



ATIS-1000608.1991(\$2017)

Integrated Services Digital Network (ISDN) – Signaling  
Specification of X.25 Packet-Switched Bearer Service for  
Digital Subscriber Signaling System Number 1 (DSS1)

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## ATIS-1000608.1991(R2012), *Integrated Services Digital Network (ISDN) – Signaling Specification for X.25 Packet-Switched Bearer Service for Digital Subscriber Signaling System Number 1 (DSS1)*

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**Integrated Services  
Digital Network (ISDN) –  
Signaling Specification for X.25  
Packet-Switched Bearer Service for  
Digital Subscriber Signaling  
System Number 1 (DSS1)**

Secretariat

**Exchange Carriers Standards Association**

Approved November 6, 1991

**American National Standards Institute, Inc.**

**Abstract**

This interface standard was written to provide a set of requirements for user–network signaling to provide packetized data support by an ISDN, while conforming, wherever possible, with the I-Series Recommendations of the International Telegraph and Telephone Consultative Committee (CCITT), and while not compromising the principles of evolution expressed therein. Equipment may be implemented with additional functions and procedures.

This standard presents the procedures at the S, T, or U reference point for B-channel, and D-channel access connection on basic rate interfaces and primary rate interfaces to a Packet Handling (PH) function within the Integrated Services Digital Network (ISDN) to support ISDN virtual circuit service. Procedures at the S, T, or U reference point for B-channel access to a Packet-Switched Public Data Network (PSPDN) are also specified.

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**Foreword** (This foreword is not part of American National Standard T1.608-1991.)

Digital Subscriber Signaling System No. 1 (DSS1) is a suite of protocols that provides the means for users to invoke the full range of services and capabilities available from the Integrated Services Digital Network (ISDN). The structure of DSS1 is consistent with the seven-layer model described in CCITT Recommendation I.320-1988, *ISDN protocol reference model*. The complete suite of layer 3 DSS1 protocols encompasses a set of several standards, each one addressing its own aspect of the suite. This standard specifies the procedures for establishing, maintaining, and clearing network connections at the ISDN user-network interface in support of X.25 packet-switched calls.

Manufacturers of ISDN user terminals and manufacturers of ISDN switching equipment can apply this standard to the design and development of their products.

This American National Standard was developed over the past several years by Working Group T1S1.2 of Accredited Standards Committee T1-Telecommunications. Many of T1S1.2's participants are also active participants in similar activities of the CCITT. Therefore, this standard is consistent with CCITT Recommendation Q.931-1988, *ISDN user-network interface layer 3 specification*.

This standard contains two annexes, both of which are informative and are not considered part of this standard.

This standard includes the supplement, ANSI T1.608a-1991. In the supplement, two normative annexes are added. (See annex A and annex B in the main standard for the relationship between the annexes in the main standard and those in the supplement.)

Suggestions for improvement of this standard will be welcome. They should be sent to the Exchange Carriers Standards Association, 1200 G Street, NW, Washington, DC 20005.

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American National Standard  
for Telecommunications –

# Integrated Services Digital Network (ISDN)– Signaling Specification for X.25 Packet-Switched Bearer Service for Digital Subscriber Signaling System Number 1 (DSS1)

## 1 Scope, purpose, and application

### 1.1 Purpose

This interface standard was written to provide a set of requirements for user–network signaling for ISDN support of packetized data transfer, while conforming, wherever possible, with the I-Series Recommendations of the International Telegraph and Telephone Consultative Committee (CCITT), and while not compromising the principles of evolution expressed therein. Equipment may be implemented with additional functions and procedures.

This standard presents the procedures at the S, T, or U reference point for B-channel, and D-channel access connection on basic rate interfaces and primary rate interfaces to a Packet-Handling (PH) function within the Integrated Services Digital Network (ISDN) to support ISDN virtual circuit service. Procedures at the S, T, or U reference point for B-channel access to a Packet-Switched Public Data Network (PSPDN) are also specified.

