List of standards and/or specifications for electronic communications networks, services and associated facilities and services

(interim issue)

(2002/C 331/04)

(Text with EEA relevance)

EXPLANATORY NOTE CONCERNING THE INTERIM ISSUE OF THE LIST OF STANDARDS AND/OR SPECIFICATIONS FOR ELECTRONIC COMMUNICATIONS NETWORKS, SERVICES AND ASSOCIATED FACILITIES AND SERVICES

In accordance with Article 5(1) of Directive 90/387/EEC ([1]), as amended by Directive 97/51/EC and Article 17 of the Framework Directive 2002/21/EC ([2]), the Commission shall publish in the *Official Journal of the European Communities* a list of standards and/or specifications which serve as a basis for encouraging the harmonised provision of electronic communications networks, electronic communications services and associated facilities and services (first paragraph of Article 17), to ensure interoperability of services and to improve freedom of choice for users. (second paragraph of Article 17) ([3]).

This publication replaces the former ONP list of standards (the sixth issue) published on 7 November 1998 ([4]) under the ONP Directive. The obligations under the current regulatory framework remain applicable until the new regulatory framework is applied from 25 July 2003, in accordance with Article 28 of the Framework Directive.

The new regulatory framework implies a number of changes. All electronic communications networks, services and associated services are now covered. The list of standards needed to be changed accordingly. Major changes in this issue compared with the sixth issue of the ONP list of standards from 1998 are:

— a number of standards have been withdrawn from the ONP list of standards. Most standards associated with the PSDS Recommendation 92/382/EEC and ISDN Recommendation 92/383/EEC have been withdrawn,

— a number of additional standards have been added to the list, in particular in a new broadcasting chapter.

This is a selective list of standards in the areas concerned. In accordance with Art 17(2) of the Framework Directive, in the absence of standards and/or specifications in this list, Member States must encourage the implementation of standards and/or specifications adopted by European standards organisations and, in the absence of such standards and/or specifications, encourage the implementation of international standards or recommendations adopted by the International Telecommunication Union (ITU), the International Organisation for Standardisation (ISO) or the International Electrotechnical Commission (IEC) ([5]).

PREFACE

1. General

Pursuant to Article 5(1) of Directive 90/387/EEC, as amended by Directive 97/51/EC the Commission publishes a list of standards for harmonised technical interfaces and/or service features in the context of open network provision. Pursuant to Article 17(1) of the Framework Directive the Commission shall draw up and publish in the *Official Journal of the European Communities* a list of standards and/or specifications for encouraging the harmonised provision of electronic communications networks, electronic communications services and associated facilities and services.

The obligations under the current regulatory framework remain applicable until the new regulatory framework is applied from 25 July 2003, in accordance with Article 28 of the Framework Directive.

The list of standards will be revised on a regular basis to take account of requirements resulting from new technologies and market changes. Interested parties are encouraged to comment on this interim issue.

([1]) Council Directive 90/387/EEC of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision (OJ L 192, 24.7.1990), as amended by Directive 97/51/EC of the European Parliament and of the Council of 6 October 1997 (OJ L 295, 29.10.1997).

([2]) OJ L 108, 24.4.2002, p. 33.

([3]) Equivalent wording is found in Article 5(1) of Directive 90/387/EEC, as amended by Directive 97/51/EC.

([4]) OJ C 339, 7.11.1998, p. 6.

([5]) Equivalent wording is found in Article 5(2) of Directive 90/387/EEC, as amended by Directive 97/51/EC.

The Communications Committee has been consulted in so far as the list relates to Article 17 of the Framework Directive ([1]).

2. Structure of the list of standards

— Chapter I: Reference list for leased lines beyond the minimum set defined in chapter I of the Annex.

— Chapter II: Access and interconnection. Number portability, carrier selection and carrier pre-selection.

— Chapter III: Unbundled access to the local loop.

— Chapter IV: Standards for implementing various user services.

— Chapter V: Standards for implementing data protection requirements.

— Chapter VI: Standards for electronic communications networks established for the distribution of digital broadcasting services including their associated facilities.

Annex

The annex includes, for information purposes only, a list of standards and/or specifications the implementation of which is made mandatory under the current Directives.

