Standard ECMA-226
June 1995

ECMA

Standardizing Information and Communication Systems

Private Integrated Services Network (PISN) - Mapping Functions for the Employment of Dedicated Circuit Mode Connections as Inter-PINX Connections

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(MAPPING-CM-STATIC)

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Brief History

This Standard is one of a series of ECMA standards defining mapping functions in exchanges of Private Integrated Services Networks required for the utilization of intervening network scenarios. The series uses the ISDN concepts as developed by ITU-T (formerly CCITT) and is also within the framework of standards for open systems interconnection as defined by ISO.

This Standard specifies mapping functions for the type of scenario where two PINXs are interconnected via Dedicated Transmission Systems and/or Cross Connect Systems.

The Standard is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO/IEC JTC1, ITU-T, ETSI and other international and national standardization bodies. It represents a pragmatic and widely based consensus.

This ECMA Standard has been adopted by the ECMA General Assembly of June 1995.

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1 Scope

This Standard defines the mapping functions in exchanges of Private Integrated Services Networks (PISNs) required for the utilization of intervening network (IVN) scenarios which provide dedicated circuit mode connections for carrying inter-PINX signalling and user information.

In order to connect a Private Integrated Services Network Exchange (PINX) to another PINX, mapping functions are required to adapt the specific interfaces at the C reference point to the application at the Q reference point. As such, mapping functions provide for physical adaptation to the interface at the C reference point. Mapping functions also provide for the mapping of user channels and signalling information at the Q reference point to the appropriate channels or timeslots at the C reference point.

The C and Q reference points are defined in ISO/IEC 11579-1.

The types of interfaces at the C reference point covered by this Standard are:

1) 2048 kbit/s Primary Rate User-Network Layer 1 Interface, in accordance with ETS 300 011 including the requirements for the "Application of the ETS 300 011 for PTNX interconnections" as contained in ETS 300 011 Annex A
2) Basic User-Network Layer 1 Interface, in accordance with ETS 300 012, excluding the point-to-multipoint mode of operation
3) 2048 kbit/s Digital Structured Leased Line (D2048S); Terminal Equipment Interface, in accordance with ETS 300 420
4) 2048 kbit/s Digital Unstructured Leased Line (D2048U); Terminal Equipment Interface, in accordance with ETS 300 248
5) 64 kbit/s Unrestricted Digital Leased Line (D64U); Terminal Equipment Interface, in accordance with ETS 300 290

The IVN can be a dedicated transmission system or a cross connect system. IVNs which include inverse multiplexer techniques (e.g. channel aggregation in accordance with ISO/IEC 13871) are covered by this Standard as far as they support one of the interfaces listed above.

At the Q reference point the mappings provide a 64 kbit/s service for user channels and a packet mode service for the signalling channel. Bearer conditioning is outside the scope of this Standard, except for deriving 64 kbit/s channels and for providing the services of layer 2 for the signalling channel. The applied mapping is a static mapping, i.e. there is a fixed relationship between user and signalling channels at the Q reference point and the timeslots of the interface at the C reference point; any changes are subject to administrative actions.

Management functions relating to failure management are outside the scope of this Standard.

This Standard is applicable to PINXs which can be interconnected to form a Private Integrated Services Network (PISN) and which support signalling protocols at the Q reference point.

2 Conformance

In order to conform to this Standard, a PINX shall satisfy the requirements identified in the Implementation Conformance Statement (ICS) proforma in annex A.

3 References

ETS 300 011	Integrated Services Digital Network (ISDN); Primary rate user-network interface: Layer 1 specification and test principles (1992)
ETS 300 012	Integrated Services Digital Network (ISDN); Basic user-network interface: Layer 1 specification and test principles (1992)
ETS 300 248	Business Telecommunications (BT); Open Network Provision (ONP) technical requirements; 2048 kbit/s digital unstructured leased line (D2048U) - Terminal equipment interface (1993)

ETS 300 290	Business Telecommunications (BTC); 64 kbit/s digital unrestricted leased line with octet integrity (D64U) - Terminal equipment interface (1994)
ETS 300 402-2	Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 2: General protocol specification (1995)
ETS 300 420	Business Telecommunications (BTC); Open Network Provision (ONP) technical requirements; 2048 kbit/s digital structured leased line (D2048S) - Terminal equipment interface
CCITT Rec. G.704	Synchronous frame structures used at primary and secondary hierarchical levels (1991)
CCITT Rec. I.112	Vocabulary of terms for ISDNs (1988)
ISO/IEC 11579-1	Information technology - Telecommunications and information exchange between systems - Private integrated services network, Part 1: Reference configuration for PISN Exchanges (PINX) (1994)

NOTE

This Standard also contains a number of informative references. Details of these publications are given in Annex B.

