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**ISDN Standards Management (ISM);
The ETSI basic guide on the European integrated
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ETSI

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Contents

1	Scope	5
2	Background to the ISDN - CCITT Recommendations.....	5
3	The Memorandum of Understanding (MOU) and the ETSI work programme	5
4	Commonality between public and private ISDN standardisation	6
5	General organisation of ETSs/ETRs and numbering scheme for ETSs.....	7
5.1	Numbering	7
5.2	Titles.....	7
5.3	Structure	7
6	List of ETSs/ETRs according to structure.....	9
Annex A:	ISDN services and specifications - matrix.....	15
A.1	Introduction.....	15
A.2	Basic services.....	16
A.2.1	Circuit-mode 64 kbit/s unrestricted	16
A.2.2	Circuit-mode 3,1 kHz audio	16
A.2.3	Packet-mode (X.31 case B) B- and D- channel.....	16
A.2.4	Circuit-mode speech.....	17
A.2.5	Telephony 3,1 kHz.....	17
A.2.6	Telefax G4	17
A.2.7	Teletex.....	18
A.2.8	Telephony 7 kHz	18
A.2.9	ISDN syntax-based videotex	18
A.2.10	Narrowband videophone service.....	19
A.3	Supplementary services.....	19
A.3.1	Calling Line Identification Presentation (CLIP).....	19
A.3.2	Calling Line Identification Restriction (CLIR)	19
A.3.3	Direct Dialling In (DDI).....	20
A.3.4	Multiple Subscriber Number (MSN).....	20
A.3.5	Terminal Portability (TP)	20
A.3.6	Call Waiting (CW)	20
A.3.7	Completion of Calls to Busy Subscriber (CCBS)	21
A.3.8	Closed User Group (CUG).....	21
A.3.9	User-user Signalling (UUS).....	21
A.3.10	Subaddressing (SUB).....	21
A.3.11	Three Party Service (3PTY).....	22
A.3.12	Advice Of Charge (AOC)	22
A.3.13	Connected Line Identification Presentation (COLP).....	22
A.3.14	Connected Line Identification Restriction (COLR).....	22
A.3.15	Malicious Call Identification (MCID)	23
A.3.16	Add On Conference Call (CONF).....	23
A.3.17	Meet Me Conference (MMC)	23
A.3.18	Freephone (FPH)	23
A.3.19	Explicit and Single step Call Transfer (CT)	24
A.3.20	Call Forwarding Busy (CFB).....	24
A.3.21	Call Forwarding No Reply (CFNR)	24
A.3.22	Call Forwarding Unconditional (CFU).....	24

A.3.23	Call Deflection (CD).....	25
A.3.24	Call Hold (HOLD)	25
A.4	Basic and primary rate user network interface	25
A.4.1	Basic user network interface layer 1	25
A.4.2	Primary rate user-network interface layer 1	26
A.4.3	Basic rate user network interface layer 2 (control plane)	26
A.4.4	Primary rate user network interface layer 2 (control plane)	26
A.4.5	Basic rate user network interface layer 3 (control plane)	26
A.4.6	Primary rate user network interface layer 3 (control plane)	26
A.5	ISDN interconnection interfaces	27
A.6	Network capabilities	27
Annex B:	Terminal interchangeability.....	28
B.1	Definition.....	28
B.2	Purpose.....	28
B.3	Achieving terminal interchangeability in the standardisation process.....	29
Annex C:	Principles for standardisation alignment between public and private ISDNs	31
Annex D:	Abbreviations used in this document	32
History	33

1 Scope

The purpose of this document is to provide a basic guide to the standards for the European ISDN. ETSI has published or will publish both European Telecommunication Standards (ETSS) or ETSI Technical Reports (ETRs) to specify or provide guidance on the services and standards for the European ISDN. This document therefore identifies the services and standards required and provides an overview of the structure, inter-relationship of the ETSS/ETRs. It does not indicate the status of the various ETSS/ETRs.

This basic guide has been produced by the ISDN Standards Management Group (ISM).

2 Background to the ISDN - CCITT Recommendations

An ISDN is a network providing end-to-end digital connectivity to support a wide range of telecommunication services. These services include voice and non-voice services to which customers have access by a small set of standard user-network interfaces.

The CCITT has prepared, in the I-Series, Recommendations which provide principles and guidelines on the ISDN concept, as well as detailed specifications. Information about the ISDN concept can be found in the following CCITT Recommendations:

- I.110 provides a structure for the Recommendations in the I-Series and also a list of those Recommendations.
- I.112 defines those terms that are considered essential to the understanding and application of the principles of an ISDN.
- I.120 describes the concept and principles of an ISDN.
- I.130 provides a method for describing telecommunication services (3 stage methodology).
- I.210.2 includes the description of the principles for defining telecommunication services supported by an ISDN including the concept of bearer services, teleservices and supplementary services.
- I.310 describes the ISDN network functional principles.
- I.410 describes general aspects and principles relating to the user-network interface.

Based on these principles the European Commission has embarked on a European ISDN.

3 The Memorandum of Understanding (MOU) and the ETSI work programme

In 1989 a MOU was agreed and signed between European Network Operators to enable European ISDN services to be offered across Europe in 1992. This includes a minimum set of services which all signatories will provide (indicated with a * in table 1). This MOU requires:

- standards for a common range of services which all signatories will follow.
- standards for user-network interfaces and protocols having the objective of enabling any customer equipment implemented to the required standards to be connected to and operated with the ISDN provided by each party (terminal interchangeability).
- standards for interconnecting national systems in order to provide international services.

Recognizing the needs of the MOU, thereby taking into account the requirements of private networks, but also bearing in mind the limited resources available, ETSI/SRC proposed a set of services and standards that would need to be established for the launching of the European ISDN in 1992 (see table 1).

Table 1: Services and standards.

