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**SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS**

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line system – Digital section and digital transmission
systems for customer access to ISDN

Access digital section for B-ISDN

ITU-T Recommendation G.966

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION G.966

ACCESS DIGITAL SECTION FOR B-ISDN

Summary

The purpose of this Recommendation is to define the characteristics of a B-ISDN access digital section for the B-ISDN customer access between the broadband user-network interface (at the T_B reference point) and the first ATM equipment on the network side of the B-NT1 (at V_{B1} reference point).

Source

ITU-T Recommendation G.966 was prepared by ITU-T Study Group 13 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 26th of February 1999.

FOREWORD

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The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

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NOTE

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Recommendation G.966**ACCESS DIGITAL SECTION FOR B-ISDN***(Geneva, 1999)***1 Scope**

This Recommendation defines the characteristics of the B-ISDN access digital section for the B-ISDN customer access between the B-ISDN user-network interface (at the T_B reference point, defined in Recommendation I.413 [9]) and the first ATM equipment on the network side of the B-NT1 (at V_{B1} reference point).

Both homogeneous and non-homogeneous access digital sections are possible, depending on the functionality required. This Recommendation applies to the non-homogeneous B-ISDN access digital section where the bit rate used for the UNI is different from the bit rate of other parts of the section. In this case, transmission path termination and TC sublayer functions are provided by the access digital section.

In the case of a homogeneous B-ISDN access digital section, where the bit rates are the same for the UNI and the other parts of the section, transmission path termination and TC sublayer functions are not required. This case is outside the scope of this Recommendation.

In this Recommendation and unless otherwise indicated, the term B-TE is used to indicate terminating layer 1 aspects of B-TE, B-TA and B-NT2 functional groups (as defined in Recommendation I.413 [9]). The term B-ET is used to indicate terminating layer 1 aspects of the first ATM equipment on the network side of the B-NT1 (at V_{B1} reference point). When the term B-TE indicates terminating layer 1 aspects of B-TE, then according to Recommendation I.413 [9], the S_B and T_B reference points coincide.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Recommendation G.704 (1998), *Synchronous frame structure used at 1544, 6312, 2048, 8448 and 44 736 kbit/s hierarchical levels.*
- [2] ITU-T Recommendation G.803 (1997), *Architecture of transport networks based on the synchronous digital hierarchy (SDH).*
- [3] ITU-T Recommendation G.821 (1996), *Error performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network.*
- [4] ITU-T Recommendation G.826 (1999), *Error performance parameters and objectives for international, constant bit rate digital paths at or above the primary rate.*
- [5] ITU-T Recommendation G.827 (1996), *Availability parameters and objectives for path elements of international constant bit rate digital paths at or above the primary rate.*

- [6] ITU-T Recommendation G.902 (1995), *Framework Recommendation on functional access networks – Architecture and functions, access types, management and service node aspects.*
- [7] ITU-T Recommendation I.311 (1996), *B-ISDN general network aspects.*
- [8] CCITT Recommendation I.321 (1991), *B-ISDN protocol reference model and its application.*
- [9] ITU-T Recommendation I.413 (1993), *B-ISDN user-network interface.*
- [10] ITU-T Recommendation I.414 (1997), *Overview of Recommendations on layer 1 for ISDN and B-ISDN customer accesses.*
- [11] ITU-T I.432.x-series Recommendations, *B-ISDN user-network interface – Physical layer specification.*
NOTE – This reference applies to Recommendations I.432.1, I.432.2, I.432.3, I.432.4 and I.432.5.
- [12] ITU-T Recommendation I.610 (1999), *B-ISDN operation and maintenance principles and functions.*
- [13] ITU-T Recommendation I.732 (1996), *Functional characteristics of ATM equipment.*
- [14] ITU-T Recommendation I.751 (1996), *Asynchronous transfer mode management of the network element view.*
- [15] ITU-T Recommendation M.3610 (1996), *Principles for applying the TMN concept to the management of B-ISDN.*
- [16] ITU-T Recommendation G.783 (1997), *Characteristics of synchronous digital hierarchy (SDH) equipment functional blocks.*
- [17] ITU-T Recommendation G.784 (1994), *Synchronous digital hierarchy (SDH) management.*
- [18] CCITT Recommendation G.774 (1992), *Synchronous digital hierarchy (SDH) management information model for the network element view.*
- [19] ITU-T Recommendation G.805 (1995), *Generic functional architecture of transport network.*

3 Definitions and abbreviations

3.1 Definitions

This Recommendation defines the following terms:

3.1.1 broadband access digital section: is defined in Recommendation I.414 [10] as the section between the user-network interface at reference point T_b and the reference point V_{B1} .

3.1.2 homogeneous access digital section: is defined as an access digital section where the bit rate used for the UNI is the same as the bit rate of other parts of the section.

3.1.3 non-homogeneous access digital section: is defined as an access digital section where the bit rate used for the UNI is different from the bit rate of other parts of the section.

In addition, this Recommendation uses terms defined in other ITU-T Recommendations:

Broadband exchange termination (B-ET), Broadband network termination 1 (B-NT1): Recommendation I.413 [9].

B-ISDN customer access: Recommendation I.414 [10].

Communication function (CF): Recommendation M.3610 [15].

3.2 Abbreviations

This Recommendation uses the following abbreviations:

AIS	Alarm Indication Signal
AN	Access Network
ATM	Asynchronous Transfer Mode
BER	Bit Error Ratio
B-ET	Broadband Exchange Termination
BIP	Bit Interleaved Parity
B-ISDN	Broadband Integrated Services Digital Network
B-LT	Broadband Line Termination
B-NT1	Broadband Network Termination 1
B-NT2	Broadband Network Termination 2
B-TA	Broadband Terminal Adapter
B-TE	Broadband Terminal Equipment
CF	Communication Function
CLP	Cell Loss Priority
CRC	Cyclic Redundancy Check
DS	Digital Section
EDC	Error Detection Code
FC	Failure Condition
GFC	Generic Flow Control
HEC	Header Error Control
HOP	High Order Path
HOPA	High Order Path Adaptation
HOPT	High Order Path Termination
LCD	Loss of Cell Delineation
LOC	Loss of Continuity
LOF	Loss of Frame synchronization
LOM	Loss of Multiframe
LOP	Loss of Pointer
LOS	Loss of Signal
MPH	Management (entity) PHysical (layer) primitive
MPH-EI	MPH Error Indication
MS	Multiplex Section
MSA	Multiplex Section Adaptation
MST	Multiplex Section Termination
OAM	Operations and Maintenance
OCD	Out of Cell Delineation
PDH	Plesiochronous Digital Hierarchy