4 Definitions

4.1 External definitions

For the purpose of this Standard the following external definitions shall apply.

– Integrated Services Digital Network	CCITT Rec. I.112
– Private Integrated Services Network	ISO/IEC 11579-1
– Private Integrated Services Network Exchange	ISO/IEC 11579-1

4.2 Special definitions

4.2.1 Channel

A means of bi-directional transmission of user or signalling information between two points.

4.2.1.1 D_Q-Channel

A channel used to convey call control information between the Q reference points of two peer PINXs.

4.2.1.2 U_Q-Channel

A channel used to convey user information between the Q reference points of two PINXs.

4.2.2 Inter-PINX Connection

A connection provided by an IVN between two C reference points used to transport inter-PINX information from the PISN control plane and/or the PISN user plane.

4.2.3 Inter-PINX Link

A link between the Q reference points of two PINXs, comprising the totality of signalling transfer and user information transfer means.

5 Abbreviations

ICS Implementation Conformance Statement

IPC Inter-PINX Connection

IPL Inter-PINX Link

ISDN Integrated Services Digital Network

IVN Intervening Network

PISN Private Integrated Services Network

PINX Private Integrated Services Network Exchange

6 Introduction

This Standard specifies mapping functions for the following scenarios:

– Dedicated Transmission System

  This scenario consists of one or more dedicated transmission systems, each in a point-to-point configuration and offering at the C reference point interfaces with a channel structure similar to that of a basic or primary rate ISDN interface.

– Cross-Connect Systems

  This scenario consists of one or more dedicated transmission systems in a point-to-multipoint configuration, offering at the C reference point interfaces with a channel structure similar to that of a basic or primary rate ISDN interface.

Both scenarios can provide the same types of interface, which allows the same mapping functions to be used.

The applied mapping is a static mapping. There is a fixed relationship between user and signalling channels at the Q reference point and the timeslots of the interface at the C reference point.

Administrative actions to apply the mapping are necessary at both sides of an IPL. Administrative actions are also necessary in the IVN when it contains a cross-connect system.

At the C reference point more than one interface type as well as more than one instance of an interface type may exist.

NOTE

For more information refer to ECMA TR/65 clause 7.

7 Capabilities at the Q reference point

For each instance of the Q reference point:

– 1 signalling channel (D_Q) for carrying the inter-PINX layer 3 signalling protocol; and

– N user channels (U_Q)

are provided. The user channels are numbered 1..N.

For a U_Q-channel the following bearer capability shall be provided:

– information transfer rate: 64 kbit/s

– Other attributes shall be the same as at the C reference point.

NOTE

The provision of bearer conditioning can change these attributes. However, this is outside the scope of this Standard.

For a D_Q-channel the following bearer capability shall be provided:

– Transfer mode: packet mode

– Information transfer capability: unrestricted digital information

– Information transfer rate: implementation dependent

– Other attributes shall be the same as at the C reference point.

The functions to map D_Q and U_Q channels to an inter-PINX connection (IPC) at the C reference point are described in clause 8.

8 Mapping functions

The PINX mapping functions shall meet the following requirements.

8.1 Physical adaptation

A PINX shall support at least one of the following physical adaptations:

8.1.1 ISDN 2048 kbit/s Primary Rate User-Network Layer 1 Interface

Layer 1 termination shall be in accordance with ETS 300 011 including the requirements for the "Application of the ETS 300 011 for PTNX interconnections" as contained in ETS 300 011 Annex A.

Timeslots 1 to 31 shall be used for up to 31 IPCs, each IPC with the following bearer capability:

– Information transfer mode: circuit mode

– Information transfer capability: according to subscription (e.g. unrestricted digital information, speech, etc.)

– Information transfer rate: 64 kbit/s.

NOTE

Timeslots that are not through connected to the peer PINX will not be used for an IPC.

8.1.2 ISDN Basic User-Network Layer 1 Interface

Layer 1 termination shall be in accordance with ETS 300 012, excluding application of the point-to-multipoint mode of operation.

When the IVN supports the D-channel end-to-end then 3 IPCs are provided at the C reference point.

One IPC has the following bearer capability:

– Information transfer mode: circuit mode

– Information transfer capability: unrestricted digital information

– Information transfer rate: 16 kbit/s.