Bearer Services Circuit-mode 64 kbit/s unrestricted * Circuit-mode 3,1 kHz audio * Packet-mode (X.31 case B) B- and D-channel Circuit-mode speech
Teleservices Telephony 3,1 kHz Facsimile group 4 class 1 Teletex Telephony 7 kHz ISDN syntax-based videotex Videotelephony
Supplementary Services Calling Line Identification Presentation (CLIP) * Calling Line Identification Restriction (CLIR) * Direct Dialling In (DDI) * Multiple Subscriber Number (MSN) * Terminal Portability (TP) * Call Waiting (CW) Completion of Calls to Busy Subscriber (CCBS) Closed User Group (CUG) User-to-User Signalling (UUS) Subaddressing (SUB) Three Party (3PTY) Advice of Charge (AOC) Connected Line Identification Presentation (COLP) Connected Line Identification Restriction (COLR) Malicious Call Identification (MCID) Add On Conference Call (CONF) Meet Me Conference (MMC) Freephone (FPH) Call Transfer (CT) Call Forwarding Busy (CFB) Call Forwarding No Reply (CFNR) Call Forwarding Unconditional (CFU) Call Deflection (CD) Call Hold (HOLD)
Basic access and Primary rate access user-network Interfaces
ISDN interconnection interfaces for the services identified above
End-to-end protocols for the services mentioned above
Network capabilities for the services mentioned above

4 Commonality between public and private ISDN standardisation

As a basic objective, the ISDN standards, in particular those covering service descriptions, have been designed to be common to both public and private ISDNs.

The principle of terminal interchangeability is to ensure that a terminal shall be (as far as possible) capable of participating in services independent of the actual network to which it is attached, i.e. different national ISDNs, private ISDNs, etc.

However, the ETSs describing a European ISDN include options which:

- cover historical variants of services and their usage in individual countries;
- allow for innovation.

Interworking between networks is assured, and where this might affect terminal interchangeability this is listed in an annex to the relevant ETS.

The ETSs also cover interworking of the European ISDN with private ISDNs which support identical or similar services to those of the public ISDN.

Again, whenever terminal interchangeability between public and private ISDNs might be affected, appropriate listings can be found in annexes to the private ISDN standards.

For the definition of terminal interchangeability and for the guidance on achieving terminal interchangeability see Annex B.

For the alignment of standardisation principles between public and private ISDNs see Annex C.

Annex D gives the list of abbreviations used in this document.

5 General organisation of ETSs/ETRs and numbering scheme for ETSs

5.1 Numbering

Numbers for ISDN ETSs (and all other ETSs) will commence from 300 001 and will be allocated on a consecutive basis, ETSs with such numbers can be purchased from the appropriate national standards body. ETSI has decided that no gaps should be left in any ETS numbering scheme, therefore numbers will not relate to any organisational structure. Until such numbers have been allocated by ETSI a temporary code has been given which uniquely identifies the draft ETS. ETRs are also identified by a unique code.

5.2 Titles

The title of each ISDN ETS consists of three elements:

- an introductory element indicating the general field to which the standard belongs (e.g. "Integrated Services Digital Network (ISDN)");
- a main element indicating the principle subject treated within that general field (e.g. name of telecommunication service such as "Explicit Call Transfer (ECT) supplementary service"; name of interface type such as "Basic user-network interface");
- a complementary element indicating the particular aspect of the principle subject or giving details which distinguish the standard from other standards, or one part from other parts of the same standard (e.g. if a telecommunication service the type of description according to CCITT Recommendation I.130 such as "Service description"; if an interface type the name of the protocol layer such as "data link layer protocol specification for the control plane").

5.3 Structure

This section provides a structure and framework for understanding the inter-relationships between the ISDN ETSs/ETRs. In determining this structure reference has been made to CCITT Recommendation I.110.

The ETSs are grouped according to the field of their application. The Stage 1 and 2 descriptions are grouped by service (i.e. they differ from other similar standards because they define a different aspect of a service; changing the interface has no effect on these). Other ETSs including the Stage 3 descriptions are grouped by interface (i.e. they differ from other similar standards because they define a different aspect of an interface; changing the service supported has no effect on these).

In addition there are ETSs and ETRs that relate to network capabilities and others to the end-to-end protocols between terminal equipments.

6 List of ETSs/ETRs according to structure

This section provides a list of ETSs/ETRs according to the structure given in section 5.3, Annex A compliments this section by providing the information contained in matrix form and also identifies relevant CCITT Recommendations.

The list below gives an ETS or ETR reference for each document. This reference does not indicate the status of the document. Information on the status can be obtained from ETSI Secretariat.

1	General	
1.1	The ETSI basic guide on the European integrated services digital network	ETR 010
2	Services	
2.1	Stage 1 descriptions	
2.1.1	Basic services	
2.1.1.1	Bearer services	
2.1.1.1.1	Circuit-mode 64 kbit/s unrestricted	ETS 300 108
2.1.1.1.2	Circuit-mode 3,1 kHz audio	ETS 300 110
2.1.1.1.3	Packet-mode (X.31, case B)	
2.1.1.1.3.1	B-channel	ETS 300 048
2.1.1.1.3.2	D-channel	ETS 300 049
2.1.1.1.3.3	Packet Handler Interface (PHI)	ETS 300 009
2.1.1.1.4	Circuit-mode speech	ETS 300 109
2.1.1.1.5	Applicability of supplementary services to the ISDN packet mode bearer services	ETR T/NA1(89)44
2.1.1.2	Teleservices	
2.1.1.2.1	Telephony 3,1 kHz	ETS 300 111
2.1.1.2.2	Telefax G4	ETS 300 120
2.1.1.2.3	Teletex	ETS T/NA1(90)03
2.1.1.2.4	Telephony 7 kHz	ETS T/NA1(89)32
2.1.1.2.5	ISDN syntax-based videotex	ETS T/NA1(90)04
2.1.1.2.6	Narrowband videophone service	ETS T/NA1(89)31
2.1.2	Supplementary services	
2.1.2.1	Number identification services	
2.1.2.1.1	DDI	ETS 300 062
2.1.2.1.2	MSN	ETS 300 050
2.1.2.1.3	CLIP	ETS 300 089
2.1.2.1.4	CLIR	ETS 300 090
2.1.2.1.5	COLP	ETS 300 094
2.1.2.1.6	COLR	ETS 300 095
2.1.2.1.7	MCID	ETS 300 128
2.1.2.1.8	SUB	ETS 300 059
2.1.2.2	Call offering services	
2.1.2.2.1	CT	
2.1.2.2.1.1	CT explicit	ETS T/NA1(89)22.1
2.1.2.2.1.2	CT single step	ETS T/NA1(89)22.2
2.1.2.2.2	CFB	ETS 300 199
2.1.2.2.3	CFU	ETS 300 200
2.1.2.2.4	CFNR	ETS 300 201
2.1.2.2.5	CD	ETS 300 202
2.1.2.3	Call completion services	
2.1.2.3.1	CW	ETS 300 056
2.1.2.3.2	HOLD	ETS 300 139
2.1.2.3.3	CCBS	ETS T/NA1(89)11
2.1.2.4	Multiparty services	

