

## An Engineering Perspective

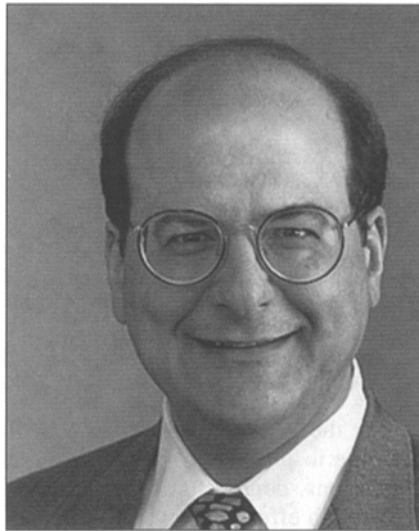
William C. Miller

Engineering Vice-President

By any measure, this has been an extraordinary year for SMPTE Engineering. Our Technology Committees wrote, revised, or reaffirmed 66 engineering documents, certainly the largest annual total I can recall. These documents include 20 American National Standards, 38 Recommended Practices and 8 Engineering Guidelines, which are all listed at the end of this report. The 1998 workload will be equally large, as we continue to grapple with the requirements of widescreen television production, and compressed, packetized digital transmission.

Last year, I discussed the importance of the convergence of computers, communication, and entertainment. I noted the formation of the EBU/SMPTE Task Force on the Harmonization of Standards for the Exchange of Program Material as Bitstreams. This Task Force, whose 80 members include representatives from all of the industries involved, hailing from three continents, issued its first report on User Requirements on schedule at NAB '96. We are currently studying how to meet those user requirements, and expect to have a final report to disclose at NAB '97. SMPTE will present a day-long tutorial on the findings of the Task Force as part of the technical sessions at the convention. The co-chairmen of the Task Force are Horst Schachlbauer, IRT, and S. Merrill Weiss, SMPTE's Engineering Director for Television.

I also noted in last year's report that standards were of little use if they were inaccessible. I said we had begun releasing collections of popular standards, grouped by topic. These



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collections have been quite successful, indeed, as we sold every copy of the HDTV and Digital TV standards books we brought to NAB.

I also committed to making SMPTE's Standards, Recommended Practices, and Engineering Guidelines available on CD-ROM and am pleased to report we will do so during the first half of 1998. There will be two disks, one for film and the other for television. The documents will be in Adobe Portable Document Format (Acrobat), so they can be viewed and printed on virtually any computer system. We will also include documents that have been released for trial publication. You will receive further information when we have worked out the details.

SMPTE's web site remains our primary means of reaching the public at large. We are expanding the information available on the site, particularly as it pertains to our Technology Committees. You can now find meet-

ing schedules and locations, a list of documents out on ballot, and online ballot response forms for Committee and Working Group members. We are also experimenting with trial publication of documents on the web site. A review of the design of the site is under way as we plan to make it more understandable and easier to use.

The Society is in the process of setting up a Registration Authority, which is an organization that registers identifiers for a particular purpose so that the same identifier is never used twice within a certain context. We have been designated to act as Registration Authority for ATSC Unique Program Identifiers (U-PIDs), for SMPTE-administered Universal Labels, and for MPEG Format Identifiers. The latter designation has been ratified by the Joint Technology Council JTC-1 of ISO and IEC, and has been forwarded to ISO and IEC for endorsement. You will hear more of this important activity in the months to come.

I am now completing my first term in office, to which I was appointed by the Board of Governors. I want to thank all of you for the help you have given me, both directly and through your support of the Society's Engineering activities, and for the honor of being chosen to lead those activities for another term.

I want to thank particularly the more than 700 volunteers who actively participate in our Technology Committees and their subgroups, and the members of the engineering department at Headquarters. It is through their efforts that we have accomplished what we have.

The following is a list of the documents mentioned in the beginning of this report.

