

Section Meetings

Atlanta

June 8, 1998

Forty-nine section members met at Panasonic Headquarters, located north of Atlanta, for an update on DVCPro and DTV display. Mark Redman, Panasonic, hosted the meeting which featured a presentation by Jay Gonzales, also from Panasonic. Gonzales reviewed the history of DVCPro 25 and gave an update on DVCPro 50. He then previewed the DVCPro 100 and DVCPro XXX, allowing the audience to envision what the future might be.

After the program participants got the chance to take a closer look at DTV displayed as either interlaced or progressive scan and also a recent 1080i recording shown on an HD monitor.—Kathy Wood, (Membership Chair), Tektronix/Grass Valley Products

Australia

June 9, 1998

NVision representatives Nigel Spratling and Dave Edmonds discussed digital audio and HDTV routing in digital studios. The net effect of the evening was to raise more questions than they answered.

HDTV issues for a TV Studio can be daunting. ATSC, for example, allows for multiple formats up to 18 \tilde{n} and multi-channel audio as well as stereo. This means 8 channels of audio \tilde{n} 2 for stereo mix plus 6 for surround sound. This 6-channel audio is described as 5.1 channel audio. One channel gets compressed to approximately 1/10 of its size, hence 5.1. This is further explained in the NVision publications "The Book" and "Video Engineer's Guide to Digital Audio."

The audio in a DTV studio will be AC-3, now being promoted as Dolby Digital. Phasing control over that audio is going to be critical throughout the plant, as any variation in phase will affect the surround audio image and not just the stereo image. The video frame and audio frame in PAL are synchronized, but not in NTSC owing to the 59.94-Hz frame rate \tilde{n} causing the audio to be synched 1 frame in 5 in NTSC. One sample of digital audio is enough to affect the surround image.

It is envisaged that there will be an AES/EBU clock input to digital VTRs as well as video reference. All of this will emphasize the amount of control required in a plant with HDTV routing. NVision's idea for routing includes having a very fast video switch at the heart of the router, with different I/O interfaces for SDTV, HDTV,

etc. The comment was made that as you are handling data at 1.5 Gbit/sec, even the exhaust fans have to be carefully designed to prevent the bits falling out! The switchers have to get CE approval after all.—Gerald W. Brooks, (Section Chair), GEC Video Systems

Chicago

June 24, 1998

More than 150 guests attended the season's final meeting of SMPTE, SBE, and ITS Chicago chapters held at WTTW-TV in conjunction with the Harris/PBS DTV Express Truck visit to the windy city.

The event began early to accommodate several tours of the DTV Express. The formal meeting was started with the introduction of keynote speaker David Bird, Philips. Bird reviewed basic DTV terminology and the 10-year process leading to the FCC document, A53, specifying the ATSC standard. The infamous Table 3 of that document was discussed in some detail.

Bird's presentation outlined several possible scenarios a TV station could implement for their DTV channel. These included pass-through of network feeds, upconversion of standard NTSC to DTV, decoding to 1.5 Gbit/sec video for local insertion, and re-encoding among others. A treatment of current MPEG splicing considerations for switching multiple transport streams within a facility was explained. Bird concluded with a brief overview of statistical multiplexing as it applies to the encoding of multiple programs into a single stream.

For the final meeting session, a panel of local station engineering managers convened to present the current status of their DTV progress. As was the case last year, the first priority is to find a permanent location for transmission facilities. Many stations reported having an interim solution for meeting the May 1999 deadline. Each station's "minimum cost" strategy appears to be upconversion of their NTSC channel to DTV during nonprime-time day parts and passing through network delivered HD programming during primetime. Stations are also in the process of completing, or have substantially completed, an infrastructure upgrade to "601." Some stations also plan to employ 1.5 Gbit/sec capability to allow branding during prime time.

