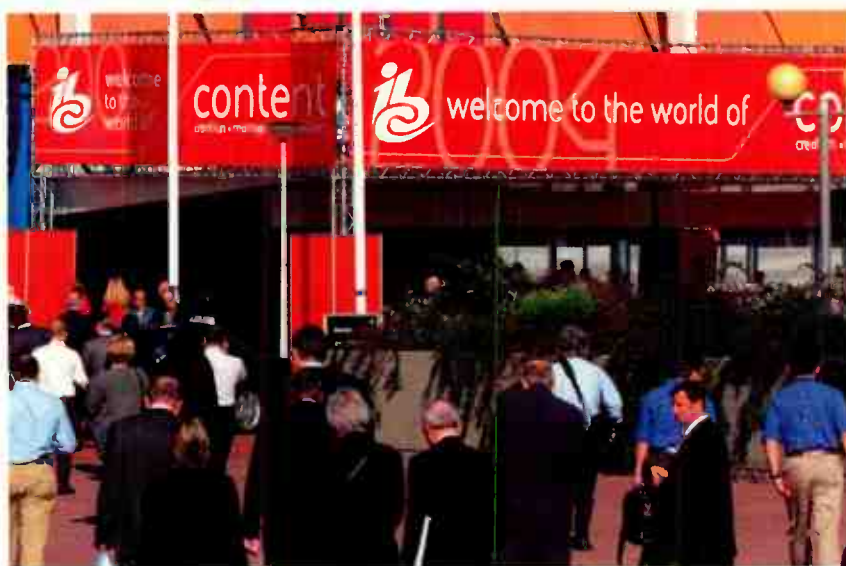
EQUIPMENT REVIEWS

- 42 Sony PDW530 XDCAM**
John Sharaf
- 43 Panoramadt RM-3270W Dual Monitor**
Bob Kovacs
- 45 Kata CG4 and RC10 Camera Protection**
Carl Mrozek
- 48 Transvideo CineMonitor III**
Bob Kovacs
- 50 Sony Vegas 5 NLE Software**
Stephen Murphy
- 52 Bauhaus Mirage 1.2 Effects Software**
Michael Hanish

EQUIPMENT

- 41, 41, 47, 51 Product Showcase**
- 54-57 Classifieds**

P.16 IBC2004: A look back



CONTRIBUTING WRITERS

NAME:
Frank Beacham

COLUMN:
The Big Picture

While a kid working in television's monochrome era, I remember well when the FCC had a policy called the "Fairness Doctrine." I didn't fully grasp what it meant, but the news director made it simple—when reporting the news, we were to be fair to those on all sides... **PAGE 28**

NAME:
André Mendes

COLUMN:
Count on IT

Throughout all its infancy and even as recently as the late 90s, it was not unusual for even some of the biggest luminaries in the information technology industry to think of IT as being mostly driven by the hardware. Now don't get me wrong... **PAGE 32**

NAME:
Charles W. Rhodes

COLUMN:
Digital TV

In 1998, the FCC revised—for planning purposes—its desired-to-undesired ratios for the DTV-DTV interference between adjacent channels (ACI). Originally, the D/U ratio was -43 dB, but now it is -26 dB in one case and -28 dB in the other case... **PAGE 34**



Because

*This is technology you can touch.
AirSpeed™, a revolutionary new breed
of broadcast video server, accelerates
your I/O by providing immediate access
to incoming feeds. Affordable, reliable
AirSpeed systems scale easily and
play to air within moments of editing
the story – with an interface you
already know how to use. Call your
Avid broadcast sales manager today
or visit www.avid.com/airspeed.*



Avid Broadcast Solutions

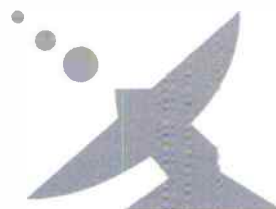
Be first. It's only news once.

From ingest to playout, nothing stands in the way of a great story.



To be a leader, you have to stay on top of the news, the competition, and the latest technology. That's why Avid has become a leading choice of news organizations around the world for innovative editing, media asset management, networking, storage, and newsroom systems. Integrated, all-digital, end-to-end broadcast solutions from Avid continue to set the pace in versatility, reliability, and price/performance, so broadcasters can focus on today's news – and not worry about tomorrow's technology.

www.avid.com/broadcast



make manage move | media™ **Avid®**

eed, Avid and make manage move | media are either registered trademarks or trademarks of Avid Technology, Inc. in the United States and/or other countries. All other trademarks contained

The staff can be contacted at the phone extensions listed or via e-mail using first initial, last name @imaspub.com

Publisher: Eric Trabb
732-845-0004
Associate Publisher: Marlene Lane
ext. 128

Editor: Tom Butts
ext. 122
Managing Editor: Deborah McAdams
ext. 177
Technology Editor: Bob Kovacs
ext. 150
Associate Editor: Lauren Evoy Davis
ext. 149

News Correspondents: Frank Beacham, Art Daudelin, Claudia Kienzle, William T. Hayes, Naina Narayana Chernoff, John Merli, Mary Gruszka, Craig Johnston and Susan Ashworth.

Production Director: Davis White
ext. 132
Publication Coordinator: Cynthia E. Council
ext. 125
Ad Traffic Manager: Kathy Jackson
ext. 134
Classifieds/Product Showcase Coordinator: Linda Sultan
ext. 109

Ad Coordinator: Caroline Freeland
ext. 153
Circulation Manager: Kwentin Keenan
ext. 108

President/CEO: Slevan B. Dana
ext. 110
Vice President/
Group Publisher: Carmel King
ext. 157
Chief Financial Officer: Chuck Inderrieden
ext. 165

TV Technology (ISSN: 0887-1701) is published semi-monthly by IMAS Publishing (USA) Inc. 5827 Columbia Pike, Third Floor, Falls Church, VA 22041. Phone: 703-998-7600. FAX: 703-998-2966. The international edition is published monthly along with the month's second domestic edition. Periodicals postage paid at Falls Church, VA 22046 and additional mailing offices. POSTMASTER: Send address changes to TV Technology, P.O. Box 1214, Falls Church, VA 22041. Copyright 2004 by IMAS Publishing (USA) Inc. All rights reserved. For reprints contact the author and TV Technology.

For address changes, send your current and new address to TV Technology a month in advance at the above address. Unsolicited manuscripts are welcome for review; send to the attention of the appropriate editor. REPRINTS: Reprints of all articles in this issue are available. Call or write Emmaly Wilson, P.O. Box 1214, Falls Church, VA 22041 (703) 998-7600 ext. 148 Fax: (703) 671-7409. Member, BPA International.



GUEST EDITORIAL

HD Isn't News—Yet



In 1990, I purchased a fancy TV set that had features I wanted, including a 27-inch screen, an S-Video input and a comb filter. It cost me \$700 in 1990 dollars.

At Wal-Mart a few weeks ago, I saw a 32-inch 4:3 HDTV set—including an integrated DTV tuner—for \$750. Shortly after that, I saw a 27-inch 16:9 HDTV set (also with an integrated DTV tuner) at Best Buy for \$700.

To be honest, \$700 was a premium price in 1990 and I bought a premium TV. A similar TV today would cost less than \$300 and would have more features.

However, with real DTV sets that can display genuine HD priced well below \$1,000, why is there still whining about the high cost of HD? The fact is that it's only high when compared to standard NTSC TVs, the cost of which has dropped precipitously ever since color TV became popular in the mid-1960s.

If my 14-year-old TV died, I would seriously consider the \$750 Wal-Mart model, ending up with a bigger and far more capable TV than the one it's replacing. The biggest thing holding me back is that the Wal-Mart set does not have the new fifth-generation DTV reception technology that makes off-air DTV reception much more reliable

than earlier technology.

The cost of viewing HD at home is not the barrier that it once was, although I understand that not everyone can—or even wants to—spend \$750 on a TV. However, the barrier to buying an HDTV set today may be more psychological than financial for many people. There are three psychological barriers that I see:

1. If I wait, they'll be cheaper.
2. I really want a flat-screen TV.
3. I don't feel comfortable with this new technology.

Working in the video industry, there's not much that we can do about statements 1 and 2. However, there is something that we can do about statement number 3: education.

If you're one of the lucky few who has a working HD setup at home, invite the neighbors and relatives over for a special occasion. In my case, I had a "Let's watch the Olympics in HD" party and had some friends and neighbors over. Now that it's the fall, football games and baseball playoffs are excellent opportunities to gather some friends for an afternoon of education disguised as fun.

Broadcasters and cable operations need to come up with more and cre-

ative ways to educate their viewers about HD, and show suspicious consumers that the technology is ready for primetime. A wonderful opportunity to put HD squarely in front of the public would be for broadcasters to begin doing local news in HD. When friendly and familiar news anchors begin talking about HD, their viewers will come to think that HD is not all that odd after all.

Yeah, I know... I don't have to buy all that gear and make the investment. However, the early adopters now have their HD receivers and others are starting to follow. Any broadcaster with an HD newscast has a good chance of getting these HD viewers to at least take a look; in my case, I guarantee that I'd watch the local news in HD if it were available.

As long as local news broadcasts are not in HD, the technology will be little more than a curiosity for many people. Broadcasters have spent time and money to make their news programs believable and reliable; they may be the best way to convince the public that HD works and it's here to stay.

Bob Kovacs
Technology Editor
bkovacs@imaspub.com

LETTERS

Send to Editor, TV Technology at e-mail tvtech@imaspub.com

The Dangers of Publishing

Dear Frank Beacham,

Regarding your article on the "Induce Act," ("Law Could Lead to High-Tech Terrorism," Sept. 8). I've been following this for a few weeks now. The good news is we "the people" have already been promised that the wording of the Induce Act will be tightened up. The bad news is that the people doing it are the same folks that wrote it in the first place.

Personally, I plan to sue everyone. I'll have to sue the recording industry because they continue to publish materials that I might want to share with others. Adding further insult, they continue to publish their materials on non-protected digital mediums. I believe we have the grounds for the largest class action suit in history. Every man, woman and child in America is a victim of this egregious and ongoing offense. It's been documented in multiple courts of law that they (the recording industry) are releasing content that this nation's very children will be forced into illegally sharing with their friends and even strangers! In fact, your article was pretty good. And seeing as you clearly did not print it in a way that would limit my ability to duplicate it and share it with others, you too are engaged in this heinous cycle of releasing materials with the complete knowledge that you are doing so in a way that will cause me to break the law. I'd bet someone even paid you to do it! The mind boggles.

I see only two solutions. Either all content producers must cease and desist from all publication of all content, including historical and current, until such time as they can assure the public that they will be safe from any danger of being unwittingly induced into committing criminal acts, or give us free and clear access to this material until you can safeguard this nation and its children. Let me be the first to extend an olive branch of peace to all sides. You may freely publish this letter.

Gus Zader
Virginia Beach, Va.

Brought to You by Wal-Mart

Dear Mario:

Loved your article in the Aug. 18 issue, ("Surprise! HDTV Has Higher Definition"). The last paragraph is right on target, especially the last sentence, "Give the director a non-HD home TV to check." Since my telecast is on cable, I have for years—and will continue to—direct from a Wal-Mart TV set with a signal coming back over cable. You might not have noticed that some of us learned a long time ago what to do.

Jerry Jones
Hot Spring, Ark.

AFFORDABILITY THROUGH INNOVATION
Scalable software for any newsroom



Now it's your turn to
make the headlines.

The story is happening right in front of you. You need to produce a high-quality edited piece for air. Now. You've always had the skill – Is the technology available?

With the Grass Valley™ NewsEdit™ LT laptop-based nonlinear editor a field reporter or producer—even a lone camera operator—can ingest media, edit sequences with cuts and transitions, add audio tracks, and output finished stories to a camcorder or back to the station.

Affordability Through Innovation

NewsEdit LT system is one part of the Grass Valley Digital News Production Solution that touches the entire news-production process, from ingest to edit to playout. Through the introduction of the NewsEdit™ SC system and Network Attached Storage (NAS), Grass Valley has provided high-quality, affordable, digital news production solutions to broadcast news organizations of all sizes.

A software based version of the most popular news edit system in the market, the NewsEdit SC system provides speed, ease of use, and tight integration with a wide range of newsroom computer systems.

Low Cost Storage Solutions

Providing fast, centralized access to everything from incoming feeds to archived clips, the Grass Valley NAS system lets editors access multiple video files in multiple video formats, including DV50 and scales to 14.6 terabytes.

Debunking myth that NAS-based storage approaches offer an unreliable quality of service, the NAS system uses Grass Valley NewsShare™ technology to provide deterministic server and client channel bandwidth, which is key to ensuring smooth workflows in demanding news production environments.

The technology is now available – It's your turn to make headlines.

To find out more visit:

www.thomsongrassvalley.com/newsproduction



Microphone Sounds Surround Viewers

As in real estate, it's all about location, location, location

by Claudia Kienzie

PARK VIEW, N.J.

Although the HD picture gives viewers a seat that's better than the best seat in the stands, it's the 5.1 channel surround sound that lets them experience what it's like to really be there. And effective surround sound starts with knowing which microphones are best suited to each situation and optimal placement for picking up the desired sound.

FROM SUBTLE TO SURROUND

"With surround sound, we bring the atmosphere of the venue into the viewer's living room. To do this, we strategically place our microphones so the viewer can hear both the loud sounds—like the roar of the crowd or an athlete landing on a mat—down to the subtlest sounds—like the echo of the PA system on the back wall or the concentrated breathing of an athlete as he prepares to perform," said Bob Dixon, manager of sound design for NBC Olympics, in Stamford, Conn. Dixon was a member of the production team that produced the 2004 Athens Olympics for NBC.

"For the Olympic telecast, microphone placement was especially challenging. In the gymnastics venue, we wanted to capture gentle sounds, like the footsteps of the gymnast walking across the balance beam. Above all else, this had to be done in a way that did not jeopardize the gymnast's safety. And with cable runs, we had to consider if anyone could trip and fall," Dixon said.

To augment the host mix from Athens Olympics Broadcast (AOB), Dixon worked with Dennis Baxter, an Atlanta-based sound designer responsible for the host feed.

Dixon said, "NBC required many separate microphone splits and submixes to mix with NBC microphones for things like 'iso' records," Dixon said.

"We conducted a feasibility study to determine that our microphones would be in a location where they were really going to pick up what we were hoping to capture. And they couldn't be so far away that we couldn't get to them easily if they suddenly needed repair," Dixon said. "Much of what we learned in Athens will benefit us at the Winter Olympics in Torino, Italy."

A DELICATE BALANCE

"My philosophy about mixing sur-

round sound for live sports is to put the viewer in the best seat in the stands, right in front of the action, surrounded by a vast, full stadium experience. But I also like to enhance the sound by adding individual effects for better definition and realism," said Fred Aldous, senior mixer and audio consultant for Fox Sports, based in Phoenix, Ariz.

Aldous has won 10 Sports Emmy Awards, and Fox Sports has won the award for outstanding live sports sound for five of the last six years.

"For surround micing, I'm very pleased with mics from Danish Pro Audio, like the DPA4006 omni mic that I like to pair in an A/B configuration for picking up ambient crowd sound," he said. "And, the only mic that offers nice, tight micing on a speed shot, for ambient splash of cars zooming around the track, is the DPA4007 omni."

For NFL games, Aldous uses DPA4061 miniature mics on officials (with Sennheiser SK250 transmitters), because it allows him to get field

LTRT or mono," Aldous said, "and it's a challenge to maintain that delicate balance."

ENVELOPED BY SOUND

"With HDTV, the picture looks realistic, but to complete the experience you must have surround sound—the action, the crowds, and ambience—to make viewers feel they are really in that stadium and emotionally involved in the program," said Brad Lunde, president of Las Vegas-based TransAudio Group (TA).

For most broadcast situations, mixing between multiple microphones placed around a venue has been a common approach to surround sound.

"But this is problematic because it introduces phase errors, where frequencies are canceled due to interference, and even if these problems are reduced in post, the final audio leaves something to be desired," Lunde said.

However, SoundField microphones, such as the ST250 used by NBC to produce surround sound at the Athens Olympics, eliminate phase errors by never creating them in the first place. SoundField microphones, including the ST250 and top-of-the-line Mark V, are premium, handcrafted mics built in the U.K. for which TA is the exclusive U.S. importer.

The SoundField is an ordinary-looking microphone but it contains four capsules that capture audio in something called "B Format." B Format has four components: X (front to back), Y (left to right), Z (up and down) and W (the absolute reference for X, Y, and Z).

"This three-dimensional B Format model represents the true three-dimensional nature of any acoustical event," Lunde said.

Once the "B-Format" (X, Y, Z, W) sound is captured (in real time or in post) it's input into a

SoundField B Format Decoder that extracts the data to produce mono, stereo, 5.1 channel, as well as any future format such as 6.1, 7.1, and 10.1 surround sound. Decoders are available in digital or analog form, such as the SoundField Surround Zone for the Nuendo, Sadie or ProTools (available winter 2004) audio post platforms or the analog SoundField SP451 for multichannel

MICROPHONES, PAGE 24



Fred Aldous, senior audio mixer and audio consultant for Fox Sports, sitting in the NEP SuperShooter 18 HD truck.

Aldous mixes on the Calrec Q2 desk in the NEP SuperShooter 18 HD truck to produce a 5.1 surround mix, a Dolby ProLogic II Stereo Lt Rt (Left Total Right Total) mix and a mono mix. On NASCAR telecasts, Aldous often maxes out his 120 faders—including more than 70 production microphones; the submix of 56 inputs of sound effects microphones placed around the track, and the submix of "racer radios" from inside 43 cars.

Aldous mixes and matches microphones in his sports telecasts because each vendor brings a different sound to the table, he said. For NASCAR, one of the most complex micing scenarios, Aldous prefers Sennheiser MKH-835 hand mics for reporters roving the track and pit areas. For tight crowd micing, he likes the Audio Technica 825S, with built-in stereo capsules for picking up definition, like hand-clapping in the stands.



John Garrido, Gary Mace and James Stoffo of Professional Wireless Systems used Sennheiser mics at Super Bowl XXXVIII.

sound between the break of the huddle and the initial surge of the play. And, he uses a pair of DPA4023 microphones in an X/Y configuration near the sideline to pick up the overall sound of the stadium.

"Our boss David Hill, [chairman and executive producer of Fox Sports], is adamant that his high-priced announcers not get overpowered by other sounds when the 5.1 surround is downmixed to

SONY®

HD Anycam.



LUMA LCD display



HDC-X300 Portable HDCAM VTR



Welcome to the HD goalpost cam. HD weather cam. HD church cam. Or HD machine vision cam. Welcome to the Sony HDC-X300, so small and affordable, it boldly goes where no high definition camera has gone before. Switch instantly among 60i, 50i, 30P, 25P or 24P signals via flexible HD-SDI, R/G/B or Y/Pb/Pr outputs. Marvel at Sony's all-new 1/2-inch 1.5-megapixel CCDs. And benefit from tally, trigger and Slow Shutter. There's even auto focus with the matching, digitally-controlled 19x zoom lens. And you can systematize with Sony's LUMA™ HD monitors and HDCAM® portable VTR. The Sony HDC-X300 is the definitive high definition camera for anytime... anywhere... anyone.

Visit www.SONY.COM/HDCX300

LIKE NO OTHER™

© 2004 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features and specifications subject to change without notice. Sony, HDCAM, Like No Other, and LUMA are trademarks of Sony.

AVC

CONTINUED FROM PAGE 1

can take advantage of AVC," said Rob Robinett, CTO of Modulus Video, a Sunnyvale, Calif.-based developer and manufacturer of AVC codecs. "The economics of the satellite business is really changed by AVC. With the availability of AVC, with its huge bandwidth efficiency gains, it makes a very poor business case to justify using MPEG-2 for new services."

Proponents of VC-1 make the identical business case for their codec.

STANDARDS ARE KEY

It is standardization that drives acceptance of these new codec technologies. AVC has, in fact, been an international standard for about one year now. A Joint Video Team (JVT) composed of coding experts representing the ISO/IEC and the ITU-T organi-

zations (from the moving picture experts group [MPEG] and the video encoding experts group, respectively), created this advanced coding standard.

These organizations are now poised to ratify extensions to the AVC standard that would result in four new profiles including High Profile directed at broadcast television applications, as distinct from the currently ratified Main Profile. The AVC High Profile is a superset of the Main Profile and adds a few new tools, including the adaptive use of an 8x8 block transform and quantization scaling matrices. The technical work is complete and as of this writing is awaiting formal ratification.

"There are those who think nobody should have the nerve to create a compression standard that is not MPEG."

—Peter Symes, SMPTE

VC-1 is well into its standards process under the auspices of SMPTE. Based on the Windows Media 9 Advanced Profile, which is roughly equivalent to the AVC Main Profile, VC-1 includes tools such as the 8x8 block transform that appear only in the new extensions to AVC.

According to Peter Symes, SMPTE vice president of engineering, "the standardization of VC-1 is somewhat controversial. There are those who think nobody should have the nerve to create a compression standard that is not MPEG. Some felt SMPTE would do nothing but rubber-stamp Microsoft's desires, but that has not been the case."

Symes explained that the SMPTE Technology Committee decided that a reference decoder must be created in software to validate the VC-1 standards document. A third-party vendor divorced from Microsoft was contracted to create this software decoder. Symes referred to this as a "clean room exercise."

This project has resulted in 100,000 lines of code and a 140-page supporting document according to Symes.

ATSC JOINS THE PARTY

ATSC is considering both AVC and VC-1 for use in its proposed E-USB or Enhanced VSB standard.

"We are reviewing video codecs with some study and evaluation of AVC and Windows Media," said ATSC President Mark Richer. "These would not be in place of MPEG-2, which will remain the codec for primary services. The current effort is for new coding for E-USB in order to provide some bits for a more robust mode. These codecs could be used to supplement the main program or for new services."

"ATSC is considering whether we adopt one, or both, or neither. It is possible there will be a preliminary deci-

sion before the end of the year but that is not guaranteed. The time frame is tough to predict," said Richer.

Even with, or perhaps because of this ongoing standards activity, Tandberg Television and Harmonic are bringing to market codecs that support AVC and VC-1 as well as MPEG-2. Modulus Video, however, is offering products that support only AVC.

"It is no small task to optimize and support all these different codecs," said Neil Brydon, director of product marketing for Modulus.

"We are focused on AVC and supporting all the tools that bring efficiency to AVC," said Robinett.

rack the equipment and you're done. You'll have an MPEG-2-only box that can be activated to become either an advanced codec without pulling the box out of the rack."

As for the differences between the two codecs, Goldman said, "from a high-level point of view, they have much in common in regard to coding efficiency. The differences are deep down in the coding level, either with how or where a coding tool is applied in the processing chain, or in a few cases, with the choice of a different tool to perform a particular function. Both are excellent and they far exceed the capability of MPEG-2 in bit-rate reduction."

"AVC is more complex and may ultimately offer the potential for higher quality and more efficient coding. VC-1 is less complex and therefore, presumably easier to implement efficiently," Goldman said.

Examples of specific differences between AVC and VC-1 include AVC's use of six-tap filters versus VC-1's use of four-tap filters. AVC uses an entropy scheme known as CABAC (context-adaptive binary arithmetic coding) that is computationally intensive and therefore expensive to implement. VC-1, by contrast, uses high-order entropy coding that is less complex and less expensive to implement.

"We chose smarter algorithms that are less complex," Ribas said. "It is a significant advantage to be less complex. Rather than the kitchen sink approach, we were very careful in our design choices."

Modulus' Robinett, however, believes that CABAC is one of the elements of AVC that will provide video quality superior to VC-1.

"VC-1 is a codec but it is also part of the complete Windows Media platform," Ribas said. "As a codec, it is merely one important piece of an end-to-end solution, which includes a DRM solution blessed by content providers, advanced servers, media players, chips, CE devices, and other key components. This is technology that can be used wherever there is digital content, whether it is the Internet, smart phones, DVD and HD-DVD players and video services transported over DSL, satellite, cable or IP networks. With Windows Media in common, all these devices will be able to talk to each other."

Tandberg Television's Goldman says there's room for both codecs in the marketplace.

"We currently have multiple audio standards such as MPEG Layer II, Dolby AC-3, MPEG AAC and DTS," he said. "The industry supports over five different audio standards and it has been left to the marketplace to decide what is most appropriate for each application. Surely the industry can support two different advanced video codecs as well." ■

Brings You Maximum Value From Install to Upgrade



Fast... All patchbays are designed, built, tested and warehoused in our state-of-the-art plant, giving you the fast turnaround you need.

Flexible... Bittree pioneered the 3-pin connector (E3) in patchbays, providing a simple, sturdy connection for fast re-configurations. We also invented the "Programmable" patchbay, letting you change normaling and grounding by re-arranging the shunts under the designation strips.

Reliable... From gold-plated contacts to powder-coated panels, count on Bittree to deliver years of flawless connections and the industry's finest fit-and-finish.

Convenient... Bittree produces a wide range of audio, video and data patchbays, as well as patchcords, tools and accessories.

Bittree

High-Performance Patching Systems

Toll-Free (800) 500-8142
Outside U.S.A. (818) 500-8142
www.bittree.com

How to build a brand, instead of just graphics.



APR • ClipStore™ Video + key + audio = better branding for your station.
The new, low-cost ClipStore DDR delivers live, full motion graphics that practically jump off the screen — truly unforgettable images that keep viewers glued to your channel. Capture, store and play pristine, uncompressed video + key + audio content, while seamlessly rendering projects directly to ClipStore via ultra-fast gigabit Ethernet. So fast and easy. Best of all, ClipStore is from Accom — the leader in reliable, innovative digital disk recorders. Visit www.accom.com to learn more about building a better station brand with ClipStore.

Accom®



The XDCAM System



As the industry leaders go tapeless, they're going with Sony's XDCAM™ Professional Disc™ system. After all, Professional Disc media is the only nonlinear media you can afford to use in acquisition, postproduction, program exchange and archiving. The XDCAM system also has proven interoperability with all the popular NLEs and servers, plus proven appeal with over 3,500 XDCAM products already delivered worldwide.

And now Sony offers the new 24PsF progressive scan option card, plus we will soon deliver the PDW-D1 XDCAM drive, which plugs directly into your compatible PC via the i.LINK® interface.

