

Section Meetings

Chicago

March 10, 1998

More than 40 guests attended a joint meeting of the SMPTE and SBE Chicago chapters held at the Chicago Sheraton Gateway Hotel. The meeting topic, ATSC and MPEG Technology, was discussed by Barry Hobbs, NDS Americas. Hobbs began his presentation by giving a history of News Digital Systems (NDS), an overview of the equipment they manufacture which includes MPEG-2 encoders, programmable multiplexer, smart cards for direct broadcast satellite/digital video, other data/broadcast products, and a list of various users and their products. He then presented a paper covering three areas of Digital TV (DTV): ATSC System Migration, Intro to ATM Architecture, and Revenue Generating Applications. ATSC System Migration highlighted the ATSC formats, video/audio display formats, and ATSC digital audio/transport/pilot signal/baseband data segment, and showed basic block diagrams of how the HDTV/4:2:2 DTV signal can be implemented at the network level and at the local TV station level.

The Asynchronous Transfer Mode (ATM) Architecture segment of the presentation covered various ATM definitions, ATM structure, and ATM/TMN architecture in relation to DTV. Revenue generating applications showed ways for DTV facilities to gain revenue through Conditional Access which is a pay per view service with "smart cards"; multicasting which is multiple channels with multiple advertising; and Data Broadcasting which involves subscription data services, Internet access, and realtime video. A question and answer session followed the presentation.—Steve Robinson, (Secretary/Treasurer), Serial Scene

Chicago

March 19, 1998

The special joint meeting of SMPTE, SBE, and ITS Chicago chapters was attended by 30 members and guests. Held at Roscor Corp., the meeting focused on engineering considerations in the design and implementation of producing electro/mechanical patch jacks for emerging high-bandwidth signals. Greg Brown, Trompeter Electronics, discussed the fact that high bit rate signals require a bandwidth of nearly 1 GHz. Meeting this requirement is paramount to providing low loss through a jack. One of the key goals of design is to reduce low-level contact resistance

(LLCR). Several factors, both internal and external to the jack, must be taken into account. Brown also covered some of the accelerated testing methods used to simulate performance of their products over a long period of time. Following the presentation, Brown answered several questions from the audience.—Steve Robinson, (Secretary/Treasurer), Serial Scene

Detroit

March 10, 1998

Forty-three members and guests gathered at WKBD-TV to listen to Bruce Vernon, Philips Media Pool, discuss his company's video server. Vernon described the subsystems that make up a Media Pool, including input/output (I/O), data transfer, storage, and control. The flexibility in the system allows it to be configured with up to 12 I/O channels at 1:1 or compressed in various ratios.

Single or multiple disk arrays can be accessed simultaneously by each I/O at full bandwidth and can provide hundreds of hours of online storage. RAID level 3 is used, permitting the use of hot-swappable drives which rebuild themselves automatically in the background.

The user controls the system through a network of Unix-based GUI workstations that allow any function to be performed with no practical limit to the number of workstations or users. Software allows VTR emulation, dubbing and basic editing, on-air cart machine emulation, and offline archive management. The system will communicate with other devices using Louth and Sony protocols as well as its own protocol, and can control other devices such as routers, cart machines, etc.

Networking using the developing SDTI interface is available, and the company is working on handling MPEG-2 streams and compressed 1080i HDTV streams.

After playing a videotape showing how various TV facilities are using their Media Pools, Vernon and Philips Midwest regional sales representatives Jeff Gouch and Tom Tisch took small groups of attendees on a tour of the operation of the Media Pool at WKBD.—Frank Maynard, (Secretary/Treasurer), WKBD-TV

Florida/Caribbean

March 10, 11, and 12, 1998

The March program, titled "DTV Are You Ready?" was presented at the studio of WJXT-TV in Jacksonville, WKMG-TV studios in Orlando, and WPLG-TV in Miami. Steve Flanagan, Post Newsweek

SMPTE SECTION CALENDAR

New England

For further information contact Section Chair John C. Gates, Gates Service Group Inc., tel: (508) 651-7886, fax: (508) 651-7889, e-mail: liteguy@bu.edu

Dates for future meetings

June 19: High-Speed Duplication/Annual Retrospective and Barbecue at Video Transfer in Southboro

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

June 17: AES/EBU AC-3 5.1 Blow Out
July 22: Lookout Mountain Picnic
August 19: Presentation of encoder for ATSC DTV application
September 16: TBA
October 16: TBA
November 18: SBE Elections

