

Reports of the Engineering and Standardization Committee Activities

Taking advantage of the Winter Television Conference, a number of technology committees, study groups and other subgroups held meetings in Atlanta, Georgia on 1-5 February 1978. The brief reports published here cover only the meetings of the three technology committees. For more detailed information on the activities or the individual projects, one should contact Alex E. Alden, Manager of Engineering Services of the SMPTE, at headquarters. The Society welcomes participation by specialists from industry in the work of its Engineering Committees, and all those interested in exploring the possibility of active membership on any of the committees should contact Mr. Alden or Roland J. Zavada, Engineering Vice-President of the Society.

Committee on Television Video Technology

On Friday morning, 4 February 1978, the chairman of the Committee on Television Video Technology, Mr. A. H. Chismark, assembled the committee for a brief meeting prior to the opening of the technical papers session, thus enabling the members to return as soon as possible to hear the excellent collection of papers being presented.

The committee is continuing its review of the needs for standardization in the television field and is working diligently on several operational questions which have presented problems to broadcast television.

The development of an appropriate stair step, or gray scale, has proven to be a very difficult matter. The working group, under Mr. G. Brill, had recommended the use of the current gray-scale chart being manufactured by EIA. However, it was pointed out that the 30:1 ratio is not adequate for cameras in current use. Mr. C. Rhodes, chairman of the EIA committee on this subject, indicated he would raise this question with his own committee.

Mr. Rhodes also advised the committee that the work on the development of specifications for a Standard Studio Monitor is continuing and should be reaching completion once the problem of defining gamma measurement is solved.

A working group under Mr. D. Zwick is preparing the specifications for a new television color reference test film. It was noted that the current film being distributed by the SMPTE is well over ten years old and should be updated. Once the contents of a new film are agreed on, the SMPTE will then work out the possible production and distribution of the new material.

The committee was apprised of the activities by an Audio Engineering Society (AES) committee, under Mr. J. McKnight, on the development of standards on digital audio. Mr. R. Zavada, the SMPTE Engineering Vice-President, noted that the AES is using this activity to "break into" standards writing and indicated he had offered the SMPTE's assistance to them.

He further expressed a concern that the AES committee, as now constituted, has little or no representation from the broadcast television field and urged that the SMPTE committee find appropriate representatives to that group.

Mr. Zavada, reporting for Mr. L. DeMarsh, said the subcommittee is continuing its work on colorimetry of picture monitors, but is being hampered by the lack of a document to standardize color monitors which is pending.

Several proposals were received for new test patterns for checking the video signal. Mr. Rhodes suggested the use of a radial pattern which was developed by Tektronics, and Mr. Zavada urged the development of a visible area pattern which could identify for a viewer the degree of overscan being experienced. He indicated he had also presented this problem to the EIA, hoping a standard could be developed to assure that a viewer was seeing some definite amount of the transmitted area.

The committee plans to hold its next meeting concurrently with the 120th SMPTE Technical Conference scheduled for October 1978 in New York City.

10 March 1978

A. H. CHISMARK
Chairman

Committee on New Technology

Mr. F. Remley, chairman of the Committee on New Technology, took advantage of the large attendance of the Winter Television Conference and held a meeting of his committee on Friday evening, 4 February, to receive summaries of the activities in progress by the subgroups.

The Study Group on Digital Video, under Mr. C. Ginsburg, expressed its concern over the suggested sampling rate of four times the color subcarrier frequency. It is planning to hold a series of tests to evaluate the suggested figures, as well as the figure of three times the subcarrier frequency which is being favored by the video recording equipment manufacturers.

Mr. R. Hopkins, reporting on the activities of his working group, said the group had reached tentative agreement on the basics for a digital video standard. These included a sampling rate of four times color subcarrier, eight bits per sample, blanking (0 IRE) equal to a code word of 40, a peak white (100 IRE) equal to a code word of 200, and emitter-coupled-logic (ECL) level interface. The standard might also include specifications for eight twisted pair lines up to 50 ft long (about 15m) for data, a single twisted pair up to 50 ft for the reference clock, and a single twisted pair to convey vertical, horizontal and color frame information.

Mr. R. Zavada reported he had attended the recent meeting of the committee of the Audio Engineering Society on digital audio. The committee, under the chairmanship of Mr. J. McKnight, is currently considering basic questions primarily dealing with mastering material for professional audio recording, as well as the requirement of those in the motion-picture and television industry using video records.

A study of time codes and codification for motion pictures is continuing, but a full report was not available.

Mr. R. Paulson, chairman of the Study Group on Video Disc Systems, said the interest in the study has now grown to approximately 80 people. The group is considering the needs and ramifications of the use of videocassettes in post-production areas.

Mr. R. Lovick, a member of the Study Group on High-Definition Television, reported on the recent meeting held at the CBS Technology Center in Stamford, Connecticut. Mr. D. Fink, chairman of the group, had arranged an excellent demonstration of various systems and equipment capable of resolving over 800 lines. In general, the test indicated that the NTSC system is well utilized and it was evident that a higher line rate is needed to achieve major quality improvement.

The Committee on New Technology will hold its next meeting concurrently with the 120th SMPTE Technical Conference scheduled for October 1978 in New York City.

10 March 1978

F. REMLEY
Chairman

Committee on Video Recording and Reproduction Technology

On 5 February 1978, the Committee on Video Recording and Reproduction Technology held a full meeting chaired by L. M.