### 1.2 Scope

The scope of this standard covers the following procedures at the S, T, or U reference point:

- a) Circuit-switched access to Packet-Switched Public Data Network (PSPDN) services – case A.

This standard defines the use of the procedures of ANSI T1.602 and ANSI T1.607, when appropriate, on basic rate interfaces and primary rate interfaces for the establishment and release of circuit-switched calls through ISDN to the access port of PSPDN. These circuit-switched calls may be initiated by the user or the access port of PSPDN. Only the B-channel is used in this instance;

- b) Packet-switched access to an ISDN virtual circuit service – case B.

This standard defines the use of the procedures of ANSI T1.602 and ANSI T1.607, when appropriate, on basic rate interfaces and primary rate interfaces for the establishment and release of packet-mode access connections to a packet-handling (PH) function provided within the ISDN. These packet-mode access connections may be initiated by the user or the PH function within the ISDN. B-channels and D-channels may be used in this instance;

- c) X.25 LAPB procedures on the B-channel and LAPD procedures on the D-channel, as described in ANSI T1.602. X.25 LAP procedures are not supported in this standard;

- d) X.25 packet level procedures on B-channels and D-channels.

NOTE – Alternative methods of access via any bearer channel to Packet-Switched Public Data Networks are for further study.

### 1.3 Structure

Clause 1 describes the purpose, scope, and structure of this document. Clause 2 lists reference documents. Clause 3 lists definitions helpful in interpreting the specifications. Clause 4 provides an overview of packet-mode call control and defines the control states for case A circuit-switched calls and case B packet-mode access connections. Clause 5 specifies the message functional definitions. Clause 6 specifies the message structure for case A circuit-switched calls and case B packet-mode access connections. Clause 7 specifies the procedures for packet communication at the S, T, or U reference point. Clause 8 specifies the system parameters.

## 2 Normative references <sup>1)</sup>

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 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 indicated below.

ANSI T1.601-1988, *Telecommunications – Integrated services digital network (ISDN) – ISDN basic access interface for use on metallic loops for application on the network side of NT (layer 1 specification)*

ANSI T1.602-1989, *Telecommunications – Integrated services digital network (ISDN) – Data-link layer signalling specification for application at the user–network interface*

ANSI T1.605-1989, *Telecommunications – Integrated services digital network (ISDN) –*

*Basic access interface for S and T reference points (layer 1 specification)*

ANSI T1.607-1990, *Telecommunications – Integrated services digital network (ISDN) – Layer 3 signaling specification for circuit-switched bearer service for digital subscriber signaling system number 1 (DSS1)*

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CCITT Recommendation E.164, *Numbering plan for the ISDN era* <sup>2), 3)</sup>

CCITT Recommendation I.330, *ISDN numbering and addressing principles* <sup>2), 3)</sup>

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CCITT Recommendation I.412, *ISDN user–network interfaces – Interface structure and access capabilities* <sup>2), 3)</sup>

CCITT Recommendation I.431, *Primary rate user network interface – Layer 1 specification* <sup>2), 3)</sup>

CCITT Recommendation I.460, *Multiplexing, rate adaption and support of existing interfaces* <sup>2), 3)</sup>

CCITT Recommendation Q.931, *ISDN user–network interface layer 3 specification* <sup>2), 3)</sup>

CCITT Recommendation Q.932, *Generic procedures for the control of ISDN supplementary services* <sup>2), 3)</sup>

CCITT Recommendation T.50, *International alphabet no. 5* <sup>2), 3)</sup>

CCITT Recommendation V.6, *Standardization of data signaling rates for synchronous data transmission on leased telephone-type circuits* <sup>2), 3)</sup>

<sup>1)</sup> For additional listings, see ANSI T1.608a-1992 (final pages of this standard).

<sup>2)</sup> Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

<sup>3)</sup> With the exception of CCITT Recommendations X.25 and X.200, all of the CCITT Recommendations referenced in this standard were published in the 1988 CCITT Blue Book. CCITT Recommendations X.25 and X.200, when referenced in this standard, refer to the versions that appeared in the 1984 CCITT Red Book. All CCITT Recommendations are available from ANSI.