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

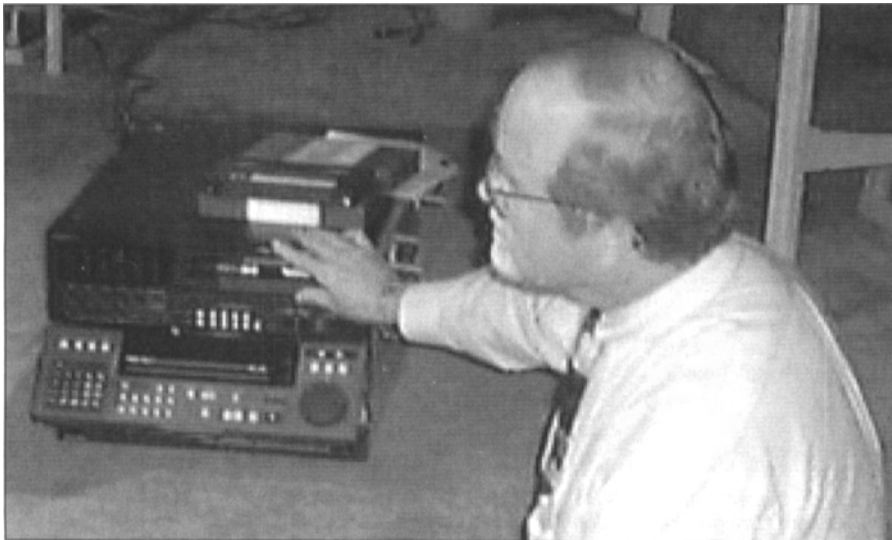
August 8: "Perception: Hearing and Seeing," at Dolby Laboratories
September 12: "Video Compression for All," at Stanford University
October 10: "HDTV, DTV, and the Painful Alternatives," at Stanford University

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

June 8: Alliance Broadcasting Tour
August: New Board of Managers Meeting
September 8: CTV N1
October 13: Television Networks Using Public Fiber Networks
November 10: TBA
December 8: TBA



Steve Flanagan runs a high-definition program on the Sony HDTV recorder at the Florida/Caribbean section meeting.

Broadcasting, gave a brief history of the development of television broadcasting in the U.S., from the original black and white version through the NTSC system used today. The time required to achieve major market impact for the medium's advancements, covering the conversion to color to the transmission of stereo sound, was of particular interest. Flanagan compared the slow but steady rise in sales of early color sets to the anticipated sales projections for DTV/HDTV sets in the future. Cost comparisons of early color sets to projected prices of DTV/HDTV sets were shown using today's dollar value. The industry believes there will be a significant consumer demand resulting in high sales of new sets and a decrease in the product's price.

There were several concerns among broadcasters about the transition to DTV/HDTV. Flanagan discussed many of these issues including coverage, must carry, network formats, cost, competition from satellite, news and ENG, video editing and effects, ultimate channel, and NTSC expiration.

Napa Valley College

February 19, 1998

Frank Coll, National Mobile Television, came up from Los Angeles to address the Napa Valley Telecommunications graduating students. He spoke about the challenges and rewards of mobile television and gave us an in-depth look into the future of digital production. Coll outlined some of the demands facing the industry created by ever changing technology, and provided some insights into the steps National Mobile has taken to keep ahead of the trends. The end of the meeting was open to questioning.

Coll took the time to interview students interested in working in the field of mobile television after the meeting. He was enthusiastic and informative and shared some personal experiences and good advice.—Anthony V. Cassano, Student Chair

New England

April 27, 1996

Special Cinema Sound Half-Day Seminar

An audience nearing 400 gathered at General Cinema Framington 14 Cinema Complex to listen to John F. Allen, consultant, discuss theater sound systems at the Special Cinema Sound Half-Day Seminar. The group included members of the New England Section, Acoustical Society of