Thomas. This is the parent committee for all standardization matters dealing with videotape recording, and the timely importance of this meeting was attested to by the nearly 30 members and interested parties who attended. Representatives present included the major VTR manufacturers, the television networks, broadcast and industrial users as well as SMPTE staff. The agenda covered standardization items relating to quadruplex, new 1-in helical-scan, 3/4-in and 1/2-in helical-scan, editing matters, etc.

In addition, reports were presented regarding the status of SMPTE videotape test materials and on liaison with other international standards bodies such as the IEC and the EBU.

The first report by D. Fibush reiterated that the Type B and Type C formats had been approved by SMPTE engineering committees and were continuing through customary procedures for official standardization. Even better news from an industry standpoint was that Type C test tapes are about to be interchanged among the major manufacturers and a major user.

The next subject dealt with tape leaders, and K. B. Benson suggested reactivating the working group with new members who are closely associated with this problem. On the matter of reel standards, N. Ritter reported that the one-inch reel standard is basically complete; however, more work is to be done by the working group on tape dimensions and a document relating to tape width and thickness is planned. Mr. Ritter also reviewed the progress toward a publication that would inform users on how videotape should be handled and cared for. L. Hedlund covered the situation on quad transport geometry and the current efforts to obtain sample guides from various manufacturers of quad heads, so as to measure the uniformity of guide curvature. Interchange on quad cassettes and cartridges was reported on by R. Monroe and the consensus was that most users were satisfied with current interchangeability. The problems relating to spooling and inserting tape into the cassette or cartridge seem to be more economic than technical. Mr. Thomas suggested a document instructing users how to do spool-to-cassette loading. Mr. Sprague pointed out that spools for carts and cassettes should all have double mechanical cue markers (foil and holes) for uniformity. Mr. Monroe will initiate a document covering this subject.

Time and control code waveforms were covered by E. Dahlin and only a final draft of an existing standards document (C98.12) is needed to complete this important standard.

With regard to time-code problems, W. Nicholls pointed out that broadcasters are beginning to worry about the proliferation of different digital codes and interfaces for time-code editing.

To attempt some unification, a committee is being formed of representatives from manufacturers who have an interest in standardization. Currently Ampex, CDL, CMX, Datatron and EECO have agreed to assign specialists to the group. Other members are being sought. This committee is charged with standardizing the edit decision list and the data transmission format. C. Kennedy gave the summary on objectives for a one-inch helical-scan test tape, to be distributed under SMPTE auspices. He emphasized that the Society should take an active role in assuring adherence to interchange standards in this new field.

A proposed document, defining the content of a subjective reference video test tape for the U-Matic system, was also circulated and received approval to produce such a tape. Intended mainly as a quick check for U-Matic users (rather than an engineering test), this tape will have such useful signals as basic RGB bars, five-step gray scale, crosshatch, safe title area, flat field and pictorial material. Mr. Remley defined the SMPTE role in the IEC and indicated that there was a dearth of delegates from the U.S. for the upcoming meeting of SC 60B in Budapest in April of this year. He suggested that means should be found to increase American participation in this important international standards committee. Mr. Nicholls reviewed his liaison work with the EBU G2 group and reported on their work toward a Type C format using a combined time-code and control-track signal. This proposal has come about because the European broadcasters consider the third audio track very important for dub-down use and do not want it dedicated to time-code use.

Under "New Business," Mr. Thomas asked for a volunteer to act as liaison between the SMPTE and the AES Digital Audio Committee. In this regard, Mr. Kennedy gave a report on the AES meeting where digital audio was discussed. Users are objecting to various digital audio coding techniques and are looking for some standards in this new field.

The next meeting of the committee was set for 24 May in New York City.

10 March 1978

L. M. THOMAS
Chairman

Standards & Recommended Practices

Approved SMPTE Recommended Practices

The Executive Committee for Standards Approval, acting on behalf of the Board of Governors, approved on 12 April 1977 two SMPTE Recommended Practices: RP 27.1-1977, Specifications for Operational Alignment Test Pattern for Television, and RP 27.5-1977, Specifications for Mid-Frequency Response Test Pattern for Television. Revision of RP 27.1 was undertaken to loosen the density requirements specified in Section 5. RP 27.5 reflects the same modifications and deletion of the alternating Type A and Type B sections.

Proposed SMPTE Recommended Practice

Proposed SMPTE Recommended Practice RP 82, Specifications for 16-mm Projector Alignment and Screen Image Quality Test Film, is published for public review and comment. Developed by a working group chaired by Paul H. Preo, the test film provides the same degree of performance evaluation for 16-mm projection systems that is presently available for 35-mm systems utilizing

SMPTE Recommended Practice RP 40-1971. The film is also an engineering tool permitting quantitative measurements of projector adjustments that affect the visual image.

Comments on the practice should be addressed to Alex E. Alden at Society Headquarters prior to 1 July 1978. If no adverse criticism is received, the proposal will be submitted to the Society's Board of Governors for approval.

Reaffirmed SMPTE Recommended Practices

On 28 November 1977, the Executive Committee for Standards Approval, acting on behalf of the Board of Governors, approved the reaffirmation of two SMPTE Recommended Practices: RP 35-1969, Specifications for Theater Test Film for Motion-Picture Projection Sound Reproducing Systems, and RP 45-1972, Use and Care of Sound Test Films.

Copies of SMPTE Recommended Practices are available from Society Headquarters for \$1.50 each. — Alex E. Alden, *Manager of Engineering Services*.