Section Meetings

Atlanta

February 9, 1998

The Atlanta Section held February's meeting at the studio facilities of WUPA UPN-69 with 48 people in attendance. David Bird, Philips BTS, gave a presentation on solutions to the DTV multicasting problem. The presentation addressed three technical situations: multiplexing multiple SDTV channels within the 6-MHz DTV bandwidth; how to send an NTSC and DV signal through a single studio-to-transmitter link; and the combined HDTV and SDTV multiplexing system. Bird answered many questions relating to the DTV topic after the presentation. Gary Kelly, WUPA, then gave a tour of the facilities.—J. Rhett Mappin, Secretary/Treasurer, Pinnacle Systems, Inc

Detroit

February 10, 1998

Thirty-one members and guests attended a joint meeting with the Detroit Section of the Audio Engineering Society at WDIV-TV. Dave Desmarais, Sony, explained the finer points of small-format videotape recorder maintenance. He covered factors that affect head performance including environmental concerns, tape abrasion, cleaning and tape tension, and emphasized regular head cleaning as an important part of assuring quality recordings and playbacks. Chroma flash, one of the more frequent anomalies with Betacam recordings, was explained along with suggested ways to minimize the condition.

Desmarais went into detail on the mechanics and design of rotary VTR heads, including the differences in headlife between fixed VTRs and camcorders. He discussed rotary head construction materials and methods, and showed microphotographs of new heads, heads with normal wear, and heads that had been damaged by abrasion and contaminated with oil debris from being packed in styrofoam.

Service procedures were covered including a list of items that are checked when a machine comes in for repair. The special problems in dealing with rotary-digital audio tape machines were also covered, particularly with respect to the narrower tape and smaller transports. Finally, he outlined steps users can take to improve performance, including preventive maintenance and performance checks, tape handling and storage suggestions, and periodic evaluation of a facility's tape stock.—Frank Maynard, Secretary/Treasurer, WKBD-TV

Florida/Caribbean

February 10 and 12, 1998

The February program topic, MPEG Video, Seamless Concatenation of MPEG-2 Bitstreams, was presented as a Power Point presentation by David Walters, Snell & Wilcox. The program, held at WESH-TV in Orlando on February 10 and WFTS-TV in Tampa on February 12, was a condensed version of a paper presented at ITVS in Montreux on June 16, 1997.

Walters outlined some of the problems faced by broadcasters in dealing with MPEG compressed video streams: keying inserts, commercial insertions, live cut-ins, editing in MPEG datastreams, and similar issues. Snell & Wilcox offers one possible solution to these problems. Utilizing Mole technology, a high-end MPEG encoder is used initially to encode the video source. Details of decisions made by the encoder are encrypted and hidden beneath the video signal, hence the Mole name. This data is then utilized by downstream lower-end decoders to decompress the video. The video effect desired is then performed, and the video is recompressed with a lower-end encoder using the original Mole data. With this method, much less expensive decoders/encoders can be used downstream.

A combined total of 28 people attended the meetings.—Bill Hillier

New England

September 10, 1997

September's meeting was held at CF Video & Interactive. CF owner Bill Churchill hosted the gathering attended by 68 SMPTE members and guests.

Churchill provided background of his facility from when it was solely a videotape-based post-production house, and the first commercial operation in New England to acquire a nonlinear editing system. He also discussed the various complex tools used in the film and video production business, and how they have changed so radically in the last decade. The present trends of developing multimedia, interactive CD-ROMS, and computer-assisted animation were discussed, leading to the creation of a new operating division of CF Video called Fablevision.

