

Section Meetings

Chicago

May 21, 1998

More than 50 guests attended a joint meeting of the SMPTE, SBE, and ITS Chicago chapters held at the Chicago SGI branch office. Marc Ordrechen, SGI, began the meeting with an overall product line presentation on the advanced techniques employed by his company.

In its desktop products, O2 and Octane, SGI uses a "Unified Memory Architecture (UMA)" and "Cross-bar Switch," respectively. The UMA condenses the typical distributed memory found on various subsystems within the computer. This removes the constraints imposed by having to rely on a buss to move data through the system. The UMA dynamically allocates memory as required by the subsystems. The Cross-bar Switch uses a similar concept to avoid internal bottlenecks by employing a direct high bandwidth between subsystems to transfer data. Switching to high-end products, Ordrechen discussed the high bandwidth and powerful graphics processors utilized for visualization applications. Also emphasized was the scalability from 1 to 128 processors by using a proprietary "link" connecting multiple systems together to work as a single system. A question-and-answer session involving other SGI and Discreet Logic panelists followed the formal SGI presentation. The questions probed HDTV performance, resolution independent applications, and high-speed network connectivity.—Steve Robinson, (Secretary/Treasurer), Serial Scene

Detroit

May 12, 1998

Line Reed-Nickerson, Tektronix, gave an informative and enlightening talk on 8-VSB, the modulation scheme used for digital television broadcasting at Ameritech. After some anecdotes about early analog television standards and a review of modulation techniques for analog signals, he described digital modulation methods. These methods were illustrated with constellation diagrams and suitability factors were discussed for each.

Emphasizing the absolute need for maintaining the fidelity of the digital signal during transmission, Reed-Nickerson used a block diagram of a DTV transmitter to show various places where distortion can cause bit errors. Reference demodulation is used to generate corrective predistortion to accommodate antenna system nonlinearities such as icing and line deformities. An overview of the signal processing and cod-

ing system followed, including the significance of randomizing, Reed-Solomon encoding, interleaving, and trellis coding. Data multiplexing, pilot insertion, and modulation were also outlined.

All of this points to the need to maintain the signal in as sound a condition as possible to avoid problems in the fringes of coverage according to Reed-Nickerson. Minor transmitter problems can cause loss of coverage, especially in indoor-antenna situations where small changes in multipath, such as a person moving around a room, can cause sudden loss of picture at the receiver.

Reed-Nickerson went over testing and monitoring, including the FCC bandwidth emission requirements, signal-to-noise and modulation error ratio measurement, group delay, and error vector magnitude. He showed constellation diagrams of signals afflicted with typical problems, such as noise, clipping, expansion, and phase shift. He also showed how to recognize these problems. Finally, he explained the use of eye diagrams, spectrum sweeps, and peak-to-average power monitoring as diagnostic tools to aid in keeping a system clean and demonstrated the use of a Tektronix RFA-800 8-VSB Test Set.

Prior to Reed-Nickerson's talk, John F. X. Browne, John F. X. Browne and Associates, updated section members on FCC matters relating to DTV, including an overview of the Final Report and Order, which formalized power levels, channel allotments, and the emissions mask. He also described the results of reception tests made in the Washington, DC area using receivers equipped with typical consumer-grade indoor antennas. Out of more than 200 sites located up to 20 miles from the transmitters, only 35%, on average, were able to get acceptable reception, compared with an 84% success rate with outdoor antennas.

Central Region Governor Harold Miller reported on the progress in establishing a student section at Specs Howard School of Broadcast Arts in Southfield, and invited Detroit section members to participate in their programs.

Following the meeting, Wallace Murray, Ameritech, took several members on a tour of his company's television operations.—Frank Maynard, (Secretary/Treasurer), WKBD-TV

Hong Kong

February 27, 1998

Twenty members visited the APT Satellite Ground Control Center at the Tai

Po Industrial Estate located 20 miles from the city. Before touring the facility, members were briefed on satellite systems, orbital background, and satellite subsystems including attitude control, tracking, telemetry, electric power, thermal control, and propulsion. The attendees were also informed on the characteristics of each of their satellites and their transponders. The company currently operates three satellites, built by Hughes and Space System Loral, that cover the Asian region.