2.1.2.4.1	CONF	ETS 300 183
2.1.2.4.2	3PTY	ETS 300 186
2.1.2.4.3	MMC	ETS 300 164
2.1.2.5	Community of interest services	
2.1.2.5.1	CUG	ETS 300 136
2.1.2.6	Charging related services	
2.1.2.6.1	AOC	
2.1.2.6.1.1	At call set-up	ETS 300 178
2.1.2.6.1.2	During call	ETS 300 179
2.1.2.6.1.3	At end of call	ETS 300 180
2.1.2.7	Additional information transfer service	
2.1.2.7.1	UUS	ETS T/NA1(89)06
2.1.2.8	Other	
2.1.2.8.1	TP	ETS 300 053
2.1.2.8.2	FPH	ETS 300 208
2.1.3	Association of supplementary services to bearer services and teleservices	
2.1.3.1	Supplementary services associated with bearer services	ETR T/NA1(89)33
2.1.3.2	Supplementary services associated with teleservices	ETR T/NA1(89)34
2.1.3.3	Guidelines for describing ISDN services	ETR T/NA1(89)43
2.2	Stage 2 descriptions	
2.2.1	Basic services	
2.2.1.1	Bearer services	
2.2.1.1.1	Circuit-mode bearer services	ETS T/S 23-01
2.2.1.1.2	Packet-mode bearer services	ETS T/S 23-03
2.2.1.1.3	Packet Handler Interface (PHI)	ETS 300 009
2.2.1.2	Teleservices (NOTE 1)	
2.2.1.2.1	Circuit-mode teleservices	ETS T/S 23-01
2.2.1.2.2	Telephony 7 kHz	ETS T/S 22-14
2.2.1.2.3	Narrowband videophone	ETS T/S 22-16
NOTE 1: The stage 2 aspects of the Telephony 3,1 kHz, Facsimile Group 4, Teletex, and ISDN syntax-based videotex services are covered in the frame of ETS T/S 23-01.		
2.2.2	Supplementary services	
2.2.2.1	Number identification services	
2.2.2.1.1	DDI	ETS 300 063
2.2.2.1.2	MSN	ETS 300 051
2.2.2.1.3	CLIP and CLIR	ETS 300 091
2.2.2.1.4	COLP and COLR	ETS 300 096
2.2.2.1.5	MCID	ETS 300 129
2.2.2.1.6	SUB	ETS 300 060
2.2.2.2	Call offering services	
2.2.2.2.1	CT	
2.2.2.2.1.1	CT explicit	ETS T/S 22-21,1
2.2.2.2.1.2	CT single step	ETS T/S 22-21,2
2.2.2.2.2	CFB	ETS 300 203
2.2.2.2.3	CFU	ETS 300 204
2.2.2.2.4	CFNR	ETS 300 205
2.2.2.2.5	CD	ETS 300 206
2.2.2.3	Call completion services	
2.2.2.3.1	CW	ETS 300 057
2.2.2.3.2	HOLD	ETS 300 140
2.2.2.3.3	CCBS	ETS T/S 22-08
2.2.2.4	Multiparty services	
2.2.2.4.1	CONF	ETS 300 184
2.2.2.4.2	3PTY	ETS 300 187
2.2.2.4.3	MMC	ETS 300 165

2.2.2.5	Community of interest services		
2.2.2.5.1	CUG		ETS 300 137
2.2.2.6	Charging related services		
2.2.2.6.1	AOC		ETS 300 181
2.2.2.7	Additional information transfer service		
2.2.2.7.1	UUS		ETS T/S 22-17
2.2.2.8	Other		
2.2.2.8.1	TP		ETS 300 054
2.2.2.8.2	FPH		ETS 300 209
2.3	Stage 3 descriptions		
2.3.1	Basic services		
2.3.1.1	Bearer services		
2.3.1.1.1	The circuit-mode bearer services at the user-network interface are specified in ETS 300 102-1		
2.3.1.1.2	The packet-mode bearer services at the user-network interface are specified in ETS 300 007		
2.3.1.1.3	Packet Handler Interface (PHI)		ETS 300 009
2.3.1.1.4	The circuit-mode bearer services at the network interface are specified in ETS 300 121 and DE/SPS-6001		
2.3.1.2	Teleservices		
2.3.1.2.1	At the user-network interface teleservices are specified in ETS 300 102-1		
	Videotelephony and telephony 7 kHz in DE/SPS-5010		
2.3.1.2.2	At the network interface teleservices are specified in ETS 300 121 (except videotelephony and telephony 7 kHz) for ISUP version 1 and DE/SPS-6001 (all services) for ISUP version 2		
2.3.2	Supplementary services		
2.3.2.1	User-network interface	Requirements	Conformance test
2.3.2.1.1	Number identification services		
2.3.2.1.1.1	DDI	ETS 300 064	ETS T/S 46-34A
2.3.2.1.1.2	MSN	ETS 300 052	ETS T/S 46-34B
2.3.2.1.1.3	CLIP	ETS 300 092	ETS T/S 46-34C
2.3.2.1.1.4	CLIR	ETS 300 093	ETS T/S 46-34D
2.3.2.1.1.5	COLP	ETS 300 097	ETS T/S 46-34L
2.3.2.1.1.6	COLR	ETS 300 098	ETS T/S 46-34M
2.3.2.1.1.7	MCID	ETS 300 130	ETS T/S 46-34N
2.3.2.1.1.8	SUB	ETS 300 061	ETS T/S 46-34I
2.3.2.1.2	Call offering services		
2.3.2.1.2.1	CT		
2.3.2.1.2.1.1	explicit	ETS T/S 46-33Q1	ETS T/S 46-34Q
2.3.2.1.2.1.2	single step	ETS T/S 46-33Q2	ETS T/S 46-34Q
2.3.2.1.2.2	Diversion services	ETS 300 207	ETS T/S 46-34R
2.3.2.1.3	Call completion services		
2.3.2.1.3.1	CW	ETS 300 058	ETS T/S 46-34F
2.3.2.1.3.2	HOLD	ETS 300 141	ETS T/S 46-34S
2.3.2.1.3.3	CCBS	ETS T/S 46-33G	ETS T/S 46-34G
2.3.2.1.4	Multiparty services		
2.3.2.1.4.1	CONF	ETS 300 185	ETS T/S 46-34J1
2.3.2.1.4.2	3PTY	ETS 300 188	ETS T/S 46-34J2
2.3.2.1.4.2	MMC contains no signalling in addition to basic call		
2.3.2.1.5	Community of interest services		
2.3.2.1.5.1	CUG	ETS 300 138	ETS T/S 46-34H
2.3.2.1.6	Charging related services		
2.3.2.1.6.1	AOC	ETS 300 182	ETS T/S 46-34K
2.3.2.1.7	Additional information transfer service		
2.3.2.1.7.1	UUS is specified in the ETS for the basic call		
2.3.2.1.8	Other		
2.3.2.1.8.1	TP	ETS 300 055	ETS T/S 46-34E

