

Section Meetings

Atlanta

May 19, 1997

Joe Davis, MPEG-2 consultant for Arris Interactive, began the May 19 meeting with an overview of Arris, which consists of two business divisions: Digital Video, a leader in digital file servers, and Cornerstone Voice Products, producers of extremely sophisticated cable telephony systems for integrated voice, video, and data. After a brief financial overview that showed the expected growth of the ad insertion and NVOD markets, Davis explained how PT20, the committee on packetized television technology, is organized. (Davis is a member of PT20.02, the working group on switching and synchronization.) After a summary of current issues, Davis contrasted the two paths being explored for MPEG bitstream splicing (referred to as seamless and near-seamless), and explored the implications and tradeoffs of each approach.

The group was then addressed by Rick Morris, Cornerstone Voice Products. The concept of Cornerstone is to enable broadband service providers to offer voice, data, and video services on a sophisticated platform that integrates and manages all aspects of the service. It begins with a digital switch that interfaces trunk lines and a host digital terminal. The host digital terminal provides status monitoring and control of power interfacing, digital multiplexing of signals, and generation of RF carriers by frequency agile modems. The combined RF spectrum is fed out over bi-directional fiber-optic cable monitored by a spectrum manager. The spectrum manager is in charge of operating frequencies for the modems on an instantaneous basis, and long-term evaluation of any potential spectrum problems before they manifest themselves. On the customer end of the system, a choice of wallboxes allows configuring for single line voice, multiple line voice, modems and faxes, "low-speed" data (64 kbits/sec), high-speed data (356 Mbits/sec), and various "PBX" features such as Centrex, coin operation, and ISDN, to name a few. A tour was given of the different laboratories which included a complete Central Office and integration facility for compatibility testing. Dick Perin (Secretary/Treasurer), Sony Electronics

Chicago

May 20, 1997

Thirty people turned out for the May meeting, held at IndeNet/Mediatech. That

company's Robert Strutzel began the program by explaining the basic issues of digital compression as it relates to video servers and satellite transmission. The primary goal for IndeNet was to find a compression system that would be complementary to its desire to efficiently store video and then subsequently deliver it via satellite to a remote location. Once IndeNet implemented its system, the turnaround time for delivering a spot to a remote TV station for playback was significantly reduced. A brief question-and-answer period followed the presentation, as did a tour of the facilities. — Steve Robinson (Secretary/Treasurer), Serial Scene

Detroit

May 13, 1997

Dan Cullen, Avid Technology, Inc., began by giving the 34-member audience an overview of his company and how it entered the news market with the acquisition of BASYS and Softech within the last few years. Avid set to work merging the strong points of its acquisitions, namely news writing, editing, and production tools, with its own expertise in digital video. He outlined the current model of a newsroom work flow, which includes a central media server linked by fiber and ethernet to journalists' workstations for low-resolution browsing, text writing, and rough-cut editing, and high-resolution video to editors' equipment and air playback systems.

Avid's Bill Rogers explained that the last-minute nature of a television newsroom can be reduced somewhat by automating many tasks. In the past, computer tools have eased the clerical burden by handling scripts, wires, and archiving. With today's proliferation of graphical user interface workstations, the text tools can be refined to make them easier to use and provide another level of service to the journalist. Rogers gave the example of a system whereby a reporter can have a message sent to a pocket pager automatically when new information becomes available on a story being tracked. Archiving and database systems now are able to search not only for keywords in context, but also for descriptions of video in the archive, with a browse window on the reporter's terminal displaying the video. Reporters also have instant access at the desktop to video feeds as they arrive, with no need to wait for a tape to finish recording or to share the tape with other users.