A tour of the CF Video facilities provided close inspection of the following items of interest: a Jaleo Digital Compositing System allowing uncompressed D-1 capture/playout with unlimited layering (Octane version); a Discreet Logic D-Vision digital workstation with an NT-

SMPTE SECTION CALENDAR

Montreal/Quebec

For further information contact Section Chair Dany Harrison, TVA Network, tel: (514) 599-6004, e-mail:harrisd@tra.ca

Dates for future meetings

May 13-14: Tutorial Production Film vs. Video

May 21: Annual Golf Tournament

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

May 20: Moving WLVI-TV: Tour and Presentation (Tentative)

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

May 20: Tour of Assembly and Test Area for High-Power Digital Transmitters

June 17: AES/EBU AC-3 5.1 Blow Out

July 22: Lookout Mountain Picnic

August 19: Presentation of encoder for ATSC DTV application

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 Seminars

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

May 12: Film Topic

June 8: Alliance Broadcasting Tour

based server offering 99 video and audio tracks, online mixing of 24 audio channels, and configuration with a Sony DTF data recorder for back-up; a networked SGI 02-based workstation offering a cel-style, vector-based animation system, with multi-plane capability, compositing, and full freedom to pan/zoom without pixelization featuring D-1 output; and DVCAM digital videocassette format for acquisition and post-production playback.

The CF facility is designed with all the production rooms clustered around a central core, with generous spaces provided for client seating, tables for workspace, and dining. This was another business-related issue which was discussed in the CF approach to providing a focused effort for total "media production" rather than "tool rental" of the wide array of digital workstations and high-priced technologies available today.

Churchill emphasized that CF clients come with a project to be completed, and prefer to let the facility do the "tool choosing." This does not preclude bringing in other upscale technology on a project-basis.—Paul R. Beck, Secretary/Treasurer, Emerson College

New England
October 22, 1997

October's meeting took place at two venues. First, a formal presentation was held in the ballroom of the Dedham Holiday Inn with Past Regional Governor Karl Renwanz serving as meeting coordinator and event moderator.

The presentation focused on the use of the DVCPRO format which has been employed in the broadcast environment for one year. Speakers included Gunnar Rieger, Marc Hopmayer, and Tim Allen, all from the Boston-based Fox Network station, WFXT-TV.

Rieger began by detailing the difficult decisions WFXT had to make regarding an economical newsgathering format, as the technology needed to be available between the Spring of 1996 (post-NAB) and the Fall.

The implementation of a new newsgathering format also required full training and orientation for both operations and engineering staff. WFXT made the decision to stay with the application of all-analog input/output with their DVCPRO systems so the proliferation of the new format would interface with the existing plant in a plug-and-play approach, replacing older formats such as 3/4-in. U-matic and, in some cases, 1-in. Type C.

The Fox DVCPRO project was approved for WFXT based upon its cost-effectiveness over other formats. The original roster of DVCPRO equipment included 12 full-featured broadcast-quality field camcorders, 12 limited-feature industrial-grade DVC palmcorders, 55 control room-based VTRs, 2 laptop-style editors, and 40 DVC VTRs assigned for online linear editing applications.

Rieger said that the money saved in this capital purchase allowed other investments in the WFXT news production control room. These investments included a superb array of full-featured audio mixing consoles, a professional multi-effects production switcher, DVEs, two Chyron text generators, and many other important and useful features required by a station producing several daily live news broadcasts.

Hopmayer followed describing some of the operational changes the station's crews had to adapt to in the beginning. They were intimidated by 32 pages of data in the field camera viewfinders, getting used to editing with a cue-style audio track, and becoming familiar with all digital audio signals during editing and shuttle-searching.

Tape usage was also discussed. WFXT established they could expect, on a preliminary basis, a field tape to provide a minimum of 40 passes before measurable or observable degradation occurred. Hopmayer's operations staff were very pleased with the technical support from Panasonic on this new format, owing to the supplier's willingness to listen to any suggestions as to how they could better support WFXT's needs. His final point stated the next phase with WFXT news and the DVCPRO format involves exploring the application of large-capacity digital video servers, augmented with their existing DVCPRO editing stations.

Allen concluded the presentation detailing the general surprise and pleasure the WFXT technical staff had with DVCPRO. A key factor was Panasonic Tech Support's ability to provided answers and details needed by WFXT to resolve issues quickly and thoroughly. Allen mentioned that a rigorous in-house regimen of VTR cleaning was also a contributing factor during the break-in period with the DVCPRO VTRs. He indicated that scanner and head-life was better than had been expected, with all VTRs, some with over 3,500 hours of use, having their original upper-drums.