Two IPCs have the following bearer capability:

– Information transfer mode: circuit mode

– Information transfer capability: according to subscription (e.g. unrestricted digital information, speech, etc.)

– Information transfer rate: 64 kbit/s.

When the IVN does not support the D-channel end-to-end then 2 IPCs are provided at the C reference point with the following bearer capability:

– Information transfer mode: circuit mode

– Information transfer capability: according to subscription (e.g. unrestricted digital information, speech, etc.)

– Information transfer rate: 64 kbit/s.

Within the scope of this clause 'network' functionality shall be defined as the functions defined for the NT in ETS 300 012.

At installation time the physical adaptation functions at both sides of the IVN shall be designated as either 'network' or 'user' side as follows:

– If the IVN provides for 'network' functionality, then the physical adaptation functions at both ends of the IVN shall be designated as 'user' side;

– If the IVN does not provide for 'network' functionality, then the physical adaptation function at one end of the IVN shall be designated as 'network' side and the other one shall be designated as 'user' side.

NOTE

Designation of the physical adaptation function at one side of the transmission system as 'network' side does not necessarily mean that the PINX at that side always has to provide for clock synchronization. However, if one of the two peer PINXs is to provide for the clock synchronization, then it has to be the PINX whose physical adaptation function has been designated as 'network' side.

8.1.3 2048 kbit/s Digital Structured Leased Line (D2048S)

Layer 1 termination shall be in accordance with ETS 300 420.

The physical adaptation part of the mapping function shall, according to CCITT Rec. G.704 clauses 5.1.1.1 and 5.1.1.2, distinguish 32 timeslots of 256 bits. Timeslots shall be numbered from 0 to 31. Each timeslot shall consist of 8 bits. The use of timeslot 0 shall be as defined in ETS 300 420. Timeslots 1 to 31 shall be used for up to 31 channels, each channel with the following bearer capability:

– Information transfer mode: circuit mode

– Information transfer capability: unrestricted digital information

– Information transfer rate: 64 kbit/s.

NOTE

Timeslots that are not through connected to the peer PINX will not be used for an IPC.

8.1.4 2048 kbit/s Digital Unstructured Leased Line (D2048U)

Layer 1 termination shall be in accordance with ETS 300 248.

The provision of a synchronization clock to the dedicated transmission system is outside the scope of this Standard.

The physical adaptation part of the mapping function shall be able to provide a 8 kHz frame structure in accordance with CCITT Rec. G.704, clauses 2.3.1 and 2.3.2.

Physical adaptation shall, according to CCITT Rec. G.704 clauses 5.1.1.1 and 5.1.1.2, distinguish 32 timeslots of 256 bits. Timeslots shall be numbered from 0 to 31. Each timeslot shall consist of 8 bits.

Physical adaptation shall be able to provide the Cyclic Redundancy Check 4 procedure (CRC-4) in accordance with CCITT Rec. G.704 clause 2.3.3. The use of CRC-4 error notifications is outside the scope of this Standard.

Timeslots 1 to 31 shall be used for up to 31 channels, each channel with the following bearer capability:

– Information transfer mode: circuit mode

– Information transfer capability: unrestricted digital information

– Information transfer rate: 64 kbit/s.

NOTE

Timeslots that are not through connected to the peer PINX will not be used for an IPC.

8.1.5 64 kbit/s Unrestricted Digital Leased Line (D64U)

Layer 1 termination shall be in accordance with ETS 300 290.

At the C reference point, the interface described in this clause provides for one IPC with the following bearer capability:

– Information transfer mode: circuit mode

– Information transfer capability: unrestricted digital information

– Information transfer rate: 64 kbit/s.

8.2 Mapping Matrix

The mapping matrix provides for the mapping of channels at the Q reference point to the channels provided by the physical adaptation function and, in the case of the D_Q-channel, bearer conditioning.

8.2.1 Channel allocation

The mapping matrix shall maintain a fixed one-to-one relationship between a channel provided by the physical adaptation function and a channel at the Q reference point.

Per instance of the Q reference point the mapping matrix shall provide for:

– 1 D_Q-channel. The D_Q-channel shall be mapped to a channel with information transfer rate of either 16 kbit/s or 64 kbit/s as provided by the physical adaptation function.

– N U_Q-channels. The U_Q-channels shall be mapped each to a channel with information transfer rate 64 kbit/s as provided by the physical adaptation function.

NOTE 1

The use of a 16 kbit/s channel for the conveyance of user information would require bearer conditioning and is therefore outside the scope of this Standard.