SMPTE SECTION CALENDAR

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

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

August: New Board of Managers Meeting
September 8: TBA
October 13: Television Networks Using Public Fiber Networks
November 10: 16 x 9 Television Studio Tour
December 8: 3-D Production Systems Featuring SoftImage
January 12, 1999: Satellite Meeting

Following a question-and-answer session, a tour of the control rooms; transmission facilities; and tracking antennas, ranging from 8.1 m to 13 m, was conducted.—Noel Leung, (Manager)

Hong Kong

March 21, 1998

Ten members visited the air traffic control center at the new Lap Kok Airport on Lantau Island. The center, with an 85-m control tower, is located in the middle of the air field. Attendees were informed on elements of air traffic control including preparation and exchange of aeronautical information, air/ground communications, and airport and ground movement control.

Members were given a tour of the airport facilities including the control room on top of the tower; the meteorological office; and the training center, with its simulation equipment. The \$20 billion airport is scheduled to become operational on July 6, 1998. The facility will be able to handle 87 million passengers and 9 million tons of cargo each year.—Noel Leung, (Manager)

Pasadena City College

April 7, 1998

Twenty-five members gathered to listen to Gordon W. Vaughan, Tylee Jones, explain the role of the fulfillment business. Vaughan said that once a commercial is shot, all essential elements must be securely stored for any possible future use. He then cited several examples of prime commercials, which may easily involve cataloging over 100 rolls of film, videotapes, and significant props, so flexibility and accountability are vital.

Vaughan stressed the importance of accuracy in keeping records on all projects. He explained that accurate documentation of film and videotape content can save immeasurably if any particular point is needed at a later date.

He concluded his talk by urging the audi-



Guest Speaker Gordon Vaughan explains the role of the fulfillment business at Pasadena's April 7 meeting.

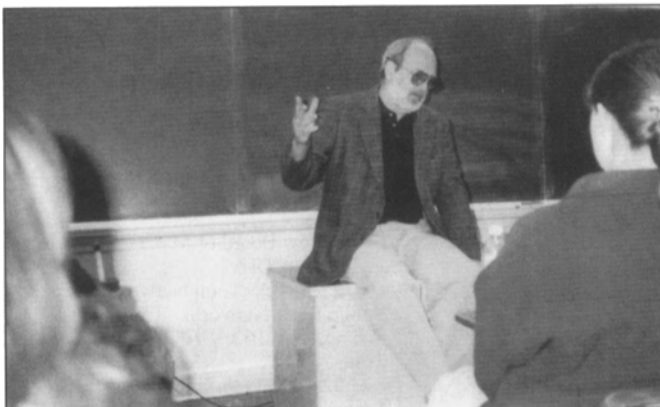
ence to attend as many of the section meetings and technology conferences as possible.—Gerald Finn, Faculty Advisor

Pasadena City College

April 14, 1998

Freelance producer Jim Crum was the guest speaker at April's second meeting. He gave a brief overview of his work, and explained how networking was essential to landing his first job on a local television station. "Building networks between people is an important part of getting hired," he said. Crum was taught a little bit of everything at the local station. This knowledge improved his ability to fix technical problems that arise while producing private films.

Crum told the students to learn as much as possible at PCC because they could end up anywhere in the industry. He suggested they learn how to become a part of the solution, instead of part of the problem. "It's not correct to complain about a problem," he said, "it should be accepted and corrected."—Josh Ochs, Student Chair



Jim Crum stresses the importance of networking to the Pasadena students at Pasadena's April 14 meeting.

Pasadena City College

April 21, 1998

April's third meeting featured guest speaker Robert Brown, KRCA. Brown is currently pursuing his degree from PCC while working full time for KRCA, Channel 62. He serves as master control operator at the company and does various jobs on production as well.

Brown informed the students that he learned how to properly light a set from his classes at PCC and, because of this, does most of the lighting at KRCA. He feels secure in his job because he knows many aspects of production. He suggested that the students enroll in as many telecommunications classes as possible. "Don't pigeonhole yourself," he said, "make sure you know almost everyone's job so you have lots of backup."