2.3.2.1.8.2	FPH	ETS 300 210	ETS T/S 46-34P
2.3.2.1.9	Generic procedures		
2.3.2.1.9.1	Generic keypad protocol for the control of ISDN supplementary services		ETS 300 122
2.3.2.1.9.2	Conformance test specification for 300 122		DE/SPS-5004
2.3.2.1.9.3	Generic functional procedures for the control of ISDN supplementary services		ETS 300 196
2.3.2.1.9.4	Conformance test specification for ETS 300 196		DE/SPS-5005
2.3.2.1.10	Interactions of supplementary services		ETS 300 195
2.3.2.2	ISDN interconnection interface		
2.3.2.2.1	ISUP Version 1 (NOTE 2)		ETS 300 121
2.3.2.2.2	ISUP Version 2		DE/SPS-6001

NOTE 2: Version 1 contains the following supplementary services: DDI, MSN, CLIP, CLIR, COLP, COLR, SUB, MMC, CUG, TP and UUS service 1.

3 User-network interface aspects

3.1 User-network interface

3.1.1	Layer 1		
3.1.1.1	Primary rate interface		ETS 300 011
3.1.1.2	Basic rate interface		ETS 300 012
3.1.2	Layer 2 basic and primary rate specification		ETS 300 125
3.1.2.1	Conformance test specification for ETS 300 125		DE/SPS-5001
3.1.2.2	PICS proforma for ETS 300 125		DE/SPS-5006
3.1.2.3	PIXIT proforma for ETS 300 125		DE/SPS-5008
3.1.3	Layer 3 basic call (NOTE 3)		ETS 300 102-1
			ETS 300 102-2

NOTE 3: specifies protocols for circuit switched basic telecommunications.

3.1.3.1	Conformance test specification for ETS 300 102-1		DE/SPS-5002
3.1.3.2	PICS proforma for ETS 300 102-1		DE/SPS-5007
3.1.3.3	PIXIT proforma for ETS 300 102-1		DE/SPS-5009
3.1.3.4	Use of ISDN for accessing packet switching functions		ETS 300 007
3.1.3.5	Conformance test specification for ETS 300 007		E/SPS-5003
3.1.3.6	Application document for the coding of information elements		ETR 018
3.1.3.7	Application of ETS 300 102-1 to videotelephony and telephony 7 kHz		E/SPS-5010

3.2 Safety and protection

3.2.1	Safety categories and protection levels at various interfaces for telecommunications equipment in customer premises		TS T/TE 04-25
3.2.2	ISDN primary rate access - Safety and protection		ETS 300 046-1
			ETS 300 046-2
			ETS 300 046-3
			ETS 300 046-4
			ETS 300 046-5
3.2.3	ISDN basic access - Safety and protection		TS 300 047-1
			ETS 300 047-2
			ETS 300 047-3
			ETS 300 047-4
			ETS 300 047-5
3.2.4	ISDN customer wiring installation guideline for basic access user-network interface		ETR T/TE 04-26

3.3 EMC

3.3.1	EMC requirements for ISDN connected equipment at basic		
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and primary rate	ETS 300 126
3.4 Maintenance	
3.4.1 ISDN subscriber access and installation maintenance	TR 001
4 Network interfaces	
4.1 Signalling system number 7	
4.1.1 MTP	
4.1.1.1 MTP	ETS 300 008
4.1.1.2 MTUP	ETS [CE] T/S 43-04
4.1.1.3 MTP test specification	ETS T/S 43-17
4.1.2 ISUP	
4.1.2.1 ISUP Version 1	ETS 300 121
4.1.2.2 ISUP Version 2	DE/SPS-6001
4.1.2.3 Signalling interworking specification, Version 1	E/SPS-6003
4.1.2.4 Signalling interworking specification, Version 2	E/SPS-6006
4.1.2.5 ISUP test specification, Version 1	E/SPS-6004
4.1.2.6 ISUP test specification, Version 2	E/SPS-6007
4.1.3 SCCP	
4.1.3.1 SCCP	ETS 300 009
4.1.3.2 SCCP test specification	TS T/S 43-18
4.1.4 TCAP	
4.1.4.1 TCAP	ETS 300 134
4.1.4.2 TCAP test specification	E/SPS-6005
4.1.5 Supplementary services	
5 User equipment end-to-end protocols	
5.1 End-to-end protocols for bearer services	
5.1.1 Circuit-mode speech	ETS 300 083
5.1.2 Circuit-mode 3,1 kHz audio	ETS 300 084
5.1.3 Support of X.21, X.21bis and X.20bis based DTEs	ETS 300 103
5.1.4 Packet-mode (X.31, case B) B- and D-channel	TS 300 007
5.2 End-to-end protocols for teleservices	
5.2.1 Telephony 3,1 kHz	TS 300 082
5.2.2 Telephony 7 kHz	ETS T/TE 12-06A
	ETS 300 143
	ETS 300 144
5.2.2.1 Test specification for Telephony 7 kHz	TS T/TE 12-06B
5.2.3 Narrowband videotelephony	TS 300 142
	ETS 300 143
	ETS 300 144
	ETS 300 145
	ETS 300 146
5.2.4 Telematics	
5.2.4.1 Lower layers	ETS 300 080
5.2.4.2 Upper layers	
5.2.4.2.1 Facsimile Group 4	ETS 300 112
5.2.4.2.2 Facsimile Group 4 Protocol conformance tests	TS 300 155
5.2.4.2.3 Facsimile Group 4 Terminal function specifications	ETS T/TE 05-09
5.2.4.2.4 Facsimile Group 4 Testing procedure	ETS T/TE 05-10
5.2.4.2.5 Teletex and Protocol conformance Tests	ETS 300 081
5.2.4.2.6 ISDN syntax-based videotex	TS 300 079