So make the move to the XDCAM Professional Disc system.

And find yourself in very good company.



Get your FREE DVD on the XDCAM system at www.sony.com/XDCAM

© 2004 Sony Electronics Inc. All rights reserved. Features and specifications are subject to change without notice. Reproduction in whole or in part without written permission is prohibited. Sony, i.LINK, Like No Other, Professional Disc, and XDCAM are trademarks of Sony. i.LINK is a trademark of Intel Corporation to designate that a product contains an IEEE 1394 connector. All products with an i.LINK connector may not communicate with each other. Please confirm interoperability with third party manufacturers. For more information, contact Sony at 1-800-845-7668.


LIKE NO OTHER™

SONY®

in **Very Good**
Company



ABC 7 CHICAGO



Virtual Sets Get Mainstream Treatment

Broadcasters find lower prices, more choices

by Linda Romanello

NEW YORK

From the start, broadcasters recognized the benefits of using virtual studios, finding valuable savings in time, space and money. But 10 years ago, when the technology was first launched, the initial investment required from users was high, while the product choices were limited. Times have changed. More recent advancements in many of the key components that make up a virtual studio are not only helping drive down overall costs, but are also allowing more companies to offer more variations of the traditional virtual studio package. And, increased competition brings us right back to lower costs. Ultimately, it's the end user that's starting to gain even more from this technology.

"In their inception, virtual studio systems cost upwards of \$250,000 for starters; now a simpler yet sophisticated system can be had for about one-fifth that cost," says Gary Attanasio, national sales manager for FOR-A's line of virtual studio and real-time graphics solutions and southeastern regional manager for its overall product line.

Eric Pratt, president and CEO of virtualsetworks.com, an Irvine, Calif.-based designer of virtual set libraries, agrees, "Virtual sets used to be exclusively a six-digit-plus domain enterprise, but with more people realizing the cost benefits of virtual production, the low- and mid-range productions are catching on, and driving the cost of this technology down with use."

Mark Randall, CEO and president of Serious Magic, elaborates, "We see users searching for ease-of-use, lower costs and flexibility. Traditional virtual set systems are remarkably complex, requiring specific staff training. As staffs turn over, this becomes an ongoing expense. Flexibility means having a portable sys-



FOR-A's Digistorm real-time rendering 3D virtual studio system

tem that isn't tied to one physical studio. We also see clients demanding a range of high-quality, virtual environments at a reasonable cost."

Tim Hedegaard, president of Virtualsetworks.com, a design and integration company based in Los Angeles, reports that his company has been seeing an "exponentially higher" interest in virtual sets over the past year. He attributes this to the fact that the technology "is becoming more familiar to users with a higher success rate" than years ago. "In addition, the realism has been improved. For years, it's been possible to produce stuff that looked like it appeared in a video game, but only in the last few years has it begun to be possible to create stuff that looked real or close to it."

According to several vendors, one key ingredient helping to bring down the costs is the proliferation and advances of 2D and 3D effects software from companies like Adobe, Alias and Discreet. Workstations, too, although still high-end, can also be off-the-shelf PCs running Windows. Kobi Shina, director of sales for Orad Inc., credits his own company as one that's helped drive this area. "Around three to four years ago, Orad introduced its new graphic computer—the DVG (Digital Video Graphics). This enabled our clients to accomplish photo-realistic sets, as well as simplified the user

interface by moving from a UNIX to a Windows-based O/S."

WHO'S OFFERING WHAT

Today there are not only more companies offering virtual studios (Orad, vizrt, FOR-A, Serious Magic and Radamec), but there's also a wide variety of resellers and design and system integrators (Virtualsetworks.com, Virtualsetworks.com, and Devlin Design Group) offering popular packages.

FOR-A offers a full line of scalable virtual studio solutions including several variations of two of the company's flagship products, DigiStorm and DigiWarp. "DigiStorm is what is commonly known and expected of a high-end virtual studio system: A full 3D model with polygons, lighting, texture and animation," explains Attanasio. "DigiWarp takes a different approach to virtual studio production. Using a series of high-resolution graphics and video layers, DigiWarp is a very powerful tool offering many of the features and all the image quality of DigiStorm, but at a slightly more reasonable price. It is considerably easier and cheaper to operate, and with the guarantee of real-time performance."

Orad has several offerings to meet the different types of production needs of its customers. The company's leading products are CyberSet and CyberSet Light. "We have noticed a growing interest and demand for our CyberSet Light system," says Shina. "It supports multiple camera production, two video insertions and animations, and is also a very cost-effective solution."

Radamec Broadcast Systems offers Virtual Scenario, a system that fea-

tures a unique version of the company's robotic products as well as its DVE (Digital Video Effects) electronic system that was actually developed by the BBC's R&D division.

"In its various guises the BBC has been involved with virtual sets since 1990," says Danny Popkin, technical development manager, BBC Studios. "R&D developed a 2D system that was licensed to Radamec Broadcast to sell called 'Virtual Scenario.'" The system is predominantly geared toward news and sports applications.




vizrt recently introduced VizIbis, which it touts as an easy-to-use, quick-to-learn, entry-level virtual studio.

Serious Magic features ULTRA, its flagship virtual set and keying product. According to Randall, "ULTRA is substantially less than the sales tax alone of many other solutions. Although price isn't normally considered a 'feature,' when the leap is this large it means that ULTRA can be deployed for new classes of applications and users. ULTRA achieves this new price-point by mixing new technology with very focused implementation."

With a library of more than 100 virtual sets available in a wide range of formats for a variety of platforms, Pratt says virtualsetworks.com offers "very competitively priced sets that work with a wide array of platforms. We offer almost all the features out there, depending on which platform you are working with. But to characterize where we excel, our virtual studios fit a niche of cost/quality that is unrivaled. Nowhere else can you buy a virtual set for \$100 that features the quality and platform independence that virtualsetworks' sets offer."


vizrt offers several solutions including its VizVirtual Studio, a full 3D virtual studio system with extensive features, animations and effects. It also recently announced VizIbis, "an easy-to-use, quick-to-learn, entry-level virtual studio." VizIbis has its



vtecs™ General Purpose Control Panels with Interfaces

Introducing the Hottest, and the Coolest Control Panels

- Multiple Vendor Control
- Ingest Frame Sync QC
- Full Router Integration
- Channel Based Organization



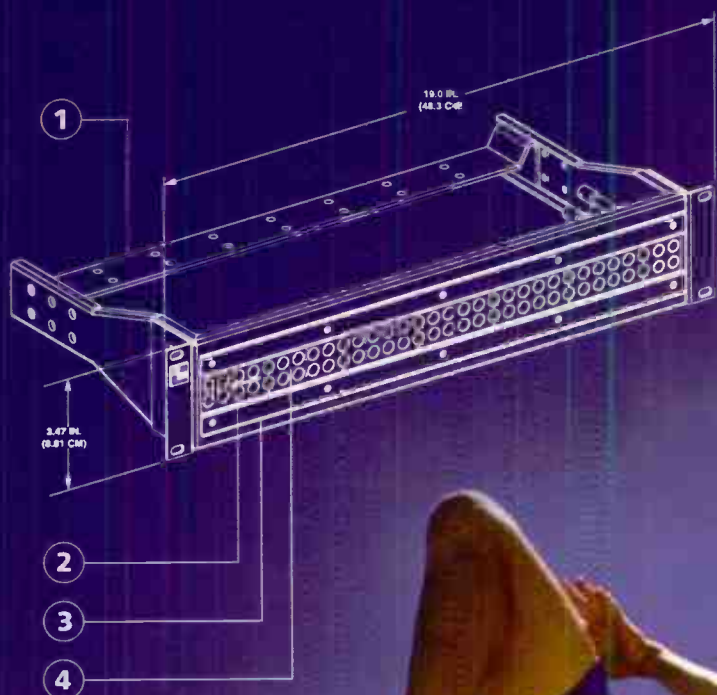
Videoframe™

Videoframe, Inc. P.O. Box 1991, Grass Valley, CA 95945
Tel: 530-477-2000 www.videoframesystems.com

VIRTUAL, PAGE 26



performance by design.



ADC's Pro Patch™ video panels have long been recognized as the leader in video patching. Panels are available in a wide variety of configurations for rack sizes, jack types, and color options. The PPI/PPV series panels are the ideal choice for demanding professional environments:

- ① Durable welded-steel frames prevent bent, cracked and broken ears
- ② Widest variety of jack types available including standard, midsize, and MUSA standard
- ③ Exclusive snap-over designations keep cards and windows in place and make changes easier
- ④ Durable molded ABS inserts prevent stripped screws and cracked inserts

Whether its Copper or Fiber, ADC's audio, video and data products are built to provide unmatched performance and reliability, and all ADC products are backed by outstanding pre/post-sale engineering support as well as the industry's best warranty.

Contact us today and find out why ADC means "performance by design."



2x32 Midsize PPI Series Super Video Jack Panel

Call today for fast delivery!



For a free copy of ADC's 12th edition broadcast product catalog, call 1.800.366.3891 ext. 20000. Or visit adc.com/broadcast.

Europe Focuses on HDTV Standards

At IBC, policymakers, vendors debate progressive vs. interlace

by Tom Butts

AMSTERDAM, THE NETHERLANDS

Policy overshadowed technology at IBC2004 as European decision makers and manufacturers debated the future of HDTV on the continent.

HDTV took center stage at the Amsterdam show; until recently, Europe appeared to be ambivalent about hi-def but advances in compression standards, flat panel displays and the anticipated popularity of high-profile sporting events have fueled the push for HD. The BBC, satellite operator BSkyB, France's TF-1 and German pay-TV provider Premiere have announced their intention to roll out hi-def services. Premiere is using hi-def coverage of the 2006 World Cup Soccer Championships to promote HDTV.

Disagreements over HDTV's path to deployment broke out at the annual broadcasters conference, however, when the EBU's BTQE Group, which is responsible for setting HDTV standards in Europe, announced at the show that it was recommending 720p as the HDTV standard for Europe. The reasons behind the recommendation focused on flat panel displays as well as the need for a standard that would make the most efficient use of spectrum and take advantage of emerging compression standards including MPEG-4, part 10 (aka "AVC"), and Windows Media 9 (recently dubbed "VC-1").

Sony was not pleased. The world's largest supplier of 1080i production and broadcast gear balked at the announcement.

"We don't need this debate," said Sony Europe President John St. Ives,

according to "The IBC Daily." "Movies, entertainment, kids, current affairs, docs and even sport all work wonderfully well in interlaced form. 720p will be a detour, not a migration."

This prompted Phil Laven, director of the EBU's technical department to backtrack his earlier statements. Calling the organization's recommendations for 720p "a work in progress," Laven stressed that the EBU has not made a final decision; however, Laven predicted that the EBU would announce more details on its recommendation in early 2005.

PROGRESSIVE POPULARITY

Panasonic, on the other hand was more than happy to push for more progressive 720p production. The company announced the "Progressive Center," a partnership with European production personnel and camera rental companies to promote progressive production in both HD and SD on the continent.

"Progressive production in SD and HD is gaining in popularity," said Robert Pascher, manager of European broadcast marketing for Panasonic Broadcast Europe. "The longer term trend is towards progressive production and distribution. We believe it creates the best pictures for the consumer."

Panasonic also announced a 1.01 billion euro investment in an LSI plant in Japan. Touted as the "largest investment in Matsushita history," the plant is expected to crank out more than



Attendance was up 12 percent at the world's second largest electronic media show.

250,000 plasma units per month and will represent "the world's largest manufacturing output in PDPs," according to Panasonic officials.

On the exhibit floor, Panasonic and Sony continued to battle it out on the tapeless front. Panasonic announced P2 deals with broadcasters in Italy, Spain, Germany and France and expanded its partnership with Avid Technology to integrate P2 capability with Avid's NewsCutter Adrenaline FC, NewsCutter XP and Media Composer Adrenaline editing systems, as well as Avid Unity shared storage systems—all available by NAB2005. Panasonic officials also said they plan to develop an HDD5 P2 camcorder that supports both 1080i and 720p by 2006 with a P2-MPEG-based HD resolution palm-style mini-camcorder by next year.

Sony announced its largest XDCAM deal to date, an order from German state broadcaster WDR for 127 XDCAM camcorders, 193 recorders and 167 viewers. Sony also announced Version 1.1 of XDCAM, featuring improved "thumbnail" operation, i.Link File Access Mode and full networking capability.

FORMAT AGNOSTIC

Thomson, for its part is not worried about Europe's HD standards debate. "We've never taken an exclusive approach on standards," said Jeff Rosica, vice president, strategic marketing and policy for Thomson. Rosica touted Thomson's LDK 6000 mk II Worldcam, which supports interlaced and progressive, as an example of the company's philosophy towards production standards. Whichever way the EBU goes, "we're going to support their decision."

After several years' absence, Avid Technology returned to the show floor, albeit through its DigiDesign audio division. Nevertheless, the Tewksbury, Mass.-based company, which had promoted its technology in Europe in recent years via a bus roadshow, was enthusiastic about the prospects for HD on the continent.

"There's been much more interest in HD in Europe than I've ever seen before," said David Schleifer, Director, Avid Broadcast. "There's a change in the wind, particularly on the broadcast side."

The other dominant technology focus at the show surrounded the newly adopted DVB-H standard, which DVB officials and broadcasters hope will spur the development of applications that broadcast audio and video to handheld devices. Nozema, Nokia, O2, NTL and Philips announced support for the standard and Thales launched its new DVB-H head-end system that encompasses the entire broadcasting chain from encoded content encapsulation to transmission for reception on mobile receivers. Rohde & Schwarz demonstrated a broadcast test system for DVB-H as well.

Show organizers announced attendance of 40,776, 12 percent more than in 2003. ■

"We had an aggressive strategy to create a tapeless, high-bandwidth, mission critical environment that also needed to support multiple file formats and be user friendly. We chose Omneon."

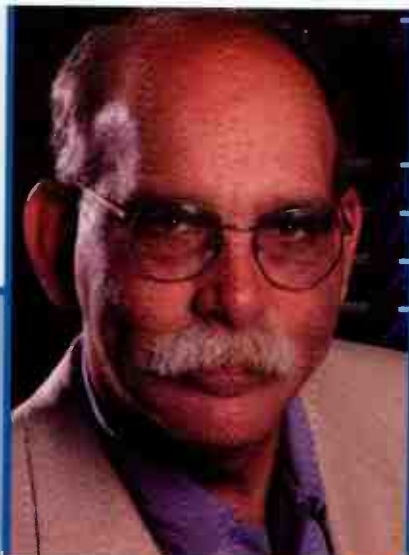
Alan Popkin

Director of TV Engineering and Technical Operations
KLCS-TV/DT, Los Angeles

When KLCS embarked on an ambitious program to upgrade to DTV, they saw an opportunity to go far beyond just television. Maximizing their use of the digital spectrum, KLCS is providing nearly a million students and teachers with a host of new programming options.

With Omneon Spectrum™ media servers, KLCS has been able to implement an efficient model for delivering new services. Incorporating Smart Scalability™, Omneon Spectrum systems meet precise format, channel count, bandwidth and storage specifications. What's more, an Omneon Spectrum can then be expanded in smart, manageable increments - without replacing the original system and in many cases, without taking the system offline.

To learn more about the unique advantages of an Omneon Spectrum media server system visit www.omneon.com



It's not
just what
you serve.

It's who.

OMNEON
VIDEONETWORKS

Pay for a switcher.....

Discover that for the cost of a switcher, Broadcast Pix is a complete live video production system. Leading studios use Broadcast Pix for news, sports, corporate, and all live productions.

Now a single operator has the tool to create great live television. You always know what is on every source, key layer and device with PixButtons. When you still want a team, just add more hard or soft panels. You can even control a distant studio across a continent. Options include: dual clip stores, 3D DVE, more inputs, and control of cameras, servers and VTRs.

get a **Studio**



For Solo, Team and Distant Productions

Broadcast Pix Studio 2000 includes:

- Broadcast Pix control panel, frame and workstation
- Digital Production Switcher
- Inscribe Character Generator
- Clip Store
- Still Stores
- Logo Generator
- 3 Pinnacle DVEs
- 22 inputs: 8 SDI, 4 Analog (composite, Y/C, YUV), plus 7 internal video/key pairs
- Fail-safe on-air operation



*PixButton™
(Mens Crew clip)*



Frame

\$23,500 Complete (monitors not included)

www.broadcastpix.com



Broadcast Pix

NEWS Technology

by Mary Shacklett

LAS VEGAS

Developing a strategy that provides "signature" presence in your marketplace, addresses technology changes to the news studio set like the migration to HDTV, and proactively manages capital investment is a formidable challenge. But by engaging everyone at the station, working closely with technology vendors, and clearly defining an achievable plan, CBS affiliate KLAS-TV of Las Vegas managed to find a strategic combination that favorably equips the station

KLAS Sees the 'Low' Light

Las Vegas station migrates to HD news one step at a time

for the present, while positioning it for the future. "Planning was the essential ingredient," said Doug Kramer, KLAS chief engineer. "From station management to the news anchor, to the set personnel, we discussed what we wanted for a news studio, and planned how we would get there. The planning process alone took six to eight months. By the end of it, we had a clear consensus and an expectation of where we wanted to go."

'SIGNATURE' LOOK

Las Vegas is a highly competitive market and an entertainment mecca. To identify with the city and the viewing audience, KLAS wanted a uniquely low-lit news set that would give the station its own "signature" with the viewing audience.

The station had recently built a state-of-the-art newsroom with multiple projection screens and low light levels in order to achieve the desired

unique look for its newscasts. "There's not a lot of light on our news set, and the use of rear screen projection systems exacerbates that because the dimness of the new screen projection systems forces us to bring down the overall light levels in the studio," Kramer said.

KLAS needed a camera and lens combination that could handle the low light conditions. It selected three Ikegami HDK-790E cameras equipped with Canon DIGISUPER 25xs lenses (XJ25x6.8BIE-D). A Canon/Ikegami team worked with KLAS to install the equipment.

"There were several unique situations that we had to solve," said Gordon Tubbs, assistant director for the Canon Broadcast and Communications Division. "Depth of field and the focal length of the lens were two of them—and both were accentuated with the migration from standard definition to high definition TV. With high definition TV, the viewer can discern more readily if a picture is out of focus. The low lighting conditions of the studio, coupled with the dim rear projection screens, made it more difficult to determine how far the cameras needed to be from the anchor person, while still maintaining focus on both the anchor person and the rear projection screens. Low lighting shortens the depth of field, and can work against you. A studio lens can have more than 30 different elements of glass, but our lens design methodology allows us to create high definition lenses with fewer elements in them. This simplifies processes such as the control of light and focus."

Ikegami's Senior Engineer, Alan Keil, noted that while camera installation was straightforward, there were several cabling issues that had to be resolved during installation.

"We used a hybrid copper-fiber cable for the set," said Keil. "The copper was used for powering, and the fiber gave us the necessary bandwidth for high-speed data transmission. We also implemented durable, half-inch cable that would fit under the pedestals that the cameras rest on, since you need to be able to dolly on the floor."

WORKING AHEAD

KLAS' studio planning took months, but actual set redesign was



KLAS's new HD news set uses low lighting to give it a signature look.

only a matter of weeks.

"Because we achieved consensus on our planning process, and had agreed precisely on what we were going to do, and where everything was going to go, we were able to work ahead on some pre-assembled projects, without making too many changes during the actual reconstruction of the set," Kramer said.

One mission-critical task involved a two-week setup of a temporary set that would continue to broadcast news while the new set was being installed. "We set up part of the old set in the studio, then gutted the studio and built a new set," said Kramer. "Thanks to a thorough planning effort, we were able to do a lot of pre-wiring, and we had fabricated ready-to-install wire harnesses. This was critical because wiring was the major infrastructure element we tackled on this project, along with cameras and lenses."

KLAS' studio redesign strategy is paced for a gradual—and affordable—transition to high definition television news. "Rewiring and recabling the studio and installing three news cameras and lenses takes us to where we can broadcast all of the network high definition programs to our viewers at the HD 16:9 aspect ratio," said Kramer. "Meanwhile, we will continue to broadcast local programming at the standard 4:3 aspect ratio, and to use the existing 16 or 17 news cameras that we have in the field. Over the next three years, we will systematically upgrade field cameras and other studio infrastructure components, with the goal of having all of our local programming in high definition format in two or three years. I estimate that within the next eight to ten years, we will be an entirely high definition broadcaster." ■



BrightEye™

VIDEO, AUDIO AND OPTICAL CONVERTERS

7 New BrightEyes!

• Embedding • Audio Conversion • Sync Pulse Gen and more



The BrightEye family offers converters and embedders for video and audio with choices like fiber, TBC, Frame Sync and USB interface. At 5.5 inches wide, BrightEye converters pack a pile of functionality into a little package. Put them where you need them — with a workstation, at a camera, near a VTR.

12 bit processing ensures your output is bright and shiny.

ENSEMBLE
DESIGNS

Tel +1 530.478.1830 ▲ Fax +1 530.478.1832

www.ensembledesigns.com

info@endes.com

PO Box 993 Grass Valley CA 95945 USA



You'll find
our prices
reasonable,
our reasoning
priceless.

Keeping track of all the satellite and fiber optic communications products out there is a full time job.

That's why so many people come to **DAWN**CO. They count on us for everything from satellite antennas, receivers, LNBs, and position controllers to fiber optic broadband links, satellite links and data links.

We offer the broadcast TV, cable TV, radio and educational fields high quality equipment at down-to-earth prices.

DAWNco formerly known as Dawn Satellite.

But more than equipment, we offer expertise. We can examine your situation and your budget, and recommend exactly what you need. You save both time and money by making the best possible buying decision.

Call a **DAWN**CO expert with your questions by simply dialing **800.866.6969**. Use the same number for our free catalog, or find it all on the web at www.DAWNCO.com.



DAWNCO

Reasonable prices, priceless reasoning.

Award-Winning Newscasts

Natural disaster coverage key to garnering RTNDA awards

by Craig Johnston

DENVER AND SAVANNAH, GA.

Anyone who has been involved with at least a few hundred newscasts has seen their fair share of disasters, where through technical glitches and the foibles of man, a news program seemingly goes down in flames.

But natural disasters play a big role in the content of newscasts. This past year's large and small market winners of the Radio-Television News Director's Association's Edward R. Murrow Award for Best Newscast had the forces of nature center-stage in their broadcasts.

Denver's KCNC found itself covering two widely separated wildfires threatening the state of Colorado in its NEWS 4 at 10 p.m. program, while Savannah's WSAV-TV broadcast an unusual and life-threatening cold weather snap on its News 3 at 6 telecast.

The stations, at opposite ends of the spectrum of technical capabilities, found their personnel to be the keys to the winning newscasts.

STRETCHED TO THE LIMIT

With the Overland wildfire burning in the northern part of Colorado and the Cherokee wildfire to the south, KCNC pulled out all the stops. "We had deployed every resource we had in order to facilitate that level of coverage that we felt was appropriate on a story of that magnitude to our viewers," said News Director Tim Wieland.

"We needed to deploy resources at two wildfires that were burning simultaneously in different parts of our state," he said. "By 10:00, for the late newscast that received the Edward R. Murrow award, we had seven live

reporters on both fires."

Add to that the station's helicopter, which hovered above, dashing in and out of the fire in mountainous terrain.

As in most such productions, there was a choke point, a narrowing of the signal path. "In our NGO, which is our Newsgathering Operations Room, we only have the ability to bring in six items at a time," said Engineering Manager Pat Bruce. So with two satellite trucks, five microwave vehicles and a helicopter, there was some turn-waiting to be done.

"There were a number of power-up/power-down situations for the live trucks, and also in the NGO, figuring out what other items we had going into our frame-store," said Bruce. "They'd have to switch those quickly, depending on how the show was laid out."

"It's a very well choreographed operation when you're talking about that many resources on a single story."

—Pat Bruce, KCNC

Prior to building the separate NGO facility to acquire live-shots and coordinate them into the newscasts, KCNC carried out that function in Master Control, using the master board operators. "In the old days it wouldn't have worked, it would have been a little tougher," said Bruce.

Out in the field it was no day at the beach either. "Because of some of the

terrain in Colorado," said Wieland, "and the fact that these were wildfires burning, one of them in a particularly mountainous area, our helicopter



KCNC's Jim Benemann covered the Colorado wildfires.

couldn't maintain a continuous live signal on the fire that was on the northern side, that was the more mountainous area.

"There were times that we would lose contact with the helicopter, when it would go in and get new pictures of the fire, and come back up at high altitude to feed those pictures in."

Bruce found communications to be the key to holding the night together. "The crews in the field are having to pay very close attention to radio communications so that they know when they're good to come up and when they have to come down."

"It's a very well choreographed operation when you're talking about that many resources on a single story. Two way radio communications and cell phone communications as well as satellite phone communications were a large part of it as well."

LOW-TECH WORKS TOO

When Savannah found itself in the grips of an unusual cold spell, where the temperature dropped into the teens at night and didn't rise above freezing for days, WSAV-TV made it its duty to not only tell the weather

story, but to help viewers cope with the life-threatening conditions in an area of the country unprepared for such cold.

"There was some worry about the power grid, there was certainly worry about cars stalling, people getting stranded, there was worry about cars not starting in the morning," said News Director Kevin Brennan.

"So we did a lot of advice about things you should have with you, whether it's in your house if your power goes out, or in your car if you get stuck. We did stories about how cold affects the body, to justify why you need those kinds of things with you."

Brennan said the station lacked a weather graphics device with a sophisticated animation package.

"Our meteorologist simply took a full hot pot of coffee outside, to demonstrate condensation of heat which created snow by just a 30-second demonstration outside," he said. "I mean, we did a whole lot of prop and demonstration work as opposed to anything else."

Since the cold-snap, the station has upgraded its weather graphics equipment. "If I were to compare now to then, I would do twice as good a job, and probably a better job as far as forecasting with the technology that I'm using now," said Brennan.

But he said that's not to take away from the creativity his people used in telling the cold-snap story in the award-winning newscast. "A great deal of what we did was use our imagination as far as physical demonstrations, props, to help people in this cold weather advance to help them stay safe."