If a PINX supports physical adaptation in accordance with 8.1.1, 8.1.2, 8.1.3 or 8.1.4, it shall be able to support the mapping of a single instance of the Q reference point on to a single interface at the C reference point and the channel allocations and U_Q-channel numberings specified in 8.2.1.1, 8.2.1.2, 8.2.1.3 or 8.2.1.4 respectively. In addition, it may be able to support alternative channel allocations and/or U_Q-channel numberings.

If a PINX supports physical adaptation in accordance with 8.1.1, 8.1.2, 8.1.3 or 8.1.4, it may be able to support the mapping of multiple instances of the Q reference point on to a single interface at the C reference point. In this case channel allocation and the numbering of U_Q-channels are implementation options and not specified by this Standard.

If a PINX supports physical adaptation in accordance with 8.1.1, 8.1.2, 8.1.3 or 8.1.4, it may be able to support the mapping of one instance of the Q reference point on to multiple interfaces at the C reference point. In this case channel allocation and the numbering of U_Q-channels are implementation options and not specified by this Standard.

If a PINX supports physical adaptation in accordance with 8.1.5, it shall support the mapping of a single instance of the Q reference point on to multiple interfaces at the C reference point. In this case channel allocation and the numbering of U_Q-channels are implementation options and not specified by this Standard.

NOTE 2

In some situations the allocation of channels to physical interfaces and timeslots can be different at the two sides of an IPL, however U_Q-channel numbering needs to be consistent.

8.2.1.1 ISDN 2048 kbit/s Primary Rate User-Network Layer 1 Interface

For physical adaptation according to clause 8.1.1 the following channel allocation and U_Q-channel numbering shall be provided as a default:

The D_Q-channel shall be mapped to timeslot 16.

The U_Q-channels shall be mapped to timeslots of the interface as follows:

– Timeslots 1..15 (at C) are respectively U_Q-channels 1..15

– Timeslots 17..31 (at C) are respectively U_Q-channels 16..30

8.2.1.2 ISDN Basic User-Network Layer 1 Interface

8.2.1.2.1 End-to-end D-channel at the C reference point

For physical adaptation according to clause 8.1.2 when the D-channel is available end-to-end, the following channel allocation and U_Q-channel numbering shall be provided as a default:

The D_Q-channel shall be mapped onto the D-channel of the interface.

The U_Q-channels shall be mapped onto the B-channels of the interface as follows:

– B-channel B1 (at C) is U_Q-channel 1

– B-channel B2 (at C) is U_Q-channel 2.

8.2.1.2.2 No End-to-end D-channel at the C reference point

For physical adaptation according to clause 8.1.2 when the D-channel is not available end-to-end, the following channel allocation and U_Q-channel numbering shall be provided as a default:

The D_Q-channel shall be mapped onto B-channel B1 of the interface.

The U_Q-channel 1 shall be mapped onto B-channel B2 of the interface.

8.2.1.3 2048 kbit/s Digital Structured Leased Line (D2048S)

For physical adaptation according to clause 8.1.3 the following channel allocation and U_Q-channel numbering shall be provided as a default:

The D_Q-channel shall be mapped to timeslot 16.

The U_Q-channels shall be mapped to timeslots of the interface as follows:

– Timeslots 1..15 (at C) are respectively U_Q-channels 1..15

– Timeslots 17..31 (at C) are respectively U_Q-channels 16..30

8.2.1.4 2048 kbit/s Digital Unstructured Leased Line (D2048U)

For physical adaptation according to clause 8.1.4 the following channel allocation and U_Q-channel numbering shall be provided as a default:

The D_Q-channel shall be mapped to timeslot 16.

The U_Q-channels shall be mapped to timeslots of the interface as follows:

– Timeslots 1..15 (at C) are respectively U_Q-channels 1..15

– Timeslots 17..31 (at C) are respectively U_Q-channels 16..30

8.2.2 Bearer Conditioning for the D_Q-channel

The signalling carriage mechanism connection (layer 2) on a D_Q-channel shall be according to the symmetrical application in Annex ZA of ETS 300 402-2.

At installation time one of the sides of the D_Q-channel shall be designated as 'master' and the other side of the D_Q-channel as 'slave'.

Annex A

(normative)

Implementation Conformance Statement (ICS) Proforma

A.1 Introduction

The supplier of a protocol implementation which is claimed to conform to this Standard shall complete the Implementation Conformance Statement (ICS) proforma in A.3.

