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Integrated Services Digital Network (ISDN); Circuit-mode multiple-rate unrestricted 8 kHz structured bearer service category; Service description

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structured bearer service category
Service description**

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Network Aspects (NA) Technical Committee of the European Telecommunications Standards Institute (ETSI).

In accordance with CCITT Recommendation I.130 [1], the following three level structure is used to describe the supplementary telecommunications services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (ISDN):

- Stage 1: is an overall service description, from the user's standpoint;
- Stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- Stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

This ETS details the stage 1 aspects (overall service description) for the circuit-mode multiple-rate bearer service category. The stage 2 and stage 3 aspects are detailed in a general form in ETS 300 350 (endorsement of ITU-T Recommendation Q.71 (1993)) and ETS 300 403, respectively.

This bearer service category is also known as the $n \times 64$ kbit/s bearer service category.

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	31 March 1995
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 September 1995
Date of withdrawal of any conflicting National Standard (dow):	30 September 1995

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1 Scope

This standard defines the stage one of the circuit-mode multiple-rate bearer service category for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage one is an overall service description from the user's point of view (see CCITT Recommendation I.130 [1]), but does not deal with the details of the human interface itself.

This standard defines the interworking requirements of private ISDNs with the public ISDN.

In addition, this standard specifies the base functionality where the service is provided to the user via a private ISDN.

The standard does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN but does include interworking requirements of other networks with the public ISDN.

Charging principles are outside the scope of this standard.

The values of the general attributes are outside the scope of this standard.

The circuit-mode multiple-rate bearer service category provides unrestricted information transfer at integer multiples of 64 kbit/s between reference points. Each of these reference points can be either a S reference point or coincident S and T reference points (see ITU-T Recommendation I.411 [2]).

NOTE: Service providers can also provide information transfer with the same attributes where the reference point is the T reference point.

This standard contains the procedures for the on-demand service variant of this bearer service category. The procedures for the permanent and the reserved service variants are outside the scope of this standard.

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This standard is applicable to the stage two and stage three standards for the ISDN circuit-mode multiple-rate bearer service category. The terms "stage two" and "stage three" are also defined in CCITT Recommendation I.130 [1]. Where the text indicates the status of a requirement (i.e. as strict command or prohibition, as authorisation leaving freedom, or as a capability or possibility), this shall be reflected in the text of the relevant stage two and stage three standards.

Furthermore, conformance to this standard is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore, no method of testing is provided for this standard.

2 Normative references

This standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.130 (1988): "Method for the characterisation of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - reference configurations".
- [3] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [4] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [5] CCITT Recommendation E.164 (1991): "Numbering plan for the ISDN era".
- [6] ITU-T Recommendation I.221 (1993): "Common specific characteristics of services".
- [7] ITU-T Recommendation I.140 (1993): "Attribute technique for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [8] CCITT Recommendation I.220 (1988): "Common dynamic description of basic telecommunication services".
- [9] ETS 300 345: "Integrated Services Digital Network (ISDN); Interworking between public ISDNs and private ISDNs for the provision of telecommunications services General aspects".
- [10] CCITT Recommendation I.231.10: "Circuit-mode multiple-rate unrestricted 8 kHz structured bearer service category".

3 Definitions

For the purpose of this standard, the following definitions apply:

bearer service: See ITU-T Recommendation I.112 [3], § 2.2, definition 202.

basic access: See ITU-T Recommendation I.112 [3], § 2.4, definition 425.

Integrated Services Digital Network (ISDN): See ITU-T Recommendation I.112 [3], § 2.3 definition 308.

ISDN number: A number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [5].

network operator: Entity which provides the network operating elements and resources for the execution of this bearer service.

primary rate access: See ITU-T Recommendation I.112 [3], § 2.4, definition 426.

retention timer: This timer specifies the amount of time that the network retains all of the information supplied by the calling user when the call encounters busy or is terminated.

service; telecommunications service: See ITU-T Recommendation I.112 [3], § 2.2, definition 201.

service provider: Entity which offers this bearer service subscription. The network operator may be the service provider.

supplementary service: See ITU-T Recommendation I.210 [4], § 2.4.

Time Slot Sequence Integrity (TSSI): TSSI characterizes the ability of the ISDN to maintain the relative position of every time slot within a frame (intra-frame integrity) and between consecutive frames (inter-frame integrity) from one basic access or primary rate access to the other basic access or primary rate access. The TSSI characteristics are described in annex A.

user determined user busy: See ITU-T Recommendation I.221 [6], § 2.1.4.

4 Symbols and abbreviations

ISDN	Integrated Services Digital Network
LAN	Local Area Network
TSSI	Time Slot Sequence Integrity

5 Description

The circuit-mode multiple-rate bearer service category supports unrestricted information transfer rates at integer (N) multiples of B-channels up to the maximum rate of the basic access or primary rate access.

The circuit-mode multiple-rate bearer service category shall apply to the basic access and to the primary rate access.

User information shall be transferred over multiple B-channels. Signalling shall be provided over a D-channel.

For the basic access, the value of N shall be 2.

For the primary rate access, N shall be any value in the range of 2 to 30. As a service provider option, the support of the circuit-mode multiple-rate bearer service category can be restricted to the use of one or more values of N.

NOTE 1: It is recommended that the network, as a minimum, supports N=2, 6, 24 and 30 for the primary rate access.

For a specific call, all the B-channels involved in the call shall be restricted to the same basic access or primary rate access.

Any free B-channel can be assigned to the call.

For the circuit-mode multiple-rate bearer service category, more than one call on an interface can be in progress simultaneously, providing that the combined values of N do not exceed the value of the subscription option for the maximum number of B-channels available for this bearer service category.

NOTE 2: This subscription option may be used in order to reserve capacity for other bearer services or teleservices to be used on the same basic access or primary rate access.

To maintain the order of data submitted by one user when that data is delivered to the other user, the Time Slot Sequence Integrity (TSSI) channel structure shall be supported by this bearer service category.