Whether it's high-tech or low-tech, the Murrow Awards prove that it's the people who make the difference in a newscast. ■

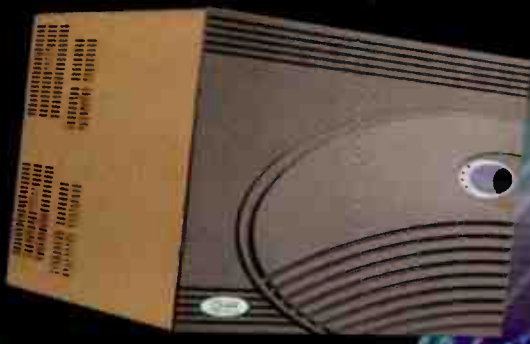
Xenon

The Signal Processing Router™

Award-winning multi-format router with built-in Signal Processing Technology™ (SPT)

Xenon's plug-in SPT modules let you bring additional hardware functions into the router, saving money and rack space while simplifying system design

SPT modules include: • Channel Branding • Master Control • Quad Split • Embedded Audio Processing



Get your **BROCHURE** online NOW

Telephone: Toll Free 888 638 8745

sales@quartzus.com

www.quartzus.com/xenon

Quartz®

Barton

CONTINUED FROM PAGE 1

how such hearings would be conducted, but said they wouldn't occur before the November election.

Barton's reference to Rather wasn't lost on broadcasters, who occupy spectrum that lawmakers want back too sweet. Since Barton became committee chairman last March, he's made it clear that he favors the original 2006 deadline set forth in the Balanced Budget Act for the recovery of analog broadcast spectrum.

"The primary reason we're going to do this is dollars," he said.

Barton acknowledged shutting down analog TV signals 27 months from now would require the distribution of digital-to-analog converters for the millions of households with analog-only TV sets. Asked how he envisioned administering such a program, Barton said it could be done with rebates, and he bluntly dismissed any notion that spectrum-auction proceeds might not cover the cost of millions of D-A converters.

"I'm not concerned at all," he said.

The spectrum in question—Channels 52-69—is anticipated to bring as much as \$50 billion at auction, but previous auctions for licenses at Channels 54, 55 and 59 generated only \$145 million. At a unit price of \$50, supplying all broadcast-only homes with D-A converters would cost around \$1 billion. Standalone D-As currently sell for around \$300, but manufacturers acknowledge that mass demand would bring down the price within a few years.

There is general agreement on Capitol Hill to earmark \$1 billion in auction proceeds for D-A converters, although no administrative costs have been determined.

Legislation being debated in the Senate at press time included a provision of \$1 billion for buying and installing D-A converters. The provision was part of Sen. John McCain's Save Lives Act, which also called for the return of broadcast spectrum in the 700 MHz band by the end of 2007; the labeling of analog-only sets by Sept. 30, 2005; and a ruling on public-interest obligations and digital must-carry by the FCC before the end of this year.

The Save Lives Act became an amendment on an omnibus intelligence reform bill that legislators hoped to pass before a target adjournment date of Oct. 8.

Should those provisions survive conference, 75 full-power stations will have to end analog operations by Dec. 31, 2006. A hard date for full analog shutdown will not likely be established until next year, but Barton assured broadcasters it was imminent.

He further endeared himself to the group with a comment about unli-

censed devices, which broadcasters are loath to allow in unused adjacent channels because of potential interference to TV signals.

Setting the tone for his position, Barton said, "I want [CEA President] Gary Shapiro to write a one-pager on that, and that's what I'll do. ... just kidding, just kidding. However, I don't think we should use existing technology to stop the development of

new technology."

As for interference, he said "we could probably do this with hearings and the FCC. It won't need a statute."

Barton neglected to share his efforts to increase fines for broadcast indecency ten-fold, and to fine performers who perpetrate indecency violations up to \$500,000. That legislation was being hammered out at press time for inclusion in a Department of Defense

reauthorization package.

Barton, an industrial engineering graduate from Purdue University, was an energy consultant in Texas before embarking on his 20-year Congressional career. His background in broadcasting includes wiring classrooms at Texas A&M with coax cable.

Reaction to Barton's remarks, delivered at the conference luncheon, was subdued. ■



**Get
knockout
results**

with the New Vector 900 and 450

An impressive performer with exceptional control

For the perfect balance of durability, stability and control, the Vector 450 and 900, partnered with the new HDT1/2, weighs in as the all time OB winner.

✓ Robust ✓ $\pm 90^\circ$ tilt ✓ Compact

Call Sales Toll free on: 1 888 2 VINTEN

**Vector
900**

Vinten

www.vintenvector.com

Beyond Video-on-Demand

SeaChange serves up interactive games

by Robin Berger

LOS ANGELES

Cable operators large and small have been hook, lined and sinkered into VOD plays. And now that they're set up, they're facing content issues.

"The problem you've had so far is not being able to launch any of those services yet because the programmers have not started pitching content in the DVD format," said Alan Bailey, director of operations at Lexcom Cable.

The company, owned by local exchange carrier Lexcom Communications, is an overbuilder in the Greensboro-Winston Salem area of North Carolina (44th largest U.S. market), competing with Time Warner. It rolled out its digital platform last January and since then, armed with software enabling DVD authoring, has convinced 1,500 of its 11,000 subscribers to go digital. The software, SeaChange International's VODlink, was rolled out in July.

"One of the reasons we went after that package was the DVD capability—watching on-demand movies in a DVD format," he said.

SERVED UP

Of course, insists SeaChange, there is another option for content: games.

The company recently teamed up with Softbank Broadmedia (SBBM) to merge the latter's streaming games technologies with its VOD system platform to enable video game competition on

standard digital set-top boxes without any upgrades—the games would be run on SeaChange servers, not on the client devices. These multiplayer games could be served up on a complimentary, subscription, pay-per-play or pay-per-timed-play basis.

Moreover, the content is available, said Thomas Schmidt, vice president, strategy and development for G-Cluster Ltd., the SBBM division responsible for the streaming software.

"A Hollywood movie makes money

"We can port any game within four to 12 days."

—Thomas Schmidt, VP Strategy and Development for G-Cluster Ltd.

over a very carefully regulated schedule for four or five years in different formats," said Schmidt. "A computer game stops making money after six weeks—that's when it comes off the retailer shelf. And there is no second re-release window other than the 'classics' edition—which comes out for something like \$15."

Thus, a game's fragile shelf life puts a premium on mass distribution asap.

"One major roll-off [on a U.S. MSO] can be a significant extension of the installed base," he said. "For them (computer game rights-holders) it's a very interesting proposition because a good computer game can cost between \$2 million and \$5 million to make."

Schmidt claimed that "we can port

any game within four to 12 days—we're talking to all major publishers and we're talking, in some cases, directly to studios."

In addition to providing available content to feed the new technology out there, the MSOs would also improve upon the playing field open to gamers. The most obvious improvement would be the elimination of "lag death."

"As you're playing on the Internet, some hiccup occurs across those thousands of kilometers of network—that burst of traffic, that interruption in the communications will cause them to be dead by the time the communications resume," said Joseph Ambeault, director of broadband systems at SeaChange International. "It's a big disadvantage in Internet gaming, and one of the principal catalysts behind game cafes: to have a high-quality connection between devices."

Ambeault noted that the USD-connector and middleware in a set-top

box also lets digital cable subscribers plug in a game pad (joystick). In fact, he said that discussions were going on right now with cable operators as to whether they should offer subscribers branded game pads or direct them to the nearest Best Buy or other off-the-shelf distributor.



SeaChange and G-Cluster have teamed up to offer video games on SeaChange's VOD platform.

GETTING ONBOARD

SeaChange and SBBM began marketing the technology last spring at NCTA's annual show, unveiling their first full prototype at IBC in September.

"We're spending the next few months working closely with G-Cluster and a number of unnamed customers—we have integration-type items and smoothing-over-of-operations work to get done," said Ambeault. "We look to deploy in the first half of next year."

So far, Lexcom Communications is one cable operator that has shied away from taking the G-Cluster/SeaChange challenge.

"We haven't done anything in that area yet—I saw a little bit of the interactive gaming platform that SeaChange had at the SCTE show down in Orlando," said Bailey. "I'm always interested in that kind of activity. We're going to post some scoreboard-type games shortly [early November] through another player on our system [that are] not nearly as feature-rich, of course, or truly dynamic like the ones that I saw with SeaChange."

Bailey believes there's a market out there for interactive games, judging by his "Playstation Genius" son and his friends. But, for now, he's keeping new investments close to the vest: Lexcom's initial venture will deal blackjack and solitaire hands played against the system instead of opening up a full-blown interactive arcade experience.

"We're going to do a six-month trial here with these games to see how well they are received," he said. "We'll be able to track how many people are going to use them." ■

Another winning team.



Whatever the action, you can count on the Studio Technologies broadcast equipment team to come through every time.

Designed for television, radio, and production applications, the Model 200-series announcer's console products support the most demanding applications with excellent audio, reliable performance, and configuration flexibility. Four models are available, each with its own unique set of resources and features.

The Model 34 Talent Amplifier is a compact, lightweight "listen-only" belt-pack. Compatible with standard IFB lines, it features simple yet flexible operation and fine audio performance. The Model 72 Level Meter/Interface is a unique "problem solver" that will find use in many in-studio and field applications. Connected directly to "wet" intercom and IFB lines, the unit provides dual 5-segment LED level meters and transformer-balanced line-level audio outputs.

The Models 41, 42, and 43 are interface units that convert analog audio signals, typically provided by matrix intercom systems, into industry-standard IFB lines. The IFB outputs handle long cable runs with aplomb and provide audio that's simply superior.

So give your team the tools they need to concentrate on the action. Visit our website or call today. We'll help you put together a winning season.

**STUDIO
TECHNOLOGIES
INC.**

Sokkie, IL USA | Ph 847-676-9177 | www.studio-tech.com

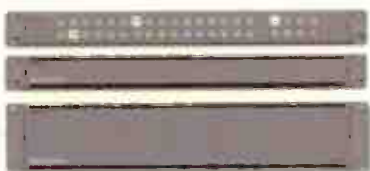
Visit us at AES
in Booth 419

PICK HIT
Broadcast Engineering
2004



OVERDRIVE PRODUCTION CONTROL SYSTEM

OverDrive is a powerful production control system that enables touch screen control over devices used in productions such as news, sports or live events. OverDrive integrates with the Synergy SD and MDX series of production switchers, leveraging powerful control interfaces over video servers, VTRs, DDRs, audio mixers, robotic cameras, routers, still stores and more.
www.rossvideo.com/overdrive/overdrive_overview.html



TALIA NK ROUTING SYSTEM

The NK Series is a new line of compact and cost effective routing switchers. NK routers are available in sizes of 16x16 or 32x32 and in a full range of signal formats including serial digital, analog video, AES/EBU, analog audio and data routing. NK ships with a powerful web browser based configuration system and is available immediately.

www.rossvideo.com/talia/nk/nk_overview.html

GEARLITE MD

GearLite MD is a line of Multi-Definition (High Definition & Standard Definition) products. These include the DAC-9213 Multi-Definition Digital to Analog Converter, the SRA-9201 Multi-Definition Reclocking DA, and the SEA-9203 Multi-Definition Serial Equalizing Amplifier.



A -PVM version of the DAC-9213 is used specifically for Sony PVM/BVM monitors.

Sony, PVM and BVM are trademarks of Sony Corporation
<http://www.rossvideo.com/gearlite/gearlite.html>

Ross Video Introduces 10 New Multi-Definition Synergy Switchers

SYNERGY MD/MD-X MULTI-DEFINITION PRODUCTION SWITCHERS

The Synergy MD and MD-X series offers models ranging from the compact and powerful Synergy 100 MD single ME switcher to the extra large, hyper powerful Synergy 4 MD-X 4 ME switcher. Synergy MD and MD-X support all popular formats of HD and SD out of the box.

Using the absolute latest technology, these switchers are full of standard features at a price point that puts a multi-definition switcher within reach of a typical mid-market customer.

www.rossvideo.com/synergy/switchers.html



Cool Practical Technology™



NEW! Synergy MD/MD-X

Multi-Definition Production Switchers

Synergy SD

Digital Production Switchers

Ross RVS Series

Analog Production Switchers



NEW! OverDrive

Production Control System



Talia Routing Systems



NEW! NK Compact Routing Systems



RossGear

Terminal Equipment

GearLite

Compact Terminal Equipment



NEW! GearLite MD

Compact Multi-Definition Terminal Equipment

www.rossvideo.com

tel: (613)652-4886 fax: (613)652-4425 email: solutions@rossvideo.com

Sports Mics

CONTINUED FROM PAGE 8

audio systems.

"Because the system is backward- and forward-compatible without altering audio quality, it's especially important where surround, stereo and mono are all required to complete a broadcast," Lunde said.

Pieter Schillebeeckx from SoundField/U.K. provided on-site technical support for the SoundField microphones that NBC used at the Olympics in Athens.

"Using a single SoundField mic, we could capture five discreet outputs that provided the ambient foundation for our surround mix," said Dixon.

NBC Olympics also used an assortment of microphones—including omni, shotgun, stereo surface-mount mics and subminiature lavaliers—from Audio Technica for its Olympic telecast.

AN ARRAY OF MICS

"Effective surround sound is not a matter of positioning a single mic, but rather an array of microphones strategically placed around the playing field or arena. It also requires proper isolation of each of the component mics, using microphones capable of producing a clean, directional, low-noise signal," said Anthony Buzzeo, music industry channel manager for Sennheiser, in Old Lyme, Conn.

For example, to cover a basketball game, Buzzeo suggested placing four to six shotgun mics, such as the Sennheiser MKH70 long shotgun mics, courtside—especially in the four corners.

Also, you could use two to four omni-directional microphones, such as MKH20 mics; and two to four lavaliers, such as MKE2 or MKE-platinum, which can be worn by referees or affixed to the basketball net backboard.

"For baseball, the MKH40 cardioid offers a wide capture zone that's ideal for covering team dugouts, if the team allows and close placement is attainable," Buzzeo said. "If a less conspicuous placement is required, either the MKH60 or MKH70 would do the trick. And the MKH816 long shotgun mic has been used for pro golf because it is a very quiet, low-noise mic with maximum range and directivity."

Shure also offers an extensive selection of microphones and wireless systems ideal for sports, including: the SM89 directional condenser shotgun for extended pickup range, the SM93 miniature omnidirectional lavalier, the MX185 directional miniature mics,

miniature condensers, omnidirectional or lapel mics, under the bases and home plate in baseball, in the cups on golf courses, on the backboards behind the net in basketball or anyplace they want to pick up local sound to add to their sound palette," said Shure's Tim Vear.

Another mic that can be inconspicuously placed is Audio-Technica's AT871R boundary plate mic.

"The A-T boundary mics, with their low profile and rugged design are ideal for picking up an event's 'Nat' sound and can be inconspicuously placed or mounted along a track, within an apparatus, on backboards or 'walls' [for sports like hockey or figure skating]. The AT899

Microline miniature shotgun mic.

"A-T microphones have been a mainstay [at the Olympic] games... because of their sonic consistency, small profile and rugged construction," Savanyu said.

RF CHALLENGED

With more than 1,200 frequencies in use on game day, Super Bowl XXXVIII not only broke the record for worldwide audience (800 million viewers), it proved to be one of the most challenging RF environments in broadcast sports.

"The ClearScan feature on our Electro-Voice CDR-1000 Dual RE-1 receivers handled this situation flawlessly because it's designed to scan for available frequencies at the push of a button and therefore enhances the antenna's effectiveness. Also the SoundCheck mode on the front panel of the RE-1 enables users to check the RF coverage over the entire field," said Guy Low, spokesman for Telex Communications, Inc., Pro Audio Group, in Burnsville, Minn., which offers Telex and Electro-Voice brands of pro audio equipment.

Electro-Voice/Telex equipment in use during the Super Bowl included the Electro-Voice CDR-1000 Dual RE-1 receivers; 100mW WT-1000REF bodypacks, RSB-2 Referee Mute Switch; Electro-Voice RE92Tx unidirectional lapel microphones (worn by referees); and ALP-450 passive log periodic antennas. Also in use were the Telex Radiocom BTR-600 UHF voice-encrypted intercom system and BTR-800 UHF wireless intercoms, among other systems that facilitated production communications during the game and half-time show.

Many microphone vendors cited the increasingly crowded RF situation on game day as one of the biggest challenges facing broadcasters using wireless mic systems to produce audio at high-profile sporting events. ■

"My philosophy about mixing surround sound for live sports is to put the viewer in the best seat in the stands."

—Fred Aldous, Fox Sports

the SM63L—popular for interviewing—and the VP88 single-point stereo microphone.

"If you start out with a mic like the VP88, a single mic that picks up the discreet L-R stereo image, that becomes a dominant contributor to the stereo soundfield you are creating. But that particular sound source also collapses nicely, surviving the down-mix to mono, without introducing artifacts," said Tim Vear, senior applications engineer, Shure, Inc., in Niles, Ill.

PLANT MICS

To enrich the sound mix, mics are often hidden on the playing field to the extent that team management will allow.

"Especially for high profile games, it's common to hide wireless mics, like

and AT898 subminiature lav mics, with their high sensitivity and high SPL handling, can be easily concealed," said Steve Savanyu, marketing manager, Installed Sound, Broadcast & Theater for Audio-Technica, in Stow, Ohio.

The Audio-Technica broadcast/production line includes shotgun mics, stereo shotguns, handheld interview mics and specialty boundary mics. Some of the more popular models include the AT4071a and AT4073a shotguns, along with the new AT897 short shotgun. As more broadcasts are being produced in stereo, A-T has developed a series of stereo microphones including the AT835ST and AT815ST shotguns, the AT825 OnePoint X/Y microphone and the AT849 stereo boundary microphone. Also popular for sports is the ES-

**Introducing the
Compact Dual
7" Widescreen
16:9 LCD Color
Monitor from
PANORAMAdtv**

First In Space. Rackspace.



- Two Composite Video Inputs per Screen (Standard) with Loop-Throughs for all Channels
- Adjustable Screen Angle ($\pm 55^\circ$) for Efficient Viewing
- 16:9 Widescreen Aspect Ratio, Switchable to 4:3

- Value Priced
- 75 Ohm/Hi Z Termination Select Switch
- Compact 3U, 3.7" Deep and Lightweight

www.panoramadv.com sales@wohler.com
(U.S.) Toll Free: 1-888-5-WOHLER Int: +1-650-589-5676

See the New RM-3270W at SMPTE/Pasadena
10/20-23 and AES/San Francisco 10/28-31

PANORAMA dv
THE VIDEO DIVISION OF WOHLER TECHNOLOGIES

World Radio History



When your Equipment absolutely Has To Work

Must-Have Wireless: Sennheiser 3000 & 5000 Series

In Real Life, there are no second takes. That's why you need Sennheiser 3000 and 5000 Series systems and components. Our benchmark products have garnered praise from every corner of the industry and an Academy Award® for our wireless technology. We've brought you such innovations as the Neumann KK105 vocal capsule and the SK5012 - the world's smallest professional bodypack. But more than that, Sennheiser gives you the best RF link and the most durable, dependable gear on the planet. When your life depends on reliable wireless, choose Sennheiser.



www.sennheiserusa.com

Sennheiser Electronic Corp., 1 Enterprise Drive, Old Lyme, CT 06371 USA • Tel: 860-434-9190 • Fax: 860-434-1759
Mexico: Tel: (525) 639-0956 • Fax: (525) 639-9482 • Canada: Tel: 514-426-3013 Fax: 514-426-3953



THE BIG PICTURE

Frank Beacham

The Age of Innuendo

While a kid working in television's monochrome era, I remember well when the FCC had a policy called the Fairness Doctrine. I didn't fully grasp what it meant, but the news director made it simple—when reporting the news, we were to be fair to those on all sides of an issue.

I understood the meaning of "fair," just as I grasped the term "objective"—a word bandied about heavily at J-school. Those journalism professors were smart enough to know that no human is truly objective—we are all defined by our upbringing and personal biases—but the job called for us to tell news stories based on facts, not opinion.

Those were such simple times. One only needed a knowledge of craft, common sense and some basic human values to understand how news reporting was supposed to be conducted.

On the few occasions that Walter Cronkite uttered words I had written

on the national news, his personal gravitas alone was enough for me to know that I'd better get it right.

On the few occasions that Walter Cronkite uttered words I had written on the national news, his personal gravitas alone was enough for me to know that I'd better get it right.

Times changed. After 1987, the Fairness Doctrine was history. Objectivity gave way—in both corporate and political life—to message management and image manipulation. It was usually about selling something,

A picture was worth a thousand words. That is until Photoshop. Then the old maxim, "seeing is believing"



CBS/Landov

bit the dust.

Now, with the most advanced storytelling tools ever available, we have entered an age of innuendo. The old rules no longer seem to work in this truth-or-dare culture. Rather than

seeking truth through objectivity, news and information programs—indeed, entire networks—seek to attract an audience through a distinctive point of view.

The distinctions of news and entertainment have blurred beyond recognition, not just for viewers, but for the people who make television programs.

When young people are getting their election news from the irreverent "Indecision 2004" segment on Comedy Central's "The Daily Show," are they better informed than the viewers of Fox News? Think about that one.

THEATER OF THE ABSURD

As we approach one of the most contentious elections in American history, it seems that every story—positive or negative about either candidate—is the subject of intense scrutiny and usually some attack on its validity, no matter how well-researched or documented.

Any news organization that produces a hard-hitting investigative report will find that report under attack, whether it's deserved or not. Bloggers and unrelenting commentators without portfolio ensure that. Just ask Dan Rather.

"The New York Times" publisher Arthur O. Sulzberger Jr., speaking

INNUENDO, PAGE 39

HD from Marshall Electronics

The World's Most Affordable Portable HD Monitor

HD/SD/Analog/Digital Included

HD/SD Screen Formats

- 1080-60/50i
- 720P-24/25/30/60
- PAL or NTSC
- 480P-24/25/30/60
- 1080 30/24/25P

Signal Formats

- HDS/SDI (Digital)
- SDI (Digital)
- Y-Pb-Pr (Analog)
- RGB/RGBHV (Analog)
- Composite (Analog)
- XGA

- Operates on 12-17 Volt D.C.
- Bright-380 nit High Resolution Display
- 6 Frame marker overlays
- Zoom for focus function
- Monochrome function
- Direct access for all adjustments
- Three LED tally
- 110-220V power supply included
- Optional Battery Pack

\$3799



Introducing the world's most affordable portable 6.5-inch Wide Screen HD monitor. The V-R65-HD is compact and lightweight, can be camera mounted and accepts any type of HDS/SDI or Analog HD/SD signal.

The World's Lightest Wide Screen 17" HD Monitor with Universal Input feature



Occupying only 6 SRU and weighing just 12 pounds, the V-R171P HD features a 17" High Resolution LCD Display and includes our universal input configuration.

- Accepts all HDS/SDI and analog HD/SD signals
- Direct access for all adjustments
- CRT style 170° viewing angles
- XGA with automatic scaling
- 6 Frame marker overlays
- Three LED tally
- Zoom for focus function
- Rackmount or Desktop Configurations
- Monochrome function
- 110-220V power supply included

HD/SD Screen Formats

- 525 (NTSC) 59 94i 60i
- 625 (PAL) 50i
- 640 x 480-59 94i 60i
- 30P, 29.97P, 59.94P, 60P
- 640 x 575-50i, 25P, 50P
- 1280 x 720-23.97P, 24P, 25P, 29.97P, 30P, 59.96P, 60P
- 1920 x 1080 - 23.97P, 24P, 25P, 29.97P, 30P, 50i, 59.94i, 60i

Signal Formats

- HDS/SDI (Digital)
- SDI (Digital)
- Y-Pb-Pr (Analog)
- RGB/RGBHV (Analog)
- Composite (Analog)
- Y/C-S-Video (Analog)
- XGA

We offer over 50 models of LCD monitors designed to meet virtually any application

Tel.: 800-800-6608 • Fax: 310-333-0688

LCDRACKS.COM

 **The Professional's Source**
www.bhphotovideo.com

B&H

PHOTO - VIDEO - PRO AUDIO

Every Image

JVC
JVC GY-D500 Professional 1/2" DV Camcorder with LCD Monitor, 30x Zoom Lens and Viewfinder



Every Specification

Specifications	Features
Image Format	3-CCD, 10 x 1.8 inch, Interlaced Transfer
Signal-to-Noise Ratio	52 dB
Horizontal Resolution	100 Lines (approx. best only)
Sensitivity	F-1.8 @ 2000 Lux
Minimum Illumination	0.1 Lux @ F-1.8 with 10x Zoom
Audio System	Not specified by manufacturer

Live Support

WebChat Support

Name: Robert Brown
Email: rbrown@netonline.com
Department: Pro Video Chat
Question: About JVC-GYD500U

Online Secured Shopping



Worldwide Shipping



Expect the Greatest & the Latest at B&H



Avid

Media Dock U320



Sony

PVM-14L5/1



Sounddevices

Model 442



Arri

Softbank D1 Kit



Sony

DXC-D50WSL

Visit Our SuperStore at:

420 Ninth Avenue,
New York., NY 10001

www.bhphoto**video**.com

For Information Call:

800-947-9907
212-555-5007

Fax:

212-239-7770

Store and Mail Order Hours:

Sun. 10-5, Mon. thru Thurs. 9-7
Fri. 9am -1pm, Sat. Closed

We Ship Worldwide!

THE MASKED ENGINEER

Mario Orazio

Analog Obsolescence Looms

You might not have noticed that it's been seven-and-a-half years since the U.S. digital television rules came out. Here are some of the reasons why you might not have noticed:

1. Almost no broadcasters have been mentioning it.

2. Almost no viewers can tune it in.

3. Only about 600 stations are licensed to transmit it.

4. Most of the analog spectrum that was supposed to be auctioned off by Sept. 30, 2002, ain't been auctioned off yet.

5. And Our Beloved Commish (aka the FCC) and See-ya (aka CEA, the Consumer Electronics Association) say that, although we could use a tad more education, everything is moving along just swimmingly.

Maybe "swimmingly" means we're up to our necks, and the water level's rising. But none of that is what I wanted to rant about this lunar cycle.