A demonstration of some of Avid's

SMPTE SECTION CALENDAR

Hong Kong

For further information contact Section Chair Kwok-Luen Lam, Wharf Cable Ltd., 5/F Wharf Cable Tower, 9 Hoi Shing Rd., Tsuen Wan, N.T., Hong Kong, tel: +852-211-24511, fax: +852-211-28764, e-mail: kl@hk.super.net

Dates for future meetings

- August 1997: VOD/IMS
- November 1997: MPEG-2

Rocky Mountain

For further information contact Section Chair Fred Baumgartner, TCI, tel: (303) 486-3946, fax: (303) 486-3891

Dates for future meetings

- August 20, 1997: Fiber Optics Technology
Speaker: Rick Cabalka, ADC Telecommunications
- September 17, 1997: Facility tour, KCNC Television
- October 15, 1997: The Challenges of Wiring for Digital
Speaker: Dave Geon, Belden Wire Cable
- November 19, 1997: Video Preprocessing for Compression

San Francisco

For further information contact Section Chair Charles Hintz, KTVU Partnership, Inc./Fox, tel: (510) 874-0290, fax: (510) 272-9957, e-mail: CHARLESinCA@aol.com, Internet: <http://members.aol.com/SMPTEsf/seminars.html>

The 1997 San Francisco Section Second Saturday Tutorials:

- August 9, 1997: Video Acquisition and Display
- September 13, 1997: Digital Audio and Compression
- October 11, 1997: Growing into MPEG
- November 8, 1997: Living with MPEG-2

All times are 9:30 a.m. to 4:00 p.m. Seminars 1, 3, and 4 will be held at Stanford University, Gates B-01 Computer Science Classroom, Palo Alto, Calif. Seminar 2 will be at Dolby Labs, 100 Potrero Ave., San Francisco, Calif.

To publicize your Section events, please send announcements to SMPTE Headquarters, 595 W. Hartsdale Ave., White Plains, NY 10607, tel: (914) 761-1100, fax: (914) 761-3115, e-mail: edit@smpte.org. Information must be received by the 15th of the second month preceding issue date (e.g., August 15th for October issue).



Dan Cullen discussing workflow in an Avid News system at the Detroit meeting in May.

hardware was conducted by Robert Fields. The NewsCutter was shown, with its nonlinear timeline and the ability to select clips from bins on the screen; choose and change edit points at will; add transitions, special effects, and titles; and assemble a story in a fraction of the time it would take under a linear tape editing system. This technology is not necessarily new, but its application to television news is important. With the aid of a journalist's workstation running Avid News, Fields also showed how it is possible to preview video, mark it and send it to an editor for finishing, and then release the story through Avid News into an on-air tapeless playback engine (Avid demonstrated their AirPlay system) for seamless and virtually instant playback.

Questions followed the presentation, after which attendees had the opportunity to operate the equipment. —Frank Maynard (Secretary/Treasurer), WKBD-TV

Hollywood June 4, 1997

Craig Mundie, Microsoft, addressed an overflow crowd of 260 members and guests at the June meeting, held at the Gene Autry Museum of Western Heritage. This section meeting was scheduled to coincide with the EWG sessions in town that week, and as a result, a significant percentage of the attendees were drawn from that international community. There was lively conversation at the pre-meeting dinner, attended by over 90 people.

The meeting was launched by Past Chair Roy Brubaker, Crest National; the introduction and opening remarks were given by Arrangements Chair Paul Carey,

Component Video. This gathering was designed to provide an in-depth look at computer industry planning for the deployment of digital TV from the viewpoint of the DTV Team (Compaq/Intel/Microsoft). Representatives from Panasonic AVC Labs provided demonstrations of the DTV Team formats via HD playback (D-5 with an 1125 converter) and scan conversion to the formats proposed by the DTV initiative.

Mundie began his presentation with a study of Internet evolution and Internet broadcasting, relating the Microsoft experience with their product, MSNBC. Likewise, with the success of the newly acquired WEB-TV, Microsoft and others are compelled to accept the coming of interactive TV.

The computer industry viewed the ATSC proposal as "just a digital TV system ... [that] wasn't really done with an eye toward having an architecture that assumed intelligence in the receivers." The negotiations that followed caused the excise of table 3 (formats) from the proposed rule and order and an agreement that no further rulemaking would be required to transport a new, future digital service. With these compromises in place, the computer industry will attempt to launch the digital television business, hopefully sidestepping the "historical chicken and egg problem": content providers do not create for a non-existent market.