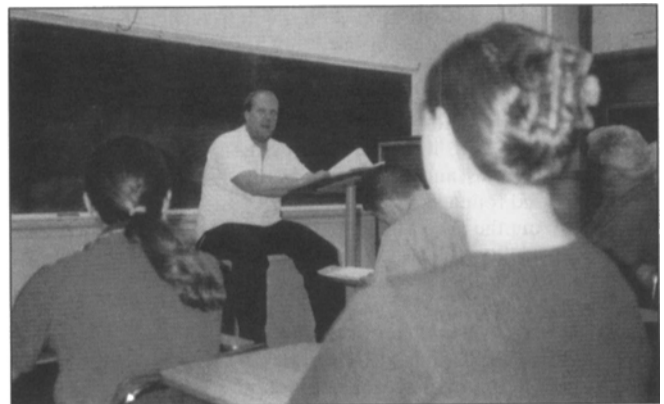
Brown wanted to be an editor but was unable to find an available position. He then looked for a job as a tape operator and soon found one. Due to the absence of a camera operator one day, Brown was asked to run the equipment. Since he learned how to operate a camera at PCC, he had no problems responding to commands from the director. This opened many doors, allowing Brown to help with many phases of the production.

"Find the good in people that you work with and use it to your advantage because it will help you work as a team," said Brown.—Josh Ochs, Student Chair

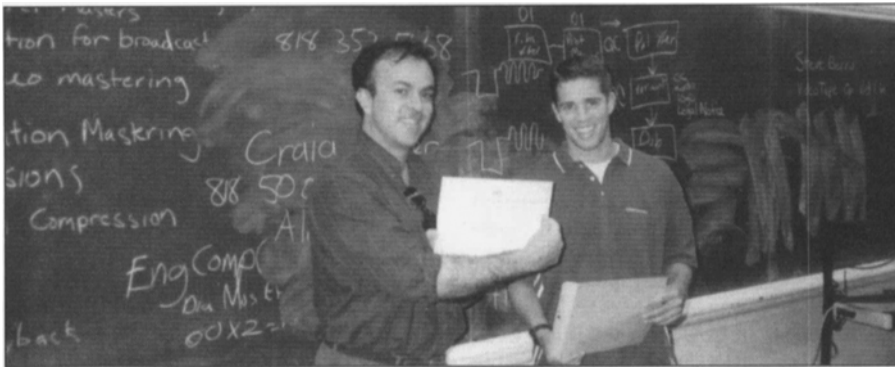
Pasadena City College

April 28, 1998

Steve Berru, VID Film, was the guest speaker at April's final meeting. He explained some of the major job positions at his company and the different responsibilities of each. Berru said "driver" would be a good position to start off with because it's a good way to get to learn the industry. He went on to describe some of the processes VID Film goes through when mastering syndication. Berru also



At Pasadena's April 21 meeting, Robert Brown discusses the value of being familiar with various jobs in the industry.



Steve Berru (left) showcases his certificate of appreciation presented by Student Chair Josh Ochs at the meeting at Pasadena City College on April 28.



From left to right: Randy Sparrazza, John Walsh, John Pazral, Arthur Cosgrove, Fred Kolb, and John Cerquone panelists at the Rochester Section Meeting.

explained the D-1 format and how it is incorporated into the company's facilities. A schematic of the hierarchy of formats used by VID Film was shown.

Berru concluded by advising students that they should look for an entry-level job in the industry and gave them a number to call for available job positions.—Josh Ochs, Student Chair

Rochester

April 22, 1998

Twenty people attended April's panel discussion on NAB98. The panel, moderated by Frederick Kolb, consisted of John Cerquone, Sony Electronics, Arthur J. Cosgrove and Randy Sparrazza, both of Eastman Kodak Co., Jan Pazral, WXXI-21, and John Walsh, WHEC-10. Each panel member delivered commentary focused on specific areas of interest to their organization.

Cosgrove reviewed the NAB presentations of hardware and software directly relating to the film/video interface, summarizing Telecine/DataCine and image processing of Philips, Cintel, Sony, Cinema Products, and CTM. He did the same for the variety of hardware and software dealing with film stabilization, scratches, dirt, grain, and restoration offered by Philips, Digital Vision, MTI, and Eastman Kodak Co.

