

The DVB specification group (the specifying body of the new European standards for 11/12-GHz digital video broadcasting by satellite, by cable, and by terrestrial networks) has defined a standard for cable segment using multilevel (nominally 64) QAM modulation within 8-MHz channels. The HD-SAT signal respects all aspects of the standard, with an adaptation of the roll-off factor, which is halved with respect to DVB-C. A sharper roll-off factor is necessary to increase the symbol rate within the constraints of an 8-MHz channel, in order to be able to carry the 45 Mbit/sec payload required for the HD-SAT HDTV transport stream. The sharper roll-off implies

an increased performance of the equalization that has been successfully realized.

The joint nature of the exhibit in Montreux (Fig. IO-5) allowed for this very effective demonstration of interworking between digital services and media, especially the common receiver that was used to decode and display television signals from SDTV to HDTV, from stereo to 5-channel surround sound, over satellite, over a UHF terrestrial channel, and over the Montreux cable network.²

The very real interworking that was demonstrated, both intersystem and between media, was observed by professional visitors from all parts of

the world, as well as by representatives of the European, American, and world standardization bodies. ITU-R has recently included these achievements into its new report on the introduction of BSS (HDTV) systems.

References

1. Stoll, G., "MPEG Audio Layer II: A Generic Coding Standard for Two-Channel and Multichannel Sound for DVB, DAB, and Computer Multimedia," *Proceedings of the International Broadcast Convention*, Amsterdam, Sept. 8-12, 1995.
2. Oliphant, A., and L. Combarel, "Digital Broadcasting Demonstrations by HD-SAT and DTTB at Montreux '95," *EBU Technical Review*, 264:43-49, 1995.

AMPAS Presents Scientific and Technical Academy Awards for 1995

Arthur Hiller, president of the Academy of Motion Picture Arts and Sciences, has announced the recipients of the 1995 Awards for Scientific and Technical Achievements. The presentations were made on March 2, 1996, at the Regent Beverly Wilshire Hotel as part of the 68th Academy Awards.

The Scientific and Technical Awards were voted on by the Academy's Board of Governors, based upon recommendations from the Scientific and Technical Awards Committee, chaired by Edmund M. DiGiulio. They are given for devices, methods, formulas, discoveries, or inventions of special and outstanding value to the arts and sciences of motion pictures and which also have a proven history of use in the motion-picture industry.

The awards may be bestowed in any of three classifications: the Academy Award of Merit, presented as an Oscar statuette, is given for basic achievements that have a definite influence upon the advancement

of the industry; the Scientific and Engineering Award, an Academy plaque, is granted for those achievements exhibiting a high level of engineering as well as an importance to the progress of the industry; and the Technical Achievement Award, an Academy certificate, is offered for those accomplishments that contribute to the progress of the industry. This year, no Academy Awards of Merit were given.

The recipients of the Scientific and Engineering Awards are:

- Arnold and Richter Cine Technik for the development of the Arriflex 535 series of cameras for motion-picture cinematography. The Arriflex 535 camera system allows, for the first time, fully intelligent computer control of the operation and functions of a sync-sound production camera of innovative design.

- Digital Theater Systems for the design and development of the DTS digital sound system for motion-picture exhibition. Digital sound systems have brought increased dynamic

range, clarity, broader frequency response and greater sound reality to enhance the total motion-picture presentation.

- Dolby Laboratories for the design and development of the SR-D digital sound system for motion-picture exhibition.

- Sony Corp. for the design and development of the SDDS digital sound system for motion-picture exhibition.

- Howard Flemming and Ronald Uhlig for their pioneering work leading to motion-picture digital sound.

- Ronald Goodman, Attila Szalay, Stephen Sass, and SpaceCam Systems, Inc., for the design of the SpaceCam gyroscopically stabilized camera system. This gyroscopically-stabilized camera system can be utilized on helicopters, boats, and camera cars. It allows substantially increased maneuverability of the camera support vehicle and has expanded the boundaries and applications of stabilized cinematography.

