

relative of the shift register, formed by the simple expedient of connecting the output terminals back to the input terminals. In the example shown in Fig. 20, the flip-flops are of the J-K type, and the Q and  $\bar{Q}$  terminals of each stage are directly connected to the J and K terminals, respectively, of the following stage. This arrangement assures that the arrival of each clock pulse will cause each stage to assume the previous setting of the stage immediately to its

left. The extreme left-hand stage will, of course, assume the previous setting of the extreme right-hand stage. In many applications of ring counters, some type of INITIAL SET bus is provided to establish a known starting condition. (This is sometimes implemented in conjunction with a "power-on reset" bus so that it happens automatically when power is first applied.) For the example shown in Fig. 20, the INITIAL SET bus has been arranged

so that the momentary application of a logic HIGH to the INITIAL SET input will cause Output A to go to the HIGH state and all other outputs to go to the LOW state. Clock pulses will then cause the HIGH state to be propagated around and around the closed register, providing a commutator-like action on the five output terminals. The *frequency* of the signal at each output terminal will be one-fifth that of the clock.

## Report on the Organizational Meeting of the Study Group on Video Disc Recording Systems

17 October 1977, Century Plaza Hotel, Los Angeles

By C. R. PAULSON, Chairman

A group of approximately thirty representatives of potential video disc users and three announced equipment manufacturers met for approximately two hours. Discussions were initially wide ranging, but finally evolved into consensus answers to three previously announced agenda topics: Should there be a Video Disc Study Group? What should it accomplish? When should it begin?

The Chairman opened the meeting by reading the "Draft Charge: Study Group on Video Disc Systems" prepared by Frederick M. Remley, Jr., Chairman, Committee on New Technology: to monitor and evaluate the progress of research and development efforts relating to video discs on a worldwide basis; to report at regular intervals to the Committee on New Technology the progress achieved; and to advise the Committee on New Technology when the formation of working groups for drafting standards for video discs seems necessary.

First discussions focused on the group name as being too restrictive. Recording and playback media may be other than "discs" — round, with a hole in the center, and rotating. Many other forms of information may be stored on these media besides "video" — multi-channel audio, or digital or analog continuous data streams, and of course, "television," — i.e., synchronous picture and sound. It was eventually decided, however, that "Video Disc" was the name which would most easily and effectively attract attention to the reports of the workings of the group.

There was almost immediate agreement thereafter that there should be a Video Disc Study Group, especially when the diversity of interests and applications had been identified. These included home and

theater entertainment, education and training, information display at public gathering places, and television broadcasting.

The three announced manufacturers present, Philips-MCA, RCA, and Thomson-CSF, all indicated they were working on systems with three levels of applications: (1) consumer — random-access playback only, continuous or single-frame viewing; (2) institutional — random-access playback only, continuous or single-frame viewing, plus viewer interaction with the system; and (3) professional — real-time continuous or interrupted recording, but not including erase and re-record capability, and random-access continuous or single-frame playback.

What the group should accomplish initially swung quickly away from defining "What is a Video Disc?" to the most basic question of "What should the group accomplish?" A British publication is reported to have listed 27 or 28 organizations or individuals that have reported on efforts to develop "video disc" systems. It was agreed, therefore, that the group could not perform any useful service until most, if not all, of these people had been invited to participate.

Discussions then centered on the drafting of two motions for action. These were passed by a majority vote with no negatives and some abstentions:

*Motion 1.* The chairman is directed to prepare a report of the meeting and the motions for publication in the earliest available *Journal* issue. He is also directed to use Society channels to identify and contact announced and potential "video disc" hardware manufacturers and software producers and invite them to participate in future group activities. He is also directed to prepare a questionnaire draft to be sent to these organizations and to distribute it to the study group initial mem-

bers for review and approval for mailing. The questionnaire will invite submission of "position papers" describing the intended hardware or software products and request answers to these questions: (1) Are you willing to participate in future study group activities? (2) Is modification of your planned "video disc" format possible if a future working group attempts to draft "video disc standards"? (3) Are you willing to modify your intended hardware device or recording medium to be interchangeable, if a standard roughly compatible with it should emerge from future Society efforts?

*Motion 2.* The following timetable for action is established: early November — draft questionnaire mailed to group; mid-December — final questionnaire prepared and mailed to largest possible mailing list; mid-January — returns from questionnaire mailing compiled and analyzed; mid-February — preliminary report mailed to enlarged group along with agenda recommendation requests for next meeting; mid-March — next meeting agenda established and announced; and April 8-13 — next meeting, which is at the NAB convention in Las Vegas. The Society is requested to contact the NAB to request a meeting place and time and to publicize it in its conference announcements. (End of Motion 2.)

The Chairman gave this report orally to the New Technology Committee at its Wednesday October 19th meeting. At its conclusion, he asked for and received permission from its Chairman, Frederick Remley, Jr., to release this written report directly to other industry publications in conjunction with its submission to SMPTE. This will generate the widest possible publicity of the group's earnest intentions to expand its membership and to provide some useful service to the Society and the many potential public users as quickly as possible.