Mundie went on to describe a family of layered formats with a base layer, HD-0, that will be playable by computers compliant with the MS-PC98 specification. HD-0 includes 1280 x 720 x 24P as well as 704 x 486 (in all aspect ratios and temporal rates), the former certainly qualify-

ing as high-definition television. By the year 2000, 40 million such PCs will be sold. Contrast this with the expected shipments of 2 million DTV receivers and we are left with the obvious: the PC will drive the adoption of digital TV. As Mundie said, "We wanted a very rapid, phased introduction. We wanted to have people building millions of units that could receive [this new service] in 1998, not tens or hundreds of thousands."

The opportunities for the broadcaster are profound should the broadcaster choose to pursue the delivery of services other than "better picture TV." Mundie suggested the contemplation of three product areas: the traditional linear video, Web-based local interactivity with locally generated graphics overlaying video, and new data services that may not have any video component at all. — Paul Carey (Arrangements Chair), Component Digital

Hong Kong January 21, 1997

Twenty-seven people attended the "Virtual Scenario Technical Seminar," held at Ocean Terminal District Centre of Wharf Cable Ltd., to hear guest speaker James M. Eddershaw, Radamec Broadcast Systems and see him demonstrate the technique of 2-D virtual reality for television production. — David C. K. Leung (Secretary/Treasurer), Wharf Cable Ltd.

Hong Kong May 13, 1997

The DVD Seminar, held in May, had an audience of 68 and was held at Studio One, Broadcasting House of Radio Television Hong Kong. Sami F. Asfour, Minerva Systems, Inc., told attendees about the process of DVD premastering, comparisons, playback time, video quality, CBR versus VBR, multipass encoding, optimization of DVD, and future trends for DVD. Finally, he demonstrated the DVD encoding and authoring tools. — David C. K. Leung (Secretary/Treasurer), Wharf Cable Ltd.

Nashville May 15, 1997

The May meeting was held at the studios of WREG-TV 3, Memphis, Tenn., and began with opening remarks by Section Chairman Mike Quinn. Several questions regarding DTV and related topics were presented to members of the audience for consideration and discussion. A question-and-answer period followed a recap of the highlights of NAB '97.

Keeping with the Section's 1997 pro-

gram theme, "The Convergence of Computer Technologies in the Broadcast Workplace," Ronnie Heard and Hal Songer, Custom Supply Co., were the featured speakers. Songer demonstrated the Media 100 system's new software enhancements, which were just introduced at NAB. — Tom Hoffman (Secretary/Treasurer), The Filmworkers Club-Nashville

New England March 19, 1997

The March meeting was held at WGBH-TV, Channel 2, at their Allston, Mass., studios. There were three formal presentations in the program, all under the broad heading of "Ancillary Signal, or Things You Should Know About Your Vertical Interval!"

The first presentation was given by Gerry Field, with the Descriptive Video Service Initiative at WGBH-TV. Field provided some deep background into the development of audio-descriptive services, which have their origins in the 1985 developments of stereo audio for broadcast television and the secondary audio program (SAP) channel. He allowed that WGBH is perhaps best known for its pioneering efforts in the closed-captioning field, and the many spin-off technologies that initiative has brought. He then discussed an interesting effort for "semi" closed-captioning for motion picture theaters. This effort was a live rear-view captioning of IMAX motion pictures, which employed a large LED display for text data, but which displayed the lettering and numbers horizontally reversed. The hearing-impaired viewer would adjust a nearby clear plastic "mirror" to display the changing text data to a position that allowed them to see the IMAX images and the reflected captioning which would then be seen in a horizontally correct arrangement.

As time progressed, the actual adoption and use of stereo and SAP heralded new opportunities for providing for a large under-served portion of the WGBH viewing audience, who just happened to be blind or sight impaired. Field described how actual on-air tests over PBS in 1988, using an "American Playhouse" project as the testbed, proved that the concept was valid. By 1990, the concept had been adopted nationally and began enjoying enormous success and acceptance by sight-impaired viewers nationwide.

Field also discussed the enormous potential which has arisen in the seven years since PBS began a national service; currently, 141 PBS stations provide direct-to-home DVS service to about 75% of American households. In addition, the future is very bright for DVS in the area of home videocassettes, where already



Speakers Bob Strickland (left) and Steve Garfinkle at the New York meeting in May.

there are dozens of popular and classic motion pictures that have been re-released with a DVS narration applied with the as-released soundtrack.