Questions from the floor were entertained by the entire WFXT team. One issue requiring Panasonic experts to participate was the DVC format being defined to record only 480 active picture lines, where FCC broadcast specifications require 486 active picture lines. The Panasonic representatives explained that the DVC format provides a technology to clone the top and bottom three lines, in whatever active fields are scanned, and then integrate the new lines in an appropriate fashion to create a complete television picture with 486 active scan lines.

This led to a discussion of the preservation of data sent in the vertical blanking interval (VBI), such as closed-captioning or test data. Panasonic technical experts disclosed that the DCVPRO recorders provided by Panasonic Broadcast have been configured to store all VBI data and signals as subcode data.

As the analog NTSC signal is originally recorded, the data in the VBI is captured, stored along with the digital audio and video signals as this subcode data, and then reinserted into the VBI line of choice.

Following the 75-minute presentation and question-and-answer period, the group of more than 70 SMPTE members and guests traveled to the nearby studios of WFXT for a sectioned tour of the television station and news production facility. The tours were done in groups of eight and covered every location where DVCPRO format recorders have been positioned.—Paul R. Beck, Secretary/Treasurer, Emerson College

New England
November 19, 1997

November's meeting was held at Finish, Inc., an all-digital post-production facility in downtown Boston.

Bob Turner, a nationally known post-production editor/expert and author on subjects related to post-production and nonlinear digital systems, was the meeting's first speaker. Turner summarized the entire field of nonlinear hardware and software at various investment benchmarks. He then shared recent market research which revealed the actual market for digital nonlinear systems costing over $500,000 to be less than 2000 within North America. This includes top-of-the-line digital products such as Discreet Logic's Fire and Flame which are currently enjoying great success worldwide.

Turner identified a much broader market for digital nonlinear workstations costing less than $20,000, such as the line of D-Vision products. This led to information from a then-recent *Videography Magazine* roundtable discussion, which revealed that many of the 24 plus manufacturers of similar under-$30,000 digital workstations were predicting a Fall 1998/Winter 1999 release of competing digital workstations which will offer extraordinary uncompressed resolution.

Without his crystal ball, Turner suggested there will be concern about the forms this evolving technology may come in related to processing in RGB, ITU-601, 8-bit, 10-bit, etc. Other concerns will be driven by how much power or how many tool-sets are provided in these next-generation digital workstations, some of which include 4-point tracking and DVE moves such as waves, warps, bevels, and corner pinning. Also included are keyframable light sources, camera-view, realtime morphing, color-correction, retouching, 3-D

Birney Dayton delivers his presentation on audio/video signals at New York's January section meeting.

Greg Harper is presented with a plaque by Michael Strein after his presentation on Webcasting given at Bell Technology Group in New York.

animation, active networking, and connectivity.

The second portion of the meeting was presented by Stephane Blondin, Discreet Logic. Blondin outlined the future product line-up, including features and benefits mentioned earlier by Turner. He discussed in detail the new product, Fire, which operates from an SGI platform and offers a very generous bandwidth capable of 4:2:2 video or RGB. Additional features included visual-audio waveforms, powerful compositing tools, tri-dimensional DVE systems, and multilevel title/text generation.

Other Discreet Logic products such as Stone and Wire were discussed, with useful features such as ultra-networking and SCSI-connectable subsystems, and the storage of multiresolution images on the same hard drive.

A brief question-and-answer session followed Blondin's presentation. The audience, consisting of more than 40 members and guests, relocated to the digital post-productions suites of Finish, Inc. Tours and demonstrations were conducted by Terry Lockhart and Steve Knowlton, both from Finish Inc.— Paul R. Beck, Secretary/Treasurer, Emerson College

New England

January 21, 1998

National Video was the designated site of January's meeting. The annual meeting was attended by more than 100 members and guests and brought 12 working nonlinear editing workstation displays to a large open space. In this space, open and frank discussion could occur between the sales/marketing groups of the various technology offerings, and the vast array of end-users and potential customers for such equipment.

