

## Section Meetings



*New York Section meeting, March '99. From left to right: Jay Bergman, Kevin Coleman, Bob Ross, John Ferder, and Greg Coppia.*

### Chicago March 16, 1999

The March meeting attracted 40 guests from the Chicago section and was held at the Discreet Logic midwest region offices. Paul Andrews, Discreet Logic, gave an overview of the advantages of working on open platforms for editing high-definition imagery; the primary advantage is the independent-resolution nature of software. Any resolution from standard definition to 2K can be accommodated. A discussion of bandwidth requirements for HD preceded Andrews's review of the editing tools available in Discreet Logic's Fire application. He also talked about other important issues associated with editing HD material. As SGI doesn't provide HDTV I/O on their workstations, Andrews discussed various strategies for solving this problem. The use of DDRs and data-tape formats were offered as current solutions, in addition to direct transfer from film via telecine to the workstation. In closing, Andrews mentioned various considerations for archiving material and using utilities to prep images.

After the presentation, attendees were given a demonstration of Fire HD.—Steve Robinson, Secretary/Treasurer

### Detroit February 9, 1999

The February meeting, with 56 in attendance, was held jointly with the Detroit chapter of IEEE at Fox affiliate WJBK in Southfield, Mich. Detroit section manager

Gene Wilczak, WJBK, began with a brief overview of the station's DTV transmitter and antenna installation and showed a video shot of the tower and DTV antenna from a helicopter. Brett Jenkins, Comark Communications, followed with a presentation on DTV transmitter performance and specifications. He explained the cause of transmitter distortion and the effect it has on the DTV signal. Jenkins also offered solutions to these distortions and presented results from actual transmitters in the field.

After a Q & A session, attendees were given a tour of WJBK's VHF NTSC and UHF DTV facilities.—Helge Blucher, Secretary/Treasurer

### Middle Tennessee State University Student Chapter February 12 & 25, 1999

On February 12, the chapter hosted a 5.1 Mixing Techniques seminar presented by Mike Sokol and EQ Magazine as well as representatives from Otari, JBL, Lexicon, and Panasonic. Sokol discussed proper procedures for setting up a 5.1-mixing environment. He explained the process of establishing a monitor system for Left, Right, Center, Rear Left, Rear Right, and LFE monitors as well as their placement. He also demonstrated various mixing techniques by routing signals to each monitor location. Students were given the opportunity to operate the equipment used in the demonstration, by mixing in surround.

Steve Davis, Crawford Communications,

gave a presentation on February 25. He discussed time code applications, audio post-production, and career goals of the engineer. His discussion on time code and its application indicated the importance of understanding synchronization. Davis also provided a tour of the facilities at Crawford, via their web pages, and offered insight to students wishing to follow audio post-production as a career path.

The discussion was followed by an extended Q & A session.—Leah White, Student Chair

### Nashville Student Chapter February 18, 1999

The February meeting of the Nashville chapter was held at A.C. Inc., with 25 in attendance. Jennie Mainor, Kodak, presented "To See the Light," which exhibited Kodak's new 800T Vision color-negative film and compared it to a digital beta videotape.

Following a question-and-answer session, Armanda Costanza, owner of A.C. Inc., a film camera rental house, talked about the facility, and the equipment and services it provides.

Costanza gave a brief overview of cameras then presented the Aaton XTR Super 16mm camera with time code and explained its finer points. She also displayed an Inno-Vision lens that captures pictures from an angle, similar to a periscope. After dazzling the audience with the lens, Costanza showed a Keno-Flo miniature light for table top and other specialty shooting. Attendees spent the remainder of the evening exploring the uses of these new tools.—Phil Arnold, Secretary/Treasurer

### Nashville Student Chapter March 11, 1999

The March meeting was held in Studio A of the John Bragg Mass Communication Building. Doug Mitchell, Department of Recording Industry of the School of Mass Communications at NTS, hosted the program. He introduced the department then gave a tour of the television studio, master-control room, editing rooms, MIDI room, electronic music room, and the two recording studios. Mitchell offered an overview of the school's four-year program and explained how it started and is currently funded. With the help of the students he also gave a demonstration of 5.1 mixing, using a project on which they were currently working.—Phil Arnold, Secretary/Treasurer

## New York March 10, 1999

Over 250 people attended the March meeting titled "Digital Television at CBS: A Progress Report." The meeting was held in Studio 45 of the CBS broadcast center in Manhattan and was hosted by Robert Ross and Robert Seidel, CBS. Ross and Seidel are both Fellows of the Society, and Seidel is currently Editorial Director for Television.

