

Section Meetings

Chicago June 18, 1999

The June meeting was held at Post Effects and attracted 30 guests. Chris Pirazzi presented an historical overview of the PC's architecture as it has been applied to video. He pointed out that as PCs were slow and operating systems lacked maturity, the ability to process video was almost impossible. As a result, a number of work-around solutions were implemented. The first was to use the PC only for user interface and storage purposes, where a black box was deployed to process video. As PCs became faster, other methods were devised to utilize more of the PC itself. Some of these were closely coupled disk and video I/O card solutions, another was the proprietary "over-the-top" bus. Pirazzi discussed drawbacks of each of these methods; for example, the disk/video card provided a record and playback solution but lacked the ability to share files over a network. The "over-the-top" approach required co-operation from various parties and therefore experienced long development cycles before products were brought to market. With the introduction of the PCI bus, fast processors, and Windows NT, PCs finally reached speeds fast enough to move and manipulate uncompressed digital video in realtime. This gave rise to various video I/O cards and realtime processing. Currently, most off-the-shelf disks and PC components can be used for storage, and standard file sharing methods are now available. One significant benefit has been the lower price point for video-capable PC. As a further testimonial of this evolution, he discussed the ability to deal with HDTV on PCs where new Triple Pier motherboards with multiple PCI busses are now available.

In summary, Pirazzi, with equipment manufactured by his company, demonstrated two streams of uncompressed video being mixed together all within a standard PC. A Q & A session preceded the conclusion of the formal program.—Steve Robinson, Secretary/Treasurer

Detroit June 8, 1999

The June meeting for the Detroit Section was hosted by General Television Network in Oak Park. The featured speaker, Bill Robertson, Vela Broadcast, began his presentation with an overview of compression technology, including JPEG, M-JPEG, and the familiar MPEG-2. Robertson discussed the frame structures, profiles, and levels

currently used in compression for television broadcasting. He also covered the new MPEG-4 technology, intended for interactive multimedia, and MPEG-7, to be used for metadata retrieval. Robertson continued with a review of current server hardware and his opinion on what is wrong with today's broadcast servers. The discussion then moved to storage technology with an overview of storage topologies and RAID. In closing, Robertson put all the theory in perspective with a detailed look at Vela Broadcast's Rapid Access Media Management System.

The presentation was followed by a Q & A session.—Helge Blucher, Secretary/Treasurer

Germany May 7, 1999

Peter H. Graf, Secretary of the German Section, organized a visit to ARTE, a bilingual broadcasting station in Strasbourg, France. Financed by a 0.55 DM charge collected monthly from viewers in Germany and France, the station is housed in three different locations: Rue La Fondiere, (headquarters where the reporters are located), Rue De La Sarrelouis (production center), and the transmission center at France 3. The intention of ARTE is to connect two cultures over one television channel; therefore, French and German television stations exchange feature program films presented in either language with subtitles. In addition, the news broadcast every night between 7:00 and 7:45 p.m. is always live/simultaneous translated to German or French, depending on the original language.

ARTE is based around an AVID editing and archiving environment that uses Tektronix's Profiles. The four incoming feed lines from EBU/Reuters/AP are recorded onto Ciprico Disk Arrays; the material can be viewed and edited from every reporter's desk. With four News-Cutter editing suites, two AirPlays installed in the control desk room, and 30 news workstations connected via a 100BaseT network, the reporter's needs are fulfilled. Although some technical problems still need to be solved, the technical staff is pleased that their installation, which took three months, is running satisfactorily.

Technical Director Jacques Van Holland explained the procedures that are different from a regular broadcasting station; for instance, almost 80% of the programs are premieres, and the only live/daily show is the newsbreak.

A study on replacement of the currently used fiber transmission lines against a satellite uplink is currently being conducted. The operational costs would decrease dramatically. However, the German Telecom regulation department (similar to the FCC in the U.S.) still denies operation of the satellite uplink. The restrictions of a satellite uplink, which is installed at the France 3 facilities, are focused on German Telecom regulations and frequency assignment.

ARTE is also looking to future presence of its program on the Internet. There are no plans for featuring programs in English or any other language because the cost for additional languages is very high. According to Mr. Bernard, director of administration at ARTE, it would cost an additional 60 million DM—40 million to cover rights and 20 million for costs of additional technical equipment.

After the visit to ARTE, the attendees had an opportunity to talk to executives and exchange their opinions and experiences.—Reinhard Wagner, Section Manager

Hollywood April 14, 1999

"Digital Sound-Technology Review" was the topic for this very well attended meeting held in the Paramount Studios theater. Over 200 people were present as representatives of three theatrical digital sound manufacturers described their latest technologies and presented demonstrations using the excellent sound system at Paramount.

Susie Daugherty and Paul Mueller, Digital Theater Systems (DTS) discussed the new DTS 680 processor and the use of DTS-ES for *Star Wars*, with additional left-back and right-back channels. Working with WGBH, a back projection subtitling system for the hearing impaired has been developed, synchronized to the DTS Track.

David Gray, Dolby Laboratories, described the Dolby Surround-EX format with three channels of surround sound, which was also used by George Lucas for *Star Wars*. A new version of the Dolby AC-3 coder will be introduced soon. A 200-ft section of track will provide a system update for the decoder.

Bill Mead and Craig Connolly, Sony Dynamic Digital Sound (SDDS), indicated that two new products are being introduced: a new digital sound processor DFP-3000 with integrated analog sound and a new SDDS recording camera.—Alan J. Masson, Manager



The Ohio Section Meeting in June. Left to right: David Schein, Manager; Gene L. Batey, Secretary/Treasurer; and Tim Carroll, Dolby Laboratories Marketing.