Pazral used a set of video slide projec-

tions to aid in his explanation of block drawings and the rationale for station transition into DTV. He discussed multiplexing, station management challenges, and opportunities for improved station services.

Sparrazza discussed the continuing role of motion picture film in the television industry. He pointed out the values, flexibility, and importance of archiving images of value on film.

Walsh focused on the engineering issues around antennas and related issues of antenna space, or lack of, on existing area towers. He discussed the advantages of the flat panel phase array antennas which have been utilized in Europe, but are new to the U.S. These antennas will allow multiple stations digital RF transmission from the same tower. The ability to build an array of panels around a tower structure for a near-uniform radiation pattern and the value and potential of other area stations using this antenna site were highlights of the discussion. Walsh also said WHEC was learning that transmitter and antenna costs were only a part of the total dollars (~40 to 50%) that they have to spend to get on the air.

Cerquone discussed Sony's story on Digital Reality around open, flexible MPEG-2 based system products which he felt was finally coming into focus. He said the company will develop products for all formats including 480 Progressive and

1080 Interlaced Betacam versions in the shorter term through a 1080 Progressive HD Cam II within five years. Cerquone also discussed Sony's developed chip sets for compression and format conversion without having to go back to baseband.

A discussion on a variety of questions from the floor ranging from formats to cost of transition followed the panel discussion.—Arthur J. Cosgrove, (Secretary/Treasurer), Eastman Kodak Co.

Toronto

June 8, 1998

File servers, robotics, and a tour of Alliance Broadcasting ended the Toronto Section's activities for the 1997-98 schedule. The meeting highlighted Alliance's Gemini award-winning master control design. Mike Deming, Sony, and Chris Coghill, Alliance Broadcasting, presented the evening's papers before touring the facilities.

Deming has worked extensively in the area of file server implementation. His work, along with the Alliance installation, includes the implementation of the file server technology installed at CTV News 1. Despite his day-to-day work with file servers, Deming reminded the audience that videotape is far from dead. He based his argument on current costs and noted that a Megabyte of data costs 5 dollars a minute if it's stored in RAM, 15 cents if it's stored on hard disc, and .005 cents if it's stored on tape. Deming was adamant that tape would be around for some time to come. "Servers have advantages over tape," he said. "They allow for multiple plays of commercials, random access to online materials, and there are no videotape heads to replace."

From Deming's point of view compression algorithms are key to a digital operation. "Compression can be employed provided that the image quality is sufficient to handle the task," he said. Deming and Sony both believe that MPEG is the appropriate choice. "It's an MPEG world, and it's not going away," he said. "It has become a de facto standard." Deming sees MPEG as the appropriate technology because it's a toolkit. "It's an open scheme, a unified system, scaleable, and flexible. MPEG's are backwards compatible." This means that the MPEG-2 4:2:2 Profile@Main Level employed in the Betacam SX production format can conform to the 5 Mbit/sec MPEG-2 Main Profile@Main Level 4:2:0 compression employed in the on-air file server. Deming also noted that the MPEG toolkit will allow backward compatibility once the high-definition MPEG format becomes established. (MPEG-2 4:2:2 Profile@High Level).

Alliance Broadcasting's system employs the combination of a Sony Flexicart and

Videostore. The Videostore handles the insertion of commercials and other short form content on both Showcase and The History Channel. The Flexicart plays all long form material and GPI pulses between the two units trigger its operation. The Videostore has enough disks to hold 30 hours of the 5 Mbit/sec MPEG-2 Main Profile@Main Level 4:2:0 material. The Videostore employs a RAID (Level 3) configuration. This means that there would be no loss in image resolution if one of the drives in the unit went down. To encode video material onto the Videostore, a Sony VST1000 BitStream MPEG-2 encoding unit is employed. The software to control the system has been provided by Cyradis Technology Group, a Canadian company that has had a great deal of success in this field. Currently a streamer is used to back-

up the Videostore; however, Deming noted that the use of nearline storage devices is increasing as backup units.