5.2.4.2.7	ISDN syntax-based videotex conformance testing	ETS T/TE 06-11
5.2.4.2.8	Videotex data syntaxes	
5.2.4.2.8.1	Alphanumeric, mosaic display	TS 300 072
5.2.4.2.8.2	Geometric display	ETS 300 073
5.2.4.2.8.3	Transparent data	ETS 300 074
5.2.4.2.8.4	Processable data	ETS 300 075
5.2.4.2.8.5	Terminal Facility Identifier	ETS 300 076
5.2.4.2.8.6	Photographic Display	ETS T/TE 06-06
5.2.4.2.8.7	Audio syntax	ETS 300 149
6	Network aspects	
6.1	Network capabilities	
6.1.1	Numbering addressing and routing	
6.1.1.1	Numbering and addressing in ISDN	ETR 006
6.1.1.2	Routing	
6.1.1.2.1	Routing for priority I and II services of the ISDN MOU	ETS 300 100
6.1.1.2.2	Routing for MOU ISDN services covering Priority 1 & 2 services for ISUP Version 2	ETS T/N XX
6.1.1.3	Numbering and addressing for VPNs	TR/NA-2002
6.2	Terminal and network interworking aspects	
6.2.1	Terminal selection and compatibility checking principles for priority I and II services of the ISDN MOU	DTR/NA-2007
6.2.2	Interworking aspects of ISDN MOU services (Priority I and II services)	ETR 030
7	Attachment requirements	
7.1	Basic rate	
7.1.1	Attachment requirements for Layer 1 and 2 basic access	ETS 300 153
7.1.2	Attachment requirements for Layer 3 basic access	TS 300 104
7.2	Primary rate	
7.2.1	Attachment requirements for Layer 1, 2 and 3 primary rate access	ETS 300 156
7.3	Terminal adaptors	
7.3.1	Attachment requirements for terminal adaptors to connect to an ISDN at the S/T reference point	TS 300 077

Annex A: ISDN services and specifications - matrix

A.1 Introduction

The tables contained in this annex list all the ETSs required for defining basic services (i.e. bearer and teleservices), supplementary services and network capabilities as required by the ETSI work programme for the European ISDN.

Each service is described in an entry matrix. The vertical entries are all specific parts where a given service can be defined. These are:

- | | |
|-----------|---|
| Stage 1: | This part is an overall description from the user's standpoint. |
| Stage 2: | This part is an overall description of the organization of the network functions to map service requirements into network capabilities. |
| Stage 3a: | This part is the definition of switching and signalling capabilities needed to support services at the access protocol ("a" stands for access). |
| Stage 3n: | This part is the definition of switching and signalling capabilities needed to support services in the network ("n" stands for network). |
| Protocol: | Under this item only user-plane protocol specifications are listed. |

For each of these vertical entries there is a column where the relevant ETS specifying the requirements, conformance testing (Conf.) and attachment testing (Attach.) is entered. ETRs are also included where relevant, and there is a column for CCITT Recommendations (Rel.Rec.) related to the requirement's ETS.

The following key applies to entries in the matrices:

- | | |
|---------|---|
| N/A | Not applicable |
| — — | None |
| NOTE 1: | Generic procedures for supplementary services (stage 3a) are included in draft ETSs 300 122 and ETS 300 196. Interactions between supplementary services are included in ETS 300 195. |
| NOTE 2: | There are no additional requirements over and above the basic call control procedures specified in ETS 300 102-1. Therefore no additional ETS is required. |
| NOTE 3: | Outside the scope of the ISM work programme |
| NOTE 4: | For equipment with ISDN interface. |

A.2 Basic services

A.2.1 Circuit-mode 64 kbit/s unrestricted

Type: Bearer

Items	ETS/ETR	Conf.	Attach.	Rel. Rec
Stage 1	300 108	N/A	N/A	I.231.1
Stage 2	T/S 23-01	N/A	N/A	Q.71
Stage 3a	300 102-1 300 102-2 ETR 018	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.2.2 Circuit-mode 3,1 kHz audio

Type: Bearer

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	300 110	N/A	N/A	I.231.3
Stage 2	T/S 23-01	N/A	N/A	Q.71
Stage 3a	300 102-1 300 102-2 ETR 018	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767
Protocol	300 084	300 084	—	G.711

A.2.3 Packet-mode (X.31 case B) B- and D- channel

Type: Bearer

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	300 048 300 049	N/A	N/A	I.232.1
Stage 2	T/S 23-03	N/A	N/A	—
Stage 3a	300 007	DE/SPS-5003	300 077	Q.931/ X.31
Protocol	300 007	DE/SPS-5003	300 077	X.31

NOTE: ETS 300 007 goes somewhat beyond stage 3 specification of the packet-mode switched bearer service in that it also includes specification of X.25 Terminal Adaptor which is usually outside the scope of a stage 3 specification. In addition, some aspects of the stage 1 ETS (e.g. PLL access method on the D-channel) is not explicitly specified in ETS 300 007.

A.2.4 Circuit-mode speech

Type: Bearer

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	300 109	N/A	N/A	I.231.2
Stage 2	T/S 23-01	N/A	N/A	Q.71
Stage 3a	300 102-1 300 102-2 ETR 018	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767
Protocol	300 083	300 083	—	G.711

A.2.5 Telephony 3,1 kHz

Type: Teleservice

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	300 111	N/A	N/A	I.241.1
Stage 2	N/A	N/A	N/A	Q.71
Stage 3a	300 102-1 300 102-2 ETR 018	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767
Protocol (NOTE 3)	300 082	300 082	T/TE 10-06	

A.2.6 Telefax G4

Type: Teleservice

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	300 120	N/A	N/A	I.241.3
Stage 2	N/A	N/A	N/A	Q.71
Stage 3a	300 102-1 300 102-2 ETR 018	DE/SPS-500	300 104 300 156	Q.931
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767
Protocol (NOTE 3)	300 080 300 112	300 155	T/TE 05-12	T.90

A.2.7 Teletex

Type: Teleservice

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	T/NA1 (90) 03	N/A	N/A	I.241.2
Stage 2	N/A	N/A	N/A	Q.71
Stage 3a	300 102-1 300 102-2 ETR 018	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767
Protocol (NOTE 3)	300 080 300 081	300 081	300 081	T.90

A.2.8 Telephony 7 kHz

Type: Teleservice

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	T/NA1 (89) 32	N/A	N/A	—
Stage 2	T/S 22-14	N/A	N/A	—
Stage 3a	300 102-1 300 102-2 DE/SPS-5010	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	Q.761/62 Q.763/64
Protocol	T/TE 12-06A 300 144 300 143	T/TE 12-06B	—	G.722 G.725 H.221 H.242

A.2.9 ISDN syntax-based videotex

Type: Teleservice

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	T/NA1 (90) 04	N/A	N/A	I.241.5
Stage 2	N/A	N/A	N/A	Q.71
Stage 3a	300 102-1 300 102-2 ETR 018	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767
Protocol	300 080 300 079	T/TE 06-11	—	T.90