After opening remarks by the hosts, Jay Bergman, associate director of the distribution systems group, CBS, gave an overview of the DTV/HDTV system at the CBS broadcast center. He also discussed CBS-HD network origination, WCBS-DT's configuration and format, and CBS's decision to route HD signals using SMPTE 292M 1.5 Gbits/sec with embedded audio. John Ferder, senior project engineer of the production systems group, followed by describing the choice of a 1.5 Gbit/sec routing system, the signal degradation limits of coaxial cable, and the use of fiber optics between the transmission center, HD master control and edit facilities, and WCBS-DT master control. Gregory Coppa, director of distribution systems, spoke on the satellite distribution system serving over 200 CBS network affiliates. Specifically, he described the choice and use of DS-3 for transmission. Kevin Coleman, associate director, gave a description of the WCBS-DT transmitter site on top of the Empire State Building and discussed the challenges encountered while constructing and installing a state-of-the-art broadcast transmitter facility in a New York City landmark building designed and constructed in 1932. His speech was highlighted by a videotaped tour of the transmitter and antenna facilities, shot entirely on HDCAM-SX, and displayed on a G90 projector provided by Sony.

Seidel then gave a comprehensive report of WCBS-DT's DTV Field Tests. He discussed the use of the Longley-Rice prediction method, field test plan, and test vehicle used. He described the test results, which yielded a 96% success rate for all Longley-Rice predicted sites. Seidel also discussed the special testing methods employed for the "concrete canyons" of Manhattan and Brooklyn, and possible co-channel interference between WCBS-DT, channel 56, and NTSC station WLNY, channel 55, which broadcasts from Riverhead, Long Island. He compared WCBS-DT's results with tests conducted earlier by WRAL-DT of Raleigh, NC, and WGN-DT, Chicago.

Following Seidel's presentation, WCBS-DT showed a videotaped portion of the live broadcast of the October 1998 launch of the space shuttle Discovery, in which former astronaut and U.S. Senator John Glenn returned to outer space. A D-5 play-

back of an episode of the CBS drama "Chicago Hope," produced and broadcast in high definition in November 1998, was also shown.

The evening ended with a frank and lively Q and A session. Attendees were given a tour of WCBS-DT's master-control facility by Charles Fagan, director of broadcast operations and engineering for WCBS-TV.— John Ferder, Section Manager

## Pasadena City College February 2, 1999

With 20 in attendance, the Pasadena Chapter welcomed Jerry Isenhower, Toyota Motor Sales, as the first guest speaker for the spring semester. Isenhower is the video production manager at Toyota and provides corporate Toyota with production services to maintain a uniform level of training for sales representatives. Isenhower pointed out that the Lexus division utilizes video training on a regular basis because it has access to video training productions via satellite. This multimedia network is available to Toyota branches nationwide. Lexus alone has a 120% turnover on all sales jobs, and training personnel through video is highly effective in improving service to Toyota customers. With topics ranging from how to answer the phone, to speaking with a customer in person, video is a powerful tool for teaching conduct on the sales floor. Emphasis on how to sell a car or change a flat tire is easily passed on to personnel, so all variables that can occur during the purchase of a vehicle can be addressed professionally. Another service provided through the satellite uplink is a complete work history on all customers. If a customer buys a Lexus in Los Angeles and drives to a dealership on the East Coast the information on that car is accessed instantly. If the customer had problems with service in the past then the sales rep would see this in the system and make arrangements to ensure satisfaction for the next potential purchase. This is a direct approach to quality control of sales and services.

Isenhower also talked about his studio and some of the equipment he utilizes for production. The studio is 40 x 30 in. with an 18 in. grid. It has facilities for three edit bays and a master-control and audio-sweetening room currently under construction. Isenhower uses an A.D.O. 2000 digital-video effect with two channels and a combiner. The equipment utilizes analog and editing in the linear realm. However, the presence of digital equipment and non-linear capabilities are also linked to the technical end of the system. Isenhower said he uses Light Works by Tektronix because it is compression free and resolution independent, providing switchability between analog and digital operation.