Chris Coghill, Alliance, presented a paper called "Master Control Yesterday, Today, and Tomorrow." The paper provided an overview of how the operation of master control has changed since he started working in the television industry. Coghill has had direct experience in master control from the days of manual commercial playback through to operating Alliance's current installation. Coghill believes that even with the new file server technology, the operation of a master control is more difficult than when he first started. He noted that no more errors occur during commercial breaks since the introduction of the Videostore. Coghill is also happy to have the Flexicart, which can run the entire

operation should the Videostore require service. "Staff training is a problem," he said. "no one is used to running a file server and we've had to develop many of the skills in-house." Coghill has had to develop a paper-based back-up system in case of a major crash. "We've also had to develop new thinking in areas of (disk) space management. Our drives filled up quickly," he said.

Coghill observed that while there is less dubbing occurring since the introduction of the Videostore, new master control tasks such as V-chip and credit squeezes are adding to the operational complexity. "The ability of the operations personnel to be multitasking is a key requirement and much more knowledge is required by today's operations personnel," he concluded.

News

SMPTÉ Makes Plans for Fourth European Conference on Imaging Media

The 1998 European SMPTÉ Conference on Imaging Media will be held on September 17 to 21, 1998 during the Photokina Professional Media Event. The Society's three-day conference will be headed by its German Section and held at the Congress Centre, located east of the Cologne Fairgrounds.

The program will provide solutions for equipment manufacturers, professional users, and experts in the fields of research, teaching, and training. It will include five lecture sessions on the relations between modern information and communication technology and film and television technology. Session topics include progress in image display techniques, an overview on powerful tools for multimedia production and services, the newest developments in information and/or broadcast technologies, and professional results with consumer equipment. Applications of business TV will also be discussed.

Every session will conclude with a podium discussion. All presentations, given in German or English, will be simultaneously interpreted. A call for papers has been announced with an August 15 deadline.

The conference will also feature a social program providing additional opportunities for communication between all national and international conference participants.

For more information contact SMPTÉ

Germany, c/o Rolf van Kaldenberg, P.O.B. 1351, D-29306 Winsen/Aller, Germany, tel: +49 (0) 5143-935 55, fax: +49 (0) 5143-935 56, e-mail: 102354.270@compuserve.com.

Relative Strangers Walks Away with 1998 SMPTÉ Creative Award

Tim Richter was awarded the 1998 SMPTÉ Creative Award at the Australian Film Television and Radio School (AFTRS) graduation ceremony in May 1998.

Richter won the award for his use of front screen projection and wide tricks and techniques in *Relative Strangers*. The other ten contestants submitted excellent work as well, which made it difficult for the SMPTÉ and AFTRS judges to select a winner. Therefore, two additional prizes were awarded: Andrew Tamandl was recognized for his work using 3-D animation tools titled *Has Beans*. Damon Escott was also selected for his use of superb in-camera effects to skillfully shoot *Half Mongrel*.

IESNA Annual Conference Set for San Antonio

The Illuminating Engineering Society of North America (IESNA) Annual Conference is set for August 10-12, 1998 in San Antonio, TX at the Marriott Rivercenter Hotel. This three-day event is an educational forum for the lighting industry. Papers presentations will focus on the latest research in design theory,

measurements and controls, photometry, daylighting, energy, ballasts, and fiber optics. Educational seminars will cover a wide range of topics including residential lighting, marketing strategies for retail, lighting sites on the Internet, security lighting, and deregulation.

William Stevens Tabor, Jr., Princeton Development Corp. will present the keynote address titled "Where is Your Energy Coming From?" on Monday, August 10. IESNA will also present its Medal, Marks, and Distinguished Service and Fellow awards at a luncheon honoring outstanding individuals who have furthered the art and science of lighting or advanced the society's goals and mission.

The program's 25th anniversary will be celebrated at the International Illumination Design Awards luncheon on Tuesday, August 11. Lighting designers will be recognized for their outstanding and original lighting design projects from this year's program.

New products and services will be showcased in a Progress Report presentation followed by tabletop exhibits by manufacturers in the lighting industry on Wednesday, August 12.

Prior to the conference, two 3-hour IESNA CEU accredited workshops titled "Lighting is the Finish" and "Software Solutions" will be conducted.

The full conference fee is priced at \$485 for members and \$525 for nonmembers (meals included); full technical fee is set at \$380 for members and \$400 for nonmembers; daily fee is priced at \$140 for members and \$160 for nonmembers; and