A.2.10 Narrowband videophone service

Type: Teleservice

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	T/NA1 (89) 31	N/A	N/A	F.121
Stage 2	T/S 22-16	N/A	N/A	—
Stage 3a	300 102-1 300 102-2 DE/SPS-5010	DE/SPS-5002	300 104 300 156	Q.931
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	Q.763/64 Q.761/62
Protocol	300 142 300 143 300 144 300 145 300 146	—	—	H.221/ 242/320/ 230/261

A.3 Supplementary services

A.3.1 Calling Line Identification Presentation (CLIP)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	300 089	N/A	N/A	I.251.3
Stage 2	300 091	N/A	N/A	Q.81.3
Stage 3a (NOTE 1)	300 092	T/S 46-34C	—	Q.951.3
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.2 Calling Line Identification Restriction (CLIR)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Stage 1	300 090	N/A	N/A	I.251.4
Stage 2	300 091	N/A	N/A	Q.81.4
Stage 3a (NOTE 1)	300 093	T/S 46-34D	—	Q.951.4
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.3 Direct Dialling In (DDI)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 062	N/A	N/A	I.251.1
Stage 2	300 063	N/A	N/A	Q.81.1
Stage 3a (NOTE 1)	300 064	T/S 46-34A	—	Q.951.1
Stage 3n	N/A	N/A	N/A	N/A

A.3.4 Multiple Subscriber Number (MSN)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 050	N/A	N/A	I.251.2
Stage 2	300 051	N/A	N/A	Q.81.2
Stage 3a (NOTE 1)	300 052	T/S 46-34B	—	Q.951.2
Stage 3n	N/A	N/A	N/A	N/A

A.3.5 Terminal Portability (TP)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach .	Rel.Rec.
Stage 1	300 053	N/A	N/A	—
Stage 2	300 054	N/A	N/A	—
Stage 3a (NOTE 1)	300 055	T/S 46-34E	T/TE 04-22	Q.931 5.6
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.6 Call Waiting (CW)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 056	N/A	N/A	I.253.1
Stage 2	300 057	N/A	N/A	Q.83.1
Stage 3a (NOTE 1)	300 058	T/S 46-34F	—	Q.953.1
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.7 Completion of Calls to Busy Subscriber (CCBS)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	T/NA1 (89) 11	N/A	N/A	I.253.3
Stage 2	T/S 22-08	N/A	N/A	Q.83.3
Stage 3a (NOTE 1)	T/S 46-33G	T/S 46-34G	—	Q.953.3
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.8 Closed User Group (CUG)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 136	N/A	N/A	I.255.1
Stage 2	300 137	N/A	N/A	Q.85.1
Stage 3a (NOTE 1)	300 138	T/S 46-34H	—	Q.955.1
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.9 User-user Signalling (UUS)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	T/NA1 (89) 06	N/A	N/A	I.257.1
Stage 2	T/S 22-17	N/A	N/A	Q.87.1
Stage 3a (NOTE 1)	300 102-1 Section 7.1	T/S 46-34T	—	Q.931 ° 7 Q.957.1
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.10 Subaddressing (SUB)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 059	N/A	N/A	I.251.8
Stage 2	300 060	N/A	N/A	Q.81.8
Stage 3a (NOTE 1)	300 061	T/S 46-34I	—	Q.951.8
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.11 Three Party Service (3PTY)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 186	N/A	N/A	I.254.2
Stage 2	300 187	N/A	N/A	Q.84.2
Stage 3a (NOTE 1)	300 188	T/S 46-34J2	—	Q.954.2
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.12 Advice Of Charge (AOC)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 178 300 179 300 180	N/A	N/A	I.256.2
Stage 2	300 181	N/A	N/A	Q.86.2
Stage 3a (NOTE 1)	300 182	T/S 46-34K	—	Q.956.2
Stage 3n	N/A	N/A	N/A	N/A

A.3.13 Connected Line Identification Presentation (COLP)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 094	N/A	N/A	I.251.5
Stage 2	300 096	N/A	N/A	Q.81.5
Stage 3a (NOTE 1)	300 097	T/S 46-34L	—	Q.951.5
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.14 Connected Line Identification Restriction (COLR)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 095	N/A	N/A	I.251.6
Stage 2	300 096	N/A	N/A	Q.81.6
Stage 3a (NOTE 1)	300 098	T/S 46-34M	—	Q.951.6
Stage 3n	300 121	DE/SPS-6004	N/A	Q.767

A.3.15 Malicious Call Identification (MCID)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 128	N/A	N/A	I.251.7
Stage 2	300 129	N/A	N/A	Q.81.7
Stage 3a (NOTE 1)	300 130	T/S 46-34N	—	Q.951.7
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.16 Add On Conference Call (CONF)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 183	N/A	N/A	I.254.1
Stage 2	300 184	N/A	N/A	Q.84.1
Stage 3a (NOTE 1)	300 185	T/S 46-34J1	—	Q.954.1
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.17 Meet Me Conference (MMC)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 164	N/A	N/A	—
Stage 2	300 165	N/A	N/A	—
Stage 3a (NOTE 1)	N/A (NOTE 2)	N/A	N/A	N/A
Stage 3n	N/A	N/A	N/A	N/A

A.3.18 Freephone (FPH)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 208	N/A	N/A	—
Stage 2	300 209	N/A	N/A	—
Stage 3a (NOTE 1)	300 210	T/S 46-34P	—	—
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.19 Explicit and Single step Call Transfer (CT)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	T/NA1 (89) 22.1 T/NA1 (89) 22.2	N/A	N/A	I.252.1
Stage 2	T/S 22-21	N/A	N/A	Q.82.1
Stage 3a (NOTE 1)	T/S 46-33Q1 T/S 46-33Q2	T/S 46-34Q	—	Q.952.1
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.20 Call Forwarding Busy (CFB)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 199	N/A	N/A	I.252.2
Stage 2	300 203	N/A	N/A	Q.82.2
Stage 3a (NOTE 1)	300 207	T/S 46-34R1	—	Q.952.2
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	Q.730

A.3.21 Call Forwarding No Reply (CFNR)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 201	N/A	N/A	I.252.3
Stage 2	300 205	N/A	N/A	Q.82.3
Stage 3a (NOTE 1)	300 207	T/S 46-34R2	—	Q.952.3
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	Q.730

A.3.22 Call Forwarding Unconditional (CFU)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 200	N/A	N/A	I.252.4
Stage 2	300 204	N/A	N/A	Q.82.4
Stage 3a (NOTE 1)	300 207	T/S 46-34R3	—	Q.952.4
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	Q.730