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## New, Reaffirmed, or Revised SMPTE Standards, Recommended Practices, and Engineering Guidelines Approved from November 1, 1996 to October 27, 1997

### American National Standards (20)

- ANSI/SMPTE 21M-1997, Video Recording — 3/4-in Type E Helical Scan — Records
- ANSI/SMPTE 22M-1997, Video Recording — 3/4-in Type E Helical Scan — Cassette
- ANSI/SMPTE 35M-1997, Television Analog Recording — 1/2-in Type G — Cassette and Tape
- ANSI/SMPTE 40-1997, Motion-Picture Film (35-mm) — Release Prints — Photographic Audio Records
- ANSI/SMPTE 59-1997, Motion-Picture Film (35-mm) — Camera Aperture Images and Usage
- ANSI/SMPTE 169-1997, Motion-Picture Film (35-mm) — Perforated 8-mm Type S, 2R-1664 (1-0)
- ANSI/SMPTE 249M-1996, Television Analog Recording — 1/2-in Type M-2 — Records
- ANSI/SMPTE 250M-1996, Television Analog Recording — 1/2-in Type M-2 — Tapes and Cassettes
- ANSI/SMPTE 251M-1996, Television Analog Recording — 1/2-in Type M-2 — Electrical Parameters of Video, Audio, Time and Control Code and Tracking Control
- ANSI/SMPTE 252M-1996, Television Analog Recording — 1/2-in Type M-2 — Pulse Code Modulation Audio
- ANSI/SMPTE 256M-1996, Television — Specifications for Video Tape Leader
- ANSI/SMPTE 259M-1997, Television — 10-Bit 4:2:2 Component and  $4f_{sc}$  Composite Digital Signals — Serial Digital Interface
- ANSI/SMPTE 293M-1996, Television — 720 x 483 Active Line at 59.94-Hz Progressive Scan Production — Digital Representation
- ANSI/SMPTE 294M-1997, Television — 720 x 483 Active Line at 59.94-Hz Progressive Scan Production — Bit-Serial Interfaces
- ANSI/SMPTE 295M-1997, Television — 1920 x 1080 50 Hz — Scanning and Interfaces
- ANSI/SMPTE 296M-1997, Television — 1280 x 720 Scanning, Analog and Digital Representation and Analog Interface
- ANSI/SMPTE 297M-1997, Television — Serial Digital Fiber Transmission System for ANSI/SMPTE 259M Signals
- ANSI/SMPTE 298M-1997, Television — Universal Labels for Unique Identification of Digital Data
- ANSI/SMPTE 299M-1997, Television — 24-Bit Digital Audio Format for HDTV Bit-Serial Interface
- ANSI/SMPTE 300-1997, Motion-Picture Color Print Film (35-mm) — Manufacturer-Printed Latent Image Identification Information
- SMPTE RP 14-1997, Plotting Data from Sensitometric Strips Exposed on Type Ib (Intensity Scale) Sensitometers
- SMPTE RP 15-1997, Calibration of Densitometers Used for Black-and-White Photographic Density Measurements
- SMPTE RP 17-1964 (R1997), Photographic Recording Technique for Measuring High-Speed Camera Image Unsteadiness
- SMPTE RP 21-1997, Dimensions of 35- and 70-mm Motion-Picture Rewind Spindles
- SMPTE RP 24-1997, Dimensions for 16-mm Motion-Picture Camera Spindles
- SMPTE RP 34-1997, Dimensions for 16-mm Motion-Picture Projector Reel Spindles
- SMPTE RP 39-1993, Specifications for Maintaining an Emulsion-In Orientation on Theatrical Release Prints (Reaffirmed 1997)
- SMPTE RP 53-1993, Scene-Change Methods for Printing 35-mm, 16-mm and 8-mm Type S Motion-Picture Film (Reaffirmed 1997)
- SMPTE RP 55-1997, 8-mm Type S Sprocket Design
- SMPTE RP 63-1997, Specifications for Sound-Focusing Test Film for 16-mm Audio Reproducers, Photographic Type
- SMPTE RP 67-1997, Specifications for Buzz-Track Test Film for 16-mm Motion-Picture Audio Reproducers, Photographic Type

