ATIS-1000640.2001(R2011)

BROADBAND ISDN NETWORK NODE INTERFACES AND INTER-NETWORK INTERFACES – RATES AND FORMATS SPECIFICATIONS

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American National Standard for Telecommunications

Broadband ISDN Network Node Interfaces and Inter-Network Interfaces – Rates and Formats Specifications

Secretariat

Alliance for Telecommunications Industry Solutions

Approved August 21, 2001

American National Standards Institute, Inc.

Abstract

This standard provides specifications of the rates and formats of signals for use at Network Node Interfaces (NNIs) and Inter-Network Interfaces (INIs) in a Broadband Integrated Services Digital Network (B-ISDN).

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Broadband ISDN Network Node Interfaces and Inter-Network Interfaces – Rates and Formats Specifications

1 Scope

This standard provides specifications of the rates and formats of signals for use at Network Node Interfaces (NNIs) and Inter-Network Interfaces (INIs) in a Broadband Integrated Services Digital Network (B-ISDN). The term, *NNI,* was originally used in ITU-T (formerly CCITT) for the description of SDH-based systems, and its use has been carried over to SONET-based systems. The meaning of NNI is further expanded in these B-ISDN specifications to include non-SONET interfaces such as DS3. INI applies to interfaces between network nodes in different networks, and has been previously established in American National Standards for other applications.

NNI and INI specifications will facilitate both intra-network and inter-network connections for B-ISDN, result in increased interoperability, and promote early availability of network interconnections and ubiquitous service offerings. This standard specifically addresses NNI and INI reference architectures and physical realizations, physical layer specifications at five bit rates (51.840 Mbit/s, 155.520 Mbit/s, 622.080 Mbit/s, 2.48832 Gbit/s, and 44.736 Mbit/s), transmission overhead characteristics, and a brief overview of Operations and Maintenance (OAM) functionality.

This standard provides fundamental definitions of the NNI and the INI and is to be used in conjunction with other standards on Physical Media Dependent (PMD) and higher layer (i.e., ATM layer, AAL layer) specifications for providing a complete technical description of the B-ISDN NNI and INI. This standard is based on a B-ISDN as described in the ITU-T Recommendations of the I-series.

There is much commonality between NNI/INI and UNI specifications at the physical layer due to the use of common underlying transport structures. The intent of this document is to be consistent with relevant American National Standards and other relevant standards and specifications.

This revision of T1.640-1996 clarifies the use of the C1 (now J1 and Z0) bytes in Table 1 as well as corrects errors related to the cell delineation states for the cell payload scrambler. In addition, several references have been updated to reflect the latest versions.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards and publications are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards and publications indicated below.