WGBH is very excited about what the future will hold for DVS initiatives, especially with the pending release of the digital videodisk, which offers enormous embedded multitrack audio capability and perhaps the ability for multilanguage DVS initiatives.

Part 2 of the meeting was presented by Peter Pinch of the Interactive Multimedia Group at WGBH-TV, who described the complex issues of using the vertical blanking interval (VBI) as a transmission path to the home for Internet and other computer-specific data streams. Citing several years of experimentation at WGBH, Pinch described the robustness of the VBI as fairly weak, especially when it comes to recording a given data stream on broadcast videotape and playing it back with the hope of recovering the VBI information with all the data still intact. WGBH has found that unless extraordinary care is taken some or all of the VBI data can be lost. Less sophisticated industrial or consumer formats such as VHS cannot be depended upon for recording and recovery of VBI data.

Nevertheless, WGBH has moved forward in multimedia access via broadcast television with a variety of technical innovations. The early efforts required scan converters and offered very low resolution, and were mostly VBI-based. Current efforts involve Web pages and full interactivity with Mac and IBM platform computers through live transmission of data via the broadcast video signal.

The third part of the meeting featured Fred W. Heineman of En Technology Corp., located in Milford, N.H. In this final segment, attendees learned that one

approach to multimedia has been to send the data stream in a fashion not unlike that done for "teletext." The VBI approach is not deemed to be as cost-effective, nor without peril from technical anomalies such as ghosting, frequency roll-off and narrow "bit width." Error-correction is also judged to be difficult as well.

Heineman described how his firm offered wider "bit width" technologies. Some first efforts along these lines were in a system devised for sending detailed text files embedded with medical imaging. He also discussed how En Technology is developing technical support systems for both the software and hardware associated with this multimedia and information services via broadcast television initiative.

Other emerging methods and approaches were discussed and demonstrated using a "Photobubble," which provided Omniview employing Quicktime VR. The most typical approach, however, uses Netscape Navigator, which places the digital data stream in the left side of the active picture, consuming about 1/5 of the visual area from top to bottom.

All in all, the evening at WGBH-TV was an eye-opening and mind-opening introduction to the various proactive initiatives that are currently ongoing for enhanced audio, video, and data/information services via standard broadcast television. — Paul R. Beck (Secretary/Treasurer), Emerson College

New England May 30, 1997

The May meeting was held at the studios of WBZ-TV Channel 4, CBS-TV, in Boston. Over 120 guests from the SMPTE, AES, ITVA, SBE, and other technical associations attended the

Section's annual Post-NAB Wrap-Up, with Past Chair Philip A. Ozek, TASC, serving as moderator and leading an exciting open-forum discussion and opinion exchange between the panelists. The panel guests were Wilson Chao, Cambridge Television Production; Bob Doyle, New Media Magazine; Bob Hess, WBZ-TV/Radio; Ross Kauffman, WCVB-TV; Mark Manuelian, WBZ Radio; Bob Lamm, CYNC Video Corp.; Marty Polon, Polon Research International; C. Robert Paulson, Omnimedia; Karl Renwanz, Video Transfer; and Bob Turner, Turner Post-Production Services. An extremely fast-paced information exchange occurred during the three-hour meeting. — Paul R. Beck (Secretary/Treasurer), Emerson College

New York May 22, 1997

Approximately 100 film and television professionals gathered for the May meeting, held at the TriBeCa Film Center screening room. Steve Garfinkel and Bob Strickland, Kodak, gave a presentation on the new 200 and 250 Vision film stocks. The presentation included split-screen 35mm projections that demonstrated the improvements over the existing EXR stocks and showcased the incredible performance of these films in such conditions as lighting extremes and variable color temperature light sources. Following this, Michael Arbuthnot, DaVinci Systems, discussed the technical aspects of high-resolution real-time color correction for both film-video and film-film applications. He touched upon many issues including high-rate data transport, real-time "feel" and interactivity, contrast range of film versus video as applied to monitoring and even a few HDTV issues, setting the stage for the June section meeting on HDTV. — Bill Topazio (Manager), Manhattan Transfer/Edit

Ohio May 29, 1997

The May meeting was held jointly with SBE Local Chapter 52 at the NBC-owned and operated television station in Columbus; approximately 75 members and guests attended. The station's Debbie Grivois assisted in the coordination of the meeting, which focused on the recent FCC-mandated digital and high-definition television standard.