### SMPTE Recommended Practices (38)

- SMPTE RP 12-1997, Screen Luminance for Drive-In Theaters

- SMPTE RP 68-1997, Specifications for Buzz-Track Test Film for 35-mm Motion-Picture Photographic Audio Reproducers
- SMPTE RP 69-1997, Specifications for Scanning-Beam Uniformity Test Film for 35-mm Motion-Picture Audio Reproducers
- SMPTE RP 70-1997, Specifications for Flutter Test Film for 16-mm Audio Reproducers, Photographic Type
- SMPTE RP 73-1992 (R1997), 8-mm Type R (Regular 8) Sprocket Design
- SMPTE RP 74-1992 (R1997), 16-mm Sprocket Design
- SMPTE RP 75-1997, Specifications for Flutter Test Film for 35-mm Studio Audio Reproducers, Magnetic Type
- SMPTE RP 76-1997, Specifications for Flutter Test Film for 16-mm Audio Reproducers, Magnetic Type
- SMPTE RP 78-1997, Specifications for Azimuth Test Film for 16-mm Audio Projectors, Magnetic Type
- SMPTE RP 83-1996, Specifications of Tracking-Control Record for 1-in Type B Helical-Scan Television Analog Recording
- SMPTE RP 84-1996, Reference Carrier Frequencies and Preemphasis Characteristics for 1-in Type B Helical-Scan Television Analog Recording
- SMPTE RP 91-1997, Specifications for 70-mm Projector Alignment and Screen Image Quality Test Film
- SMPTE RP 97-1997, Specifications for Flutter Test Film for 35-mm Audio Reproducers, Photographic Type
- SMPTE RP 113-1996, Supervisory Protocol for Digital Control Interface
- SMPTE RP 115-1997, Dimensions of Photographic Control and Data Record on 35-mm Motion-Picture Release Prints
- SMPTE RP 122-1993, Dimensions of Cemented Splices on 8-mm Type S Motion-Picture Film, Projection Type (Reaffirmed 1997)
- SMPTE RP 123-1997, Dimensions of Tape Splices on 8-mm Type S Motion-Picture Film, Projection Type
- SMPTE RP 128-1997, Specifications for Audio Level and Multifrequency Test Film for 70-mm Striped Six-Track Release Print Audio Reproducers, Magnetic Type
- SMPTE RP 138-1996, Control Message Architecture for Digital Control Interface
- SMPTE RP 139-1997, Tributary Interconnection for Digital Control Interface
- SMPTE RP 148-1987, Relative Polarity of Stereo Audio Signals (Reaffirmed 1997)
- SMPTE RP 149-1992 (R1997), Dimensions of Transverse Cemented Splices on 16-mm and 8-mm Type R Motion-Picture Film
- SMPTE RP 160-1997, Three-Channel Parallel Analog Component High-Definition Video Interface
- SMPTE RP 164-1996, Location of Vertical Interval Time Code
- SMPTE RP 184-1996, Specification of Jitter in Bit-Serial Digital Systems
- SMPTE RP 192-1996, Jitter Measurement Procedures in Bit-Serial Digital Interfaces
- SMPTE RP 196-1997, Transmission of LTC and VITC Data as HANC Packets in Serial Digital Television Interfaces

## **SMPTE Engineering Guidelines (8)**

- SMPTE EG 8-1993, Specifications for Motion-Picture Camera Equipment Used in Space Environment (Reaffirmed 1997)
- SMPTE EG 10-1996, Tape Transport Geometry Parameters for 19-mm Type D-1 Television Digital Component Recording
- SMPTE EG 13-1986 (R1997), Use of Audio Magnetic Test Films
- SMPTE EG 16-1997, Measurement Methods for Motion-Picture Camera Acoustical Noise.—Field Method
- SMPTE EG 17-1997, B-Chain Electroacoustical Response for Preparing Magnetic Masters for Transfer to 16-mm or 35/32-mm Monaural Photographic Film
- SMPTE EG 20-1997, Tape Transport Geometry Parameters for 19-mm Type D-2 Composite Format for Television Digital Recording
- SMPTE EG 21-1997, Nomenclature for Television Digital Recording of 19-mm Type D-1 Component and Type D-2 Composite Formats
- SMPTE EG 22-1997, Description and Index of Documents for 19-mm Type D-2 Composite Television Digital Recording