The format of the event was very informal and open-ended, with only a minimum of introductory remarks by SMPTE officials. Participants were given successive 20-min periods for their spoken presentation and demonstration. With the generous size of the National Boston production sound stage, the space was large enough to allow for multiple simultaneous vendor presentations in the main studio.

(L to R) Bob Cutler and Linc Reed-Nickerson are presented with plaques by Kenneth Hunnold after their presentation on the 8-VSB modulation signal at New York's February section meeting.

The 12 technology presenters were Accom, Inc., Avid Technology, Inc., D-Vision, Discreet Logic, Fast, Media 100, Mercury Computers, Panasonic, Pinnacle Systems, Inc., Quantel, Scitex, and Tektronix, Inc.— Paul R. Beck, Secretary/Treasurer, Emerson College

New York

January 21, 1998

The January section meeting was held at Bell Technology Group and consisted of two programs from opposite ends of the bandwidth spectrum. Birney Dayton, NVision Corp., presented a paper on the distribution of audio/video signals both internal and external to the DTV plant. His discussion included the following topics: full-bandwidth HDTV vs. compressed; handling multiple layers of audio and video signals; living within the constraints of existing coax plants as opposed to building a new fiber facility; and examining the possibilities and cost of using Telco facilities as internal and external distribution methods. Dayton's points on the possibility of creating a new multichannel audio interface using existing coax distribution method was of significant interest. This is intended to address the issues that additional channels of audio will bring to the television post-production and distribution process.

Moving down the bandwidth tree, the second presentation was titled "Webcasting: Streaming Audio and Video through the Internet." Presented by Greg Harper, MSNBC, the program covered all phases of the process including capturing clips through all types of software development, search engines, web site architecture, and posting on the servers. A physical description of the technology used in maintaining and rowing the service was also included.

The Bell Technology Group is also the site of the MSNBC servers, which made it possible to "walk into the Internet" after

the presentations. Harper provided online demonstrations of the creating, searching, posting, and webcasting process while giving a fairly complete history of the development of streamline technologies. This nonstandard program was enthusiastically received and provided a refreshing insight for many traditional broadcast types.—Mike Strein, Program Chair-Television, ABC-TV Network

New York

February 11, 1998

Sixty-five people attended February's meeting held at the IBM Building in New York City. The topic, "Understanding and Testing the 8-VSB Modulation Signal," was presented by Linc Reed-Nickerson, Tektronix, Inc., and Bob Cutler, Hewlett-Packard Co. Their tutorial on the 8-VSB DTV modulation system was thorough and easy to comprehend. They discussed the parameters that need to be monitored as the over-the-air DTV broadcasting system is deployed. The two presentations also included descriptions of the data coding and error correction mechanisms incorporated into the 8-VSB modulation scheme. Measurements of actual broadcast signals were shown and important error measurements were described.—Kenneth Hunold, Manager, ABC-TV Network

Pasadena City College

February 10, 1998

Forty-three people attended February's first meeting hosted by George Taylorson. Recently retiring after 37 years of teaching, Taylorson's strong suit was theater. He directed many plays such as "Oklahoma" and "Music Man." The students were provided many guidelines to help them get jobs in the entertainment industry. Some of these guidelines included making goals, and being dedicated and patient. Taylorson gave some insight into each of these suggestions: instances when each guideline could be used and why they are necessary to make an impact and create a good reputation. He also said that students should read technical magazines to keep informed about the latest technological trends. Taylorson went on to discuss his private studio and briefly explained nonlinear editing. He concluded the meeting by emphasizing the importance of persistence, because after all, the squeaky wheel gets the oil.—Josh Ochs, Chair