A.3.23 Call Deflection (CD)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 202	N/A	N/A	I.252.5
Stage 2	300 206	N/A	N/A	Q.82.5
Stage 3a (NOTE 1)	300 207	T/S 46-34R4	—	Q.952.5
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.3.24 Call Hold (HOLD)

Type: Supplementary

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Stage 1	300 139	N/A	N/A	I.253.2
Stage 2	300 140	N/A	N/A	Q.83.2
Stage 3a (NOTE 1)	300 141	T/S 46-34S	—	Q.953.2
Stage 3n	DE/SPS-6001	DE/SPS-6007	N/A	—

A.4 Basic and primary rate user network interface

A.4.1 Basic user network interface layer 1

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Decription	300 012	300 012	300 153	I.430
Safety & Protection (NOTE 4)	300 047-1 300 047-2 300 047-3 300 047-4 300 047-5	300 047-1 300 047-2 300 047-3 300 047-4 300 047-5	300 153	K.22
Maintenance	ETR 001	N/A	N/A	I.601 I.603
EMC (NOTE 4)	300 126	300 126	N/A	—

A.4.2 Primary rate user-network interface layer 1

Items	ETS/ETR	Conf.	Attach.	Rel. Rec.
Description	300 011	300 011	300 156	I.431
Safety & Protection (NOTE 4)	300 046-1 300 046-2 300 046-3 300 046-4 300 046-5	300 046-1 300 046-2 300 046-3 300 046-4 300 046-5	300 156	—
Maintenance	ETR 001	N/A	N/A	I.601 I.604
EMC (NOTE 4)	300 126	300 126	N/A	—

A.4.3 Basic rate user network interface layer 2 (control plane)

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Description	300 125	DE/SPS-5001	300 153	Q.920 Q.921

A.4.4 Primary rate user network interface layer 2 (control plane)

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Description	300 125	DE/SPS-5001	300 156	Q.920 Q.921

A.4.5 Basic rate user network interface layer 3 (control plane)

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Description	300 102-1 300 102-2 ETR 018 DE/SPS-5010	DE/SPS-5002	T/TE 04-22	Q.931

A.4.6 Primary rate user network interface layer 3 (control plane)

Items	ETS/ETR	Conf.	Attach.	Rel.Rec.
Description	300 102-1 300 102-2 ETR 018 DE/SPS-5010	DE/SPS-5002	300 156	Q.931

A.5 ISDN interconnection interfaces

Items	ETS/ETR	Conf.	Attach.	Rel. Recs.
MTP	300 008	T/S 43-17	N/A	Q.701/709
MTP Testing UP	T/S 43-04	—	N/A	—
SCCP	300 009	T/S 43-18	N/A	Q.711/714 /716
TCAP	300 134	DE/SPS-6005	N/A	Q.771-775
ISUP Version 1	300 121	DE/SPS-6004	N/A	Q.767
Signalling interworking specification Version 1	DE/SPS-6003	—	N/A	—
ISUP Version 2	DE/SPS-6001	DE/SPS-6007	N/A	—
Signalling interworking specification Version 2	DE/SPS-6006	—	N/A	—

A.6 Network capabilities

Items	ETS/ETR	Rel.Rec.
Numbering and Addressing	ETR 006	E.164/ 165
Routing	300 100	E.170 I.132
Public/Private Numbering	DTR/NA-2002	—
Terminal Selection	DTR/NA-2007	I.333
Teleservice Interworking	ETR 030	I.5XX series

Annex B: Terminal interchangeability

B.1 Definition

The ability of a Terminal Equipment (TE) to be attached to any two network(s) accesses, A and B, if at least one interface of the terminal equipment, and all interface and network access related functions, can satisfy the functional requirements, or a subset of, applicable to network access A and the functional requirements, or a subset of, applicable to network access B, with minimal modification or re-configuration.

A functional subset of a standard provides a particular set of functions (e.g. call answering capabilities on terminal equipment). It shall be sufficient for a terminal equipment or network access to conform to functional subsets only.

Minimal modification or re-configuration is that amount of modification or re-configuration that could be expected to be performed by an unskilled user of that piece of terminal equipment. It therefore includes the possibility of software and hardware modifications simply implementable by unskilled users, but excludes re-configurations or modifications that would normally be performed by the terminal equipment supplier.

NOTE: The definition given above does not consider administrative and regulatory aspects pertinent to individual networks. In addition, the actual connection of a terminal to a network may require the action of the network operator, e.g. allocation of terminal identification, subscription to the relevant service, etc.

Further to the definition, in the ISDN environment, the network accesses are the terminal-to-public-ISDN accesses at the S/T reference point and the terminal-to-private-ISDN accesses at the S reference point.

Terminal interchangeability can be achieved, even if constrained to certain bearer services and/or teleservices and/or supplementary services. This depends upon the ability of the terminals and networks to provide the functions necessary to support those services. It therefore requires both the terminal and the network to provide, and to conform to, the functions standardised for the support of these services.

Terminals are expected to be interchanged between network(s) accesses that do not support particular bearer services, teleservices or supplementary services in a standardized manner. The user shall be able to determine which services are or are not supported when the terminal equipment is used on a particular network access.

B.2 Purpose

The ISDN provides a standard set of interfaces and services. The ISDN MOU defines a basic kernel set of ISDN service which all public ISDNs are expected to provide. It also allows for additional services to be provided as options. However, when these optional services are provided, they shall be provided in the standardised manner¹⁾. Thus when a terminal equipment is connected to an ISDN network access any service which is:

- a) provided by the network; and
- b) provided by the terminal equipment

it will operate correctly.

The only reason why a service will not operate is if either:

- a) the service is not provided by the network; or
- b) the service is not provided by the terminal equipment

¹⁾ Any network operator/terminal provider may provide non-standardised services (and this is expected to be the norm in the early stages of ISDN implementation). However, Terminal Interchangeability cannot provide the user with a guaranteed operation of these non-standardised services.

A terminal equipment which supports standardised services may therefore be connected to any ISDN (public or private) at the access points X1, X2, X3 or X4 of figure 1.

Terminal Interchangeability includes interchanging terminal equipments between two accesses:

1. on one public network;
2. on two different public networks;
3. on one private network;
4. on two different private networks;
5. one on a public network and one on a private network.