A completed ICS proforma is the ICS for the implementation in question. The ICS is a statement of which capabilities and options have been implemented. The ICS can have a number of uses, including use:

– by the equipment implementor, as a check list to reduce the risk of failure to conform to the Standard through oversight;

– by the supplier and acquirer, or potential acquirer, of the implementation, as a detailed indication of the capabilities of the implementation, stated relative to the common basis for understanding provided by the Standard's ICS proforma;

– by the user or potential user of an implementation, as a basis for initially checking the possibility of interworking with another implementation. While interworking can never be guaranteed, failure to interwork can often be predicted from incompatible ICSs.

A.2 Instructions for completing the ICS proforma

A.2.1 General structure of the ICS proforma

The ICS proforma is a fixed-format questionnaire divided into subclauses each containing a group of individual items. Each item is identified by an item number, the name of the item (question to be answered), and the reference(s) to the clause(s) that specifies (specify) the item in the main body of this Standard.

The "Status" column indicates whether an item is applicable and if so whether support is mandatory or optional. The following terms are used:

m	mandatory (the capability is required for conformance);
o	optional (the capability is not required for conformance, but if the capability is implemented it is required to conform to the specifications);
o.<n>	optional, but support of at least one of the group of options labelled by the same numeral <n> is required;
x	prohibited;
c.<cond>	conditional requirement, depending on support for the item or items listed in condition <cond>;
<item>:m	simple conditional requirement, the capability being mandatory if item number <item> is supported, otherwise not applicable;
<item>:o	simple conditional requirement, the capability being optional if item number <item> is supported, otherwise not applicable;

Answers to the questionnaire items are to be provided either in the "Support" column, by simply marking an answer to indicate restricted choice (Yes) or (No), or in the "Not Applicable" column (N/A).

A.2.2 Additional information

Items of Additional Information allow a supplier to provide further information intended to assist the interpretation of the ICS. It is not intended that a large quantity will be supplied, and an ICS can be considered complete without such information. Examples might be an outline of the ways in which a (single) implementation can be set up to operate in a variety of environments and configurations.

References to items of Additional Information may be entered next to any answer in the questionnaire, and may be included in items of Exception Information.

A.2.3 Exception information

It may occasionally happen that a supplier will wish to answer an item with mandatory or prohibited status (after any conditions have been applied) in a way that conflicts with the indicated requirement. No pre-printed answer will be found in the support column for this. Instead, the supplier is required to write into the support column an x.<i> reference to an item of Exception Information, and to provide the appropriate rationale in the Exception item itself.

An implementation for which an Exception item is required in this way does not conform to this Standard. A possible reason for the situation described above is that a defect in the Standard has been reported, a correction for which is expected to change the requirement not met by the implementation.

A.3 ICS proforma for PINX implementation

A.3.1 Implementation identification

Supplier	
Contact point for queries about the ICS	
Implementation name(s) and version(s)	
Other information necessary for full identification, e.g. name(s) and version(s) for machines and/or operating systems; system name(s)	

Only the first three items are required for all implementations; other information may be completed as appropriate in meeting requirements for full identification.

The terms name and version should be interpreted appropriately to correspond with a supplier's terminology (e.g. type, series, model).

A.3.2 Implementation summary

Implementation version	1.0
Addenda implemented (if applicable)	
Amendments implemented	
Have any exception items been required (see A.2.3)?	No [ ] Yes [ ] (The answer Yes means that the implementation does not conform to this Standard)

Date of statement	

A.3.3 General

Item	Name of Item	Reference	Status	N/A	Support
A1	Support of ISDN 2048 kbit/s primary rate user-network layer 1 interface	8.1.1	o.1		Yes [ ] No [ ]
A2	Support of ISDN basic user-network layer 1 interface with end-to-end D-channel	8.1.2	o.1		Yes [ ] No [ ]
A3	Support of ISDN basic user-network layer 1 interface without end-to-end D-channel	8.1.2	o.1		Yes [ ] No [ ]
A4	Support of 2048 kbit/s digital structured leased line (D2048S)	8.1.3	o.1		Yes [ ] No [ ]
A5	Support of 2048 kbit/s digital unstructured leased line (D2048U)	8.1.4	o.1		Yes [ ] No [ ]
A6	Support of 64 kbit/s unrestricted digital leased line (D64U)	8.1.5	o.1		Yes [ ] No [ ]
A7	Support of bearer conditioning for the D_Q-channel	8.2.2	m		Yes [ ]
A8	Support of multiple types of interfaces per instance of the Q reference point	8.2.1	o		Yes [ ] No [ ] If Yes then specify combinations and limitations

A.3.4 ISDN 2048 kbit/s Primary Rate User-Network Layer 1 Interface

Item	Name of Item	Reference	Status	N/A	Support
B1	Support of default channel allocation and U_Q-channel numbering	8.2.1.1	A1:m	[ ]	Yes [ ] No [ ]
B2	Support of non-default channel allocation and U_Q-channel numbering	8.2.1	A1:o	[ ]	Yes [ ] No [ ] If Yes then see Note

NOTE

Specify channel allocations and limitations, e.g.

