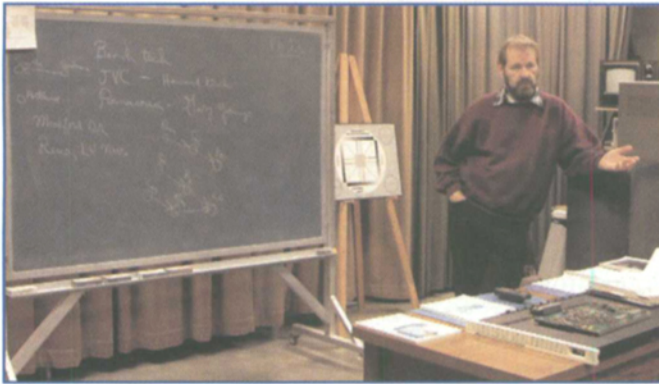


Section Meetings



Charles Hintz lecturing at the Napa Valley College meeting in April.

Napa Valley College March 15 and April 3, 2001

The 2001 graduating class was honored to have Charles Hintz lecture on digital audio, digital video, and VTR dynamic tracking. Hintz is currently chief engineer of media technology services at Cal State Hayward.

The presentation was given on two days, March 15 and April 3. It began with a description of analog signal quantizing, taking noise floor and headroom into consideration. After explaining D-to-A and A-to-D using flash conversion and look-up tables, Hintz moved on to a review of color theory, which served as the basis for an explanation of 4:2:2 compression. The eye is easily fooled and MPEG compression principles exploit that fact by removing spatial and temporal redundancies. He described the use of I, B, and P frames, and discrete cosine transformation as tools to accomplish video compression.

The subject of dynamic tracking was highlighted on Hintz's second visit on April 3. He spoke of Betacam techniques, step-up and step-down of the

RF envelope, head travel, and error correction and concealment.

Both lessons were beneficial to the students and Chapter 11 would like to thank Hintz for the knowledge he left us.—Greg Martin, Secretary

Nordic March 27, 2001

The event was an excursion to a newspaper house, Sanomatalo, owned by SanomaWSOY, a diversified media establishment consisting mainly of newspaper and publishing companies. Sanomatalo, a nine-story steel and glass building, houses editorial offices for three newspapers, facilities for audiovisual and multimedia publishing, television cable and terrestrial transmission, and retail sales of books.

The meeting included interesting oral and visual presentations and a tour of the building. Newspapers are edited on personal computers networked in groups, and the completed pages are conveyed to printing houses in and outside Helsinki via optical cables. Numerous questions were asked and participants noted that the newspaper editing offices in the com-

puter age are very similar to television newsrooms.—Otto E. Mikkela, Secretary/Treasurer

Nordic April 24, 2001

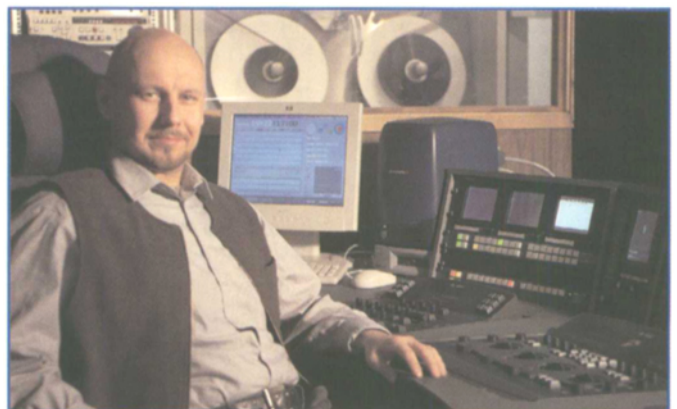
The meeting was held at a fairly new post-production house, Frameimage Oy, which specializes in color grading. A short history of the company was given, followed by a tour of the premises.

Frameimage Oy was founded in 1997 with Marko Terävä as its first employee. He was the only colorist at the time and worked almost two shifts each day. The second employee, Adam Vidovics, a former photographer, joined in April 1998, and Pasi Mäkelä, a second-generation color grader, is now in training. Terävä is also one of the company's three owners and planned the installations. He was trained at the Finnish Broadcasting Co. (YLE), where he served as a color grader. In 1994, he participated in the implementation of YLE's first digital grading unit, based on 4:4:4 technology that uses D-1 and Betacam recorders. This was the best unit in

Finland at the time, serving YLE and other film and video producers. (Changes in the 1980s and 90s sent quality-minded customers to Stockholm, Sweden, and this unit brought them back to Finland—but only for a few years. After the mid-1990s, better quality was again achieved elsewhere [Sweden and Denmark]).