A question-and-answer session followed the individual station manager pronouncements.—Steve Robinson, (Secretary/Treasurer), Serial Scene

SMPTE SECTION CALENDAR

Rocky Mountain

For further information contact Section Chair Fred Baumgartner, TCI, tel: (303) 486-3946, fax: (303) 486-3891, e-mail: baumgartner.fred@tcinc.com

Dates for future meetings

September 16: AES/EBU AC-3 5.1 Blow Out
September 30 to October 1: SCTE Cable

Technical Symposium
October 21: Quantel solutions for transporting and otherwise working on digital TV in the DTV broadcast station

November 18: SBE Elections

November 19: SCTE

January 20, 1999: Back-up power systems

San Francisco

For further information contact Section Chair Charles R. Hintz, KTVU Partnership, Inc., tel: (510) 874-0290, fax: (510) 272-9957, e-mail: chasinca@aol.com

1998 Second Saturday Full-Day Seminar

September 12: "Video Compression for All," at Stanford University

October 10: "HDTV, DTV, and the Painful Alternatives," at Stanford University

Toronto

For further information contact Promotions Adviser Brad Fortner, Rogers Communications Center, Ryerson Polytechnic University, tel: (416) 237-0625, fax: (416) 979-5203, e-mail: bfortner@acs.ryerson.ca

Dates for future meetings

September 8: CTV N1

October 13: Television Networks Using Public Fiber Networks

November 10: 16x9 Television Studio Tour

December 8: 3-D production Systems

featuring SoftImage

January 12, 1999: Satellite Meeting

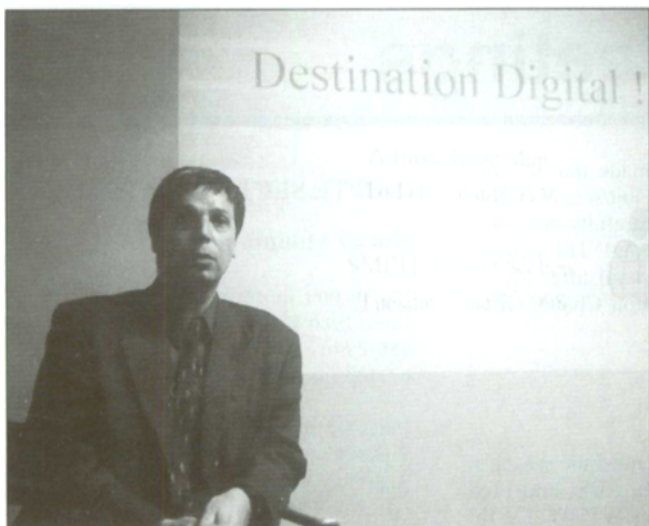
Washington

For further information contact Rudolph J. Niznansky, Tektronix Inc., tel: (301) 948-7151, fax: (301) 921-9273, e-mail: rudolph.j.niznansky@bangate1.tek.com.

Dates for future meetings

September 9: STV Express

September 25, 1998: SMPTE/WEBE Conference



Richard Christensen presents "Destination Digital: A Basic Roadmap to DTV and HDTV" at Detroit's June section meetings.



Ed Schuller presents plaque to Mark Schubin at New York Section's annual review of the NAB equipment exhibition.

Detroit

June 9, 1998

Fifteen people gathered at Media Streets Communications to listen to Richard Christensen, Leitch Technology Intl., give a presentation titled "Destination Digital: A Basic Roadmap to DTV and HDTV." The program helped answer the question of how broadcast and teleproduction facilities converting to digital video should design an intraplant transmission system to handle both ITU-R 601 digital video and high-definition pictures as well. Christensen, began with a review of digital television, including its advantages, definitions, and modes of operation and the various uses for both the video stream and ancillary data capacity.

An overview of the serial digital transport interface (SDTI) followed. Christensen explained that the SDTI operates at the same data rate as SMPTE 259M digital video, allowing it to be handled by the same distribution and switching equipment as existing 270 or 360 Mbit/sec digital video. Because SDTI packetizes and transmits any type of data within the 259M framework, other types of data or video can be sent. With light compression, this interface can handle mezzanine-level high-definition video at a net payload rate of around 300 Mbts/sec.

Christensen explored the issues of multiple generations of compression and decompression of high-definition digital video. Network feeds and local source material are fed at higher than final transmission rates to allow for further local processing without objectionable artifacts.

He concluded his presentation with some advice for a sensible transition plan. This included taking one step at a time and avoiding leading-edge technology, timing equipment purchases to match wide market

availability and looking at equipment reuse as standards change. His final words of advice were to avoid production in analog composite because of the potentially destructive conversions necessary to move to component digital video. Questions from the audience followed.

Before Christensen's presentation, Central Region Governor Harold Miller reported on the first meeting of the newly-formed Student Section at Specs Howard School of Broadcast Arts in Southfield, MI. Eighteen members gathered, along with elected officers for a presentation on offline and online editing by Paul Painter, Unique Film and Video, and Chuck Reti, Detroit Section Manager. Section members were urged to participate in the Student Section's activities. Student members will be included on the Detroit Section's mailing list.—Frank Maynard, (Section Chair), WKBD-TV

Napa Valley College

May 21, 1998

The final meeting of the school year was fully attended by current and future members. After old business was discussed, leadership was turned over to the new officers.