No, what I'd like to do now is offer a quick lesson in English vocabulary. I ain't going to define "digital television,"

which See-ya applies to video displays that can handle 480p signals, even if they ain't got a digital circuit in them, and which cable operators apply to programming packages that don't necessarily include broadcasts.

The word I'd like to define here shouldn't have anything to do with TV

valuable thing..."

It goes on, but I think you get the idea. Ready, now? The word I've just defined is fraud.

The reason I've just defined it here is that a great fraud is being perpetrated on the American public, and it has to do with TV technology.

Suppose everyone in the clothing industry knew that, come Jan. 1, 2007, some government-mandated emission would cause the thread used to sew ordinary clothes to disintegrate, but no one told you.

technology, but it does. Here's the legal definition, from a big, fat dictionary—"an intentional misrepresentation, concealment, or nondisclosure for the purpose of inducing another in reliance upon it to part with some

"But, Mario, there are differences of opinion about the success of digital television."

Digital television? I ain't talking about digital television. Digital television—at least as it's being implemented by Our

Beloved Commish—might not be the best idea since sliced bread, but it's not a fraud (well, anyhow, arguably not). I'm talking about analog television.

Look. Suppose you buy some clothes. You don't expect them to last forever, but you don't expect them to fall off you the second time you wear them, either, do you?

Suppose everyone in the clothing industry knew that, come Jan. 1, 2007, some government-mandated emission would cause the thread used to sew ordinary clothes to disintegrate, but no one told you. Oh, sure, the clothes stores would also offer "advanced-thread" clothing for more money, and they'd also offer expensive treatments to turn ordinary clothes into advanced-thread clothes, but they'd continue to sell you ordinary clothes without a peep about how they'd fall apart in 2007.

You'd buy the ordinary clothes (parting with a valuable thing called money). They'd fall off on Jan. 1, 2007, and you wouldn't have known because the information about the clothes falling off was being intentionally withheld from you.

I'd say fraud was being perpetrated on you. Wouldn't you? I wouldn't be sure who to haul into court—the government, the clothing manufacturers or the retailers—but, if not one of them mentioned the little 2007 problem, they'd probably all be guilty.

Tektronix™ 751

+

msi 320



+

msi 751



Automatic Calibration
Video Demodulation, Automatic Calibration,
Modulation Monitoring

Tek, 1450 and 751 are trademarks of Tektronix, Inc.

Modulation Sciences
understands your needs.

First we introduced the **msi 320** Precision Video Demodulator. The **320** offers quality, specifications and features comparable to the Tek 1450* for only \$5,820. Now, we've heard your requests for maintaining the simple automatic calibration of your Tek 751 Modulation Monitor. That's why we created the **msi 751** Calibration Interface.

The **msi 751** allows you to use the **msi 320** Precision Video Demodulator to auto-calibrate the Tek 751 with the same accuracy afforded by the Tek 1450.

Modulation Sciences
responds to your needs.

For more information, contact Modulation Sciences, Inc.
12A World's Fair Dr. Somerset, NJ 08873
(800) 826-2603 Toll-Free
(732) 302-0206 Fax
e-mail: sales@modsci.com
Web: www.modsci.com



Well now, guess what. As far as I know, your clothes will not fall off on Jan. 1, 2007. But your TV set might stop working. Ditto your VCR, your TiVo and your DVD recorder. Your computer, radio, CD player and maybe even your shower could lose some desirable feature. And no one has warned you about this, even though 2007 is just over two years away.

FRAUD, I SAY!

"But, Mario, all those things will continue to work with DTV adapters."

Will they, now? Let me see.

Yes, if I buy a \$5,000 HDTV, I probably won't go bankrupt adding a \$100 set-top adapter to it in 2007, though I might still sue for fraud. If it's a \$500 TV and a \$200 adapter, I ain't going to be as happy, but I'll probably do it anyhow. But those ain't the only possibilities.

How about if I go to a store today and buy a 13-inch TV or a VCR for \$50 or a TV/VCR combo for \$100? Do I add two \$100 adapters to my TV/VCR combo so I can continue to watch one show and view another? I've got the same two-adapter problem with my picture-in-picture TV. But maybe I have a bigger problem. How do I attach two adapters to one antenna input on my TV/VCR combo or my picture-in-picture TV? Fraud!

"But, Mario, most viewers have cable

or satellite. Their analog TVs and VCRs will work the same as they do now."

If it was just TVs and VCRs, you might have a good point—as long as you're willing to ignore the 20 million homes or so without cable or satellite and the extra TVs in the homes that do have cable and satellite.

See-ya told Our Beloved Commish that some of those extra TVs are used just for video games or watching movies. That could be. But then there are "cable-ready" TVs and VCRs connected to analog cable without set-top boxes. Once the cable company switches to digital, they stop working. That ain't so bad if there are analog broadcasts to fall back on, but it ain't great if there aren't. Then there are portables.

PORTABLE TVs

You can probably go to your local drug-store chain and find a five-inch black-and-white TV/radio portable combo for less than \$20 to take camping with you. The color LCD TVs fans use in football stadi-

ums cost a little more. So do jogger radios with TV-audio reception. So do shower radios with TV-audio reception. So do computer TV-tuner cards, methinks.

Now then, maybe you're willing to stick a cable TV or satellite connection into your shower (please update your will first), but you're going to have a hard time jogging with a gyro-stabilized satellite dish on your head, and you sure ain't going to find a cable connection in the seats of your local football stadium. All those products will fail to provide TV reception when analog gets shut down, and not one of them is labeled to warn buyers about that today. Fraud!

"But, Mario, those radios already don't offer UHF reception and, as for a \$20 TV, is it so bad if it stops working?"

It's a good thing you're a figment of my non-existent imagination! Yes, I'm well aware that the radios don't provide UHF reception. That's bad for UHF broadcasters. But it ain't fraud. The radios are very clearly labeled as pro-

viding only VHF TV-audio reception. And, even if someone misses the label, buys the radio and takes it home, it won't take long before the lack of UHF is discovered. If that's a problem, it's back to the store for a cheerful refund, not, "Surprise! Your radio just stopped picking up TV audio today!"

As for the \$20, I'm glad that you're rich enough to afford to throw away money. I ain't. (But, if you're a figment of my non-existent imagination, and you're rich, how come I ain't?)

And, anyhow, it ain't just \$20. I just pointed out some more expensive portables. And, if you give the \$20 TV as a gift, it ain't going to be pretty when it stops working. And you can't use cable or satellite or even a digital-reception adapter on these portables, and...

"But, Mario, what are you getting so worked up about? Times change. There are lots of advantages to digital television. Are you trying to stop progress?"

Yes, now that Zenith is releasing its fifth-generation receiver, I can believe there are lots of advantages to digital television, and I ain't got any desire to stop the transition or slow it down. I repeat: This lunar cycle's rant ain't about digital television. It's about fraud!

Allow me to quote from a recent See-ya press release. The headline is "CEA Calls On All DTV Industries To Educate Consumers."

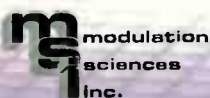
ANALOG, PAGE 32



All-Inclusive Professional Studio Television Receiver

The complete studio monitor — **msi 189** from Modulation Sciences. Our state-of-the-art design provides full access to everything you broadcast, SAP, Stereo, Mono and Video, on five independent, simultaneous outputs. You gain superior performance at an affordable price while eliminating cobbled together monitoring systems.

- Simultaneous reception of SAP, Stereo, Mono and Video
- All channel tuning 2 - 69
- True 75 ohm video on a BNC connector
- Performance *far* exceeds commonly used consumer tuners
- Compact 1 RU high box
- All audio outputs transformer balanced, Low Z, line level on XLR type connectors
- High-quality stereo audio
- Diversity reception available
- Affordably priced at \$2,358
- Backed by MSI's outstanding 3-year warranty



Contact Modulation Sciences, Your Sound Authority
12A World's Fair Dr. Somerset, NJ 08873
(800) 826-2603 Toll Free • (732) 302-3090
E-mail: sales@modsci.com • Web: www.modsci.com



COUNT ON IT

André Mendes

AI: The Holy Grail!

Throughout all its infancy and even as recently as the late '90s, it was not unusual for even some of the biggest luminaries in the information technology industry to think of IT as being mostly driven by the hardware. Now don't get me wrong. It is easy to be seduced by the siren song of multiple lightning-fast CPUs, gigantic storage arrays and the ever-increasing speed of LAN and WAN links, but at the end of the day, the real value will always come from the software systems and their ability to interoperate.

THE RISE OF SYSTEMS

The increases in productivity that are by and large responsible for the three economic expansions since the early '80s can be directly attributed to the ever-growing influence and interoperability of software systems. It wasn't always smooth or trouble-free but as time progressed, more systems became interconnected and allowed companies to base their strategic and operational decisions on increasingly more accurate books of knowledge about their suppliers, manufacturing plants, distribution channels and market share.

We saw the rise of manufacturing resource systems (MRP) and their migration into enterprise resource systems (ERP), the aggregation of Excel spreadsheets into decision support sys-

tems (DSS), which eventually became today's full-fledged business intelligence (BI) setups, and the transformation from packages like ACT! and Goldmine into fully connected customer resource management (CRM) environments that allow companies to not only maintain their customers, but also precisely target them for cross-sell and up-sell opportunities.

Such is the challenge that faces most broadcasters today. Whereas in the recent past, we had to be mostly concerned with the speeds and feeds of our new computer-based, digital television equipment, nowadays, our biggest issues center on our ability to create enterprisewide software infrastructures that can holistically manage our portfolios of digital assets.

Effectively, our enterprise application integration (EAI) problems today mirror the same obstacles that the purveyors of physical assets faced earlier in their computerization lifetimes. This similarity, 20 years later, is a perfect characterization of the issues that our society is facing as we experienced the migration from physical assets to digitized intellectual property.

Most broadcasters have a plethora of applications for the operation of their environments. We have our contract systems, our rights-managements systems, our ad sales systems, our

resource-scheduling systems, our traffic systems, our automation systems and our archive front-ends.

But in most cases, all these disparate applications are loosely connected, require substantial manual

It behooves us to study the battle scars of our IT brethren and use that accumulated knowledge to smooth out our integration processes.

manipulation, are embedded amid 30-year-old processes and workflows and are therefore ill-equipped to provide us with the operational flexibility required to adapt.

As an industry, we are in dire need of integrated platforms that will allow us to concentrate our energies on the pursuit of stakeholder value rather than daily administration of needlessly complex and disconnected sets of operational data.

Over the last 20 years, the IT industry has undergone a long and painful hardware and software vendor consolidation process, but the result has been the emergence of a very sophisticated set of enterprisewide systems that allow end-to-end supply chain optimization.

The same process is needed in the broadcast industry. We need to con-

tinue to abstract hardware components through standardization processes like MXF, adopt IT industry-standard architectures so that we can reap the benefits of a much larger marketplace, and above all, we need to leverage software strategies to the detriment of proprietary hardware environments.

INTEGRATION LESSONS

It behooves us to study the battle scars of our IT brethren, and use that accumulated knowledge to smooth out our integration processes. We have the advantage of far more advanced tools and technologies, such as XML interfaces and Web services, to help with the integration of disparate components, and we are much further along by virtue of universal connectivity standards like Ethernet and TCP/IP. We must, however, remain vigilant to ensure that we do not trade short-term integration benefits for the long-term pain of supporting legacy applications on discontinued platforms.

As television broadcasting continues its fast migration, the time is now to take a step back, look around with a critical eye and make the necessary bold moves to ensure our organizations' survival. In the end, just as it was the masterful integration of all our physical abilities and senses that eventually gave rise to sentience and put human beings at the top of the food chain, so it will be that enterprise application integration will be the differentiator between thriving and struggling to avoid extinction in the broadcast industry.

Count on IT! ■

André V. Mendes is the Chief Technology Integration Officer for PBS.



Holds color in captivity.

Introducing the new 8.4" diagonal ERG HDM-EV80D HD monitor with extremely accurate color. Its HD innovations include four inputs and one output, which allow it to be used with multiple cameras. The monitor's DC output and cost effectiveness make it ideal for rack mounting while its compact, rugged design and low power consumption make it perfect for location shooting. No matter how you use it, the monitor will capture your imagination. For more information, simply call or visit our website: erg-ventures.com, contact@erg-ventures.com, U.S.: +1-949-263-1630, Japan: +81-3-3760-8161

ERG HD Monitors

Analog

CONTINUED FROM PAGE 31

Sounds good, eh? And, in fairness, some of it talks about education, even if it doesn't promise to revise the definition of "digital television." But then there's this—"CEA also reiterated its opposition to mandatory government labels, urging that this proposal is not just based on lack of evidence that labels would help more than hurt education efforts, but because labels for sets by their nature would be cursory and uninformative."

Hello? Labels are uninformative?

Here's a sample simple label:

"The U.S. government plans to shut down the analog television signals that this product receives as early as Jan. 1, 2007. This product will no longer be able to receive those signals after the shutdown."

What part of that is uninformative? Not having the label is uninformative. And, since the lack of label is clearly intentional, it's also fraud. ■

Mario Orazio is the pseudonym of a well-known television engineer who wishes to remain anonymous. E-mail him at Mario_Orazio@imaspub.com.



WHAT'S IN SEASON? THE MARKET OPENS JANUARY 6.

The International CES is the world's first look at the hottest technologies under the sun. Featuring 130,000 potential partners, competitors and market makers, and new products from 2,400 exhibitors. Make the connections that will make your year, and watch your business grow.

Register today at www.CESweb.org.

JANUARY 6-9, 2005 | LAS VEGAS

2005 International CES®

www.CESweb.org

grow



Emmy

CONTINUED FROM PAGE 27

Walter), in a different scene. She pirated it, and then inserted the cut away using reverse motion to make it appear as if the mother were looking toward Michael. "The expression in her eyes was perfect when played backwards, so I stole it," Lee said.

"That's just one of the gems picked up off the edit-bay floor."

THE EDITS

Then, Lindsay's husband, Dr. Tobias Funke (David Cross), inadvertently admits that most of the money donated to the fund-raiser actually came from the Bluth Co.'s corporate funds. Michael turns to confront the group and Lee cut in five exquisitely

well-timed reactions: A) Michael turns toward camera, B) the mother sips her scotch, C) the sister looks away, D) the doctor looks sheepish, E) the mother hangs her head.

The way those visuals slam a pause in the comedic flow effectively catches the audience off-guard.

But again it took a bit of post-production magic to make the moment work since none of those reactions

were originally planned just as they appeared in that sequence. For one thing, the pilot was shot on Panasonic's 720p tape in 16:9, but Lee's editing dub was 4:3. When she looked at the master tape Lee discovered that Lindsay's head could be seen very out of place in the lower corner of Michael's close-up, so she had to arrange for a major reposition to cheat that shot in.

The pilot also utilized a dual image effect as a transition several times, something the Avid software calls "picture-in-picture," where we see the last shot from the previous scene pull back into a half-screen square, and the first shot from the next scene appears in another square beside it.

"This was one more conglomerated idea we discovered in the edit bay," Haxall said. "Not only did it remind us of 'The Thomas Crown Affair,' but Mitch Hurwitz was delighted that it let us advance the story by juxtaposing the 'from' and 'to' shots simultaneously side-by-side."

Later, Lee throws the audience another curve by invoking the same dual image effect, but this time using it to show simultaneous action.

As she explained, "That way we could pull up the amount of time that was passing while still letting the audience know what was going on. By that time in the show, we figured the viewers would be willing to buy it."

As Lee repeatedly demonstrated, the rhythm of the editing bridges the audience's disbelief long enough to make a time-truncating technique such as this find credibility in the audience's mind. Nowhere was that jump-cut more effective than in a quick scene showing family members fleeing from a hotel they could not afford. We see them running down a corridor and out the back door, but Lee cut their escape into five slices of time without worrying about the logical action flow, confident that this far into the episode the audience would be willing to accept the discontinuity.

"It frees me to be able to get away with some pretty weird cutting," she said. "It's like saying 'Here we go. You're on Mr. Toad's wild ride' throughout the show."

Lee finished the first season of "Arrested Development" sharing each alternative episode with fellow editor Steven Sprung. This year, she is working on the Universal/ DreamWorks feature film, "Meet the Fockers," starring Robert DeNiro. It's a good bet that the next time she receives a golden statuette, Lee Haxall will not be wearing seven-year-old shoes. ■

Jay Ankeney is a freelance editor and post-production consultant based in Los Angeles. Write him at 220 39th St. (upper), Manhattan Beach, Calif. 90266 or at JayAnkeney@aol.com.

The Most Flexible, and Cost Effective Uncompressed Editing System Around



ProMax adds a new dimension to their uncompressed video editing solutions with their Premiere SMAX, at a price point that is unbelievable. This remarkable system, powered by BlackMagic's DeckLink Extreme card and Adobe's® powerful new Premiere® Pro software, features the highest quality 10 bit uncompressed video. Make a professional choice and contact ProMax for a quote on a new SD editing system that meets your needs and budget.

- ProMax Pentium 4 - 3.2 GHz SP, 1024 MB RAM, 80 GB, DVD-RW
- Two 250 GB SATA Media Drives
- BlackMagic DeckLink Extreme
- Altec-Lansing VS4121 3 Piece Speakers
- Adobe® Video Collection Standard includes:
 - Adobe After Effects® Standard
 - Adobe Premiere® Pro
 - Adobe Encore DVD™
 - Adobe Audition™
- 19 inch ViewSonic RGB Black Monitor
- System Configuration
- 90 Day Toll Free Support

proMAX

ProMax Systems, Inc.

16 Technology Drive - #106 • Irvine, California 92618
www.promax.com • TEL: 949-727-3977 • SALES: 1-800-977-6629 • FAX: 949-727-3546

Behavior

CONTINUED FROM PAGE 35

input signal levels. Conventional receivers have the RF gain automatically controlled by the signal level at the second detector (where only the D signal is present).

Thus, the undesired signal level at the mixer (where the IM3 is actually generated) is determined only by the desired signal level. If the D signal is weak, the RF amplifier will operate at its maximum gain; therefore, the undesired signal(s) may exceed the linear signal handling range of the mixer so that mixer overloading and additional IM3 result.

A wideband RF AGC circuit is much more appropriate to DTV receivers. In this case, strong undesired signals would force a reduction in RF gain thus automatically protecting the mixer from overload.

We need to know the IP3 for a range of D levels and not just let manufacturers pick a sweetspot. What needs to be defined is the safe operating range of a receiver. To determine this, we must test for IP3 over a range of D levels. In reality, we would be finding the maximum U level at which the receiver would operate for each D level

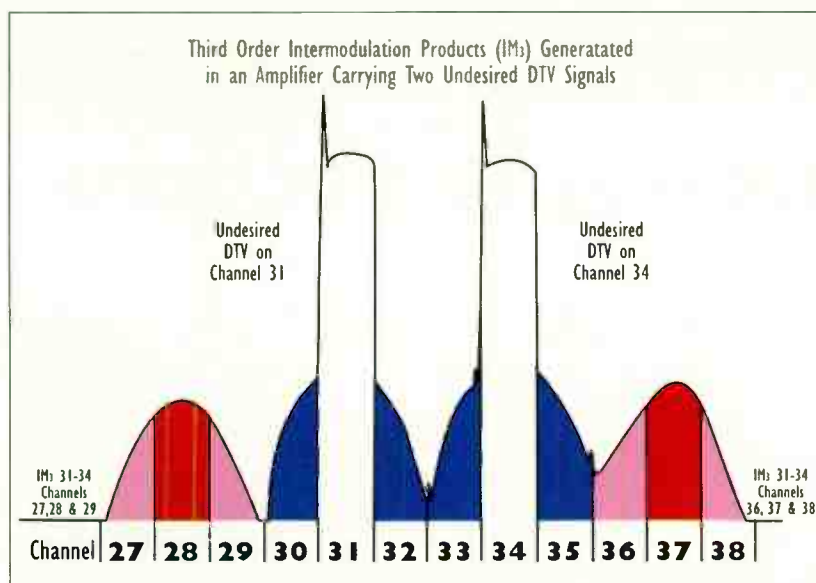


Fig. 2

tested. From such data one could calculate IP3, but much more important, the receiver's safe operating range.

$$IP3 = 0.5 (3 \cdot U - IM3).$$

Note that a 5 dB increase in receiver IP3 reduces receiver-generated IM3 by 10 dB, an excellent tradeoff for receiver designers once they understand the importance of DTV-DTV interference. This 10 dB decrease in receiver-generated IM3 would reduce that noise source to insignificance compared to

the other noise sources, making this 5 dB increase in receiver IP3 with respect to the values in Table II extremely valuable to broadcasters.

Is this the end of the story? No. We must proceed to consider how DTV signals on UHF taboo channels may also generate additional noise within the desired channel.

In the Aug. 18 issue of TV Technology, Fig. 2 of this column showed actual spectra of IM3 in

Channels 28 and 37 due to a pair of DTV signals on Channels 31 and 34. If the viewer wanted to watch Channel 37, then these undesired signals are the n-6, n-3 channel pair. If the viewer wanted to watch Channel 28, these undesired signals are on the n+3, n+6 channel pair.

The result is always the same, the IM3 generated by strong undesired pairs of signals contributes to the noise in either desired channel. This figure is being repeated here also as Fig. 2 because this is so important.

The noise in Channels 28 and 37 is much higher than the sideband splatter around Channels 31 and 37. I hope to measure the power in each of these channels late this year, and you will read about it right here. Stay tuned.

The channel pairs discussed above are perhaps the least of our concerns because a well-designed tuner will attenuate n+/-6 by quite a few dB. The channel pairs n+/-2, 4 are more of a problem, especially the n+4, n+2 pair. My biggest concern is the n+/-1, 2 channel pairs where tuner RF selectivity will be minimal. ■

Charlie Rhodes is a consultant in the field of television broadcast technologies and planning. He can be reached via e-mail at charlesrhodes@worldnet.att.net.

BROADCAST TIME DELAY

Doremi Labs provides the highest quality disk based solutions for all your broadcast time delay requirements.

From five seconds to seven hours, NTSC, DVB-ASI, or High Definition video, Doremi Labs has you covered.

- ▶ **V1-MP2** SDI and Analog video delay
- ▶ **V1-UHD** HD-SDI & SDI delay
- ▶ **TSS-100** DVB-ASI delay



See our complete line of Video Servers - DDRs - HD Video MPEG2 Encoder

Doremi Labs, Inc. | tel. 818 562-1101 | info@doremilabs.com | www.doremilabs.com

doremi



PRODUCTION MANAGER

Craig Johnston

Constructing Instructions

I get invited to go fishing quite a bit because, in addition to (or in spite of) my personality and fishing acumen, I read instruction manuals.

A friend will get a new boat or a new piece of electronic gear, and bingo, I'll get a "Hey, whaddaya doing this weekend?" call. I guess that after learning to use all sorts of new television equipment and computer software over the years, I'm used to reading instruction manuals, and kind of enjoy them.

So I get a fishing trip, and my friend gets his gadget configured and a lesson in plain English on how to use it.

There is certainly no shortage of instruction manuals on being a manager, with oldies-but-goodies like the "One-Minute Manager," as well as the management fad book-of-the-week showing up in the bookstores.

But these are more like books on how to navigate rather than how to work with your own specific GPS. Where is the instruction manual for your employee? (Notice I didn't call it a "user's manual." You don't "operate" employees, employees; you lead and work with them.)

It turns out there is an instruction manual for an employee. It's inside the employee himself. It's your job to access it.

One of my favorite questions for

job applicants is: "Tell me about the best boss you ever worked for?"

Over the years, I've gotten a variety of answers to that. That shouldn't be

I get invited to go fishing quite a bit because, in addition to my personality and fishing acumen, I read instruction manuals.

surprising, because we all respond to different kinds of leadership and supervision. An answer that sticks in my mind came from an applicant who had worked for a friend of mine, in a different kind of business.

FEEDBACK MACHINE

"He is a feedback machine," the applicant said in describing my friend. "You never had to wonder how you were doing, because he let you know all the time about everything you did."

I didn't hire the fellow for other reasons, but if I had, I'd have known up front that he was probably going to



perform best with me reviewing his work constantly and giving him a flood of feedback.

For every person whose answer told me they craved more feedback, I've had someone who said their best boss told them what needed to be done, showed them how to do it, then let them settle into their own routine and judge their own work.

Okay, so maybe that's a good job interview question, but how do you do that with existing employees, people who have already worked for you

for several years?

The best time I've found is during a performance appraisal, where you're talking about a lot of supervisory kinds of things anyway.

And you don't have to beat around the bush. You can always say, "I was reading a magazine article by some nitwit who suggested I ask you this."

But I would be careful how I phrased the question. Leave yourself, as the latest in the list of supervisors, out of the running. Try, "Looking back to when you first started working, up until you began working for me, who was the best boss you ever had?"

WHO'S NO. 1?

My experience is that most people have never answered that question, which means they may have to think for awhile. Once they've identified who No. 1 is, ask what it was that the boss did that made him the best?

Some people can verbalize the answer precisely; others may give you an "Oh I don't know." You can respond, "There must have been something this person did that was particularly effective."

Once I began to get an answer, I'd keep restating their answer, and ask if that's correct until I was sure I understood what it was about that previous boss that made him the best.

Then, to make the discussion more than just something to satisfy my curiosity, I would ask, "Is there a way we can apply what worked so well with that person to my working with you?"

It's a high-wire act question, and you do set yourself up for a few answers like, "There's no way you could ever be her."

I've heard that myself before. But by and large, I've found this to be a pretty productive exercise. For it to be productive, though, means you have to do more than just have the discussion. You need to follow-up.

If the two of you end up agreeing that you would be a more effective supervisor by giving a little more instant feedback to the individual, then start doing that and monitor yourself on it.

If it feels a little phony and staged at first, remember that the employee asked for it and you agreed to do it. It'll start feeling more natural.

When you've had this discussion with a fair number of your employees, you'll have documentary proof of something you already know—everybody's different. In the end, you'll have a different instruction manual for each of them. ■

Craig Johnston is a Seattle-based Internet and multimedia producer with an extensive background in broadcast, who went to great lengths to get a picture of his fish included with his column. He can be reached at craig@craigjohnston.com.