Frameimage Oy was created to bring business back to Finland. The first unit, designed for conventional television quality, began operation only a few months after the company was founded. It includes a Philips Quadra Vision 4:4:4 film scanner and a DaVinci Renaissance color corrector. A second unit, installed in February 2001, is equipped for HDTV and high-quality film post-production. It houses a Philips Spirit Datacine that handles 16mm, 35mm, and super 35mm films; a DaVinci 2K color corrector; and Philips Voodoo HDTV, Sony HD-CAM, D-1, digital Betacam, Betacam SP, and VHS recorders. A Philips VS4 is used for noise and scratch removal.

Customers are mainly film and commercial film producers. Work is divided in film-to-tape (normal



Marko Terävä in the new DaVinci color correction suite of Frameimage Oy, site of the Nordic Section meeting in April.

grading, which can be finalized by tape-to-tape grading), one-light transfer (for offline editing), best-light transfer (intermediate grading), and tape-to-tape (final grading). The company also produces digital masters for DVD production and uses camera negatives or duplicate master positives as starting points. The normal grading of a feature film takes about 30 hr, while a long DVD or television film takes about 15 hr. Grading of motion picture for high-quality cinema presentation is more demanding and nearly 40 hr are spent to achieve top quality. There are now three commercial color-grading units in Finland. Frameimage Oy operates the two described above, and Digital Film Finland Oy operates the third, which was visited by the Nordic Section in October 2000.

The demonstrations created a lively discussion.—Otto E. Mikkela, Secretary/Treasurer

Ohio March 27, 2001

The meeting at Ozone Studios in Columbus was combined with the Central Ohio area Chapter 52 of the Society of Broadcast Engineers. The first guest speaker was Elizabeth Wolfe, WBNS-DT, the CBS digital television affiliate in Columbus. Wolfe discussed the station's recent pioneering effort to multicast four basketball games from CBS feeds of the NCAA basketball tournament coverage. This is a first for the station; it achieved a two-game transmission during last year's coverage.

DTV multicasting allows the Central Ohio digital television viewing audiences to select any of the

four games by using a remote control to choose from the available digital channels: 21.1, 21.2, 21.3, and 21.4, etc. The analog station on Channel 10 sends out the conventional main CBS feed for those watching just one game on regular NTSC receivers. Attendees were amazed at this feature, one of many available to a DTV broadcaster, as a result of the new ATSC digital broadcast standard mandated by the FCC in 1996.

Wolfe pointed out that the software upgrades that make it possible to transmit all four games, were handwritten and loaded into the hardware by the station's engineering staff, prior to its implementation at the plant. She presented a video demonstrating some of the preparation that goes into multicasting. All agreed that multicasting of the basketball games was truly a pioneering marvel of engineering, as well as an outstanding achievement by the station's staff.

Michael Taylor, Sony Broadcast & Professional Co., followed with a discussion of current and future digital videotape standards in the broadcast television industry. He pointed out that some of the high-end analog tape gauges now used by many broadcasters on the air have a video appearance similar to the basic (non-HDTV) digital video broadcast today, but when a full HDTV signal is played back along with both, the differences are easily discernable. He predicted that the digital videotape of the future will be the same workhorse in the DTV broadcast industry as analog and basic digital tape have been in the past. It's a reusable format for automated commercial delivery, network time zone delays,

studio and location original production, and the fast and economical editing of all types of television programs, as well as a reference for motion picture/editing, commercials, news, specials, etc. Digital videotape of the future will also be required to carry signals for ancillary services such as metadata (data about data) that can provide a television programming guide display service. Current and future DTV broadcasters will need to record and play back state-of-the-art digital audio such as Dolby Digital 5.1 soundtracks, per the new FCC-mandated ATSC broadcast standard. Digital videotape participation will be a necessary link in the DTV broadcast chain.

Michael Delgrosso, Ozone Productions, then gave a very interesting presentation on the complexities of creating a full digital/HDTV production. He pointed out that the principal photography is sometimes shot in full HD rather than 35mm motion picture film, in order to get the sharpest and highest possible video signal resolution on tape at lower cost, yet maintain the ability to edit and add special effects, graphics, etc., through computerized nonlinear editing. This can then be released to both digital and analog television broadcasters, as well as to industrial clients using analog format.