America, Boston Audio Society, and Audio Engineering Society

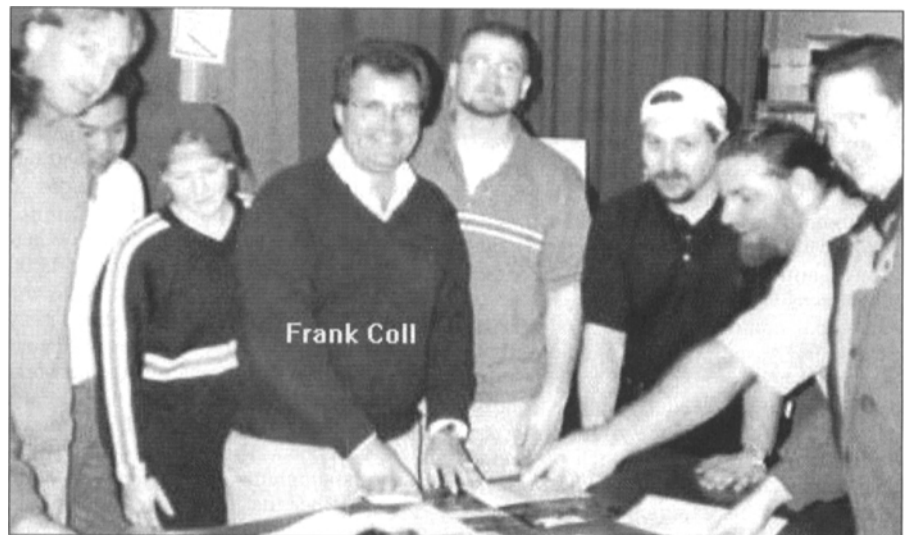
Allen discussed conventional methods applied to the tuning of these sound systems, with microphones placed in pick-up positions, mostly in the rear of the theater, or "far field" and utilized the HPS 4000 theater sound system which he designed. He explained and audibly demonstrated why these conventional methods are flawed, resulting in unreliable and unnatural sound quality.

Several 2 to 3-minute scenes from recently released popular movies were screened, each with the system tuned to various industry-standard configurations. The final screening for each segment was tuned using Allen's "near-field" approach, each yielding dramatic improvement in audible clarity, bass response, and presence. In most cases, the audience heard background sound elements such as birds, wind, or rain, which had not been discernible on the previous screenings with conventional tuning techniques.

Prior to a brief intermission, Allen introduced Dan Taylor, Sony Corp., who provided a brief follow-up on the Sony SDDS theater sound format, which was used for some of the screenings during the previous demonstrations.

After the intermission, Allen introduced Steve Cohen, Sony Pictures Studios. The two jointly presented a thorough demonstration of what it takes to produce a 6-channel final mix, as typified in a recently released motion picture film.

The demonstration involved a 32-channel mixing console erected in the center of the audience area, along with four Tascam DA-88 multitrack digital audio recorders, and a professional videotape recorder with SMPTE time code providing the picture signals which were screened using an Ampro video projector.



Frank Coll discusses mobile television with the Napa Valley College Telecommunications students.



Tim Carroll presents his leg of the surround-sound speaker systems and AC-3 Dolby Digital systems at the New York section meeting. From left to right: Doug Osborne, John Alberts, Steve Strassberg, and Tim Carroll.

This complex demonstration took the viewer through the entire layering process for each scene within a short 3 minutes of a feature film. Separate screenings showed the original actor's dialog tracks, the various dialog replacement tracks, many varied sound effect enhancement tracks, various music tracks, and finally, from a total of over 100 separate sub-tracks, the fully-mixed 6-channel surround-sound stereo soundtrack played in the Sony SDDS format.

This was the most complete and enlightening tutorial on motion picture sound the New England SMPTE Section has ever participated in. —Paul R. Beck, (Secretary/Treasurer), Emerson College

New York

March 10, 1998

The SMPTE and AES New York chapters presented a program titled "5.1 Audio and AC-3: Systems and Practices." Approximately 200 attendees from both organizations listened to technical descriptions of surround-sound speaker systems and AC-3 Dolby Digital systems presented by Doug Osborne, Miller & Kreisel, and Tim Carroll, Dolby Labs, respectively. The tech talk was punctuated with provocative demo material whereby comparisons were made between 5.1 digital tracks, 5.1 AC-3 encoded and decoded tracks, fold-downs to stereo and mono, and various surround decode schemes using a variety of pop, classical, and vocal material. Steven Strassberg, Strassberg Associates, arranged a fully-functional hardware setup to provide this demo at quality level equal with the technical level of the audience. John Alberts, Sony Music, followed the tech program with demos and insights of mixing for 5.1, drawing from his experience engineering music videos and shows for Sony. The presentation was followed by a question and answer session.—Bill Topazio