Guest speaker Jeff Banke followed those activities with a discussion on linear and nonlinear editing systems and techniques. His vast experience in post-production was evident in his explanation of video compression parameters and the use of disk arrays in small and large post-production settings. Banke fielded questions for nearly one hour leaving students with a deeper understanding of nonlinear editing and digital compression.

At the end of the meeting it was announced that there was nearly 100% employment of this year's graduating students in the video industry. Sony, National

Mobile, and Cintel hired the majority of the students. It was a great year.—Anthony Cassano, Chair

New England

April 27, 1996

Special Cinema Sound Half-Day Seminar

A report on this event appeared in the June 1998 *Journal* on p. 369. Following is a list of the people who made the seminar a success.

Michael Kohut, Senior VP Post-Production, Sony Pictures Studios
 Jeff Corman, Video Technician, National Cinema Service
 Andy Lizotte, Projectionist
 Stacey Lizotte, Projectionist
 Bruce Ferrelli, Projectionist
 Rex Hescocock, Theatre Manager
 John Norton, Technical Services Head, General Cinema
 Bob Sivco, Tascam
 Paul Beck, Secretary/Treasurer, SMPTE New England Section
 Phil Ozek, Manager, SMPTE New England Section.

New York

May 19, 1998

Annual Review of the National Association of Broadcasters Equipment Exhibit

Is it better to derive a 16:9 image from a 4:3 or vice versa? Why do some NTSC cameras use 640,000-pixel imagers for a transmission system incapable of even 150,000? How will broadcasters deal with six DTV audio channels and metadata on video recorders with only four audio tracks? Can a retroflective gray cloth

revolutionize color replacement compositing? Why might a 3-D laser scanner be important in television production? Can a computer tell the difference between Kim Basinger and Sharon Stone?

These questions in addition to many others were answered by technological consultant Mark Schubin at New York Section's annual review of the National Association of Broadcasters equipment exhibition. A large audience at the Museum of Television and Radio participated in the program.—Mark Schubin

Ohio

June 8 and 25, 1998

A combined 83 people attended the two meetings in June held in Cleveland and Cincinnati, respectively. The host was WLWT-TV.

The Sony demos in the JAVS RV were repeated on a 15 to 20-minute schedule with about six people at a time. Inside the transmitter building, Iteco and Phillips representatives worked hard to overcome the blower noise and each gave repeating half-hour presentations.

Those who listened to the Phillips presentation came away with an expanded understanding of what ATSC is, resulting in many new concerns about the uncertain future that we as broadcasters face. The lawyers and bean-counters in Washington are finding that you can't legislate technological development and its timetable. There continue to be more DTV transmitters on the air then there are functioning receivers. The FCC is actually allowing transmission without any means of seeing if people are really putting out a picture as there are no modulation monitors or receivers available at this time.

The Christmas deadline will probably not be met as the FCC has not issued construction permits to many of the first tier. Many of those stations cannot locate tower space. Some have already been granted extensions well into the next year.

Australia, going to a different transmission scheme from ours, has imperfect coverage to rabbit ears, loops, and mobile receivers. The experimental station in Washington, DC is finding that it has only 60% coverage without external fixed antennas. Pocket TVs and small screen portables will take a long time to appear and even longer to get down to a reasonable price.

The big unanswered question is there a market for ATSC service? The answer is not much while cable stays NTSC. We will live in interesting times for the next ten years or so.—David Prince, (Section Chair), Prince and Associates Inc.

Pacific Northwest

June 25, 1998

June's meeting was held at American

Production Services (APS) in Seattle, WA. The facility recently completed installation of a high-definition editing suite featuring a Sony Broadcast HDS-700 switcher and HDME-7000 digital effects unit with Sony HDCAM VTRs and a BVE-9100 editor. The suite also incorporates a DMX-E00 digital audio mixer with CD and DAT, a Snell & Wilcox 5100 HDTV upconverter and Panasonic D-5 VTRs.

Hugo Gaggioni, Sony Electronics, gave a two-part presentation outlining the DTV transport system and various resolution formats including 1080i, 720p/i, 480p/i, and 60 vs. 30 vs. 24. The limitations and system overheads of various bit-stream rates were also discussed as they pertain to existing plant routing configurations.

