ATIS-0100802.01.2001(R2006)

North American Adaptation for Domestic – International Interfaces of ETSI 300 174 Digital Component Television Signals – Interface and Coding Specifications at DS-3

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Contents

Foreword (This foreword is not part of American National Standard T1.802.01-1996.)

This standard is the North American adaptation for Domestic-International interfaces of ETS 300 174 standard for the coding and transmission of digital component television signals. It addresses the interface characteristic and the coding compatibility characteristic of digital coders/decoders for the transmission of ITU-R 601-2 digital video signals, AES/EBU digital audio signals and ancillary signals used in the production of television material. These signals are formatted to be compatible with time division multiplexing in the North American DS-3 transport media.

This standard has been developed to provide a common framework for encoders and decoders to transmit ITU-R BT.601 television signals between North America and International Telecommunication Networks. Further work is planned to standardize an ISO 13818 (MPEG-2) based system for contribution quality applications.

Equipment performance definitions and measurement methods are provided where appropriate. Interface definitions are provided to facilitate compatibility. This standard has been prepared in consultation with the European Telecommunication Standards Institute (ETSI) Network Aspects (NA) Technical Committee and The Society of Motion Picture and Television Engineers (SMPTE) and by Working Group T1A1.5 of Accredited Standards Committee T1

Signals created or transmitted in accordance with other standards may not necessarily be compatible with the specifications of this standard.

This standard contains three annexes. Annexes A through C are informative and not considered part of the standard.

Suggestions for improvement of this standard are welcome. They should be sent to Alliance for Telecommunications Industry Solutions, Inc., 1200 G Street, NW, Suite 500, Washington, DC 20005.

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American National Standard
for Telecommunications –

North American Adaptation for Domestic-International Interfaces of ETSI 300 174 Digital Component Television Signals – Interface and Coding Specifications at DS-3

1 Scope, purpose, and application

1.1 Scope

This standard is the North American adaptation for Domestic International interfaces of the ETSI ETS 300 174 standard for the coding and transmission of digital component television signal at a bit rate of 45 mbits/s. It provides a detailed description of the digital coding algorithm to be implemented in equipment designed to terminate digital transmission systems when those systems are employed to carry ITU-R 601-2 digital television video signals, AES/EBU digital audio signals and ancillary signals such as SMPTE time-code, and SMPTE machine control. Each television signal is formatted to be compatible with the North American DS-3 transport network. The video coding algorithms are based on a hybrid predictive/transform scheme incorporating arrangements for variable word-length coding (VLC), synchronization, and video framing. Provision is made for the transmission of audio and teletext services to accompany the video and for the application of scrambling for conditional access.

1.2 Purpose

The purpose of this standard is to provide a common framework for coders and decoders to transmit ITU-R 601-2 television signals between the North American and International telecommunications networks by providing linkage to the ITU-R 723 and ITU-T J.81 recommendations and the ETSI ETS 300 174 standard.

NOTE – It should be recognized that due to the application of this standard for the interworking internationally with ETSI 300 174 it is useful to provide the details of encoder implementation as seen by ETSI and the ITU. In the original development of the coding system structure by ETSI and the ITU there was a pairing of the specifications between the encoder and the decoder. New encoding processes may develop that may be applied to this system approach as long as they interoperate with the original pairing structure. This standard will allow for this new technology. Therefore, normative references in this standard to implementation of encoders are optional, and are not intended as limitations on encoder implementations.

1.3 Application

This standard provides a framework for interoperability of equipment from various manufacturers and various service providers to ensure uniform application of the coding methods. It also provides a common understanding between suppliers and their customers.