Audio Distribution Done Right

How many channels do You need?



From a small 2 Channel Summing Box up to 60 Channels in 3RU - ATI has your solution.

MIC or Line Audio Digital Audio - AES/SPDIF Master Clock/Sync

Celebrating 25 Years of Innovation

Hear for yourself why more Engineers and Sound Professionals are specifying Audio Technologies Inc. For your nearest Dealer call +215-443-0330 or visit our new webpage at www.ATIaudio.com

Innuendo

CONTINUED FROM PAGE 28

recently at Kansas State University, noted that newspapers and broadcast stations that try to give unbiased information now face increased skepticism and even cynicism from the public.

"It is growing near to impossible to thoughtfully address our most pressing challenges," Sulzberger said. "The result is legislative gridlock at the federal level, at the state level and at the city level."

As some news organizations enjoy being "another actor in the political theater of the absurd," people either become disengaged or they vent their frustrations themselves, Sulzberger noted. Some, he added, view news as little more than another form of reality programming.

The publisher criticized talk radio for too often having a "trial by insult format," television programs that provide little more than "barroom chatter" and authors who increase book sales by becoming more shrill in their writing.

"We are starting to pay a high social price for this form of cheap entertainment," he said. "This results in younger generations being less interested in the news."

Too often, accuracy is sacrificed to

the pressures to be first. The Internet and 24-hour news channels have fueled that pressure, Sulzberger said. He also acknowledged that incidents such as last year's Jayson Blair scandal at the Times, which led to the resignation of two top editors, also damaged news organizations' credibility.

What was particularly upsetting, he said, was that the Times received relatively few calls from people mentioned in Blair's stories.

"They just generally assumed that newspapers operated that way," he said.

BREAKING THE BUBBLE

So how does the average person now living within a saturated media bubble get a better handle on what is reality and what is not?

How do people that live and breathe fixes of speeding "information" know when they are being informed and when they are being hoodwinked?

By being media literate. Like all forms of literacy, media literacy begins at home in early childhood and should be nurtured at school. In our modern world, media literacy has become as important as knowing how to read and write. If a new generation is going to learn to think and make informed decisions, its members must

learn to create and deconstruct rich media.

"We live in increasingly complex times, and unless we teach our children how to read about, watch, interpret, understand and analyze the day's events, we risk raising a generation of civic illiterates, political ignoramuses and uncritical consumers, vulnerable not only to crackpot ideas, faulty reasoning and putative despots but fraudulent sales pitches and misleading advertising claims," wrote David Shaw, the Pulitzer Prize-winning media technology columnist for the "Los Angeles Times."

Only by demystifying media can those who live within a cocoon of media messages begin to understand the artificial environment that disconnects them from reality.

Educational experiments have found that kids that learn to produce their own videos are far more discerning in dissecting the meaning of television commercials, programs and movies. When kids make and edit their own videos, they learn the techniques and tricks that can be used to manipulate the human mind.

Just as laptops have found a place in the classroom, so should low-cost video camcorders and cheap editing software. Modern essays should be expressed not only in words, but in pictures and sound.

Teaching media literacy is, in a sense, teaching critical thinking, and it should "start early, with simple activities in preschool, and continue through high school," said Tessa Jolls, president and CEO of the Santa Monica-based Center for Media Literacy, which provides guidance and curricula for school districts interested in taking on this most challenging task.

One would think it would be a no-brainer for schools to teach kids—who process more than 10 hours of media information each day—to learn to understand how media is used. Yet, media education is still very rare in school curricula.

Why? Many reasons are offered, from extra cost to the fact that American education is highly structured and resistant to change. Some say there are too few people who know how to train teachers, much less textbooks that support the subject. But the time for a media literate society is now. It's necessary if we are to dig ourselves out of the media of innuendo. ■

(For more information, check out the Center for Media Literacy at www.medialit.org.)

Frank Beacham is a New York City-based writer and media producer. Write to him in care of TV Technology.



**Frezzi Charges the Batteries,
Powers the Cameras,
& Lights the News.**



2000 Emmy
Award Winner



Frezzi HMI Mini-Sun Guns
18W, 24W, & 50W



Frezzi 200W HMI
Super-Sun Gun



Frezzi M2100A Advanced
Battery Management System



Frezzi's Micro-Fills
Dimmer / on-off / HMI's

Frezzi Dimmer Mini-Fill
& Camera powered by
BP-14MHEG 130Wh Battery

Frezzi
ENERGY SYSTEMS

5 Valley Street
Hawthorne, NJ 07506
(973) 427-1160 Fax (973) 427-0934
<http://www.frezzi.com>

Contact Frezzi for information on a specialized power & lighting solution for your requirements (800) 345-1030

World Radio History

PRODUCTS & SERVICES SHOWCASE

New HD Rackmount Converters

10-bit broadcast quality

RH10MD—HD-SDI to SDI and analog downconverter, 1x4 HD/SD reclocking DA. \$2395

RH10UC—SDI to HD-SDI upconverter with motion adaptation, genlock, selectable output modes, accurate SD to HD colorspace conversion, and 4 HD-SDI outputs. \$3500



AJA

800.251.4224
530.274.2048
Gross Valley, California
www.aja.com



Professional Lens Add-ons

New .8X Wide Converter

Discover the high-quality, economical way to expand a lens' angle of view while retaining the zoom function. Century's new professional .8X Wide Angle Converter simply mounts to the lens front. Then zoom on for incredible 20% greater coverage at wide angle, telephoto or anywhere between.

1-800-228-1254
Century optics

Ph 818-766-3715 • Fax 818-505-9865

www.centuryoptics.com

Lower Cost. Century Quality.

For lenses including: 18X/19X Canon IF Pro and 19X/20X Fujinon Pro Classics

New 1.6X Tele-converter

Extend the reach of your zoom without exposure compensation. Slip it on the front of lenses without internal doubler for more telephoto range even in lower light situations. Or add it to lenses with internal doubler and your lens becomes a super-telephoto!

List Price
\$995 each
(Includes 85mm clamp ring)



SHOCK & AWE!

Avoid any unnecessary shock to your equipment. The next time you ship your rack mountable equipment insist on a shock absorbing and secure environment. Our shock-protected shipping cases have an inner rack shell, surrounded with shock absorbing foam for superb shock-isolation while in transit.

**SHOCK
PROTECTED**

8 RU 24" Deep - only \$ 629

12 RU 24" Deep - only \$ 699

For other sizes, configurations and options

Shop Star Case Online

www.starcase.com

info@starcase.com

Toll Free 800-822-STAR (7827)

Toll Free 800-782-CASE (2273)



8 Rack Unit (14") High, 24" Deep
2" Foam-Isolated Inner Rack Shell
Front & Rear Lids & Tapped Rails
3 1/2" Swivel & Locking Casters

Add SDI and HD-SDI Inputs to Your Sony PVM / BVM Monitor

DAC-9213-PVM



**Multi-Definition
SDI to Analog
Component
Converter
for Sony Monitors**

Installs directly
in the rear option
slot of select
Sony PVM / BVM
series monitors

NEW!

ROSS

Cool Practical Technology™

Only
\$1,395

www.rossvideo.com

tel: (613)652-4886 fax: (613)652-4425
email: solutions@rossvideo.com

Xintekvideo
INC.



Universal Analog / Digital / Analog Transcoder Model SDI-313

A Universal analog-to-analog, analog-to-digital and digital-to-analog transcoder for 525/625 TV systems. It converts any components or composite inputs to any other components and composite outputs, as well as to SDI. It also converts SDI Input to any composite and components outputs. Internal analog color bars test signal. Digital sampling with 10-bit accuracy. Digital processing with 12-bit accuracy. Adaptive 3 or 5-line comb filters. Quality antialias filters at the inputs and outputs. Priced under \$1500.

Xintekvideo Inc. Stamford CT (203) 348-9229
www.xintekvideo.com

Xintekvideo
INC.



SDI to Analog Converter Model SDI-110

- A true 10-bit SDI to Analog Converter!
- Fully equalized and re-clocked SDI output!
- NTSC or PAL output!
- Professional quality wideband components and composite outputs!
- Selectable luminance sharpness filters!
- Adjustable video output levels!
- Internally generated color bar test signal!
- Budget priced! List \$895.
- Two independent units in 1 RU cabinet also available.

Xintekvideo Inc. Stamford CT (203) 348-9229
www.xintekvideo.com

Xintekvideo
INC.



NTSC to SDI Converter Model SDI-310

For a clean conversion from NTSC to SDI, choose our Model SDI-310. It converts NTSC or Y/C to full quality 601 and to 270Mbps serial digital video for under \$1K

- Features:
- Full 10-bit Accuracy
 - Adaptive Comb Filtering
 - Linear Color Demodulation
 - Image Enhancement

Xintekvideo Inc. Stamford CT (203) 348-9229
www.xintekvideo.com

PRODUCTS & SERVICES SHOWCASE

Save Video & Money!

Save your company thousands of dollars by archiving your valuable media on the most durable mediums available today. Archive with SMPTE time code, CC, VBI, RS-422 control and more. Store on optical DVD and hard drive and have global control from anywhere in the world.

For more information and an on-site demonstration
www.baystor.com



BK-2500 Video Vault



BAYSTOR
Contact Us Today! (888)229-7867
baystor@kardengrouptech.com

IM
www.baystor.com

HD TRIUMVIRATE. COBALT DIGITAL INTRODUCES 3 HI-DEF CONVERSION DYNAMOS.

Model 8021 HD/SD Up/Down/Cross Converter

Model 8022 HD/SD Up/Down/Cross Converter w/advanced de-interlacing, motion compensation and embedded audio

Model 5821 HD Down Converter, SD pass through, full ARC and embedded audio

sales@cobaltdigital.com | www.cobaltdigital.com | 800 669 1691

COBALT

HOW MUCH TIME?



Torpey Timers Drive Multiple Displays, So Everyone Can See!
Call Bob At

TORPEY TIME

SCARBOROUGH, CANADA

CALL TOLL FREE: 1-800-387-6141

OR (416) 298-7788 FAX: (416) 298-7789

www.torpeytime.com

Pixelmetrix

PREVENT WARDROBE MALFUNCTION

ANNOUNCING
DVShift
DIGITAL DELAY FOR HDTV

Providing up to 10s of delay for both video and embedded audio, DVShift-HD allows you to screen outgoing content before it hits the airwaves.

US: 954 472 5445 Europe: +41 79742 7454
Asia: +65 6547 4935
tvtech@pixelmetrix.com www.pixelmetrix.com

Superior Broadcast Products TV - FM - AM Transmitters & Antennas

Solid State Television Transmitters All Power Levels 5 to 20,000 watts



the right choice for your next TV, or LPTV Transmitter or Translator

- Choose from Power levels from 5 to 10,000 watts for both UHF and VHF
- Modular construction allows for greater dependability
- Separate power supply for dependable operation
- Digital Compatibility All transmitters are easily converted to Digital operation
- Remote control interface built in
- Common mode operation
- High performance broadcast modulator
- High velocity air cooling
- Full Digital metering for power, voltage and current

10,000 watt Television Transmitter

The Superior Broadcast Products 10 KW UHF Transmitter features Single Tube Design using a Thompson TH610 Diacode Tube for long life and reliability



- Solid State High performance Modulator
- Solid State 500 watt driver uses LD MOD technology for easy conversion to Digital
- Thompson TH610 as Final Amplifier
- Filament regulation maximizes tube life
- Price includes delivery and check out at time of installation at no additional cost.
- Fast Delivery
- Built in Texas.
- Air Cooled
- Remote control interface built in

Slot and Broadband Antenna Systems

Whether you are building a new Full Service Television Station, LPTV or upgrading your present station to digital, Superior Broadcast Products can supply an antenna that fits your needs. Superior Broadcast Products has antennas for both UHF and VHF with power levels from 10 watts to 120 Kw. Superior Broadcast Products has a wide range of antennas including Slot antennas, Parabolic, Panels, and Yagis. Performance dependability, and durability at a reasonable price is what you can count on from Superior Broadcast Products.



Contact **Benny Springer** 800/695-7919 or **Jimmie Joynt** 800/279-3326 17194 Preston Rd. Suite 123-297 Dallas, TX 75248

EQUIPMENT REVIEW

Equipment and product reviews from professionals in the video industry

OPTICAL CAMCORDER

Sony PDW530 XDCAM Camcorder

by John Sharaf

Workflow, workflow, workflow! Just as "location" is the watchword of a real estate transaction, workflow has become the Holy Grail in modern television production and Sony has staked out some significant territory with its XDCAM.

With optical disk media, thumbnail search, proxy editing and networking, Sony is offering video practitioners a workflow that eliminates the turtle-like pace of linear editing and even the delays of digitizing tape-based video.

FEATURES

The system builds on Sony's propri-

etary 23.3 GB blue-violet optical disk, which is the same size as CDs and DVDs but is encased in a housing intended to prevent contamination from dirt and handling. The same media is used for four flavors of formats, the highest quality being IMX50, which allows 45 minutes of record time. In addition there is IMX40 (55 minutes), IMX30 (68 minutes) and DVCAM (85 minutes).

Just as in previous tape-based incarnations of these formats, the IMX features eight-bit digital component recording with MPEG-2 4:2:2 compression, and the DVCAM has 5:1 compression with 4:1:1 color sampling in NTSC. As an added bonus, the

media can be reused many times.

The acquisition part of the system consists of two camcorders, one that records at DVCAM exclusively (PDW510) and the other that records both IMX and DVCAM (PDW530). I had the opportunity to test the PDW530 version of the camera and as a result, I could preview the XDCAM's highest-quality IMX50 video.

Both share some rather impressive specifications and standard features, including triple skin-tone detail, selectable gamma tables and a 12-second picture cache that supports both loop—and interval—recording modes. Also standard are slow shutter speed and IEEE-1394 (iLink) interface.

I'm told that the camera head is essentially the same as the MSW900 tape-based IMX camcorder that combines the latest in megapixel IT-chip technology (with vertical smear reduced to almost FIT standards of -140 dB), 12-bit A/D conversion and 30-bit digital signal processing within the camera section. It's hard to believe that at this price, the video quality rivals Digital Betacam camcorders costing almost twice as much, but it's true! The XDCAM camcorders pack a lot of features and image quality under the skin.

There is also a sizable selection of optional cards and accessories that extend the cameras' functions, such as a board that allows 24p photography. An optional SDI output is available, as is an option to allow analog composite input for recording conventional press feeds and the like. Like its HDCAM big brother, there is even a color viewfinder option, although the built-in LCD screen almost makes that redundant.

Although not exactly a feature, the camcorder's seven-year warranty will be a great comfort to freelancers, even though the laser is expected to last 4,000 hours (or 6,000 in the decks).

Two decks complete the system, and are configured to look and feel like the VTRs we're all used to seeing and using. The portable PDW-V1 mobile

FAST FACTS

Application

ENG and EFP acquisition

Key Features

XDCAM disk-based recording; high-speed ingest; proxy video creation; IEEE-1394 port

Price

\$34,000

Contact

Sony Broadcast
800-686-7669

www.sony.com/professional

deck is for field playback and data-file transfer when used in conjunction with a PC and the supplied PDZ-1 proxy browsing software, and includes a small LCD screen so no additional monitor is required. The larger PDW-



Sony's XDCAM system uses a blue-violet laser to record more than 23 GB on an optical disk.

1500 compact deck adds recording capability and even faster transfer rates. Both decks have RS-422 connections that allow seamless integration into a linear editing environment, making transition to XDCAM the easier.

The new workflow paradigm soon becomes apparent when the camera records video on the disk in the chosen format, as it concurrently records a low-resolution "proxy" version of the same thing. These files can be transferred to a compatible portable computer system running Sony's PDZ-1 software; the transfer rates are either 30x realtime from the mobile deck or at a blazing 50x from the compact

SONY, PAGE 44



DVStation

8VSB RF PSIP Compliance

Integrated Real Time Monitor & Analysis

The DVStation family of Preventative Monitoring systems simultaneously monitors multiple RF and MPEG-2 transport streams for errors and compliance to broadcast standards — providing valuable insurance against network failure.

Combining 8VSB modulation performance, MPEG-2 transport analysis, and comprehensive PSIP compliance verification, alarms and results are displayed both on the local touch screen or through a user friendly remote GUI.

Automatic content validation ensures that programming and services reach the target audience. The comprehensive log file clearly shows problems in RF performance, transmission errors, and even ad insertion or program splicing.

Advanced yet cost effective, DVStation is the right solution for insuring the integrity of your signals and content.



PIXELMETRIX CORPORATION: 965 N. Nob Hill Rd. Suite 114 Ft. Lauderdale, FL 33324
Tel: 954-472-5445 • Fax: 954-472-6989 • sales@pixelmetrix.com

Copyright © 2004, Pixelmetrix Corporation. All rights reserved.
DVStation, DVStation Remote, DVStation Pro, DVStation IP, DVStation, DVStation, and DVStation are trademarks of Pixelmetrix Corporation.
Data subject to change without notice.

VIDEO MONITOR

Panoramadv RM-3270W Dual Monitor

by Bob Kovacs

Years ago, I once ruined a video shoot because of a monitor—or rather, the lack thereof. It was a simple shoot and if I had brought a monitor, I would have known immediately that the VCR was getting no video.

However, at the time we had only heavy CRT monitors and I was already carrying a heavy tube camera, an even heavier VCR and a tripod; I figured that a monitor was a luxury I didn't need. Instead, a bad cable killed the recording; shoot ruined.

Lightweight LCD displays now challenge CRTs for image supremacy. Although the Panoramadv RM-3270W dual-LCD video monitor is not intended to be portable, it is much lighter and more compact than CRT monitors of similar image size.

Panoramadv is the video products wing of audio-monitor specialist Wohler Technologies.

FEATURES

The RM-3270W consists of two seven-inch 16:9 displays in a single 3 RU chassis. The chassis uses an interesting open-frame construction that has a thin compartment for the driver electronics linked to the display assembly by a pivoting joint that permits the displays to be tilted for optimum viewing.

Each display has two inputs (A and B), each with a toggle switch termination and looping output. The monitors can autosense NTSC and PAL, and an optional SDI input module can be attached to either or both of the inputs. There are no component or Y/C inputs, and this monitor is for standard-definition display only.

The front panel has identical controls for each display, including input select, a menu button and up/down buttons for the menu selections. In addition, there are power on/off switches, power indicators and tally lights on the front panel of the monitor.

One of the selections under system setup is for aspect ratio and magnification. Setting this to normal will show a full-screen 16:9 image, while a 4:3 image will display in the center of the screen with black bars on either side. For letterboxed NTSC (such as you see in many network TV dramas), selecting the "Zoom1" mode will stretch the image to nearly full-screen.

Each of the active-matrix seven-inch LCD panels has a resolution of 1,440x234 pixels. Like most LCD displays, the optimum viewing window is more restrictive than a CRT and the greatest restriction is in the vertical dimension; that's the reason why the

LCD assembly can be easily tilted. The specs for viewing angle are ± 60 degrees horizontal and $\pm 15/-35$ degrees vertical.

The chassis is really too small to support a power supply, so the RM-3270W has an external power supply. To prevent the power connector from falling out of the chassis, it fastens with a twist-lock ring; someone at Panoramadv must have been thinking "production trucks."

Two of the big advantages of LCD monitors are their light weight and low power consumption, and the Panoramadv RM-3270W does not disappoint here. This dual-monitor assembly weighs six pounds and consumes 25 W during typical operation.



The Panoramadv RM-3270W has two seven-inch 16:9 LCD monitors, each with two analog inputs. An SDI input adapter can be added to either or both monitors.

Size is another advantage of LCD displays. This 3 RU rackmount chassis has a depth of 4.5 inches (including connectors); adding an SDI adapter bumps it out to eight inches.

IN USE

Like all LCD monitors, the RM-3270W fires up quickly. It makes two very crisp and bright displays, easily visible in a room with bright light. Although this monitor is not intended to be used outdoors in bright sunshine, it certainly held its own during the daytime in a room with a big unshaded window.

I received an optional SDI module for one of the monitors, which attaches perpendicularly to the electronics chassis. The entire chassis of the monitor is made of steel, as was the SDI module, so the resulting assembly was sturdy, if a little ungainly looking.

The SDI adapter connects to the B input and an adapter can be installed on either or both displays, making the RM-3270W quite flexible. With two SDI adapters installed, this monitor has both digital and analog video inputs, easily selectable from the front panel with the press of a button. Without SDI adapters, analog A and B inputs for each monitor are easily selected.

I used the monitor to display a digital camcorder in both 16:9 and 4:3 aspect ratios, as well as an SDI test signal generator and DV video playback.

With the signal generator, I experimented with both PAL and NTSC test patterns, either of which the RM-3270W locked up to in a moment.

Images were clean and clear; I don't know that I came close to needing the specified horizontal pixel count of 1,440, but the display certainly was crisp. As is typical of any two side-by-side non-calibrated monitors—LCD or CRT—the two images were not perfectly identical and I couldn't quite tweak the controls to get them identical. In practice, this monitor will be used more for signal presence checks than precision QC work and these displays are certainly more than good enough to see if something is black,

white or all the colors in between.

After several hours of operation, the RM-3270W was just a little warm to the touch, typical of LCD monitors. The displays can be tilted over a very wide range, which makes it easy to find the right angle for nearly any viewing position.

The shallow depth and light weight of this monitor make it a good choice

for production trucks. Since the chassis is so shallow, there is less of a moment arm to torque the chassis when the monitor is jounced during transit. This means that there will be less stress on the chassis, which should result in longer life and improved performance over its lifetime.

The monitor was also dead silent in operation, something that will be appreciated by audio operators if it is to be used as a video monitor in an audio booth.

SUMMARY

The Panoramadv RM-3270W is a high-quality dual 16:9 LCD monitor with

FAST FACTS

Application

Control room monitoring

Key Features

Dual seven-inch 16:9 monitors in a 3 RU rackmount

Price

\$2,199

Contact

Panoramadv
650-589-5676
www.panoramadv.com

impressive viewing and input flexibility. It is not fussy about its analog inputs, swallowing NTSC and PAL without a hitch, and its optional SDI capability means that you can use it now with analog sources and upgrade it when you switch to digital. Or you can fit it up with SDI now and display both analog and digital video.

Its thoughtful design makes this monitor a particularly good choice for production trucks, where weight, size and power consumption are all critical factors. However, any requirement for a good-quality signal-presence video monitor will be well served by the Panoramadv RM-3270W, whether it is a mobile or fixed application. ■

Bob Kovacs is the technology editor for TV Technology.

SMPTE TI:ME:CO:DE

GENERATOR/READER/INSERTER ALL IN ONE!!



ES-488

- Continuous size adjustments, 2% - 20% screen size
- Continuous position adjustments, locate anywhere on the screen
- Large LED Display
- 1/30 - 30x play speed
- Jam Sync • User Bits

3 YEAR WARRANTY



www.es-web.com

142 Sierra St. El Segundo, CA. 90245 USA
Phone: (310) 322-2136 • Fax: (310) 322-3127

Sony

CONTINUED FROM PAGE 42

deck by either iLink or Ethernet.

In the laptop, ins-and-outs can be created and storyboarded, then this information can be returned to the disk containing the full-resolution video for playout. Much of the same functionality is in the camera itself. This proxy data can also be shared on a network, so editors back at the station can work off-line on the material even before the high-resolution master arrives.

IN USE

While I am principally a camera operator and not versed in editing functions, I did find navigating through the thumbnail clips to be quite easy and intuitive. With a little training, I could probably learn to do the cursory pre-selects that would expedite getting a news story on the air in a hurry.

Since none of my clients so far have adopted this format, I was not able to test the camera in an actual real-world application. However, I did thoroughly test the unit around my home and shop. Despite the radical design concept realized by XDCAM, its use is completely transparent.

The media loads just like a conventional tape cassette, although it did occur to me that some new system of labeling

would be in order because the disk will be reused time and again. There is a slightly audible "clunk" when you begin a shot, as the blue laser moves to a blank spot on the disk. There is a feeling from the camera not unlike what I'd expect from a gyroscope or some other spinning object inside would create, but not enough to disturb the steadiness of handheld operation.

The camera body itself is quite small and light (less than 13 pounds with viewfinder, microphone, disk and 75-W battery), probably because the media itself is smaller than a Betacam tape. The switches and controls are all in familiar places and the menus were no problem for me because I'm now used to them from previous Sony cameras.

The problem is trying to remember the menu tree on all the different cameras I'm called upon to use. Even among Sony cameras there are many differences. The learning curve for someone coming from an analog camera might be considerable, but only if the shooter was to learn all the new features.

From what I understand, early versions of the camera did have some dropouts caused by severe shock, but Sony reengineered the shock protection with four dampers. In addition, the PDW530 has a built-in 12-second frame buffer that protects the signal during any disruption. From my own rather unscientific tests—namely running down the

street while shooting (as we're often called upon to do these days)—the recordings seem as robust as any other.

I really appreciated the 24p option in the camera I tested. With 24p, the images show the progressive-motion quality that film has when transferred to video, which adds to the quality and look of video photography.

It may seem like a small thing, but I found the optional SDI output to be important. I've already begun the transition to digital by buying HD/SD-SDI monitors, and with the addition of a small accessory board, the PDW530 camcorder has SDI output as well. Earlier digital camcorders such as DigiBeta do not offer SDI out, even as an option.

I did notice that the camera uses a considerable amount of power—namely 36 W, according to Sony's specifications—and this is without the LCD and other attached devices such as RF receivers. I recently ran across an XDCAM user who told me the same thing.

Fortunately there has been considerable improvement in recent years in lithium-ion batteries such that smaller, lighter and more powerful models are available. He was using the "big berth" model in the Anton/Bauer line, the Dionic 160, and said he was satisfied with the run times. A battery that large was a prerequisite when he used

an on-camera light as well.

SUMMARY

It's obvious that Sony put considerable time, energy and thought into the XDCAM system. The company definitely responded to the wish lists of producers and created an innovative solution to a deadline-driven business.

However, in light of the imminent implementation of high-definition the question remains: Can this system be amortized before it's time to be replaced? Some of the major networks think so and have placed initial orders.