Although the need for server-based systems will arise in the future, Isenhower said he provides the best quality by avoiding the expenses and problems associated with compression algorithms and the digitizing process. The studio houses a Grass Valley 200 switcher in edit bay 1 and a G.V.G. 2200 serial digital switcher in edit bay 2. Five L.D.K. 90 Philips cameras are used in productions, teamed with Sony B.V.V. 5 record decks for field shots. He plans to replace his Beta S.P. videotape recorders with Digital-S D9 edit decks. Currently, he uses other formats such as Panasonic's D-5 because of its compatibility. According to Isenhower, many formats within a system make it easier to conform to the outside world. After a production is finished the videos are routed via four channels of fiber-optic cable to their transponder to transmit to the Galaxy 7 satellite.

The content of the training videos comes from many departments within Toyota. Some people write their own scripts and carry out their own research, some producers have industry-related insight and create their own style of training videos. Other videos are simple and to the point with the same technical standard as some of the more complicated productions. Isenhower explained that a captive audience can lose focus after eight minutes, so all productions are treated equally to ensure that employees get the message.

Isenhower explained the importance of learning a craft beyond being just competent at a job, and said that desire is the key to gaining knowledge in a person's career. He stressed that in addition to being dependent students should experiment now, while in school, to avoid mistakes that can occur on the job. According to Isenhower, students should not be afraid to admit that they are not qualified to perform a task, as this can open doors for training experiences. He encouraged students to become familiar with the effects of lighting, and viewing video signals with a waveform monitor and vector scope, to manipulate the potentiometers in the cameras and analyze the change in signals. He said experimenting gives one ability, which solidifies what one knows and can actually do. He also emphasized the importance of knowing the differences and similarities of certain equipment, as this is a vital aspect in adapting to all production environments. Isenhower stressed that management looks at one's education first and foremost.— Brian Klepek, Student Chairperson

## Pasadena City College February 23, 1999

With 25 in attendance, the meeting was called to order by Student Chairperson, Brian Klepek who announced the guest

speaker, Carla Ferrer, KRCA-TV. Ferrer is one of eight graduates of Pasadena City College currently working at KRCA-TV. She explained that despite long working hours, she still takes classes at PCC.

KRCA-TV is owned by Liberman Broadcasting, which has four 24-hour Spanish language radio stations. Ferrer actively participates in lighting for productions, works as a cameraperson, and does videotape applications in addition to her main assignment as master-control operator. She explained that the master-control operator must input the program log into the LMS on every shift. Ferrer provided a detailed description of this computer-controlled video system and the associated duties of the operators who work in four shifts of ten hours each day.

KRCA-TV has three edit bays, of which two are linear and one a non-linear Avid 1000 suite. Six editors can share different shifts at any given time. The station also has two sound stages with computer controlled lighting, two control rooms that allow for simultaneous productions, and a 36-track audio-sweetening bay. The videotape formats range from Beta SP, Digital Beta SX, and 1/2-in. tape machines. Multicore fiber optics can route signals for live broadcasts and satellite transmissions. The satellite systems send and receive C-Band, and Ku-Band signals.

The presentation was followed by a Q and A session.—Brian Klepek, Student Chair

### **Sacramento February 24, 1999**

Fifteen engineers and managers from the video design industries in the local Grass Valley area attended the Sacramento chapter meeting at Graham-Patten, Inc. Wayne McLachlan, Tektronix, gave an informative presentation on MPEG-4 and MPEG-7. McLachlan presented MPEG-4 as a standard method for describing objects that compromise scene. Compression, obtained by sending instructions to those objects that affect their attributes, was demonstrated with several interesting clips. MPEG-7 was presented as a standard method for describing audio and video content for easy search and filtering. Printed text can be located by searching for words, dates, concepts, authors, and such; and by applying descriptors to video and audio material. Similar search techniques (that are used with text) can be used to find audio/video material.—William Carlquist, Secretary/Treasurer