The second part of Gaggioni's presentation compared and contrasted various schemes of DTV accusation and recording. He outlined the principles of Sony's HDCAM and answered questions concerning monochrome and color sampling resolutions and outcomes.

The 200-plus attendees went on a tour of APS after the presentation. The tour acted as a catalyst for the discussions that followed this informative and timely meeting.—Michael Scott, (Secretary/Treasurer), Bates Technical College

Rochester

May 12, 1998

Bill Zou, General Instruments (GI), discussed digital television solutions offered by his company at May's section meeting held at WXXI-TV21 studios.

Zou pointed out that the quality of the GI encoder designs are based upon the history and experience of invention and demonstrated leadership in hardware and software implementation in statistical multiplex, film mode processing, advanced motion estimation, fade and scene change direction, and security and access control. GI offers an end-to-end solution in distribution links using MPEG compression systems with DigiCipher I and II equipment. Subsystems support video, audio, data, and transport functions, with I, P, and B frames bounded by buffer memory and data rate through adaptive quantization. Zou answered a variety of questions from the floor including those on MPEG-2 MP@HL support, progressive, hierarchical search mode estimation, motion range, and auto sync of sound and video.—Arthur Cosgrove, (Secretary/Treasurer), Eastman Kodak Co.

Rochester

June 17, 1998

Tom McMahon, Microsoft, and Michael Coop, WebTV, spoke to 28 members of the Rochester section on the future of television, with a vision of change.

Microsoft's acquisition of WebTV in April 1997 provided a platform of programming information through program guide and Internet access for program related content as well as access to commercial sites for shopping and banking.

With the understanding that digital television (DTV) must make business sense, Microsoft sees value-adding opportunities in the expanding network bandwidths offered through DTV and delivered through cable, terrestrial, satellite, and Internet channels. Opportunity exists through higher quality images and audio, and the addition of programming choice. Interactivity can expand our horizons but requires compatibility and information to make informed choices. Substance in the offerings must become a reality.

The rate of adaptation for digital technology is directly tied to the affordability of the equipment, services, and software. The acquisition of WebTV by Microsoft in conjunction with the inclusion of a video layer within the Windows 98 capabilities is the beginning of the addition of value to the television service model.

Microsoft holds strong positions on DTV implementation strategies, with one of the strongest being around progressive scanning, distribution, and display. They point out that it is less expensive to interlace [at the display] than to de-interlace at any point in the chain.

Microsoft's WebTV with Windows 98 is seen as the platform for office, home, and school environments. With improved routines (ROM) for instant booting in the television appliance and in the WebTV box, as well as increasing appliance memory [WebTV box has 1 GB], the Windows 98 software is expected to significantly impact video application, and interactive usage of television.

Microsoft has also announced a number of new partnerships, including Sony television products. The digitization of the television receiver is stretching towards the performance characteristics of the computer, with flexible updating of the operating system and applications being downloaded via direct means through terrestrial television, cable, satellite, and Internet services. One can envision the need to expand our television set memories as we do today in our personal computers.

McMahon and Coop presented a very interesting view of future television models and were thanked for visiting the section.—Arthur J. Cosgrove, (Secretary/Treasurer), Eastman Kodak Co.

Rocky Mountain

June 17, 1998

June's meeting was held at the Digital Television Center. Following the business portion of the meeting, Smith introduced guest speaker Dave Hershberger,

Continental Electronics Corp. Hershberger gave a talk focusing on a number of digital things. He first gave an overview of how digital signal processing can be applied in the FM broadcast band. This was followed by a very unique proposal for utilizing digital transmission in the present AM broadcast. Hershberger's approach included a novel concept of having receivers continually "learn" new digital algorithms which are downloaded from the bit stream coming from the broadcast stations.

Hershberger and his fellow engineers believe that only about 10% of the available data would be needed to keep a receiver updated and still provide excellent stereo quality reception. He concluded by giving attendees a look at the application of digital techniques to video transmissions.—Fred Baumgartner, (Section Chair), TCI

Washington, D.C.

June 18, 1998

Engineering representatives from various Washington, DC television stations gathered at WUSA-TV9 for a digital television (DTV) roundtable to discuss their plans and schedules for implementing DTV. More than 80 people gathered for this unique SMPTE monthly session organized by DC Section Manager Ron Peters.