- *the maximum number of D_Q-channels per interface*
- *the maximum number of U_Q-channels per D_Q-channel per interface*
- *the maximum number of interfaces of this type per instance of the Q reference point*

A.3.5 ISDN Basic User-Network Layer 1 Interface with end-to-end D-channel

Item	Name of Item	Reference	Status	N/A	Support
C1	Support of default channel allocation and U_Q-channel numbering	8.2.1.2.1	A2:m	[ ]	Yes [ ] No [ ]
C2	Support of non-default channel allocation and U_Q-channel numbering	8.2.1	A2:o	[ ]	Yes [ ] No [ ] If Yes then see Note

NOTE

Specify channel allocations and limitations, e.g.

- *the maximum number of D_Q-channels per interface*
- *the maximum number of U_Q-channels per D_Q-channel per interface*
- *the maximum number of interfaces of this type per instance of the Q reference point*

A.3.6 ISDN Basic User-Network Layer 1 Interface without end-to-end D-channel

Item	Name of Item	Reference	Status	N/A	Support
D1	Support of default channel allocation and U_Q-channel numbering	8.2.1.2.2	A3:m	[ ]	Yes [ ] No [ ]
D2	Support of non-default channel allocation and U_Q-channel numbering	8.2.1	A3:o	[ ]	Yes [ ] No [ ] If Yes then see Note

NOTE

Specify channel allocations and limitations, e.g.

- *the maximum number of D_Q-channels per interface*
- *the maximum number of U_Q-channels per D_Q-channel per interface*
- *the maximum number of interfaces of this type per instance of the Q reference point*

A.3.7 2048 kbit/s Digital Structured Leased Line (D2048S)

Item	Name of Item	Reference	Status	N/A	Support
E1	Support of default channel allocation and U_Q-channel numbering	8.2.1.3	A4:m	[ ]	Yes [ ] No [ ]
E2	Support of non-default channel allocation and U_Q-channel numbering	8.2.1	A4:o	[ ]	Yes [ ] No [ ] If Yes then see Note

NOTE

Specify channel allocations and limitations, e.g.

- *the maximum number of D_Q-channels per interface*
- *the maximum number of U_Q-channels per D_Q-channel per interface*
- *the maximum number of interfaces of this type per instance of the Q reference point*

A.3.8 2048 kbit/s Digital Unstructured Leased Line (D2048U)

Item	Name of Item	Reference	Status	N/A	Support
F1	Support of default channel allocation and U_Q-channel numbering	8.2.1.4	A5:m	[ ]	Yes [ ] No [ ]
F2	Support of non-default channel allocation and U_Q-channel numbering	8.2.1	A5:o	[ ]	Yes [ ] No [ ] If Yes then see Note

NOTE

Specify channel allocations and limitations, e.g.

- *the maximum number of D_Q-channels per interface*
- *the maximum number of U_Q-channels per D_Q-channel per interface*
- *the maximum number of interfaces of this type per instance of the Q reference point*

A.3.9 64 kbit/s Unrestricted Leased Line

Item	Name of Item	Reference	Status	N/A	Support
G1	D_Q-channel can be mapped to the interface	8.2.1	A6:o.1	[ ]	Yes [ ] No [ ]
G2	U_Q-channel can be mapped to the interface	8.2.1	A6:o.1		Yes [ ] No [ ]
G3	Maximum number of interfaces of this type per instance of the Q reference point	8.2.1	G2:m	[ ]	

Annex B

(informative)

Bibliography

ECMA TR/65 (1994)	PTNX Functions for the Utilization of Intervening Networks in the Provision of Overlay Scenarios (Transparent Approach) - General Requirements (TR/Mapping)
ISO/IEC 13871 (1995)	Information Technology - Telecommunications and information exchange between systems - Private telecommunications networks - Digital channel aggregation

This Standard ECMA-226 is available free of charge from:

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