Pacific/Northwest

March 6, 1998

With more than 100 people in attendance, Bob Morris, Capilano College, Ross Kelsay, Panavision, Allen Rhodes, Sony, and Curtis Staples, Rainmaker, presented a tutorial covering the issues and challenges of the Advanced Television Systems Committee digital television standard. The team discussed the DTV doubling of the NTSC line rate and associated picture detail enhancements as well as color matching or mismatching across all three domains which include film, computer, and video. Also discussed were considerations of set dressings, lens selections, framing, and lighting throughout the production process. The tutorial addressed pre-production, production, and post-production issues as well.—Michael Scott, (Secretary/ Treasurer), Bates Technical College

Sacramento

May 18, 1998

Eleven members of the Sacramento Section were treated to a tour of Comcast's head-end television cable system facilities which is one of the largest operations in the U.S. The company's Sacramento County system is also one of the largest networks in the country, with over 250,000 subscribers and 20,000 miles of cable and fiber. Comcast's Sacramento operation is a bit unusual for its size as the entire head-end is located in the center of the network, with seven or eight outlying hubs, each feeding distribution nodes and, ultimately, their subscribers. This star network configuration is supplemented by three separate rings of fiber that pass from hub to hub, providing redundant paths for increased reliability

David McVicker and Cary Hanson, both

of Comcast, were joined by at least four other group leaders from the company. The group described their earth station link to the central hub as well as their links to the outlying hubs. Each of the group leaders then led a smaller group of SMPTE members on a very thorough tour of the facilities. Attendees saw, for example, a 35 ft long rack of microwave transmitters that was replaced by 18 RU of rack-mounted YAG laser equipment. A description of the company's plans for implementing high-resolution television and cable modem technologies was of major interest to meeting attendees. As one might expect, Internet service provision was also a major topic.

Operations was also a topic of discussion. Attendees learned how local ad insertions and pay-per-view were coordinated and implemented. They also heard about plans for a new digital editing suite for in-house ads and production.—William Carlquist, (Secretary/Treasurer), Grass Valley Products

Toronto

March 10, 1998

The members of SMPTE Toronto got a sneak preview of data-enhanced broadcasting at the March meeting held in the Rogers Communications Centre at Ryerson Polytechnic University. With 120 members in the audience, Jim McNeil, Mountain Cablevision, and Michael Coop, WebTV, updated Toronto on advances in both cable systems and set-top boxes for the delivery of data-enhanced television. The meeting featured the first public big screen demonstration of Microsoft's WebTV Plus in Canada.

McNeil began the evening with a paper outlining the advances made in cable systems and cable's ability to deliver two-way data to the set-top box. He started his presentation noting that only 180 services currently exist that can be delivered to home television receivers. Arguing that cable has a strong future, he indicated that current cable technology could deliver as many as 900 services if a 5:1 digital compression algorithm was employed. Cable is starting to compete with the telephone companies in delivery of data to the home. According to McNeil there are currently about 1000 xDSL (digital subscriber line) installations by telephone companies in North America, compared to 100,000 installed cable modems.

McNeil focused his presentation on four areas: cable architecture, data speeds, cable modems, and set-top boxes and the future. His paper indicated how the "tree and branch" approach to cable system design has long since vanished. Mountain Cablevision has been building fiber into its system since 1989 and today 75% of its system is two-way. To make Mountain Cable's hybrid fiber-coaxial system work, two fiber

strands are provided for every 500 homes. One fiber acts as the send line, while the other acts as the return line to the cable company. In typical cable system design, the channels are converted from the send fiber to coaxial cable for delivery. In Mountain Cable's case, the two-way system is possible because there is a maximum of four solid-state coaxial amplifiers between the fiber and the home. "Advances in solid-state amplifiers have made two-way a reality, but the design is a critical factor in making it work in the field," said McNeil.

In addressing data speed, McNeil pointed out that the typical home computer can handle about 2 1/2 Mbits/sec. "I can currently deliver 2.4 Gbits/sec," he argued, pointing to the potential of cable, "but it would be very expensive." He then presented information that indicated a 2-Mbyte file that would take 583 sec to download on a 14.4 modem, and about 2 sec using a typical cable modem connected to a home PC. In delivering data information to a set-top box, cable typically uses one of three methods. They are bi-phase shift keying (BPSK), quadrature phase shift keying (QPSK), or quadrature amplitude modulation (QAM). A standard is also emerging called Data Over Cable Service Specification (DOCSIS). "When the information arrives at the set-top box or home computer, it's converted to ethernet for communication with the device," McNeil said.