The meeting concluded with a tour of the audio facilities, which have the capability of full Dolby Digital 5.1 audio mixing within an approved THX audio theater mixing facility. DTV broadcasters will need to consider and utilize this for full deployment of the digital audio soundtrack broadcasts of the future.—Gene L. Batey, Secretary/Treasurer

Rochester March 13, 2001

Thirty spectators squeezed into a former handball court in the new WHEC-TV annex to attend the program titled, "Changeover to the 16:9 World: Transition and the Solutions Offered." Chaired by Section Manager Kyle Luther, The HD Group, the meeting began with a functional display of the Panasonic DVCPRO HD line.

Steve Romain, Ross Video Ltd. then addressed the dilemma of the 30-year-old, 4:3 legacy footage in dual aspect ratio production. He discussed the new "aspectizer," a hardware/software, high-quality aspect ratio converter with 1/164 pixel resolution, that performs internal conversion on either the input or output of the ITU-R BT.601 switcher. Both original and converted images are available within the switcher concurrently, allowing simultaneous 4:3 and 16:9 production.

Romain discussed station economics, outlining the problem facing broadcasters when a DTV channel must be added at minimum cost in equipment with no increase in operating expense. He cited the problem of juggling sources, e.g., production truck feeds or home video footage, in the larger scheme of combining 4:3 and 16:9 in realtime. Solutions include cropping the 4:3 or using "curtains" on a 16:9 display or choosing a 14:9 letterbox that almost fills the screen, "windowboxing" with black bars on all sides, or pan/scan to fill the picture height.

The meeting concluded with a demonstration of the Synergy Series DTV switcher by Romain and demo artist Grant Loft-

huse.—John P. Weiksnar, Manager/Membership Chair

Rocky Mountain April 29, 2001

Over 30 attendees were on hand for the meeting, which took place in an informal venue offered by various stations set up to demonstrate streaming video and a variety of tools to create CD-ROM, DVD, and live streaming applications for the Web. Each station was manned by personnel from Digital Metropolis who discussed file formats and bit rate manipulation, authoring, compression tools, and shooting and editing for streaming formats. Hosts for the evening were Jerry Sexton and John Immo, Digital Metropolis.—Rome Chelsi, Section Chair



John Fodek, Teletstream, assists at Digital Metropolis exhibition for Rocky Mountain Section in April.

Russia 2000

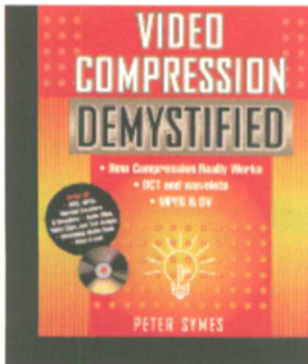
Section meetings were held in the fall of 2000. The topic of the first was "Features of Visual Perception of TV Image Hidden Frame and Procedure of its Detections by Hardware." S. R. Neztsova and G. G.

Demirchoglyan discussed the features of subsensory perception of hidden frames (the so-called 25th frame) in a television image. They have developed an electronic image analyzer capable of detecting the presence of similar hidden insertions and defining their information characteristics.

In December, speakers A. S. Mkrumov and L. A. Sevalnev presented "Multi-channel TV Sound in Secam D. K. TV Systems." At the present time multi-channel sound is used in digital television broadcasting systems with bit-rate reduction, according to MPEG-2/DVB standards, providing for up to six sound channels. However there is still a demand for the development of multi-channel sound for SECAM with D and K air emission standards. Studies have shown that the Musicam system is optimal for coding to multichannel television sound signals, as it provides for the subjective sound of a compact disk at the audio data rate of 256 kbits/c per stereo pair.—N. Alekseeva, Secretary/Treasurer

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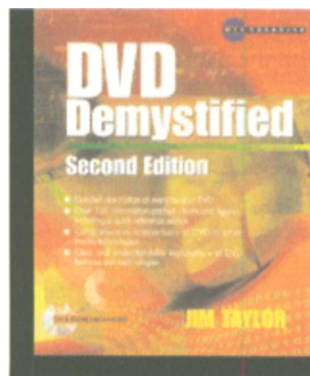
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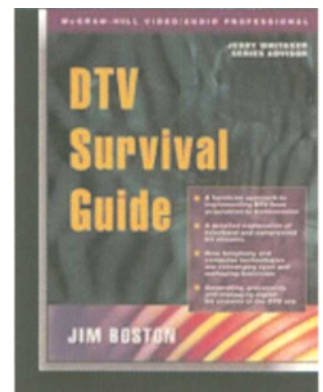
and audio considerations. The CD-ROM contains an MPEG encode with 30-sec video samples and ready-to-use JPEG wavelet, fractal compression algorithms.

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