Section Meetings

Rocky Mountain
October 2006

The combined efforts of the Rocky Mountain Section and SBE Chapter 48 provided the third in a series of all-day technical conferences for members. The past conferences provided presentations on HD television and IT for broadcast; however, this year's focus was audio for the home, live production, and broadcast.

The first presentation on "Audio System Gain Structure, Levels, and Metering" was given by John Murray, owner of ProSonic Solutions and senior technical editor of *Live Sound International* magazine. He discussed level standards such as dBm, dBV, dBu, dBFS, and dBVU and their application to recording and playback; compression used for recorded media to ensure adequate loudness without noticeable signal compression; and gain structure of recording and playback systems.

Walt Stinson, president of Listen Up, presented Emerging Trends in High-End Audio Systems Including Digital Streaming, Compression Schemes, and Internet Radio. Stinson discussed trends in state-of-the-art home theater design, high-end technique and problems of streaming digital audio from computer to music systems—from internet, internet radio, network attached storage, new developments in audio and video servers for home use, and the impact of various compression schemes on sound quality in high-end music and theater systems.

Mike Babbitt, customer support manager at Dolby Laboratories, discussed program loudness measurement, analysis and control, and the use of the Dolby LM100 broadcast loudness meter to gather and analyze loudness data.

Cris Alexander, director of engineering at Crawford Broadcasting, gave an update on HD radio, which has progressed in the past few years. Along the front range, 13 FM and 13 AM stations now transmit HD-R signals, and many of the FM signals include multicasts. Alexander discussed the present and future of receivers, as well as broadcast products such as transmission and monitoring equipment.

The last speaker, Frank Foti, founder and president of Telos Systems/Omnia Audio, discussed audio processing in transition. As broadcasting moves closer to a full digital transmission system, the requirements for audio processing have changed dramatically. There is an impact on both FM and AM within the traditional analog channel, as well as the digital path. Foti provided comprehensive insight on the implementation of audio processing in a digital broadcast facility.

Mike Babbitt, Dolby Labs.

Thanks to Burst Communications, Miranda Corp., Avid Technology, SMPTE, and Rocky Mountain PBS, for the generous underwriting of the program.—*Rome Chelsi, Section Chair*

Rocky Mountain
November 2006

The Section meeting was held on November 8, at KCNC—CBS studios in Denver, CO, with 16 in attendance.

Al Jason and Warren Bottorff of Dielectric Communications provided a discussion and an overview of antenna technology for HD radio and the DTV transition. The session included a presentation of signal-combining techniques, antenna design, and its effects on transmission, as well as signal propagation resulting from various mechanical and electrical design criteria. Dielectric is a full-service broadcast supplier involved in the design, engineering, and manufacture of broadcast antennas for DTV and NTSC (UHF and VHF); FM antennas, combiners, switches, diplexers, transmission lines, waveguides, and dehydrators.

Thanks to David Layne, vice-president of engineering, KCNC, for use of the studio facilities.—*Rome Chelsi, Section Chair*

Rochester
October 2006

The Section meeting was held on October 24, at the Eastman Kokak Co., in Rochester, NY. Art Cosgrave, Past Rochester Section Chair and SMPTE Governor, gave a review of the new broadcast technologies shown at IBC2006, which he attended in Amsterdam on behalf of Kodak.

The support for a broad range of display technologies, from 2-in. screens on handheld devices, to 600-in. screens for eCinema (as Digital Cinema is known in Europe) was an underlying theme this year, with the slogan, "Here There, and Everywhere."

Teranex

The introduction of HDTV is not as advanced in Europe as it is in the U.S. On the basis of empirical testing, the EBU has recommended 720p/50 as the best current HDTV emission format, 1080p/50 as the potential next-generation HDTV emission format, and 1080p/50 as the desirable next-generation HDTV production format.

Electronic cinematography cameras from seven manufacturers were shown, including a new camera for ultra-high-definition television (UHDTV) (32 megapixels) from Japan Broadcasting Corp. (NHK) and the "Red Camera" 4K prototype. Although all cameras were selling on the market, Cosgrave reported that they were still struggling in competition with 35mm film, in terms of dynamic range, speed, bit-handling, and archiving.

A compliance testing process is being developed for digital cinema. An international exhibitor group, which includes 15 organizations, is also in the process of creating a certification program for DC equipment.

Storage technologies continue to advance, and holographic recording prototypes with a capacity of 300 Gbytes on a 5.25-in. disk and transfer at 160 Mbits/sec will be available by the end of 2006, from In-Phase Technologies and Maxell. Media stability does not seem to be a high priority, with a product shelf-life of two years and archival life of 30 plus years, quoted on the basis of limited stress testing. There are concerns, however, about interchange of both hardware and software.

Art Cosgrave presents a report on IBC, at the Rochester Section meeting in October.

Keisoku Giken showed a solid-state hard-disk RGB recorder with a capacity of 3.5 Tbytes or 18 min of uncompressed UHDTV.

Internet protocol distribution of television (IPTV) deployment by Telcos is sluggish in Europe, except in France, Italy, and parts of Asia. Microsoft's TV IPTV edition integrated software platform for the delivery of broadcast-quality video and integrated TV services over broadband networks is being tested by Alcatel in France.

Small-screen, low bit rate services including hand-held digital television-receiving devices are being developed for the European DVB-H standard, with tolerance to moving reception devices. Smaller screens require fewer image samples such as 176 x 144 samples per frame, lower bit rates, and potentially lower temporal rates.

The BBC Research & Development Department showed DIRAC pro compression technology using wavelets, motion compensation, and arithmetic coding for a wide range of resolutions from QCIF (176 x 144) to HDTV (1920 x 1080).—*Alan Masson, Secretary/Treasurer*

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Washington, D.C.
September 2006

Members and guests gathered at the National Geographic Society (NGS) headquarters on September 21, for a presentation on the digital archiving system, built and operated by the Society's Digital Media Group (DMG). The system is overseen by A. Cody Claxton, the DMG's director of video and archive technology, who presented an overview of the system architecture.

The DMG archiving system consists of several user workstations for ingest, clip review, and output, connected to an SGI disk storage array for nearline access, and a Sony Petasite as the long-term datatape archive. Servers and software from VideoBank operate the database, which controls input and output operations, tracks video files and metadata, and provides web proxies for customer viewing.

Archival tapes in various analog and digital formats—both original sources and program masters—are ingested and simultaneously converted into multiple digital file formats for use in-house and via the internet. Various compressed and uncompressed formats are used for viewing and delivery of footage to NGS departments and stock-footage customers. The DMG archiving system currently operates in standard definition; high-definition will go online in early 2007.

After the presentation, attendees had the opportunity to tour the facilities and discuss further issues about system design and operations with Claxton and NGS staffer Scott Galczynski, as well as Lou Siracuson, Jr., and Tamas Nagy of VideoBank.

Thanks to National Geographic for their hospitality and to VideoBank for sponsoring the excellent refreshments.—*Eric Wenocur, Section Manager/Program Chair*

Cody Claxton discusses the NGS archive system with Ken Miller of Communications Engineering Inc.