In closing, it was McNeil's opinion that demand for Internet services over cable will drive the medium's return path rollout. Consumer demand for digital television will drive cable system upgrades. And more importantly, advanced digital set-top boxes will emerge for the home television envi-

ronment along with myriad training issues for cable installers.

Michael Coop, WebTV, then treated the audience to a preview of Microsoft's WebTV Plus scheduled to be launched in Canada on May 18. In presenting his paper on Interactivity and Internet Access via the Television Set, Coop explained that Microsoft's current focus is on data-enhanced TV. The original WebTV set-top box was designed to allow users to "surf" the Internet on their home television sets. The WebTV Plus box will integrate television in a seamless manner allowing the user to utilize traditional broadcast signal to interact with data and web sites delivered by the Internet. To obtain this marriage, the WebTV Plus unit contains an input for cable or a direct satellite service and a modem for dialing into a local service provider.

To make web information presentable given the resolution limitations of interlaced NTSC television, WebTV has developed its own browser to display information on a home television set. For example, WebTV converts all the text on a typical web page to a sans serif font so it can be read on a home TV set; to make the page easier to navigate with a remote control, WebTV only scans vertically when displaying information; to allow fast access to data, information downloaded from the WebTV service provider is cached in a 1.1-GB hard drive buried in the WebTV box. WebTV customers are also provided storage space from their WebTV service provider, allowing them to access their e-mail and store additional material.

Coop then demonstrated how users will be able to access either their WebTV home

page or their TV home page when they turn on their sets. For those choosing a TV home page, their television will act in a normal fashion. Users can then select the WebTV function on their remote and they will be directed to the WebTV home page which is the starting page for "surfing" the Internet. The WebTV set-top box also contains a printer connection and video/audio input connections. The printer port allows users to connect off-the-shelf printers to print out information. The video/audio connections allow the user to transfer 30-sec videoclips to a WebTV account and include them as e-mail. Along with sending video, WebTV e-mail can also deliver web pages, graphics, and photographs.

In the area of alerting a viewer of integrated WebTV data, broadcasters can embed a synchronized WebTV icon into the video image by making use of line 21, field 2 in the vertical blanking interval. When the WebTV box sees this data type, it will display a small WebTV icon in the upper left corner of the television image. If the viewer selects the icon, the set-top box contacts the WebTV service provider and delivers the appropriate synchronized data to the television viewer. The viewer can continue to view the broadcast, as it remains part of the screen via a picture-in-picture feature. Microsoft has gone to an open standard for this function: EIA-746.

Coop provided the audience with the following web site addresses to obtain more information on this kind of technology: <http://www.microsoft.com/DTV/>, and <http://pcube.com/>.—Brad Fortner, (Promotions Adviser), Rogers Communications Centre, Ryerson Polytechnical University

Books, Booklets, Brochures

The updated **IC Master catalog** contains the latest device specifications for currently available ICs. The catalog covers more than 100,000 base part numbers with device data efficiently organized in ten master selection guides. Also listed are an excess of 120,000 functional equivalents for current and discontinued ICs. Other sections include the part number index, military part directory, application notes directory, and a manufacturers and distributors directory.

The enhanced 1998 IC Master CD-ROM search tool for Windows has full-parametric search capability. For selected advertised devices, users can now link directly through their Internet browser to datasheets on IC manufacturer's web sites. In addition to all the information appearing in the catalog, the CD-ROM also cov-

ers discontinued ICs to deliver specifications for more than 135,000 base part numbers and package data for over 90,000 of these devices on a single compact disk.

Subscribers to the 1998 IC Master Catalog and CD-ROM will have access to the IC Master Online service for one year. Along with the regularly updated database, the web site offers full-parametric search with Krakatoa engine; pinout diagrams, and package styles; and direct links to IC manufacturer's home pages. The catalog and CD-ROM is available from Hearst Business Communications Inc./UTP Division, 645 Stewart Ave., Garden City, NY 11530.

The New Communications Technologies, 3rd edition, written by Michael M.A. Mirabito with contributions from Barbara

Morgenstern, provides information on the emerging technologies that will shape the way communicators do business. In addition to technological background on computers, information storage, fiber optics, and desktop video, the social and economical ramifications of these technologies are also discussed. New to this edition are chapters on the Internet and World Wide Web, wireless and mobile communications, e-mail and privacy, and new technologies in relation to the First Amendment. The Telecommunications Act of 1996 is also discussed and expanded coverage of satellites and launch systems are provided. The publication is available from Focal Press, 313 Washington St., Newton, MA 02158-1626.