

**Committee T1
Contribution**

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STANDARDS PROJECT: ANSI T1.801.01, Digital Transport of Video
Teleconferencing/Video Telephony Signals - Video Test
Scenes for Subjective and Objective Performance
Assessment

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TITLE: Tape Duplication and Traceability Process for ANSI
T1.801.01 (Test Scenes)

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DISTRIBUTION: T1A1.5 Video Performance Session

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ABSTRACT: This contribution recommends a process to be used by
ANSI for duplication and traceability of video tapes for
ANSI T1.801.01 (test scenes).
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Tape Duplication and Traceability Process for ANSI T1.801.01 (Test Scenes)

PLATINUM TAPE

The Technical Sub-Committee (TSC) Editor will supply ANSI with one final edited video tape in the D2 digital format on "archival" quality tape stock. This tape will be labeled as the "PLATINUM" standard tape.

GOLD TAPE

A backup GOLD standard tape using "archival" quality tape stock will be duplicated from the PLATINUM standard tape and held in a physically separate location from the PLATINUM standard tape. The GOLD standard tape will serve as a backup to the PLATINUM standard tape in case the PLATINUM standard tape is damaged. A representative from ANSI and the duplication house will verify by written record that the following instructions were followed for generation of the GOLD standard tape:

- a. Original "archival" quality tape stock must be used for the GOLD tape.
- b. The GOLD tape will be generated using a direct D2 to D2 digital duplication (from the PLATINUM tape to the GOLD tape) with all VCR controls set to their UNITY positions. This duplication will include any audio channels present on the PLATINUM tape. The time code will be regenerated on the GOLD tape so that its time code matches the PLATINUM tape. The editing house will record the number of error concealments generated by the PLATINUM VCR during the tape duplication. ANSI will keep a log file of all recorded plays of the PLATINUM tape and the number of error concealments that were generated.
- c. The GOLD tape will be played (i.e., the entire length that includes the standard video test scenes) and the number of error concealments generated by the playback VCR will be checked to assure that no more than x errors have been concealed. If more than x errors have been concealed, the GOLD tape will be discarded and a new GOLD tape will be generated using steps a and b. If less than x errors have been concealed, the GOLD tape will be declared good and the tape will be archived. ANSI will keep a log file of all recorded plays of the GOLD tape and the number of error concealments that were generated.

SILVER TAPES

Multiple SILVER standard tapes can be generated from the PLATINUM standard tape provided they are duplicated as given below and sequentially numbered for tracking purposes. A representative from ANSI and the duplication house will verify by written record that the following instructions were followed for generation of the SILVER standard tape:

- a. Original "archival" quality tape stock must be used for the SILVER tape.

b. The SILVER tape will be generated using a direct D2 to D2 digital duplication (from the PLATINUM tape to the SILVER tape) with the gain and color controls of the D2 VCRs set to UNITY. This duplication will include any audio channels present on the PLATINUM tape. The time code will be regenerated on the SILVER tape so that its time code matches the PLATINUM tape. The editing house will record the number of error concealments generated by the PLATINUM VCR during the tape duplication. ANSI will keep a log file of all recorded plays of the PLATINUM tape and the number of error concealments that were generated.

c. The SILVER tape will be played (i.e., the entire length that includes the standard video test scenes) and the number of error concealments generated by the playback VCR will be checked to assure that no more than x errors have been concealed. If more than x errors have been concealed, the SILVER tape will be discarded and a new SILVER tape will be generated using steps a and b. If less than x errors have been concealed, the SILVER tape will be declared good. ANSI will keep a log file of all recorded plays of the SILVER tape and the number of error concealments that were generated.

CALIBRATION TAPE

A supplemental CALIBRATION tape in D2 digital format will be provided to ANSI. This tape is to be used by the duplication house for precalibration of analog recording equipment before generation of *analog* format DISTRIBUTION tapes. The CALIBRATION tape will contain at least one minute of each of the following two test signals: NTC-7 Composite and NTC-Combination. These two signals are needed to assure that the video recording systems are flat and equalized.

There will be an audio (stereo phased) test tone of +8dBm on this tape in conjunction with the video signals described above.

DISTRIBUTION TAPES

All tapes distributed to those who purchase the standard will be duplicated from a SILVER tape according to the following duplication guidelines:

D2 DISTRIBUTION TAPES

- a. Original "professional" quality tape stock must be used for the DISTRIBUTION tape.
- b. The DISTRIBUTION tape will be generated using a direct D2 to D2 digital duplication (from a SILVER tape to the DISTRIBUTION tape) with the gain and color controls of the D2 VCRs set to UNITY. This duplication will include any audio channels present on the SILVER tape. The time code will be regenerated on the DISTRIBUTION tape so that its time code matches the SILVER tape. The editing house will record the number of error concealments generated by the SILVER VCR during the tape duplication. ANSI will keep a log file of all recorded plays of each SILVER tape and the number of error concealments that were generated. When the number of error concealments of a SILVER tape exceeds y, then that SILVER tape will be archived by ANSI and another SILVER tape generated.

c. The DISTRIBUTION tape will be labeled with following information (the date the tape was generated, the SILVER tape number that was used to generate the tape, a unique distribution tape number).

VHS and S-VHS TAPES

a. Original "professional" quality tape stock must be used for the DISTRIBUTION tape.

b. The DISTRIBUTION tape will be generated using the NTSC output of the SILVER tape VCR and the NTSC input of the DISTRIBUTION tape VCR. The calibration of the equipment used for duplication shall include the following calibration procedure before the DISTRIBUTION tape is generated:

The video analog output of the playback machine will be confirmed to be flat, equalized, and of proper levels using the two NTC-7 test signals on the CALIBRATION tape. Methods of measure may be found in ANSI T1.502-1988.

The audio test tone should be used to calibrate the duplication plant meters. If the plant is set up as a +8dBm plant, this tone should read as 0 on a vu meter and -8 (straight up) on a PPM meter. If the plant is at +4 dBm, this tone will have to be attenuated 4 dB prior to calibration of the system.

If the recording VCR has balanced audio inputs, then these inputs shall be used. If only unbalanced inputs are available on the recording VCR, then the audio signal must be appropriately converted to an unbalanced signal at the correct input level for this VCR. Every audio channel available on the recording VCR should be used (e.g., if a VHS VCR has hi-fi and linear tracks, both should be recorded).

The editing house will record the number of error concealments generated by the SILVER VCR during the tape duplication. ANSI will keep a log file of all recorded plays of each SILVER tape and the number of error concealments that were generated. When the number of error concealments of a SILVER tape exceeds y, then that SILVER tape will be archived by ANSI and another SILVER tape generated.

c. The DISTRIBUTION tape will be labeled with following information (the date the tape was generated, the SILVER tape number that was used to generate the tape, a unique distribution tape number, the label "FOR CONTENT VIEWING ONLY, NOT TO BE USED FOR SUBJECTIVE OR OBJECTIVE TESTING PURPOSES").