Jerry Agresti, from NBC-owned WRC-TV, spoke positively of the station's plans to begin transmitting network primetime HDTV offerings in the fall. According to Joseph Balkan, NBC, the network is geared up and ready to begin releasing its 1080i/16x9 programming, but has placed the burden of how to make this programming happen on its program suppliers. He predicted that the "Tonight Show" would also be produced in HD by the first quarter of 1999. NBC is not a fan of multichannel

DTV, thinking it not viable for business at this time. Section members from Sinclair Broadcasting in Baltimore probably had different opinions on this issue.

WRC's plant is the home of the model DTV station, WHD-TV. Dennis Wallace, WHD-TV, spoke briefly about the station's trials and victories as it approaches its third, and supposedly final, year of operation. The model station has been continuously broadcasting the new type of signals in varying formats (1080i, 720p, 480p, and 480i) in an effort to promote the technology to the public and government officials. The station is also experimenting with areas such as splicing compressed MPEG signals and helping vendors and set manufacturers work out their bugs. A big problem, discovered in their tests, was that of multipath interference in reception. WHD-TV said they are currently working with set manufacturers to resolve the problem.

Bill Beckner of Gannett's WUSA said his station was aiming for November to be on the air with its DTV signal in order to pass on CBS's HD feed in some form this fall. The construction of a new tower to hold both NTSC and DTV antennas for both WUSA and its neighbor, WJLA, will require the use of the Gannett station's older backup tower for a few days during the construction.

Mark Olingy of Albritton's WJLA, an ABC affiliate currently in purchase negotiations with the Walt Disney Co. according to the Washington Post, also says it is on track for implementation of its network's choice: 720p.

Steve James and Dave Lewis, both of Fox's WTTG, related that their decision to make their plant digital a few years ago is making things easier for the transition. Fox plans to broadcast all progressive, either SDTV 480 or HDTV 720.

Lew Zager of the PBS flagship WETA-

TV 26, talked about the problems the station experienced when they fired up adjacent experimental Channel 27. Suddenly, cable companies and community antenna systems discovered the need to filter out interference to prevent disruption of Channel 26's NTSC signal.

Stations other than NBC, CBS, ABC, FOX, and PBS are being more conservative in their game plans. Pedro Perez of Viacom's WDCB (a UPN station) said his company is exploring many options. The station is going to wait and see, and move very cautiously, watching first what happens elsewhere in the DTV arena.

John Handley of the city's WB affiliate WFIFY, said they were upgrading their master control and investigating the use of 480i and 480p, as well as 720p. They have the additional problem of their Georgia Ave. tower not being able to support an additional DTV antenna.

Willy Halla, DTV Express, said people all around the country were impressed when given the opportunity to see digital television and were amazed at the difference in picture quality. Consultants Garrison Cavell and Joseph Davis warned that stations need to keep an eye on deadlines, watch for areas where their signal can cause interference (such as hospitals and other medical facilities which the FCC now mandates they must contact), and make sure they keep up on PSIP (Program and System Information Protocol) which will be absolutely essential for DTV receivers in making program information available to viewers.

The evening proved interesting to all, including those who prefer retirement to Advanced Television implementation. Now the fun begins.—Jim Suthard, (Secretary/Treasurer), Communication Arts International

Calendar

SMPTE Activities

COLOGNE, GERMANY—1998 European SMPTE Conference on Imaging Media, Congress Centre, *September 17-19, 1998*

PASADENA, CA—140th SMPTE Technical Conference & Exhibit, Pasadena Convention Center, *October 28-31, 1998*

ORLANDO, FL—33rd SMPTE Advanced Motion Imaging Conference, Omni Rosen Hotel, *February 25-27, 1999*

NEW YORK, NY—141st SMPTE Technical Conference & Exhibit, *November 19-22, 1999*

For more information on these and other Society activities contact SMPTE Headquarters: (914) 761-1100, Fax: (914) 761-3115

September

International Broadcasting Convention Ltd., RAI International Exhibition and Congress Centre, Amsterdam U.K. Info: IBC Office, Savoy Place, London

WC2R OBL, U.K., tel: 44 0 171 240 3839, fax: 44 0 171 240 3724, e-mail: show @ibc.org.uk, Internet: <http://www.ibc.org.uk/ibc/>. *September 11-15, 1998.*

October

Rocky Mountain Film and Video Expo, John Q. Hammons Convention Center, Denver, CO. Info: Mark Cramer, ExpoMasters, Inc., 7632 E. Costilla Ave., Englewood, CO 80112. *October 14-15, 1998*