I understand that Sony plans an HD version of XDCAM, using a dual-layer disk that would have twice the storage. In the meantime it will be up to television stations and networks around the world to determine whether manpower savings realized by the speed of this new optical disk workflow justifies the expense of upgrading for an uncertain amount of time. Sony has a history of supporting its legacy formats and I've gotten excellent service from my Beta SP equipment, which is still in everyday use. I hope that whatever I buy next will last as long. ■

John Sharaf is a Los Angeles-based cameraman and lighting director who now owns four video formats: HDCAM, DVCPRO100, Betacam SP and DV. He can be reached at john@sharaf.net.

You Think It... TCD/IP does it!

DVD Recorder
PANASONIC DMR-T6070

DVD Player
PIONEER DVD-V5000

System Controller
LEIGHTRONIX TCD/IP

Server
360 SYSTEMS® Image Server 2000

For unattended system control and remote access via network, nothing performs like the TCD/IP. The TCD/IP controls servers, DVD players, VCRs, and much more. Find out what the TCD/IP can do for you.

info@leightronix.com ♦ www.leightronix.com ♦ (800) 243-5589

Affordable ♦ Versatile ♦ Reliable
Cable/Broadcast Automation

LEIGHTRONIX, INC.
CONTROL PRODUCTS

CAMERA PROTECTION

Kata CG4 and RC10 Camera Protection

by Carl Mrozek

When it comes to sophisticated, vulnerable technology like video cameras, an ounce of prevention is easily worth a pound of cure—especially when putting food on the table hinges on keeping it functional. As a result, I seldom go into the field without at least a light-duty rain cover for protection against light rain, wet vegetation, unanticipated spills, splashing waves (on boats) and mist.

Often I've added an extra layer, a padded projector cover, a vinyl rain jacket or canvas camera cover, but not one designed for my camera. These have had mixed results; although they all protect the camera to different degrees, there is often a tradeoff in functionality, ergonomics and efficiency—not to mention aesthetics.

I've been meaning to streamline this process, especially after examining some interesting products by Kata. Recently, I tested the company's rain cover and camera glove for a Sony DSR-570W 2/3-inch CCD camcorder.

FEATURES

Camera gloves are somewhat padded durable covers designed to fit a given camera like a glove, hence the term "camera glove." They are designed for everyday protection from scrapes, bumps and other hazards of daily use in the real world. Kata's camera glove has just enough dense padding under a tough shell to deflect simple knocks and scratches without creating a larger, clunkier camera package that's too awkward to handle.

It actually comprises three distinct layers: the exterior is an elastic nylon knit fabric designed to be non-abrasive to the skin, whereas the inner



Photo: Kathy Beck

The Kata RC10 rain cover and CG4 camera glove let you safely reach the camera's controls in less-than-perfect weather.

layer is a soft knit fabric designed to protect the camera body. The middle layer features shock-resistant closed-cell neoprene, perforated to permit the camera to breathe.

The two long sides are secured at the top with a silent-action zipper beneath the camera handle. The sides are connected with a simple strap in the middle below the camera, leaving much of the underside exposed for easy attachment to the tripod adaptor plate. Two thin but sturdy straps—one above and the other below the lens mount—snug the glove at the front of the camera.

Two durable vinyl windows, fore and aft, provide a clear view of side-panel controls on the viewfinder side of the camera. Another small window provides a view of the cassette window on the rear VTR section.

Cassettes can be changed by unfastening the top zipper under the camera handle or by peeling open the Velcro-secured back flap that covers the batteries. A detached (padded) tri-layered sleeve snugs over the viewfinder for added protection. The lens and microphone assemblies are also covered.

There is also a simple rain cover that fits into a pouch mounted on the back end of the unit, for use in light rainfall or mist. The glove weighs 0.7 kg overall and fits handily into a fanny pack when folded.

Kata's rain cover can be described as two rectangles of dense waterproof fabric, one with a large vinyl window on the camera's control side panel and the other a solid synthetic waterproof fabric similar to that used for the finest winter parka shells. The rain

FAST FACTS

Application

Field production

Key Features

Provides physical protection for cameras and attached accessories

Price

CG4: \$256 RC10: \$87

Contact

Kata

201-818-9500

www.bogenimaging.us

cover is designed to cover the camera completely including the microphone and lens up to the lens shade. Polypropylene sleeves attach to the lens and mic covers to permit expansion when using extra-long shotgun mics or telephoto lenses.

The outer lens element, microphone and viewfinder are sealed off from the rest of the unit with self-snugging elastic-tipped sleeves that ensure moisture doesn't penetrate beyond the very outer elements necessary for operation. The rain cover includes enough slack to accommodate oversized variants (lenses, shotguns, viewfinders), if desired.

There is also extra material in the body of the rain cover to permit use with large battery packs, wireless receivers or with larger cameras. This slack can be tucked out of the way with straps at the front and rear of the rain cover. There are adjustable elastic fasteners on both camera strap sleeves to prevent moisture from seeping in from above while moving around.

All access to camera controls is from

KATA, PAGE 46

Synergy 100 MD is the Switcher for You

- 1 Multi-Level Effects System (MLE)
- 16 Video Inputs
- Standard or HD Production
- Squeeze & Tease MD Warp DVE Effects
- ... and much, much more!

www.rossvideo.com

tel: (613)652-4886

email: solutions@rossvideo.com

Cool Practical Technology™

Kata

CONTINUED FROM PAGE 45

below the overhanging rain cover. The entire seam is edged with Velcro, which provides a watertight seal when battened down, even when mounted on a tripod. The Velcro must be peeled away to access camera controls.

The same is true on the tape loading side of the cover. Batteries, wireless receivers and rear camera functions are kept dry by an ample sheet of waterproof fabric. The rear section is sealed at the top and back edges by heavy-duty Velcro strips, all of which are yellow and easy to find—even in poor light.

IN USE

I tested Kata's CG4 camera glove, designed for use with Sony DSR series 1/2-inch and 2/3-inch CCD camcorders. Without benefit of instructions, I managed to install it quickly and correctly on the DSR-570W camcorder, buckling the straps above and below the lens mount and zippering the top just underneath the handle.

Not only did it give me peace of mind that my camera was protected whenever tearing through underbrush or clambering around with the camera dangling from my shoulder, but it also rested comfortably against my body, even without wearing a jacket.

Camera functions were all easily accessed by pulling open the three flaps tucked beneath the main cover. The clear vinyl windows made it feasible to find the desired switches and buttons without removing the cover. Hence, I had no difficulty operating the camera functions as per normal with the glove on, even when I added the RC10 rain cover. Even the VTR functions were readily accessible

through the separate zipper access port at the top of the glove, parallel to the main fastening zipper underneath the camera handle.

The adjustable rear flap easily covered a docked pair of IDX Endura 80 batteries or a 50/80-W combo and a wireless receiver. When using less of a load on the back end, the flap folds over and tucks in under the main cover.

The rain cover includes enough slack to accommodate oversized variants.

Overall it was straightforward to use and provided the protection I need when shooting wildlife, weather, news and other subjects outside the control of the studio.

For shooting in substantial rainfall, as I routinely do for the Weather Channel, I was eager to compare the efficacy of Kata's synthetic rain cover with vinyl and plastic covers I typically use in heavy rainfall. Unlike these other covers, all openings and extended sleeves on the Kata RC10 were properly located for use with the DSR-570W and installation was straightforward. It would have been fairly fast had I not been finicky about getting as watertight a seal as possible on the camera straps as well as the lens, viewfinder, microphone and underside.

Notwithstanding four hurricanes in Florida this season, as luck would have it in Western New York we were in the midst of the driest spell of the

year when the rain cover arrived. Therefore, I had to resort to reviewer's license to simulate field conditions in the rain to test the efficacy of Kata's rain cover.

I took a page from low-budget feature cinema and used an ordinary garden hose with spray nozzle. After fastening the bottom of the rain cover and checking the seals on the viewfinder, microphone and lens, I proceeded to rain on the RC-10 doing my best to simulate a downpour I had shot in just a few weeks earlier. Once I achieved the desired downpour, I continued it for another 6-7 minutes—a fairly long duration for a hard, steady drenching.

When I was done, the standard camera strap was soaking wet. When I peeled off the damp—but not soaked—rain cover, I found a smattering of tiny droplets inside the vinyl window and on the barrel of the lens, especially beneath the polypropylene sleeve.

By contrast, there were no droplets under the durable waterproof covering. More importantly, the downturned viewfinder didn't fog, nor did the lens. In other words the camera remained completely functional throughout and following the hosing.

Moreover, beneath the camera glove, the camera was essentially dry. The actual exposure time to rainfall during the test easily matched what I encounter when shooting real rain, as I always try to find some shelter from the direct downpour at least part of the time.

When shooting without the benefit of shelter in a downpour, my camera typically gets quite damp, despite being covered by a light poly-and-vinyl rain cover. In short, the waterproof fabric in Kata's rain cover outperformed

my old rain cover. If I had limited my exposure during the downpour as I typically do, it is quite likely I could have reduced the seepage of moisture to a much greater extent.

Although I wasn't able to operate the camera during the test, other than to have it turned on, I found it fairly convenient to operate the camera with the rain cover opened enough to get a hand in underneath. Moreover, the six-inch fabric overhang should be enough to keep moisture from seeping in from below when inserting a hand beneath the hood under most conditions. Under extreme conditions, keeping the thick Velcro seam sealed below and on top should provide adequate protection for the camera.

SUMMARY

As the old saw says, an ounce of prevention is worth a pound of cure, and around 40 ounces of protection with a Kata camera glove and heavy duty rain cover could prevent hundreds of dollars in damage to sensitive, expensive tools like broadcast video cameras. Under many circumstances, the lighter-duty rain cover that comes with the camera glove may offer adequate protection for the typical exposure to the elements encountered by many pros.

However, for stormchasers like myself, the Kata RC10 rain cover offers an extra layer of protection that barely impedes camera operation. For the price—less than 100 bucks—it is well worth getting and taking along. ■

Carl Mrozek operates Eagle Eye Media based in Buffalo, N.Y., specializing in wildlife and other outdoor subjects. His work appears regularly on the Discovery Channel, CBS, PBS and other networks. Contact him at eagleeye@localnet.com.

World's Most Advanced Media Transcoder.



Convert Anything to Anything Including DV & SDI.

Blows the doors off all other media converters & transcoders. The ultimate everything to everything box converts any format to any format including SDI & DV! ALL formats & outputs active all the time! Each format features dual outputs. 2RU. MSRP \$2,995.00

INERTIA™
Ultimate Interface Tool.

www.lairdtelemedia.com

LAIRD®
TELEMEDIA
Life is Good.

PRODUCTS & SERVICES SHOWCASE

BROADCAST VIDEO Over IP

NEW! 4:2:2 Video Profile



ACT-L3 Video Transport

- Broadcast Quality at 1.5 Mbps
- Contribution Feeds
- Live News Gathering
- Portable ENG & SNG
- Realtime Store & Fwd
- Portable or Rack-Mount
- Multi-Network T1, E1 & IP
- Advanced Error Correction



Mac™ or Intel®

Streambox®

Call or visit our website today!

www.streambox.com sales@streambox.com 206/956-0522

Seen the award-winning LED lite?

Only the new LitePanels™ daylight balanced lighting system employs ultra-efficient LED technology to produce soft and "projected" output—ideal for interviews, events, car interiors, or any tight spot.

Compact LitePanels mount easily on camera, a stand, or elsewhere. Fully flicker-free, this 5600°K head offers output that is 3 times more efficient than a conventional tungsten camera light! It's heat-free, & infinitely dimmable from 0 to 100%, with virtually no shift in color.

LitePanels come in single or dual kits, packaged with everything you'll need.

- Heat-Free, LED technology
- Absolutely Flicker-Free
- Bright: 68 footcandles at 2 feet
- Efficient: One hour+ battery life
- Lightweight: 9.6 oz (.36kg)
- Snap-on battery, camera battery, car battery or AC

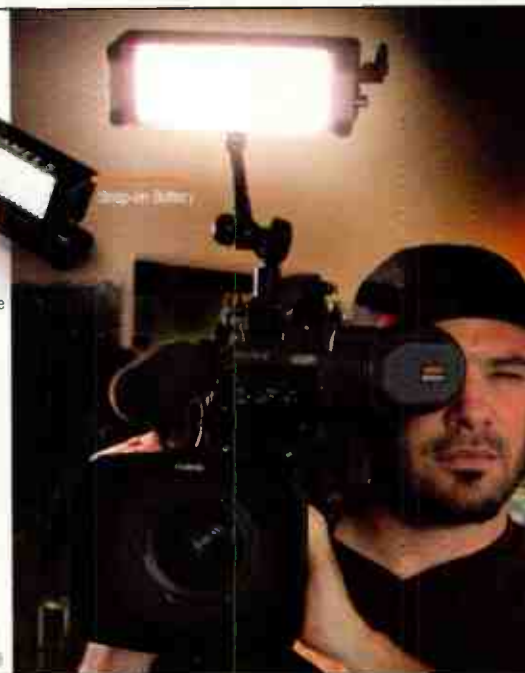


LITE PANELS™

BUY NOW

www.litepanels.com

Ph: 800 871 0436 Fax: 616 752 6316



■ DVB-ASI TimeShifter earns the distinguished Pick Hit award given at NAB by Broadcast Engineering



For a **free 30 day trial*** of the TimeShifter from DVEO, the recently formed professional broadcast division of Computer Modules, Inc., call 858-613-1818 or go to www.dveo.com. *Visit Web site for more details.

DVB



Computer Modules, Inc.

Systems PCI Cards Software



Open Wide for U-Bags!

The ultimate padded camera bag with hidden safety features like reinforced hard interior floor and panels to protect delicate contents. Petrol's U opening allows for safe & speedy camera insertion without disturbing the viewfinder or mic. Offers ample pockets, dividers, padded straps, U-grip interlock handle & padded straps. Sizes to fit tiny DV to HD.



sachtler.

www.Petrolbags.com

California: 818-845-4446
New York: 516-867-4900
email: sales@sachtlerusa.com

Full Duplex Wireless at Wired Prices!

Digicom Digital

Eartec manufactures a full line of wireless belt packs & headsets for the professional audio industry. A unique stand-alone encrypted digital wireless is now compatible with your existing wired intercom.



Simultaneous Talk

No Buttons to Push
No Base Station Needed

Telex®, Clear Com®, RTS® compatible.

1-800-399-5994

www.eartec.com

Television Antennas from ERI

ERI

Broadband Panel Antennas

UHDTV Antennas

VHF TV Antennas

ERI

VHF Batwing

Electronics Research, Inc.

812.925.6000 | www.ERInc.com | sales@ERInc.com

VIDEO MONITOR

Transvideo CineMonitor III

by Bob Kovacs

There are all sorts of video monitoring requirements, ranging from simple observation of the correct image to precision monitors for quality control. However, anytime you take a video monitor into the field, you need a level of ruggedness and performance that is seldom seen in studios and control rooms, often to serve the needs of demanding creative types who sometimes can't articulate exactly what they want.

The Transvideo CineMonitor III is a monitor that just might get a nod of approval from the creative types on field shoots. In addition to features tailored for monitoring in the great outdoors, its build quality is up to the knockabout rigors of the road.

FEATURES

The CineMonitor III is a beautifully crafted LCD monitor in a heavy alloy case, presenting a compact and sturdy appearance. Its overall meas-

urements are approximately 7x4.5x2.75 inches (length x width x depth), although its depth changes at the end containing its video and

power connectors.

The outside of the case sports both traditional analog controls for brightness, contrast and color saturation, and five pushbuttons for menu selections. Two of the pushbuttons, pressed together, switch the unit on and off. In addition, there is a small toggle switch to choose between video A, video B and the accessory input.

On the back, tucked into an edge where they are less likely to be damaged, are BNC connectors for video A, a looping output and video B. Other connectors here are a Hirose 10-pin accessory jack and a four-pin XLR battery connector. The Hirose connector can be used to feed power and video to the CineMonitor III, as well as providing Y/C input. The monitor does not have SDI or component inputs.

The monitor runs from an input voltage of 9 to 36V, with a current draw of 1.2A at 12V. It can easily be run from common rechargeable batteries used in the video industry and there is an optional Anton/Bauer-style battery adapter plate that doubles as a carrying handle. The monitor, without accessories, weighs two pounds.

The CineMonitor III can be set for NTSC, PAL and SECAM in a variety of flavors. For example, it will work with NTSC 3.38, NTSC 4.43, PAL M and PAL N. It does not accept any HD formats.

The LCD screen measures a nominal six inches diagonal, although the useful viewing diagonal is 5.7 inches. The screen is an active TFT type with 320x240 RGB pixels, for a total pixel count of 230,400. The brightness

FAST FACTS

Application

Field production monitoring

Key Features

High-brightness LCD screen; multistandard video inputs; rugged construction

Price

\$2,950

Contact

Transvideo International
818-985-4903
www.transvideointl.com



The rugged Transvideo CineMonitor III has easy-to-use controls that include both pushbuttons and old-fashioned analog knobs.

specification is 250 nits, which may not tell you much about how bright the monitor actually appears. Trust me, it's bright.

The display has a wide variety of settings that are accessible through the five pushbuttons. Some of these settings include freeze frame, various aspect ratios, flipping the screen horizontally and vertically, and the ability to display input voltage and video standard.

All four sides of the case have threaded holes that multiply its mounting possibilities. These include the already-mentioned optional battery mount as well as a nifty articulating arm that can hold the monitor in just about any position. The monitor ships with a tough-looking lunch-box-sized carrying case that contains a special cloth for wiping the LCD screen. There is also an optional sunshade that further improves visibility in the bright sun even.

Just as this article went to press, Transvideo announced the CineMonitor IIIa with some significant upgrades. Among other things, the new version bumps the overall brightness up to 470 nits from 250 and the contrast ratio is now 450:1, up from 60:1.

The IIIa version uses the same rugged case and the same control interface, and will have the same optional accessories. All versions of the six-inch CineMonitor III can be converted to IIIa specs at Transvideo's North Hollywood office.

Transvideo's products are manufactured in France and supported in the United States from the company's office in the Los Angeles suburbs.

IN USE

The CineMonitor III simply feels like a quality device, with a dense and well-machined heft. The controls, both potentiometers and push-

Unlimited conversion
Computer to video

OUR SCAN CONVERTERS FULFILL ALL YOUR NEEDS THROUGH THEIR CONTINUAL EVOLUTION.
Today our program's performance gives you access to the widest spectrum on the market. Try it.

- HD SCAN™
- VIDEO SCAN XTREME™
- STUDIO SCAN XTREME™
- SCAN VISION VHS™
- POWER 1024™
- VIDEO 1024 PCI™

Computer inputs:
PC, Mac, Workstations
800 x 600 up to 1600 x 1280

Outputs:
Analog HDTV & HDSDI output
Composite Video, YUV, RGB/S,
Y/C, NTSC, PAL, D1-10 bits,
SMPTE standards, ITU-R

With or without Genlock

High performance Anti-Flicker Filters

From US & Canada:
Analog Way Inc.
New York
Phone: (212) 269-1902
Fax: (212) 269-1942
Email: salesusa@analogway.com

From Europe, Africa,
South America & Middle East:
Analog Way France
Phone: (33) 1 64 47 16 03
Fax: (33) 1 64 47 14 73
Email: saleseuro@analogway.com

From Asian & Asian Pacific:
Analog Way Pte Ltd
Singapore
Phone: (65) 62 925 900
Fax: (65) 62 925 203
Email: salesasia@analogway.com

ANALOG WAY®
Think Fast Forward™

buttons, have a nice tactile touch that reinforces the monitor's overall impression of quality. Further assisting this impression is a rubber patch that wraps around one corner, making the monitor a little easier to hold and control.

Counting down from the top (although "top" has a fluid meaning with the flexible CineMonitor III), buttons three and four are used to switch the monitor on and off. Once the monitor is on, the power LED switches from red to green and the CineMonitor II takes a few seconds to begin making a display. Full brightness is achieved a few minutes after power up.

I used the CineMonitor III both indoors and out, although this thing really comes into its own outdoors. Inside, it is simply a clear, bright monitor that is easily seen by talent working a few feet from the camera. It is small enough that it can be placed nearly anywhere and could probably be carried on a lanyard around the camera operator's neck, in a pinch. The various threaded points on the case make for seemingly endless mounting possibilities.

Outside, the CineMonitor III can work in the bright sun and still be visible. I shot a scene where the monitor was on pavement awash in bright

sun, in the talent's line of sight. I wanted the talent positioned so that the sun was directly behind her head and she was able to find the spot herself by watching the screen, even though the monitor was in the direct sun on a crystal-clear day.

After the scene was shot, we reviewed the video while sitting across a table. I had set the CineMonitor III to "auto flip" mode, which automatically flips the picture depending on the orientation of the monitor. I could watch the scene normally on my side of the table then simply flip the monitor for the talent to see—the picture immediately re-oriented itself so that it was right-side up for her.

I shot in 4:3 but it was nice to see that the monitor supports 16:9 and anamorphic 1:2.35 aspect ratios. There is even a setting for 16:9 with a 14:9 safe area.

The useful manual steps through all the menu selections but the CineMonitor III was easy to figure out after a minute or two of pushing buttons. The menu structure is logical and clear, and it was almost like a video game to punch buttons and see what it would do next.

One of the more interesting features is "recall," which works in conjunction with the unit's freeze frame.

After grabbing a still image by pressing the top button, the second button flickers quickly back and forth between the still image and a live picture.

Using recall let me grab a still of the talent and then reposition her in exactly the same spot for another take. Since the CineMonitor III was connected to the output of my camcorder, I could grab the still from the scene recorded on tape and reposition the talent perfectly.

The monitor also has extensive image quality controls using both the analog potentiometers and the pushbutton menus. Getting it tweaked just right was quick and intuitive.

This thing makes some heat, though. My first night with it, I sat on the floor and stepped through all the menus. After a while, the monitor got a little too warm to keep comfortably on my lap, although it's probably no worse than a warm laptop computer.

The optional battery-mounting bracket attached firmly and provided a sturdy handle to easily grip the combined monitor/battery assembly. Mirroring the flexibility of the monitor, the battery mount can be attached a couple different ways to meet different operating styles.

Finally, I was really impressed with the beautifully engineered optional mounting arm. It attaches solidly to the monitor and can be adjusted quickly to any angle and position. However, supporting the two-pound monitor and a heavy battery puts a lot of stress on the support structure unless you're careful with your positioning.

SUMMARY

The Transvideo CineMonitor III is one of those tools that will make any field shoot easier. It is easily up to the durability requirements of field use and it hides surprising complexity behind a fun and friendly user interface. In addition, the CineMonitor III throws the kind of light needed to use it in the daylight under demanding circumstances.

The company's attention to detail is visible in every part of this monitor, from the solid feel of the controls to its overall rock-solid construction. The carrying case alone attracted a lot of admiring glances around the office, and the monitor's accessories reflect the same careful engineering thought that went into the monitor.

If you're still squinting at playbacks in the camera's viewfinder, Transvideo has a better way to monitor video in the field. ■

**Zero to soft light
in 60 sec.**

Compact, Quick, Beautiful

Join the thousands of pro's who've discovered the magic of Rifa-lite®. Go from kit to lit in less than a minute, for beautiful wrap-around light quality that's virtually fool-proof. Now added to a wide range of Lowel kits, Rifa is everything you'd expect from the world leader in location lighting.



lowel®

lowel.com 800-334-3426

NLE SOFTWARE

Sony Vegas 5 NLE Software

by Stephen Murphy

Sony Vegas 5 is a multitrack audio and video editing application for Windows-based computers. When Sony purchased Sonic Foundry last year, Sony added its name, reputation and a whole lot of powerful features to the latest version of this unique and intuitive editing application.

The combination of Sony's video expertise with the creative programming of Sonic Foundry has made Vegas 5 a tantalizingly easy-to-use yet powerful audio/video editing system for the Windows platform.

FEATURES

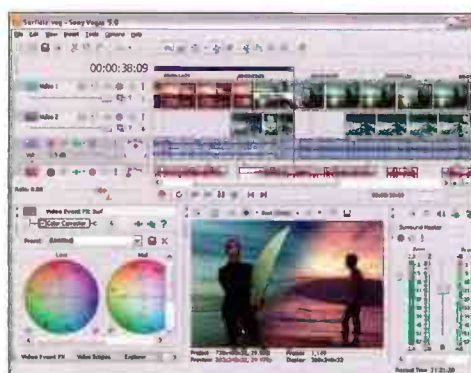
It would be impossible to cover all the features of Vegas 5 in an article of this length (the "Quick Start" manual is more than 100 pages!), so visit Sony's Web site listed above for a full feature list. Covered in this section are some of the program's base capabilities and a rundown of new features added in this

latest version.

On the video side, Vegas boasts unlimited video tracks, a slew of video effects (more than 190), three-wheel primary and secondary color correction, several video measurement tools and scopes, text animation and titling tools, and more than 175 2D and 3D transitions.

Vegas supports any aspect ratio, multiple frame rates, progressive and interlaced field orientation, as well as editing of HD and HDV video. The software allows the seamless use of multiple file formats and rates on the same timeline without conversion.

New features in Vegas 5 include video track envelope automation and key-framable transition envelopes, 3D track motion, multilevel compositing, Flash (SWF) file import, key-framable Bézier masks, and two-pass variable bitrate MPEG-2 export for direct use in Sony DVD Architect authoring software.



Vegas 5 has very good audio capabilities to complement its video editing prowess.

On the audio side, Vegas features unlimited audio tracks, supports ASIO hardware, is 24-bit/192-kHz capable, comes with more than 30 real-time audio effects and provides 5.1 surround mixing capabilities. Sony offers a Vegas + DVD Architect package (\$999) that includes a Dolby AC-3 encoder.

Vegas 5's new audio features include Sony Acid loop-and-event pitch-shifting support, 19 user-definable time-stretch modes, on-the-fly punch-in recording, bus-to-bus routing, 5.1 surround plug-in support and surround downmix monitoring.

The software now includes a network-based render engine that distributes jobs across multiple computers and automatically reassembles the file when complete; two render-only installations are included with Vegas 5.