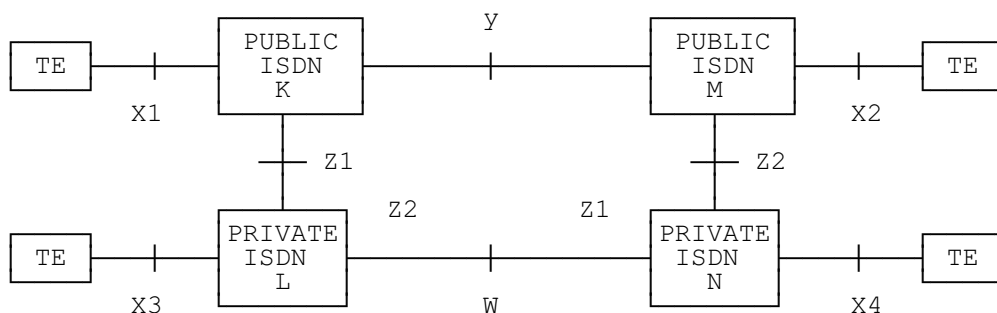


Figure 1¹⁾ : Access and interconnection points in ISDN concept

B.3 Achieving terminal interchangeability in the standardisation process

Practical Terminal Interchangeability requires that the standards defining the services of the ISDN are written in a manner which prevents deliberate (or accidental) selection of options within a standard which will prevent two implementations of a service, each of which conform to the standard, failing to interwork.

However, the definition should not prevent terminal equipment or network suppliers from choosing to support only a limited set of the options of a service.

Terminal interchangeability is prevented by ambiguity within Standards.

In order to create apparatus that will allow terminal interchangeability, it is necessary for terminal and network equipment suppliers that:

- 1) all parts of standards related to network accesses and services be written in a manner that prevents misinterpretation and unintentional equipment differences;

¹⁾ The interconnections W, Y and Z of figure 1 are not relevant to the subject of Terminal interchangeability.

Standardisation of the services and interfaces at point W of figure 1 is the subject of work currently being undertaken by ECMA.

Standardisation of the interface at point Y in figure 1 is the subject of work currently being undertaken by ETSI.

The public ISDN access points (Z1 and Z2) in figure 1 may be different to the access points X1 and X2. Standardisation of the interfaces and services at the access points Z1 and Z2 would allow for ISPBX interchangeability.

It is assumed that an unskilled user would not perform the reconfigurations or modifications necessary to achieve ISPBX interchangeability.

- 2) all optional parts of standards related to network accesses and services be clearly identified as options, when they will affect the ability of terminals to be interchangeable or the network to support interchangeable terminal equipment;
- 3) on the basis of the options identified within the standard, the network operators explicitly define which options they support at which time and, when more than one option supported, how the options are defined. This will provide a "profile" of the network accesses and services;
- 4) on the basis of the options identified within the standards, terminal manufacturers explicitly define which options they support and, when more than one option is supported, how the options are to be used. This will provide a "profile of the terminal equipment in respect of all standards supported.

The users/purchasers of terminal equipment can then use the "profiles" of the terminal equipment and of the network(s) accesses to determine whether a satisfactory level of terminal interchangeability can be achieved.

When creating Protocol Implementation Conformance Specifications (PICS) for an existing standard, the revised standard shall identify the obvious and hidden options.

Annex C: Principles for standardisation alignment between public and private ISDNs

Joint ITAEGT (Information Technology Expert Group for private Telecommunications) and ISM (ISDN Standards Management) statement

ITAEGT and ISM have considered, in particular, the need for common service descriptions for public and private ISDN. Already ISM has produced stage 1 service descriptions, taking into account requirements from private ISDNs (presented by ECMA and ETSI TC-BT). As a general aim, a single service description document covering both public and private ISDNs is desirable.

To enhance the aim of producing a single service description document, there should be a single base standard and with conformance statements for both the public and private ISDNs.

It is further considered that this aim should be applied to all the standards being produced for public and private ISDNs. However, the time constraints of both the ISM and ITAEGT programmes of work made this difficult in the short term, but this should not constrain the long term aims.

Therefore, ITAEGT and ISM recommend that the following principles should be adopted for future standardization activities in the areas of public and private ISDNs:

- 1 Where European Standards for corresponding services are being developed concurrently in the public and private ISDN domain, the standardization bodies concerned declare:
 - that, while recognizing that some differences in the standards may be essential, unnecessary differences shall be avoided;
 - a common format and layout should be used for both public and private network standards;
 - there shall be, following ITAEGT procedures, a timely exchange of information;
 - European ISDN Standards should indicate the differences between public and private applications.
- 2 Where a European Standard exists for a service for the public ISDN but not for the private ISDN, and it is decided to develop a standard for the private ISDN, the public ISDN standard shall form the core for a common ISDN standard, so that the user's perception of the service shall be kept the same as far as possible.

Necessary differences between the requirements of public and private networks shall be explicitly indicated by conformance statements.
- 3 Where a European Standard exists for a service for the private ISDN but not for the public ISDN, and it is decided to develop a standard for the public ISDN, the private ISDN standard shall form the core for a common ISDN standard, so that the user's perception of the service shall be kept the same as far as possible.

Necessary differences between the requirements of public and private networks shall be explicitly indicated by conformance statements.
- 4 Coordination is required to prevent unnecessary duplication of the development of standards.
- 5 It should be noted that it is possible that some standards and services may only be applicable to either public ISDNs or private ISDNs. When separate, stand-alone documents are necessary, then those parts of the two specifications which are the same should be identical; i.e. rewriting of a section using different words or a different format for whatever reason should be avoided.

Annex D: Abbreviations used in this document

CCITT	Comité Consultatif International Télégraphique et Téléphonique
ECMA	European Computer Manufacturers Association
EMC	Electro-Magnetic Compatibility
ETR	European Technical Report
ETS	European Telecommunications Standard
ISDN	Integrated Services Digital Network
ISM	ISDN Standards Management
ISPBX	ISDN Private Branch Exchange
ISUP	ISDN User Part of CCITT Signalling System No. 7
ITAEGT	Information Technology Advisory (and Coordination) Expert Group for private Telecommunication networks
ITU	International Telecommunication Union
MOU	Memorandum of Understanding
MTP	Message Transfer Part of CCITT Signalling System No. 7
MTUP	MTP Testing User Part of CCITT Signalling System No. 7
NET	Normes Européennes de Télécommunications
SCCP	Signalling Connection Control Part of CCITT Signalling System No. 7
SRC	Strategic Review Committee (on ISDN)
TC BT	Technical Committee Business Telecommunications
TCAP	Transaction Capabilities of CCITT Signalling System No. 7
VPN	Virtual Private Network

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