Nashville March 31, 1999

Forty-one members and guests gathered for a buffet dinner and tour of the Harris/PBS DTV express trailer where they viewed a living room display of a large screen, medium screen, and computer screen, using Dolby AC-3 surround sound. Uses of the four channels with information transmission were demonstrated. The other section of the trailer, used as a complete functional end-to-end DTV broadcast facility, was also in operation. After the tour, Ed Williams and James Snyder, Harris/PBS DTV Express, presented a complete overview of the demonstration trailer, including its history. The meeting gave an exciting glimpse into the DTV future.—Phil Arnold, Secretary/Treasurer

Ohio June 17, 1999

The final meeting of the season was held jointly with several Ohio area SBE sections at the NBC plant, WCMH-TV, in Columbus. The theme of the meeting was "Digital Audio: The Other Half of the Digital HDTV Equation."

Tim Carroll, Dolby Laboratories, spoke to approximately 40 members and guests on the new Dolby E Digital Audio/Video broadcast format, available later this summer. Dolby Digital Audio uses up to seven channels of CD-quality audio that can be featured in HDTV broadcasts. Dolby E, a pre-broadcast stage of the broadcast audio chain, provides accurate synchronization of video and audio bit streams. This will assure that HDTV broadcasts of the future will have the same video and audio-matching integrity as any standard analog of the present.

Using power slides, Carroll introduced the concept of broadcasting metadata signals within the digitally compressed bandwidth of an HDTV channel. This results in the broadcast of special instructions from the encoder to the receiver's decoder in

order to properly set up all the key elements of the receiver's audio system. The advantage is that during any given time frame there will be precise video and audio bit stream synchronization, thus reproducing at the receiving end, exactly what is broadcast at the head end of the signal chain.

Dolby E Digital marks the first time that Dolby Laboratories has introduced a format that processes video as well as audio signals. As an example, Carroll presented a slide showing several HDTV video/audio frames and their relationships in realtime. Dolby E Digital assures accurate bit stream synchronization between the video and audio frames regardless of the types of audio formats being processed and mixed at any given time. Dolby analog audio formats using one, two, three, or four channels, (Pro-Logic) and the Dolby Digital Surround EX, etc., would have no noticeable bit stream mismatches of video and audio frames when reproduced by the receiver.

For a local network affiliate, this could be a very important consideration. When doing an audio promo over the ending of the network's HDTV movie, which contains a six-channel digital audio sound track, for instance, the local audio network feed may be just in analog mono. Dolby E Digital assures that the affiliate's audio signals will also be recognized immediately by the receiver's decoder, resulting in a fully synchronized and faithful mix of all the audio/video sources being sent out, all within a one-video frame rate. The station can even eventually fade out the entire network audio/video feed with no interruption in continuity of the HDTV receiver end of the chain. This will prevent the necessity of having a master control board operator, at the affiliated station, manually mixing channels and attempting to match up the video and audio bit stream rates.

Carroll concluded his presentation by explaining that the new Dolby Digital Surround EX format, introduced this year in the new Lucasfilm production of *Star Wars Episode I: The Phantom Menace*, adds an additional middle surround chan-

nel to the rear of the theater auditorium, creating additional spatial surround participation to enhance the theater-going experience. This Dolby Digital Surround EX channel could also be part of a digital HDTV broadcast received directly through a home antenna or the new digital cable TV systems, further enhancing the HDTV home-theater listening experience.

A Q & A session, including a discussion of the contrasting numbers of HDTV receivers in some areas of the U.S. television markets, followed Carroll's presentation. It was noted that in some top ten markets, limited numbers of HDTV receivers are in use, contrasted with much higher numbers in markets such as Columbus, OH, which has a national market ranking of 34. It was concluded that in some markets, factors other than population size should be considered when marketing HDTV.—Gene L. Batey, Secretary/Treasurer

San Francisco June 30, 1999

The June meeting, titled "Real-time MPEG Encoding," or "How DiviCom Fits Ten Gallons of You-Know-What into a Teacup," was held at the DiviCom headquarters in Milpitas, CA. Sixty members and guests gathered in the heart of Silicon Valley to hear about DiviCom's standards-based MPEG-2 encoding products and systems for digital broadcasting and transmission over a variety of networks including satellite, wireless, fiber, and cable. The company has deployed over 5000 MPEG encoders, worldwide, that distribute audio, video, and data over a wide array of methods, including DTH (QPSK), MMDS, cable (QAM), ATSC (8VSB), DVB-T (COFDM), ATM, G.703, and others. The audience learned how DiviCom technology is helping broadcasters, cablecasters, and others cope with the transition to DTV.

The MV-400 is DiviCom's newest encoder, designed to meet the requirements of compressing HDTV (SMPTE 292M at 1.5 Gbits/sec) to still fit within the ATSC (19.39 Mbits/sec over 8 VSB) in one rack unit. DiviCom's impressive technology suite was open for tours after the meeting, and attendees saw demos of "DiviTrack" bandwidth sharing (statistical multiplexing or "statmux"). The system allows for "proof of concept" and other testing evaluations of MPEG systems.

The program was organized and hosted by Stu Casteel, an engineer at DiviCom and a former SMPTE-SF manager. Casteel was ill that night and was replaced by Joel Wilhite, who introduced the evening's speakers; Neil Brydon from the encoder group and Michael Guthrie from cable/broadcast.—Peter Hammer, Secretary/Treasurer