The guest speaker for the evening was Joseph Balkin, digital technical manager of NBC's experimental digital high-definition television station, WHD, Washington, D.C. He gave an in-depth Powerpoint and videotape presentation

covering the key aspects of the new futuristic broadcast television standard. The presentation and discussions included an overview of the ATSC standard, involving some 18 formats, some interlaced and some progressive. The new audio specifications of the new digital broadcast standard were also covered, involving the Dolby AC-3(6) digital channels fixed at 387.5 kbits/sec.

The timelines for the FCC mandatory conversion by television broadcasters was also discussed, broken down into three basic phases ranging from 18 months to five years. The broadcasters were told that in the beginning they had no specific requirement for HDTV. The new digital and high-definition television receivers are expected to be out on the market in time for the 1998 Christmas holiday season.

A video tour of the NBC model digital high-definition station, which provides broadcasters and manufacturers with some practical experience on the operations of an HDTV station was well received. An enthusiastic question-and-answer session followed. — Gene L. Batey (Manager), The Ohio State University

Philadelphia May 13, 1997

Among the topics covered by speaker Gwenn A. Tune, Leitch, Inc., were over-sampling converters; signal-to-noise as it relates to 18-bit, 20-bit, and 24-bit sampling; full-scale digital; analog headroom and why digital headroom isn't necessary; jitter; and audio pops and clicks due to system timing errors. Tune also examined AES equipment and system issues, converters, delays, reference generators, and distribution amplifiers. — James E. Landy (Chair), Landy Electronic Reps

Philadelphia June 10, 1997

The June meeting was held at Videotek, Inc., Pottstown, Pa. The speaker was that company's Robert Stenzil, who discussed the video signal (not tape) formats such as YC_bC_r representation used in serial digital (SMPTE 259M); digital RGB used by graphic workstations; and digital analog composite signals, including the digital system integration products developed by Videotek. He also touched on how typical reproduction equipment performs conversions between these signal formats (a problem that can arise during the conversion process) and how the video producer or broadcaster can avoid, detect, or recover from these problems, sometimes automatically. — James E. Landy (Chair), Landy Electronic Reps

San Francisco May 22, 1997

More than 100 members and guests met at SGI in Mountain View, Calif., to hear Adolfo Rodriguez, Tektronix; Brian Hanley, Silicon Graphics; Allen Hansel, Hewlett Packard; John Hennessy, Ampex, and Todd Roth, ASC Audio Video, speak on "Video File Servers: State Of The Art — On The Air Now!" Attendees had a chance to hear from some of the emerging market leaders in disk-based video server technology and archival data storage. This meeting made it clear that video servers are no longer a myth; they are here now and revolutionizing the way video is staged, stored, and distributed within large and small television facilities. Fibre Channel, RAID, UNIX, SCSI/Ultra SCSI, data transfer speeds, and storage capacity all are a part of the file-server system specification. Different manufacturers have different philosophies about motion-JPEG, MPEG-2, tape back-up, tape-based archival, and library storage. The program let attendees know what questions they should be asking during the design and construction of their next-generation day-of-air and week-of-air operations facility. The meeting offered facility managers and their staffs a chance to see up close what some missed at NAB. The speakers brought some of their companies' latest products for a hands-on look. — John Hennessy (Manager), Ampex

Washington, D.C. April 17, 1997

The April meeting was held at the National Association of Broadcasters Offices in Washington, D.C.; 50 people attended. Lynn Claudy, Kelly Williams, and Art Allison, NAB Science and Technology Dept., gave a slide presentation entitled, "Digital Televisions Update," which included information from the NAB Convention held in Las Vegas in April. FCC DTV standards were presented, including details of all of the available ATSC formats. The discussion also covered the FCC DTV channel assignments and the associated VHF versus UHF service replication coverage. Industry statistics showing the projected consumer acceptance of DTV were compared to other media delivery services (cable, PC, DBS). A report on the National Data Broadcasting Committee was also discussed; this report covered technologies developed by Digideck, Inc., and WavePhore, Inc., for high-speed digital data transmission within existing 6-MHz broadcast channels. — Rudy Niznansky (Secretary/Treasurer), Tektronix