IN USE

It was a year and a half ago that I reviewed Sonic Foundry's Vegas 4, reporting that it had made some earnest strides from its curiosity status towards professional usability and recognition. A lot has changed in the program since then: Sony bought the company, many rough edges were smoothed out and a substantial amount of powerful features were added—some of which are the envy of Vegas' competition.

The genius of Vegas is its deceptively simple and transparent interface. Much of the mundane and frequently frustrating aspects of video editing—such as compiling a project from a variety of source file types and frame rates—are handled behind the scenes. The program presents a simple set of tools and an easy-to-use interface up front, but for those who wish to dig deeper, more powerful features and in-depth settings are readily available.

If you are familiar with the editing paradigm used in just about every digital audio workstation, you can cut and assemble video projects in Vegas with almost no learning curve. If a more tra-

FAST FACTS

Application

Post production

Key Features

Windows-based NLE; key-framable transition envelopes; 3D track motion; multilevel/nested compositing; ACID loop and event pitch-shift support

Price

\$699

Contact

Sony Pictures Digital
800-221-6678
<http://mediasoftware.sonypictures.com>

ditional editing style is preferred, the GUI and keyboard can be customized towards that end.

One advantage I found Vegas to have over other DV editing applications is its powerful scripting language. Based around the Microsoft .NET framework, Vegas scripting provides in-depth access to many of the program's operations and functions, allowing the user to create custom integration with external applications, complete tedious tasks at the click of a mouse and design customized features. There is a very good community based around the sharing of scripts on the Sony Vegas Scripting Forum and some enterprising folks have even created low-cost "wizard" sets of utilitarian scripts.

For example, the creative folks at Mobile Pro Video and Jet Digital Video have co-produced two after-market plug-in collections (Neon and Excalibur) using Vegas scripting that add functionality and enhance many aspects of editing in Vegas. The Excalibur multicamera wizard expertly simulates live camera switching, including a four-camera real-time preview with the "on-air" camera highlighted in the view. Several other features of the wizard, such as redundant camera choice warnings/markers, demonstrate the power of combining the speed of live switching with the safety and creativity of post editing.

On the audio front, Vegas 5 now has Acid loop support, expanded time-stretch and pitch-shift support, external controller support, fader-based automation and discrete surround panning with downmix monitoring functionality. These are all very welcome additions; thank you Sony.

Although the audio improvements in this version are substantial, it still lacks several essential functions in

IN YOUR OWN WORDS

David Eastwood on his 6" CineMonitor III:

"The 6" Cinemonitor III provides me with what I need for live Television events:

- Less weight
- Lower power consumption
- Larger screen to view
- Color image

It even works nice with a downconverter for HD.

My green screen tube is now my back-up monitor".



David Eastwood, 8 times Emmy winner, ICG member, operates on top live television events such as the Academy Awards, Emmy, Grammy and MTV Video Music Awards, Super Bowl Halftime Show, American Idol and more.

TRANSDVIDEO International
10700 Ventura Bl. #2A
No. Hollywood, CA 91604
USA
Tel: 818 985 4903
Fax: 818 985 4921

transvideo
www.transvideointl.com

TRANSDVIDEO
Z.I. BP526
27135 Verneuil S/ Avre.
FRANCE
Tel: +33 2 3232 2761
Fax: +33 2 3260 1479

order to use Vegas as a stand-alone audio workstation. For instance, it has no MIDI, VST or VSTi/Dxi instrument support (though some VST plug-ins will work in Vegas with a VST-to-DX wrapper), no track grouping to speak of, nor does it have the capacity for multiple tempos/time signatures across the length of a project; just a global tempo and signature setting.

While Vegas does have some audio shortcomings, it is important to note that, when compared to

other desktop video editing applications such as Avid Xpress and Apple Final Cut Pro, Vegas is years ahead in its integrated audio support—light years, actually.

One of the coolest audio-related perks found in Vegas is nowhere to be seen in other editing systems: a tempo grid to which one can snap video clips. For cutting video to fit music (music videos, TV commercials, bumpers), the tempo grid was invaluable. I found the ability to cut and assemble video to a

tempo grid breathtakingly simple and quick, and the results were always in lock step with the music bed. Two full-time Avid editor colleagues were drooling at the possibilities.

SUMMARY

Vegas 5's initial simplicity belies the fact that this is a very powerful program. Despite its ingeniously easy entrée, Vegas 5 possesses a complement of video and audio tools comprehensive enough to satisfy most editors

and engineers.

Although its flow may initially seem counter to those used to working with traditional video applications, it does not take long to realize the power of Vegas 5's in-depth feature set and highly customizable interface lurking below the surface. ■

Steve Murphy, studio editor of *Pro Audio Review* magazine, is a multimedia and audio producer. His Web site is www.smurphco.com.

PRODUCTS & SERVICES SHOWCASE

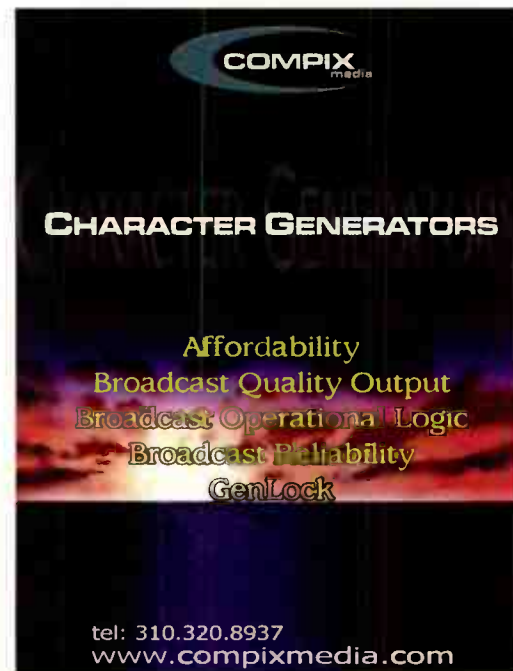


UNLEASH THE POWER OF BEXT

"We get a great picture with crystal clear sound ... when you call Bext, you talk to management and engineering without hassle."
"If I needed a transmitter today, I would call Bext!"
(WFNY TV 49)

BEXT
Transmitters from 4W to 60kW
Digital and Analog, VHF / UHF

1 888 239 8462
www.bext.com

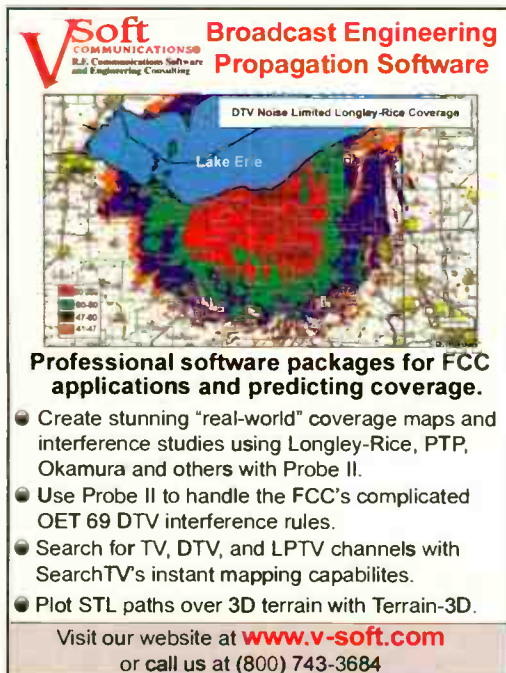


COMPIX media

CHARACTER GENERATORS

Affordability
Broadcast Quality Output
Broadcast Operational Logic
Broadcast Reliability
GenLock

tel: 310.320.8937
www.compixmedia.com



V-Soft COMMUNICATIONS
Broadcast Engineering Propagation Software

DTV Noise Limited Longley-Rice Coverage

Professional software packages for FCC applications and predicting coverage.

- Create stunning "real-world" coverage maps and interference studies using Longley-Rice, PTP, Okamura and others with Probe II.
- Use Probe II to handle the FCC's complicated OET 69 DTV interference rules.
- Search for TV, DTV, and LPTV channels with SearchTV's instant mapping capabilities.
- Plot STL paths over 3D terrain with Terrain-3D.

Visit our website at www.v-soft.com
or call us at (800) 743-3684



a new direction in routing

16x16
32x32

NK is a compact and very flexible series of routing systems designed for use in broadcast, educational, corporate, and government facilities.

NEW!

Available in analog and digital audio and video as well as data routing formats.

All formats are available in either 16x16 or 32x32 configurations.

ROSS
Cool Practical Technology™

www.rossvideo.com
tel: (613)652-4886 fax: (613)652-4425
email: solutions@rossvideo.com



Special Promotion

8VSB RF & Transport Stream Monitoring & Measurement

Integrated Real Time Monitor & Analysis

DVStation – the world's most widely deployed MPEG monitoring system – monitors multiple RF and MPEG-2 transport streams for errors and compliance - providing valuable insurance against network failure.

Combining 8VSB, MPEG-2 transport stream PSIP compliance, results are displayed in real time on a built-in touch screen or remote GUI.

Limited time promotional price of only \$14,990 – Call Today!

US: 954-472-5445
Europe: +41 79742-7444
Asia: +65 6547-4935
tvtech@pixelmetrix.com
www.pixelmetrix.com

Pixelmetrix

Copyright © 2004, Pixelmetrix Corporation. All rights reserved.
DVStation, DVStation Remote, DVStation Pro, DVStation-P are trademarks of Pixelmetrix.

EFFECTS SOFTWARE

Bauhaus Mirage 1.2 Effects Software

by Michael Hanish

One of the holy grails long sought by compositors, animators and special effects artists is the real-time paint and animation system, running on a non-proprietary desktop box.

The latest worthy contestant in the field is Mirage from Bauhaus Software, running on either Windows 2000/XP or Mac OS X 10.3. A full-featured, resolution-independent, bitmap-based paint, roto, animation, compositing and effects toolset, Mirage is a great addition to any post production workflow.

FEATURES

As you can see from the screen shot, Mirage is based on the familiar paradigm of layers (still-image or animated) and a timeline, in the lower part of the screen. It runs completely within its own window, including the menu bar, with a mode-sensitive toolset in the upper left and the canvas (or composition window) in the center.

Tool tips show the functions of each button and pane as you roll the mouse over it. Layout and configuration are totally customizable (to be saved and recalled) for different projects or different tasks within a project. Keyboard shortcuts for virtually all Mirage's actions can be customized, to make controlling the software similar to other familiar programs such as Photoshop and After Effects.

Real-time paint tools are Mirage's forte and they don't disappoint. You

can use an unlimited number of 32-bit layers for exceptional color and detail reproduction.

All the familiar paint tools are at your disposal, with a few unique and useful ones as well. Paint modes include color, erase, light, shade, merge, clone, colorize, tint, noise, grain, negative, sharp, emboss, solarize, saturate, unsaturated and more. You can paint on and affect only specific color channels (red, green, blue, alpha), with all sorts of brushes and strokes, including static and animated brushes. There is full built-in support for pressure-sensitive tablets like the Wacom Intuos.

The stroke recorder automatically animates painting over sequences or handwriting, by recording all pointer information and playing it back in scrubbable, real-time previews. With a supported video card, you can grab frames on-the-fly for stop-motion animation or even paint over live video, with live output.

Animation is keyframe-based, with all properties animation ready, including motion blur (which seems especially nice and smooth) and noise. Keyframes can be shown in the timeline as part of the layer display; as you would expect, keyframe manipulation is simple and straightforward.

Working with masks is likewise a simple process. The tools and shapes are provided, including rectangular and square, circle and ellipse, free-

hand, spline and Magic Wand. Masks can also use an unlimited number of layers as source.

Naturally, there are a wide range of effects, plug-ins and color-correction tools included. Mirage makes a distinction between effect and plug-in types of filters. Effects are built into the program and include blurs, color correction tools, distorts, keying, motion effects, paint effects, perspective (3D), rendering, stylize and transition.

Effects are applied using the FXStack, which centralizes control and keyframing. This is one of the main areas in which Mirage's workflow differs from other applications. Single or multiple effects can be applied from the Stack; "applied," in Mirage terms, is synonymous with render.

Since Mirage is primarily a paint application, it doesn't save process (effects) information when saving the current project. Effects are saved and can be reloaded and reused by saving the FXStack Bin, which is a list of the effects, settings and layers. Effects can be previewed, so in no way are you working blind or by trial-and-error.

Audio can be imported and played back in Wave, QuickTime, and AVI formats for sync purposes, although this is an area in which Mirage could use some further development. Third-party video cards are supported for display and capture, but only on Windows machines.

A wide range of file formats are supported, though the degree of support varies. For example, Photoshop files have layers and opacity settings preserved but are compatible only with Photoshop 5 and 5.5. For higher-end users, Cineon support is built-in, as are fully editable color lookup tables (LUT).

IN USE

Using Mirage was quite a revelation. I decided to take the plunge into the program and work on an opening for a documentary I'm editing. Getting up to speed in the program, while still ongoing due to Mirage's depth, was



Mirage 1.2 has a wide range of paint features, including painting with animated brushes.

FAST FACTS

Application

Post production

Key Features

Real-time painting, animation and effects

Price

\$895

Contact

Bauhaus Software

210-212-7530

www.bauhaussoftware.com

made so much easier by the included tutorials and overviews, in HTML and Flash format with audio explanations, created by Camtasia Studios.

The revelation was the responsiveness and real-time feeling of painting on video and painting with anim brushes. I haven't quite felt that sort of flow since the Deluxe Paint days on the Amiga!

Once I got over the almost-but-not-quite familiarity of how Mirage handles layers and composites, developing the opening became quite enjoyable and speedy. Exploring different looks was quite easy because of the real-time feedback and responsiveness, and that led me to playing with a layer warps and distortions of the type I haven't gotten into for years. That kind of responsiveness just encourages experimentation and play as well as speedily getting things done.

I was disappointed by the lack of plug-in support for Macintosh and generally limited third-party support. I have hopes for that in a future version, as it would greatly expand the capabilities of an already capable program.

SUMMARY

In fact, Mirage is quite a capable and exceedingly stable program for such an early version (1.2). It is an excellent complement to, and in some cases a potential replacement for, a compositing program.

But primarily what Mirage is is an excellent paint and animation program. I have every confidence that it will get better over the next versions and reach more parity of features and support between Windows and Mac versions. Look for the demo at Bauhaus' Web site and enjoy the rush of real-time painting. ■

Michael Hanish runs Free Lunch, a video/audio/multimedia production house outside scenic Guilford, Vt. Contact him at mhanish@sover.net.

Your Production Search Engine.

products | services | professionals | news | events | classifieds



ProductionHUB.com
Where Production meets the Internet.

877.629.4122 | www.productionhub.com | help@productionhub.com

 **TheProfessional'sSource**
www.bhphotovideo.com

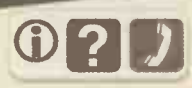


Get Your **FREE** copy of
The Professional Lighting Sourcebook

- ▶ **865 pages** of product information
- ▶ Complete Lighting reference for photo, video, cine and theatrical lighting



Visit Our SuperStore at:
420 Ninth Avenue,
New York., NY 10001
www.bhphotovideo.com



For Information Call:
800-947-9907
212-555-5007
 Fax:
212-239-7770

Store and Mail Order Hours:
Sun. 10-5, Mon. thru Thurs. 9-7
Fri. 9am -1pm, Sat. Closed

We Ship Worldwide!

EQUIPMENT EXCHANGE

Cameras • Camera Accessories • Receivers • Transmitters • Tapes • Carts • Reels • VCRs • VTRs • Tubes • Video Production Equipment • Help Wanted

TV Technology's Equipment Exchange provides a FREE listing service for all broadcast and pro-video end users. Brokers, dealers, manufacturers and other organizations who sell used equipment on an occasional basis can participate in the Equipment Exchange on a PAID basis. All free listings run at the discretion of the publisher. Call 1-703-998-7600 for details. Submit your free listings on your letterhead and state the make, model number, a brief description, sale price and complete contact information and mail it to: TV Technology, PO Box 1214, Falls Church VA 22041

USED EQUIPMENT



**We buy, sell & trade
Broadcast Television Equipment**
BUY OUT COMPLETE STUDIOS or Single ITEMS
IMMEDIATE \$CASH.

www.videoused.com

425-649-8848 Fax 425-649-8836

AUDIO PRODUCTION

Want to Sell

Symetrix 628 digital processor, \$475/BO; Valley People dyna-mite, \$95/BO; Shure FP-42 audio mixer, \$325/BO; Orban 622A, one-chnl EQ, \$95/BO; Sony MPX-2900, 21x4 audio mixer, \$900/BO; Neumann KMR-81i shotgun mic, EA-92 Elastic Suspension, SG-82mt swivel mount, Rycote WK-81 windshield, Rycote SFT-18-MHF softie, new in box, never used, \$1500; Shure EZG/18SE cardioid condenser 18" gooseneck mic, side exit cable, new in box, never used, \$100/ea; Lexicon MPX-1 multi processor FX, like new, in box, \$475. 203-322-3000.



CAMERAS

Want to Sell

Hitachi FP-C10U dockable 16x7 RM Fuji lens w/zoom handle w/Sony EVV-9000 dockable Hi8 in hard shpg case, \$1000. 419-874-9177 or dmckenna@wcnnet.org.

JVC KY 27B w/BR D40U D9 back, w/100 hrs & Fuji 16x lens (will split), \$1400; deck, \$1400 or both for \$2800, deck needs work, call for details; Sony DXC 3000a camera, great cond, \$500. Bill, 973-773-3559.

Sony D30, PVV3 Betacam SP camera system w/Canon 19x9 BCS lens, like new, 1w hrs VTR, camera comes w/tripod plate, \$9500; Bogen field tripod & case; Sony 8041 field monitor; 6 Place NPA A&B fast charger, like new & more, BO. 208-746-8335 or jeda@lewiston.com.

Sony BVW-400a, \$5500. 818-788-4700 or
www.tvprogear.com.

CAMERA ACCESSORIES

Want to Sell



Canon J14aX8.5BIRS bdct lens w/lens hood & caps, B4 mount, 2X extender, Internal Focus, \$2000. Alex, 727-595-6050.

Fujinon A15x8 BEVM-B28, built-in 2X extender, great broadcast lens, vgc, \$4250. George, 310-980-8944.

BROADCAST SERVICES

TECHNICAL OPERATIONS, INC.

- Maintenance
- Equipment service for all your Broadcast and Industrial needs
- System Integration
- Multimedia Service
- A/V Rentals

454 West 41st Street • New York, NY 10036
(212) 465-1318 • Fax: (212) 465-2318

2235 Fairbanks Avenue • Winter Park, FL 32789
(407) 628- 2555 • Fax: (407) 628-5506

http://www.tech-ops.com email: support@tech-ops.com

Toll Free: 877-420-1600

Mackie CR1604 VLZ, \$950; Sony MXP-390, \$1250; Sony MXP-290, \$750; Tannoy CPA-5 compact loudspeakers (20 pairs), \$150/pair; Sony WRR862, WRT822, WRT847, new, \$2750; Otari DTR 90 DAT, \$2500; Lexicon 312 3-chnl amp, THX rated, \$1150; Lexicon 212 2-chnl amp, THX rated, \$650; Tascam DA-88 8-trk w/sync card, \$1250; Sony PCM-7040 DAT, \$3995; Bag End 18" subwoofer, \$550; Digidesign 888, \$500; Bittree & ADC audio & video patch panels from \$350; Mid Atlantic 45RU racks from \$350; Emcor Series 10 40RU racks from \$350. 818-788-4700 or www.tvprogear.com.

Sony DSR 300A, Canon 18x1 lens, Ni-MH batt chgr, (2) BP-L40A Lithium Ion batt packs, never used, \$6500; Ikegami HL-DV5, DVCAM camera/rcdr, Canon 18x1 lens, set up by Macie Video, like new, \$7800; Sony DSR-PD-150, 2 batts & chgr, \$2500; Sony RM-M7G Paint Box camera remote cntrl unit w/cable, \$800; Sony RM-P3 Paint Box camera remote cntrl unit w/cable, \$650; Sony CA-511 camera adapter for Sony cameras to Betacam decks, BVV-5, \$475; Fujinon lens manual cntrls (2) MCA-1M mounting clamps, new; (2) FMM-1B focus manual cntrls, new, CFH-1 focus cntrl, new, CFC flexible cable, GHA-3 camera zoom lens grip, for all, BO. 203-322-3000.

Sony AC-500 AC adapter w/cables, \$175. Alex, 727-595-6050.

Cartoni Beta head & single stage sticks, \$2350; Sachtlar Combi Pedestal w/25 II head, \$8250; Sachtlar M2000 w/XL dolly & Video 60p head, \$7500. 818-788-4700 or www.tvprogear.com.

DIGITAL EFFECTS

Want to Sell

Abacus A-53D-DVE, single chnl, key chnl, \$975/BO; Abacus A-72 CG, 2 chnls, \$975/BO. 203-322-3000.

USED VIDEO/AUDIO EQUIPMENT



Bexel's BVG is the only call you ever need to make!
We offer the largest inventory of used Broadcast Video and Audio equipment in the USA

Buy-Sell-Trade. Appraisal services. Fully interactive website with complete inventory - updated daily.

800.842.5111

801 South Main Street Burbank, CA 91506
www.broadcastvideogear.com

EDITING EQUIPMENT

Want to Sell

JVC RM-G870U A/B edit cntrl w/ext key pad, great cond, \$650. Bill, 973-773-3559.

LanCODE DV Protocol converter, converts RS-422 or RS-232 to LANC cntrl for video editing purposes, \$350. G Parr, 805-681-0415 x.22 or Gparr@glendon.org.

Discreet Inferno 8 procs, 3.3 gig memory, license, Sapphire sparks, monitor adn table included. \$100,000 or best offer; Davinci 2K Color Correction system: with Gallery, Defocus, Network Panels, TLC PC. \$225,000 or best offer. Contact: Andy Lewis, Cutters Inc., (312) 644-2500; andy@cutters.com



Media100i/XR ver 8.2.1 turnkey system w/RealTimeFX option, DV/LossLess option & SDI option all on a Mac G4.1GHZ DP 1 GB RAM/80 HD, AT19000, Super Drive (2) 17" LCD studio displays w/ADS W-ULT3 dual Atto Tech SCSI card w/Megadrives, 72 GB, \$9000/BO. 419-874-9177 or dmckenna@wcnnet.org.

Accom Axial 3000, good for hi-def, \$7500; Accom Axial 2010, \$2500; Sony RM-440, \$200; GVG VPE 241, \$2000; GVG VPE 341, \$3000; Media 100 i/LX on Mac, \$1500 Microtime Impact, \$500; ADO-100 2-chnls w/combiner, \$1000; Abekas A53D, \$2500; Avid Adrenaline, new, \$22000. 818-788-4700 or www.tvprogear.com.

A VIEW TO SAVINGS

Great Gear at the Best Prices!

Why buy new when you can save thousands with our quality guaranteed used video equipment?

- View current stock online at www.usedvideogear.com
- Worldwide coverage. iExpat.com!
- 30 day parts and labor guarantee
- We also BUY and TRADE. We pay immediate cash for single items and complete studios.

Call us today for stock and pricing
Se Habla Español

ENHANCED VIEW SERVICES

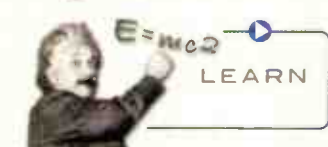
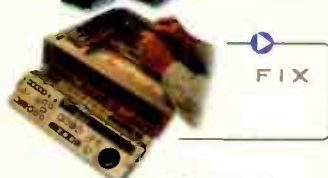
Miami, Florida (305) • Tel: (305) 971-2916
www.usedvideogear.com • e-mail: sales@usedvideogear.com

CALL 818.788.4700

TV PRO GEAR

EQUIPMENT
SERVICE
INTEGRATION

OCTOBER EQUIPMENT SALE



VTR's

Sony DVW-M2000P Digibeta	\$39,500
Sony DVW-A500 Digibeta	31,500
Sony DVW-500P Digibeta	27,500
Sony DVW-500 Digibeta	26,500
Sony UVW-1800 Betacam SP	4,500
Sony UVW-1600 Betacam SP	2,500
Sony P'VW-2800 Betacam SP	5,500
Sony P'VW-2600 Betacam SP	2,500
Sony BVW-70 & 75 Betacam SP	5,500
Sony BVW-60 & 65 Betacam SP	2,500
Sony HDW-500 1080i High-Def	31,500
Sony DSR-60 DVCAM SDI	2,200
Panasonic AJ-D950 DVCPRO	7,500
Panasonic AJ-D750 DVCPRO	4,990

Monitors

Sony BVM20E1U 20" Monitor	\$3,500
Sony BVM20F1U 20" Monitor	3,000
Sony BVM14F5U 14" Monitor	1,950
Sony PVM20M4U 20" Monitor	1,750
Sony PVM20M2U 20" Monitor	1,500
Sony PVM14M4U 14" Monitor	1,250
Sony PVM8040 Dual 8" Monitors	600
Sony PVM4B1U B&W Monitor Bank	1,000

Terminal Equipment

Tektronix WFM601A SDI WFM/Vctr	\$4,500
Tektronix 1730 WFM	750
Tektronix 1740 WFM/Vector	1,750
Tektronix 1750 WFM/Vector	2,000
Tektronix 1760 WFM/Vector	3,000
Tektronix 764 Digital Audio Monitor	3,000
Tektronix 760a Audio Test Monitor	1,850
Videotek TVM-821D SDI WFM/Vctr	3,990
Grass Valley M-2100 Master Control	15,000
Grass Valley Frame 8900 (New)	750
Grass Valley Frame 8900 DA's	Call
Philips Venus 96x96 SDI Router	45,000
DPS AES-2400 Synchronizer	1,850
DPS 290 Component TBC	2,250
Dorrough Loudness Meter 40-A2	325
McCurdy ATS-100 VU Audio Meter	1,200
Wholer Amp 1A	395
Sony DVS-1201 12x1 SDI Router	2,500
Clear-Com RM-220 PL-Pro	450
Paragon AMS-1022 Audio Monitor	375
Tektronix SPG-422	2,500
Lots of Racks and Patchbays	Call
Vinten Osprey Elite Pedestal with Vector 70 Head	16,000



SELL YOUR SURPLUS EQUIPMENT NOW !