### **Sacramento March 24, 1999**

The March meeting was held at NVision, Grass Valley, with approximately 20

people in attendance. Mike Betts, Broadcast Training Partners, presented the topic "Problems with Embedded Audio?" Betts began with an introduction to the AES-3 audio signal and the component digital video ancillary interval. He then discussed embedded audio insertion into the ancillary period using the standard SMPTE 272M-A format, and other main formats such as SMPTE 272M B/C. Variations on SMPTE 272M D-J were also mentioned. Betts also discussed synchronization and the five-frame AES-3 audio-to-video sequence. He ended the presentation by highlighting problem areas when switching embedded audio streams. After the presentation, Nigel Spratling, NVision, gave a brief introduction to the new NVision embedded audio products.—William Carlquist, Secretary/Treasurer

### **Washington, D.C. February 18, 1999**

With the proliferation of HDTV and the commensurate desire to broadcast multiple signals over a single channel, broadcast networks and stations will need to quickly migrate to large digital video storage, manipulation, time delay, and distribution systems. Thus, Wiltronix sponsored a presentation by SeaChange International, a well-known manufacturer of digital video delivery and ad insertion systems with more than 20,000 MPEG-2 channels online. SeaChange has developed the Broadcast MediaCluster; a system designed for 4:2:2 studio profile MPEG-2 program origination, commercial insertion/playback, and time shift/delay. It is based on a fault-resilient, scalable, multiple input/output data-storage technology that extends the concept of RAID (Redundant Array of Inexpensive Disks) to a cluster of computers acting as a single server, substantially increasing the reliability of video/audio data storage and access. Each computer in a 1200 series cluster uses 12 drives in RAID-5 configuration (two sets of six drives—five striped with data, one for parity), which offers a very high level of data reliability. If one disk drive fails, the data is still safe because of the RAID-5 implementation. SeaChange goes one step further: It creates a cluster of several fully-interconnected computers that act as a single multiprocessor computer system, using direct point-to-point, twisted-pair, two-way, dedicated 100 Mbit/sec ethernet links. Sequential blocks of data, with strong parity error correction, are stored on each successive computer in the cluster using their proprietary SeaNet protocol.

The SeaNet protocol supports full performance up to an 80% payload factor, in

contrast to the ethernet-standard CSMA/CD protocol, which starts to take performance hits at about 30% load. It is this patented implementation that further enhances protection against data loss. Even if one computer fails, the RAIS (Redundant Array of Inexpensive Servers) concept protects against data loss just as the RAID concept does for a disk failure. In addition, neither access time nor data-transfer rate of the other computers in the cluster is compromised. For protection against power failure, a UPS on each node provides ten minutes for an orderly manual shutdown. The MediaCluster processes MPEG-2 data, not Motion-JPEG—data are not directly transferable between them. SeaChange produces its own MPEG-2 codecs, which use the 50 Mbit/sec IBM chipset and are optimized to process 4:2:2 and 4:2:0 digital video. It can handle a variety of video-quality levels, which can be changed from clip-to-clip, on the fly. The MediaCluster connects to networked data archives via TCP/IP over 100 Mbit/sec ethernet connections, while supporting simultaneous storage and delivery of multiple, independent high-quality MPEG-2 4:2:2 digital video programs at up to 24 Mbits/sec with fault resilient storage. A five-node 1200 series cluster can have up to 20 independent video I/O connections and five independent TCP/IP network connections. All of the MediaCluster computers run the Microsoft WindowsNT operating system, and can network to anything that supports an NT file system.

The SeaMon management application software (GUI-based) is provided to manage, track, and administer video program data storage and distribution, and administer the system. SeaChange provides interfaces to many other systems (such as cart, digital-tape archive, etc.), and includes open, non-proprietary video-server interfaces for automation system control. The system design allows the user to maintain and upgrade the hardware (to either larger disk drives, more drives or more nodes) or the software, without taking the system offline. Since the MediaCluster system was first offered, among the 22 installations (most supporting multiple simultaneous program broadcasting), no more than 500, 18-GByte disk drives have failed. SeaChange, which has recently started qualifying 36-GByte drives for use in their MediaCluster, subjects their disk drives, from several manufacturers, to an extensive selection and QC process. A white paper is available: "SeaChange Broadcast MediaCluster—The New Paradigm for Digital Video Storage & Delivery."—James R. Suthard, Secretary/Treasurer