ANSI/CEA Standard

Service Selection Information for Digital Storage Media Interoperability

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Approved American National Standard

ANSI

CEA

Consumer Electronics Association

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(Formulated under the cognizance of the CEA's **R4.8 DTV Interface Subcommittee**.)

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FOREWORD

Users of this standard should be aware that ongoing standardization work in the 1394 Trade Association may have a future impact on this standard. CEA has stated its intention to harmonize its standards with those developed within the 1394 Trade Association, and likewise the TA has indicated its willingness to coordinate standards development with CEA.

This standard was developed under the auspices of the CEA R4.8 DTV Interface Subcommittee.

1. INTRODUCTION

CEA-775-C [1] standardizes the IEEE 1394 [3][4] High Performance Serial Bus interface for the Digital Television (DTV) receiver. A digital storage device such as a D-VHS or hard disk digital recorder may be used by the DTV or by another source device such as a cable set-top box to record or time-shift digital television signals. The present standard supports the use of such storage devices by defining Service Selection Information (SSI), methods for managing discontinuities that occur during recording and playback, and rules for management of partial Transport Streams.

For purposes of digital storage, it is desirable that SSI is stored along with program audio/video/data material. SSI supplements the program material by describing one or more selected services. Information can include:

- the name of the source channel (for example, the name and number of ATSC PSIP virtual channel)
- the title of the selected program
- a multi-lingual textual description of the program (optional)
- the program duration
- the start time of the original broadcast
- any descriptors pertinent to the program, such as content advisories
- the type of source (camcorder, broadcast source, etc.)
- an optional reference to further descriptive information

When a digital recording that includes SSI is played back, channel name and program title information is available for display. If system time is also recorded, using the time of day, start time and duration data, playback equipment can display the time remaining in the program at any point during playback. When several services are present in the transport multiplex, SSI data can be used to support user selection of the desired program.

SSI may be provided in one of two possible formats: as an MPEG-2 compliant data structure defined in this standard called the Selection Information Table (SIT) or as Service Information tables compliant with the ATSC A/65C PSIP [2] standard.

A device preparing an MPEG Transport Stream for recording may delete transport packets corresponding to unwanted programs or services, thus creating a *partial* Transport Stream. This standard discusses the necessary signaling required for proper construction of a partial TS.

In addition to information describing service and program selections present in the multiplex, this standard defines a mechanism to signal discontinuities in the recorded material. The presence of an MPEG table section called the Discontinuity Information Table (DIT) indicates, upon playback, the location of a point of discontinuity in the system timebase, Service Information or Elementary Stream.

Note that any device processing an MPEG-2 Transport Stream must handle discontinuities in the timebase (PCR discontinuities) or within Elementary Streams that are not signaled by a DIT. The primary function of the DIT is to minimize the recovery time in an MPEG-2 decoder following a point of known discontinuity, and enable the decoder to reduce the disruption in audio and video output.

When present, SIT sections shall be carried in the MPEG-2 Transport Stream multiplex in transport packets with PID value given in the **network_PID** in the Program Association Table. For the SIT sections, this PID value shall not be 0x1FFB. Furthermore, the SIT sections shall not appear in transport packets used by any PSIP tables in the case that PSIP tables are present in the multiplex. When present, the DIT shall be carried in transport packets with PID value 0x001E. PSIP tables use transport packets with PID values as defined in [2].