- Colin Mossman, Joe Wary, Hans

Leisinger, Gerry Painter, and Deluxe Laboratories for the design and development of the Deluxe Quad Format digital sound printing head. This device is capable of simultaneously printing all-digital sound-on-film formats and a time code control track.

- David Gilmartin, Johannes Borggrebe, Jean-Pierre Gagnon, Frank Ricotta, and Technicolor, Inc., for the design and development of the Technicolor contact printer sound head.

- Iain Neil for the optical design; Rick Gelbard for the mechanical design; Eric Dubberke for the engineering; and Panavision International, L.P., for the development of the Primo 3:1 zoom lens. The high contrast and absence of flare, along with its ability to provide close focusing and maintain constant image size while changing focus, make the Primo 3:1 zoom lens truly unique.

- Martin Mueller for the design and development of the MSM 9801 Imax 65mm/15 perf production motion-picture camera. The MSM 9801 represents a new plateau in the development of Imax format cameras. With features such as a 180° shutter, superior viewing, and ease of loading, this camera is light enough for Steadicam use yet has all the abilities of an MOS production camera.

- Alvy Ray Smith, Ed Catmull, Thomas Porter, and Tom Duff for their pioneering inventions in digital image compositing. This groundbreaking methodology has significantly influenced the development of the compositing of images using digital techniques.

The following were honored with Technical Achievement Awards:

- Pascal Chedeville for the design of the L.C. Concept digital sound system for motion-picture exhibition.

- Jim Deas of the Warner Bros. Studio Facility for the design and subsequent development of an Automated Patchbay and Metering System for motion-picture sound transfer and dubbing operations. This system eliminates the manual patchcord approach in favor of a fully automated, solid-state switching matrix, greatly increasing efficiency and reliability.

- Clay Davis and John Carter of Todd/AO for their pioneering efforts in creating an automated patchbay system for motion-picture sound transfer and dubbing operations.

- Al Jensen, Chuck Headley, Jean Messner, and Hazem Nabulsi of CEI Technology for producing a self-contained, flicker-free color video-assist camera. This device can be used with virtually any professional motion-picture camera and provides color or black-and-white video-assist images that are flicker-free. Switchable options allow for image manipulation and increased low-light sensitivity.

- Peter Denz of Präzisions-Entwicklung Denz for developing a flicker-free color video-assist camera.

- David Pringle and Zhang Yan for the design and development of Lightning Strikes, a flexible, high-performance electronic lightning effect system. Using a low-pressure, long-arc xenon light source, this system produces programmable, precisely-timed realistic lightning effects, as well as other effects where accurate control of a very bright light for a brief duration is required.

- BHP, Inc., for their pioneering efforts developing digital sound printing

heads for motion pictures. BHP-engineered components are integral to the state-of-the-art digital sound film printing systems in use today.

- Joe Finnegan for his pioneering work in developing the Air Ram for motion-picture stunt effects. This pneumatically-powered device was the first practical hinged platform providing cam-controlled, progressive acceleration for improved safety in propelling stunt persons. The Air Ram was the first device to be made small enough to be easily installed and concealed.

- Gary Demos, David Ruhoff, Dan Cameron, and Michelle Feraud for their pioneering efforts in the creation of the Digital Productions digital film compositing system. This early work illustrated and introduced some of the capabilities that digital compositing techniques could provide feature motion-picture production.

- Douglas Smythe, Lincoln Hu, Douglas S. Kay, and Industrial Light and Magic for their pioneering efforts in the creation of the ILM digital film compositing system.

- Computer Film Co. for their pioneering efforts in the creation of the CFC digital film compositing system.

- Toulouse University Genie Des Systemes for the concept; Kodak Pathe CTP CINE for the prototype; and Eclair Laboratories for the development and further implementation of the Toulouse Electrolytic Silver Recovery Cell. This economical and easily maintained, single-step silver recovery system eliminates the need for subsequent treatment of the effluent to meet current environmental standards.

— Aileen Moroney