TURN YOUR SURPLUS EQUIPMENT INTO INSTANT CASH BY SELLING IT TO US. WE ARE ALWAYS IN THE MARKET TO BUY CAMERAS, RECORDERS, TEST GEAR, MONITORS, SWITCHERS AND AVIDS.



PANASONIC AJ-D950
\$7,500



TEK WFM601A
\$4,500



VECTOR 70

VINTEN
OSPREY
ELITE
\$16,000

SONY BVM20F1U
\$3,000



DORROUGH 40-A2
\$325



SONY DVWA500
\$31,500



[HTTP://TVPROGEAR.COM](http://TVPROGEAR.COM)

818.788.4700

LENS REPAIRS

Focus Optics. Service and repair of broadcast video lens. Fujinon, Canon, Nikon, Angenieux, etc. We have the fastest turnaround in the country. We also repair lens that have had impact damage. Call Stuart at 800-234-lens or www.focusoptics.com.

MICROWAVE/STL

Want to Sell

MA-COM 2 GHz, 7 GHz, 13 GHz and 23 GHz, broadcast-quality radios in-stock. Excellent for STLs. Refurbished, repaired, retuned, tested and warranted. Save thousands of dollars over new radios. Antennas and waveguide also available. 100% Customer satisfaction. Massachusetts Microwave (978) 635-1556. www.massmicrowave.com.

Winsted 70027 Full Frame Tape Storage System, incl add-on frame # 70028, cabinet # T7144, cabinet # T7402, cabinet # T7102, \$3000/BO; Winsted V8606 vertical rack cabinet, 70" tall w/feet & top, overall, 78-1/2" x 22-9/16" x 28", \$525/BO; Winsted tape carts (2), \$225/ea. 419-874-9177 or dmckenna@wcnet.org.



BROADCAST STORE
DIGIBETA DECKS
REFURBISHED, IN-STOCK AND ON SALE!

DVW-A510
\$17,500
LOW PRICE!

DVW-500
\$22,500
SWEET!

DVW-A500
\$33,900
THE SONY STANDARD WORKHORSE!

DVW-510
\$13,500
CLEAN!

BUY • CONSIGN • SELL • SERVICE • PRO VIDEO FOR 20 YEARS
BUY ONLINE & SAVE! SEARCH 60,000 PRODUCTS!
BROADCASTSTORE.COM
LA 818-551-5858 • NY 212-268-8800



Lens Service

Repair and Maintenance of SD/HD Zoom and Prime Lenses, Lens Adaptors and Accessories. We service Canon, Fujinon, Angenieux, Nikon, etc. Call 1.800.251.4625 or george@lvrusa.com.
EMERGENCY TURNAROUND SERVICE AVAILABLE.

LIGHTING

Want to Sell

Mole Richardson Type 2771 (1K) Molorama quartz cyc-light/direct mount frame/filter frame, hanger & C-clamp, 10 units, like new, \$110/ea; Dove System Controlmaster TS24-SS48 w/2 ETC L86/EM24 wall packs, \$900 complete. 203-322-3000.

Tweenie-Mole Solarspot Lights, Type 2821 Molequartz, 2 avail w/barndoors, \$175/ea. Alex, 727-595-6050.

MISCELLANEOUS

Want to Sell

Leitch 681 mix box video DAs, 1x8, EQ, clamping in rack mount, great cond w/manual, \$200/BO. Al, 712-362-7939 or alwud2002@yahoo.com.



Trompeter JS-I rack panels w/video loop thru, also audio jacks, gd cond, BO. Al, 712-362-7939 or alwud2002@yahoo.com.

MONITORS

Want to Sell

(3) PVM-5041Q 5" monitors, rack mounted, \$650/BO. 419-874-9177 or dmckenna@wcnet.org.

Sony BVM-1910, \$675/BO; **Sony PVM1944Q**, \$240/BO; **Marshall V-R53P triple 5" color LCD monitors**, like new, \$975. 203-322-3000.

Sony PVM 8020 AC/DC, needs to be white balanced, also dark picture, \$100. Bill, 973-773-3559.

Sony BVM20F1U only \$3000 optional cntrl panel & SDI card available; **Sony PVM-20M4U**, \$1750; **Ikegami TM14-17R**, \$750; **Ikegami TM14-16R**, \$650; **Ikegami TM20-17RA SDI**, \$1950. 818-788-4700 or www.tvprogear.com.

Leitch TSG-1302N-A test signal gen, +2602TG-YC test gen w/pkg #8 (2); **Leitch FR-681** mounting frame w/pwr sply, \$800/BO; **ADC audio patch bay**, 24x2, \$250; **ADC video patch bay**, 26x2, \$250; **TecNec BNC/RS-422 patch bay**, \$75. 419-874-9177 or dmckenna@wcnet.org.

SIGNAL PROCESSING

Want to Sell

Leitch 681 mix-box video DAs, 1x8, 2 per rack mount, great cond, \$200/BO. Al, 712-362-7939 or alwud2002@yahoo.com.



Sigma BTS-414 b/b timing, \$100; **Sigma VDA-100A**, \$175; **Lenco PCE-466 color encoder**, \$75; **ADC audio patch bay**, \$100; **ADC video patch bay**, \$100; **Tektronix 1410 sync gen**, \$125; **Sigma System 500 video & audio DAs**, \$75; **Evertz Edit Code Master Model 3700**, \$125; **Sony BVT-800 TBC**, xint cond, \$350; **Sony IF-500 multiple interface box**, xint cond, \$250. 203-322-3000.

Get the picture without the cable!



Digital Microwave Systems

Clip-On Transmitter & Receiver
Wireless Camera System

Now Available!
5.8 GHz License Free

\$750 2-Day Event Rental or as low as \$2500 a month Lease

Purchase for less than \$28,000

The cost to implement this new technology is surprisingly low. Systems can be purchased or leased.



jeff.winemiller@rfcentral.com

717-249-4900

www.rfcentral.com

SIGNAL PROCESSING (WTS) Cont.)

Snell & Wilcox CPP-100 prefix compressors (brand new in box), \$2500. Current Snell price is \$14,000. (5) available. AVS Int'l. (661) 251-6333.

Leitch Mix-7001 multi-function digital frame, \$500; Leitch FR-683 w/4 Video DA; Leitch FR-6804-1 w/10 VSE-6801 serial DAs, \$3750; PDA-680's, \$300; GVG 8501 video DA's, \$100; GVG 8551 audio DA's, \$85; GVG 9520 Master Sync, \$850; GVG 9560 SPG PAL, \$2000; GVG 3256A SPG, \$700; GVG 3258 SC/H Phase meter, \$600; Sony BVX-10 component color corrector w/remote, \$700; Dubner 20K, \$2500; Telcom Research T6010 time code reader, \$150; N-Vision 4000 w/PS & DA4061 time code delay, \$1750; Evertz Edit Code Master 3700, \$195; Evertz ECM 4010, \$150; Cipher Digital 1200 time code reader, \$150; Gray Engineering DTR 170B SMPTE data rcvr, \$1250; Gray Engineering DTR313D SMPTE data xmtr/rcvr, \$2000. 818-788-4700 or www.tvprogear.com.

STATIONS

Want to Sell

Digital TV Broadcast Facility for sale, location Singapore, DVB equipment facility for sale by tender, also certain Miranda & Leitch equip. Please email equip@epst.net or fax 65-62525158 for details.

SWITCHERS

Want to Sell

3M 101 vertical switch, 10 in, 1 out, audio follow video, \$150. N Macrae, 702-386-2844.

Miranda Digipath 16x16 DV router w/remote panel, \$4900; GVG Ten X, \$800; Kramer 5x4 A/V switchers, \$425; Grass 110 composite, \$2750; Grass 200 composite switchers, \$4500; Adrienne Electronics VS-1VAA video stereo audio switcher, \$300; Sigma Electronics Series SLX 16x1 video router, \$500; Utah Scientific AVS-1, call for price. 818-788-4700 or www.tvprogear.com.

TEST EQUIPMENT

Want to Sell

Videotek TVM-720, component, composite, wave-form & vectorscope, \$975/BO. 203-322-3000.

Tektronix 1760, \$3000; Tektronix 1750 wfm/vector component, \$2250; Tektronix 1745A, \$3000; Tektronix 1740A wfm/vector component, \$2500; Tektronix 1735 PAL waveform monitor, \$1200; Tektronix 1720 & 1730 combo w/case, \$1750; Tektronix 764 digital audio monitor, \$3000; Tektronix 300a wfm component & composite, \$1500; Tektronix oscilloscopes 2445A, \$1050; Leader 5850C & 5860C wfm/vc, \$2250; Videotek TSM-60 & VSM-60, \$700. 818-788-4700 or www.tvprogear.com.

TRANSMITTERS/EXCITERS

Want to Sell

NEW - REBUILT
TRANSMITTERS
1w - 1kw
LPTV - TV - FM TRANSLATORS
SELL - BUY - TRADE
**DARWIN
HILLBERRY**
1-800-697-1024

TRANSMITTERS-Used TV transmitters from Harris, Acrodyne, RCA, Emcee, TTC. Antennas, microwave, feedline, etc. See transmitterwarehouse.com or call 954-792-7207.

**EMCEE
Communications**

Same Name, Same Employees,
New Ownership
Transmitters and Translators
MMDS, ITFS, UHF 100 to 1,000
Watts, New Sales, Repairs,
Service, Spare Parts
We Also Buy Used EMCEE
Equipment
(480) 315-9283
sales@emceecom.com
www.emceecom.com

To advertise in

TV TECHNOLOGY

e-mail

cfreeland@maspub.com

VTRs/VCRs/RECORDING MEDIA

Want to Sell

Sony DSR-20 DVCAM/DV VTR, perfect cond, \$1700; JVC BRS 422 dockable S-VHS deck, incl batt box & handle, hardly used, new cond, ops manual, \$500. G Parr, 805-681-0415 x.22 or Gparr@glendon.org.

Sony PVW-2800 Betacam SP w/rackmounts, \$4750/BO. 419-874-9177 or dmckenna@wcnnet.org.

TEST & MEASUREMENT

World's First!

HAMLET
EXCELLENCE IN VISION

FOR INNOVATIVE TEST AND
MEASUREMENT PRODUCTS!

TEL: (949) 916-1070
TOLLFREE: 866-4-HAMLET
Web site: www.hamlet.us.com

NEW

Sony DSR-80 DVCAM rcdrs (2), \$4500/ea; Sony BVW-65, \$1975/BO; Sony BVW-70, \$5500/BO; Panasonic AG-1980 S-VHS desktop editor, late 2003, like new, in box, \$875; Sony EVO-9850 TC, \$1200/BO; Sony BVU-950, \$1500/BO; Sony DVR-55 & DVR-50 TBC remote, \$375/ea. 203-322-3000.

Sony VO5850, new heads & unit is working, \$100; JVC BRS-422U S-VHS deck, great cond, \$400; Panasonic AG7400 portable S-VHS deck, \$300; JVC BR D40U digital S D9 deck, not working, call for details, \$1300; JVC BR-D50U D9 plyr, great cond, \$2000; JVC BR D750U edit rcd, great cond, \$2500. Bill, 973-773-3559.

Sony UVW-1800, \$5000 Sony PVW-2800, \$6500; Sony BVW-70 from \$6500; Sony BVW-75, \$6500; Sony BVW-65, \$2750; Sony BVW-60 from \$2750; Sony BVW-50 PAL portable Betacam rcd, \$3000; Sony PVW-2650, \$2750; Sony PVW-2600, \$2750; Sony DSR-40, \$2995; Sony DSR-60, \$2995; Sony BVU-950, \$1500; Sony BVU-900, \$1500; Sony VO 9850 w/timecode, \$1500; Sony VO 9800 w/timecode, \$1200; Sony VP-7000, \$400; Tektronix Profile, \$3995; Pluto 601 DDR, \$2500; Sierra Designs DDR, \$1000; Sony BVH-2000, \$1500; Ampex VPR-6 w/TBC, \$750; Sony DVR-10, \$750. 818-788-4700 or www.tvprogear.com.

EMPLOYMENT

HELP WANTED

Great Lakes Regional Sales Manager: Ross Video is searching for a Regional Sales Manager with an entrepreneurial spirit and experience in the Broadcast Industry. As the sole manager for the Wisconsin, Illinois, Indiana, Michigan, and Ohio region, your major responsibilities will include developing new business and maintaining existing customer accounts. You will be responsible for preparing and conducting technical presentations and demonstrations at customer visits as well as conferences and tradeshows as required. Approximately 50% of your time will be spent traveling to customers and potential customers' facilities providing information and support as required. You should have a minimum of 5+ years of selling experience in the Broadcast industry or a related field. Ross Video product lines include digital and analog production switchers and terminal equipment. Please send your resume to hr@rossvideo.com and visit www.rossvideo.com for more details.

EMPLOYERS / EMPLOYEES

Click On No. 1 Search & Job Service:

www.KeystoneAmerica.com

TECHNICAL / ENGINEERING / SALES-MGNT / VPGM

View or Post Jobs - FREE

SERVICES

Structural Analysis

ERI

Electronics Research, Inc.
7777 Gardner Road
Chandler, IN 47610



(812) 925-6000 | www.ERInc.com

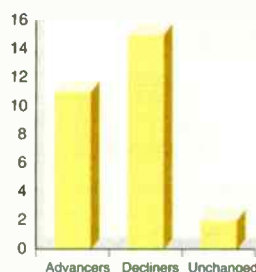
ADVERTISERS INDEX

While every care is taken to ensure that these listings are accurate and complete TV Technology does not accept responsibility for omissions or errors.

PAGE	ADVERTISER	WEB SITE	PAGE	ADVERTISER	WEB SITE
11	Accom	www.accom.com	28	Marshall Electronics	www.lodtracks.com
15	ADC Broadcast	www.adc.com/broadcast	30,31	Modulation Sciences	www.modsci.com
40	AJA Video	www.aja.com	16	Omneon Video Networks	www.omneon.com
48	Analog Way	www.analogway.com	2	Panasonic Broadcast	www.panasonic.com/broadcast
38	ATI	www.atiaudio.com	47	Petrol	www.petrolbags.com
4	Avid Technology	www.avid.com/broadcast	41,42,51	Pixelform	www.pixelform.com
29,53	B&H Photo-Video	www.bhphotovideo.com	59	Prime Image	www.primeimageinc.com
41	Baystar	www.baystar.com	52	Production Hub	www.productionhub.com
51	Beit	www.beit.com	36	ProMax Systems	www.promax.com
10	Bitrate, Inc.	www.bitrate.com	20	Quartz Electronics	www.quartz.com/venon
17	Broadcast Pix	www.broadcastpix.com	23,40,45,51	Ross Video Ltd.	www.rossvideo.com
40	Century Precision Optics	www.centuryoptics.com	25	Sennheiser Electronics	www.sennheiserusa.com
41	Cobalt Digital	www.cobaltdigital.com	26	Shotoku USA	www.shotoku.tv
51	Compu Media	www.compumedia.com	9	Sony Broadcast & Professional Company	www.sony.com/hdcp300
47	Computer Modules, Inc.	www.computmodules.com	12,13	Sony Broadcast & Professional Company	www.sony.com/hdcp300
19	DAWNco	www.dawnco.com	40	Star Case Mfg. Co., Inc.	www.starcase.com
37	Doremi Labs	www.doremilabs.com	47	Steambox	www.steambox.com
47	Eartec	www.eartec.com	22	Studio Technologies	www.studio-tech.com
47	Electronics Research, Inc.	www.eriinc.com	41	Superior Broadcast Products	www.sbgp.com
18	Ensemble Designs	www.ensembledesigns.com	7	Thomson/Grass Valley Group	www.thomsongrassvalley.com
32	ERG Ventures Co. Ltd.	www.erg-ventures.com	41	Torpey Time	www.torpeytime.com
43	ESE	www.esa-web.com	50	Transvideo International	www.transvideointl.com
39	For-A Corporation	www.for-a.com	14	Videoframe	www.videoframe.com
39	Frezzioli Electronics	www.frezzi.com	21	Vinten Broadcast	www.vintenbroadcast.com
1	Harris	www.broadcast.harris.com	51	V-Soft Communications	www.v-soft.com
46	Laird Telemedia	www.lairdtelemedia.com	60	Wheatstone	www.wheatstone.com
44	Leightronix	www.leightronix.com	24	Wohler Technologies	www.panoramadv.com
27	Linux Pro Products	www.linpro.com	40	Xintek Video	www.xintekvideo.com
47	Lite Panels	www.litepanels.com	34	Z Technology	www.ztechnology.com
49	Lowel Light	www.lowel.com			

TV TECH STOCK INDEX

WIN-LOSE RATIO



To have your company listed, contact Deborah McAdams at dmcadams@imaspub.com.

TOP ADVANCERS BROADCAST STOCKS (Sept. 3 - Sept. 17)

Tektronix +17.28%
SeaChange +6.77%

TOP DECLINERS BROADCAST STOCKS (Sept. 3 - Sept. 17)

Scientific Atlanta -6.92%
LSI Logic -3.28%

TOP ADVANCERS TV STOCKS (Sept. 3 - Sept. 17)

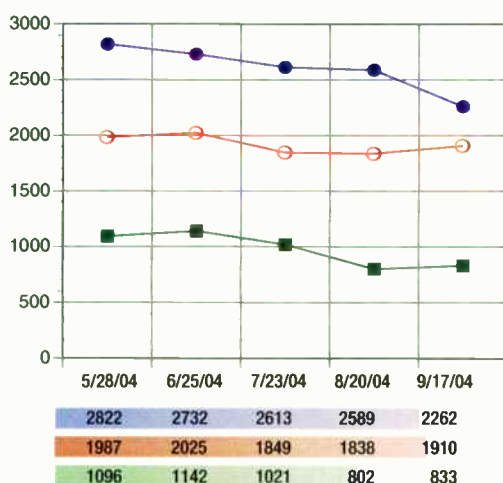
Nexstar +6.22%
Meredith +3.72%

TOP DECLINERS TV STOCKS (Sept. 3 - Sept. 17)

EW Scripps -51.83%
Gray -44.74%

TV TECH TREND

TV TECH AVG. NASDAQ COMPOSITE BROADCAST AVG.



TV Tech STOCKS as of Sept. 17

Company Name	52-Week Range	Sept. 3	Sept. 17	% Change
Avid	38.43 - 59.77	43.44	46	5.89%
Ciprico	3.15 - 7.21	3.54	3.54	0.00%
Harmonic	4.86 - 13.75	5.88	6.38	8.50%
Harris	33.50 - 51.19	48.43	51.7	6.75%
Leitch	N/A	6.87	7.17	4.37%
LSI Logic	4.39 - 11.73	4.58	4.43	-3.28%
Pinnacle	3.25 - 9.91	3.64	3.62	-0.55%
S-A	25.39 - 38.59	28.04	26.1	-6.92%
SeaChange	11.20 - 21.88	15.52	16.57	6.77%
Tektronix	24.26 - 35.00	28.35	33.25	17.28%

Broadcast STOCKS as of Sept. 17

Company Name	52-Week Range	Sept. 3	Sept. 17	% Change
Acme	5.85 - 10.21	6.39	6	-6.10%
Belo	18.00 - 29.90	23.27	22.66	-2.62%
Emmis	18.00 - 28.65	19.23	18.51	-3.74%
Entravision	6.85 - 11.67	8.01	8.06	0.62%
Fisher	44.40 - 52.50	48.1	47.48	-1.29%
Granite	0.21 - 2.88	0.38	0.21	-44.74%
Gray	10.55 - 16.22	13.58	12.63	-7.00%
Hearst Argyle	22.42 - 29.25	24.67	25.1	1.74%
Nexstar	7.75 - 14.50	8.52	8.05	-5.52%
Lin TV	18.00 - 27.49	20.13	20.1	-0.15%
Paxson	1.55 - 6.07	1.81	1.81	0.00%
Sinclair	7.76 - 15.43	7.95	7.94	-0.13%
Liberty	39.60 - 51.79	40.77	39.96	-1.99%
Univision	28.38 - 40.05	32.82	32	-2.50%
Young	9.29 - 22.52	11.52	11.64	1.04%
Tribune	39.20 - 53.00	42	41.43	-1.36%
Meredith	45.85 - 55.94	50.52	52.4	3.72%
EW Scripps	42.15 - 54.65	104.14	50.16	-51.83%

*Granite was delisted from NASDAQ SmallCap Market on 8/5/04

COMPANY FOCUS

Siemens Seals BBC Tech Deal

LONDON

In an effort to ensure continued investment in its technology division, the BBC sold its tech R&D division, BBC Technology, to Siemens Business Services on Oct. 1.

Siemens plans to retool BBC Technology slightly by having the newly purchased company provide IT and convergence solutions for the broadcast industry.

While the BBC did not release the exact sale figure of BBC Technology to Siemens, the company did say the deal itself is worth £2 billion, including the price of the sale of BBC Technology plus the value of a 10-year procurement of the contract.

The move comes after nearly a year of sales talks between buyers both here and in Europe. BBC Technology was sold to an outside entity, insiders say, because the company "needed the benefits that [the outside] market could deliver," said John Varney, chief technology officer for BBC.

BBC Technology, which was created in 2001 to deliver technology services and generate third-party revenues for the BBC, will be renamed Siemens Business Services Media Ltd.

Varney, who leads the Technology Direction Group, said Siemens was selected as BBC Technology's preferred buyer after the engineering and electronics company guaranteed to put R&D dollars into BBC Technology for the next 10 years.

"By the end of the decade we want to be developing [technology] that allows [users] a whole new way of making programs," he said. "We want to enable anyone who uses a PC desktop be able to make programming [of his or her own]," he said.

Varney said BBC Technology would continue to work closely with the BBC.

Siemens is fairly new to the broadcast stage, although the German company has provided broadband integration services to the broadcast market, said Vikas Agrawal, director of strategy and innovation for Siemens Business. Siemens will continue to support current products from the BBC Technology lineup, such as the Colledia production workflow system, as well put significant R&D dollars behind the newly acquired company.

"We want to combine [BBC Technology]'s resources with the best of what we do at Siemens," Agrawal said.

—Susan Ashworth

FREE Online Seminar

Automation in the IT Enterprise

Nov. 17th
12-1pm EDT



Joe Snelson
Director of Engineering
Meredith Broadcast Group

Join TV Technology Editor Tom Butts, Joe Snelson of Meredith Broadcast Group, and Brian Lay of Harris for a free online seminar. Learn how to expand your functionality into the IT enterprise, collaborate with departments, make on-air changes, and integrate delivery systems.

Register today at <http://www.tvtechnology.com/harris>
No special software needed. Just use your browser to register





Please stand by.



**D1 Pipeline – Audio/Video Delay System
Up to 30 Seconds**

Designed and engineered for control.

Avoid the high costs associated with unexpected on-air "wardrobe malfunctions," explicit language, or colorful gestures... learn from the valuable two-second lesson that set off an intense media blitz that changed the broadcast industry.

Setting the new performance standards for the broadcasting industry.

Trust the experts.



Tei (408) 867-6519
Fax (408) 926-7294
www.primeimageinc.com

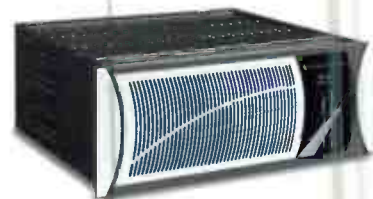
Features

- Up to 10 seconds delay standard
- Up to 30 seconds additional delay available
- 10-bit video processing
- Primary and auxiliary/alternate video inputs
- 24-bit audio processing
- AES/EBU digital or analog audio
- 4 auxiliary/alternate audio inputs
- Audio and video can be switched together or independently
- Fits in standard 2U-high rack space

Digital Audio Network Router

The Bridge

The Bridge Router can hold all the electronics you'll need for a small console: I/O cards, mix engines, and DSP processors. Naturally it can also have automatic fail-over DSP and CPU cards to keep you on-air. You can expand the system with a simple cage-to-cage interconnect.



It's not just a Digital Console, IT'S AN ENTIRE AUDIO INFRASTRUCTURE

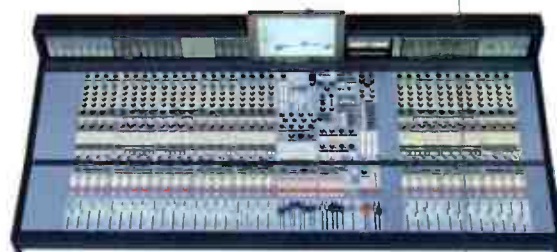
YOU CAN START with a simple AES router with analog and digital inputs and outputs. From there you can add logic I/O cards and scheduling software; you can link multiple master bridge cages together to achieve thousands and thousands of I/O ports; you can create a custom system that includes multiple smaller remote satellite cages— with everything interconnected via CAT5 or fiberoptic links.

BUT THAT'S JUST THE BEGINNING: you can also add mix engine cards, interface to your automation system; you can choose from two different WHEATSTONE series control surfaces (D-9 or D-5.1), each specially configured for production room, on-air or remote truck applications. We also provide a full complement of Ethernet protocol remote router control panels, as well as a complete family of plug-in modules that interface the routing system to existing Wheatstone digital and analog standalone consoles.



**The D-9 is
Compact yet Powerful:**

It can route, generate and monitor 5.1 surround signals and produce simultaneous 5.1 and stereo master signals for your dual broadcast chain. The console also provides extensive, rapid communication paths throughout your entire Bridge system. Motorized faders and control setting storage and recall make show-to-show transitions fast, easy and accurate.



Wheatstone Knows Live Audio. The D-5.1 is loaded with MXMs, foldbacks, and clear easy-to-read displays. You'll have all the power you need when the news breaks! Its intuitive layout helps your operators work error-free, and it can handle and generate all the 5.1 content and simultaneous stereo capability any large or medium market station could need.

 **Wheatstone**

the digital audio leaders

600 Industrial Drive, New Bern, North Carolina, USA 28562
tel 252-638-7000 / fax 252-635-4857 / sales@wheatstone.com



Made in USA

www.wheatstone.com

Copyright © 2003 by Wheatstone Corporation