Pasadena City College

February 24, 1998

Carlos Juarez, Fox Sports America, hosted February's second meeting. He began his presentation by showing the 42 attending students a small clip that he assisted in editing for his company. The clip consisted of many sports including basketball, football, and soccer. Juarez, who is currently attending Pasadena, then provided some background information on himself. He began interning two years ago at Fox Sports America and was hired shortly after. Currently, he is one of the senior editors for the company's basketball coverage. Juarez explained to the students that Pasadena was a big factor in contributing to his background knowledge pertaining to the use of editing equipment at his job. He emphasized that taking telecommunications classes at the college are benificial if you plan on entering the industry. The Fox editor also expressed that students should not enter the entertainment industry strictly for the money, instead he suggested they should be attracted to it because they enjoy their work.—Josh Ochs, Chair

Philadelphia

February 10, 1998

Twenty-eight members and guests gathered to hear "Understanding and Testing the 8-VSB Signal" presented by Link Reed-Nickerson, Tektronix. Nickerson started by giving a brief history of 8-VSB including the technical and political process involved in adopting the standard. Following the history, characteristics of the 8-VSB signal were examined in detail: the interface to the exciter, data randomizing, Reed-Solomon coding, convulational encoding, Trellis encoding, and Viterbi decoding. Nickerson also explained why a pilot signal is used and how segment sync and training sequences add to the robustness of the signal. Spectrum compatibility with System M NTSC was also talked about.

As the presentation turned to hardware, the topics discussed included how manufacturers have designed their transmitters, and why closed-loop correction is required. Nickerson ended his presentation looking at the 8-VSB measurements required to assure optimum performance and coverage, how these measurements should be made, and what is acceptable performance.—Steve Tadzynski, Program Coordinator, Laurel Video Productions

Rochester

February 9, 1998

Christine Doyle, a director at the Rochester Central Library, delivered a presentation focusing on managing information with technology. The group learned about the technology, services, and programs available at the recently expanded downtown Central Library. The two-building complex houses a collection of more than one million books, CDs, audio tapes, 16mm films, videos, newspapers, magazines, and other information references and services. Sophisticated electronic information resources were a tour highlight.—Arthur J. Cosgrove, Secretary/Treasurer, Eastman Kodak Co

San Francisco

February 19, 1998

Despite extremely rainy conditions, 91 members and guests gathered at Dolby Laboratories to hear SMPTE Engineering Director–Motion Pictures Ioan Allen, Dolby Laboratories, give a presentation titled "Film Sound and Better Film Sound: The Dolby Experience."

The Dolby screening room has a 14-dBsp noise floor and an excess of 84-dBsp dynamic range with up to 16 kW of audio amplification available to the 5.1-channel full-surround sound. With the exception of a trailer, the amplification was hardly taxed.

The program consisted of accentuating each point with a film clip including the first stereo recording, the first "A-type Dolby" film track, Dolby SR, and Dolby Digital. The recent film sound developments such as Dolby Spectral Recording and Dolby Digital can provide a film soundtrack with the highest fidelity this side of the digital master. Film tracks once had very limited fidelity and dynamic range, now, Dolby film sound formats are capable of carrying a much higher fidelity "message," making the film audio essentially transparent. Taking advantage of the new formats has required new approaches to soundtrack production. A dramatic demonstration using a clip from *Shine* and a Japanese anime showed that Dolby film sound at its best means not only better quality audio, but theater sound experience that consistently realizes the director's original intentions.

While Dolby's involvement with film sound first achieved wide recognition with the spectacular audio effects of such films as *Star Wars*, the name has long since come to mean more than just special or dramatic effects. The objective is high-quality sound reproduction of dialogue and music, as well as sound effects. Dolby technology is a means, not an end. It can be likened to an artist's palette providing them with a full-range of colors, where before there were but a few. Above all, Dolby formats have been developed to enhance that very special experience of going to the movies.

The San Francisco section thanks Allen and Dolby Laboratories for providing this and similar presentations for our section, student members, and community. Dolby has continuously supported our section by providing speakers and facilities for our educational activities, seminars, and tutorials.—Charles Hintz, Chair, KTVU Partnership, Inc