— Chapter I: Reference list for the minimum set of leased lines listed in Annex II of Directive 92/44/EEC ([2]) as amended by Directive 97/51/EC ([3]), and in future by Directive 2002/22/EC (Universal Service Directive) ([4]).

— Chapter II: Quality of service parameters, as established in Annex III of Directive 98/10/EC ([5]) as amended by Commission Decision 2001/22/EC ([6]), and in future by Directive 2002/22/EC (Universal Service Directive), for operators with universal service obligations.

When no version number of the standard is quoted, the version referred to in this list is the version valid at the time that the list is published.

See section 7 of this preface for full references to the above-mentioned Directives.

3. Status of the standards in the list

The use of standards listed in Chapters I to VI is encouraged but there is no legal obligation to implement them. According to Article 17(2) of the Framework Directive, 'Member States shall encourage the use of the standards and/or specifications referred to (. . .) for the provision of services, technical interfaces and/or network functions, to the extent strictly necessary to ensure interoperability of services and to improve freedom of choice for users.' ([7]).

In accordance with Article 17 of the framework Directive, the purpose of this list is 'to serve as a basis for encouraging the harmonised provision of electronic communications networks, electronic communications services and associated facilities and services' (first paragraph), 'to ensure interoperability of services and to improve freedom of choice for users.' (second paragraph). This should be borne in mind when implementing standards which contain alternatives or optional clauses.

According to Article 17(5) and (6) of the Framework Directive, 'where the Commission considers that standards and/or specifications (. . .) no longer contribute to the provision of harmonised electronic communications services, or that they no longer meet consumers' needs or are hampering technological development, it shall (. . .) remove them from the list of standards and/or specifications (. . .).'.

4. Technical standards and/or specifications

Most of the standards and specifications mentioned in this list are ETSI deliverables under both the previous and current ETSI nomenclature. According to the 'ETSI Directives' ([8]), these deliverables are defined as follows:

Deliverables under the current ETSI nomenclature:

ETSI guide, EG: An ETSI deliverable, containing mainly informative elements, approved for publication by application of the membership approval procedure.

ETSI standard, ES: An ETSI deliverable, containing normative provisions, approved for publication by application of the membership approval procedure.

([1]) Established under Article 22 of the Framework Directive.

([2]) OJ L 165, 19.6.1992.

([3]) OJ L 295, 29.10.1997, p. 23.

([4]) Article 18(1): 'Where (. . .) a national regulatory authority determines that the market for the provision of part or all of the minimum set of leased lines is not effectively competitive, it (. . .) shall impose obligations regarding the provision of the minimum set of leased lines, as identified in the list of standards published in the *Official Journal of the European Communities* in accordance with Article 17 of Directive 2002/21/EC (Framework Directive), and the conditions for such provision set out in (Annex VII to this Directive (. . .).'.

([5]) OJ L 101, 1.4.1998, p. 24.

([6]) OJ L 5, 10.1.2001, p. 12.

([7]) Equivalent wording is found in Article 5(1) of Directive 90/387/EEC, as amended by Directive 97/51/EC.

([8]) Available at http://portal.etsi.org/directives/

ETSI technical specification, TS: An ETSI deliverable, containing normative provisions, approved for publication by a technical body.

ETSI technical report, TR: An ETSI deliverable, containing mainly informative elements, approved for publication by a technical body.

European Standard (telecommunications series), EN: An ETSI deliverable containing normative provisions, approved for publication in a process involving the national standards organisations and/or ETSI national delegations with implications concerning standstill and national transposition.

Harmonised standard: An EN (telecommunications series) the drafting of which has been entrusted to ETSI by a mandate from the European Commission under European Directive 98/48/EC (latest amendment to Directive 83/189/EEC) and has been drafted taking into account the applicable essential requirements of the 'New Approach' Directive and whose reference has subsequently been announced in the *Official Journal of the European Communities*.

Special report, SR: An ETSI deliverable, which contains information made publicly available for reference purposes.

Deliverables under the previous ETSI nomenclature to which reference is made in the list:

European telecommunication standard (ETS): An ETSI deliverable, containing normative, provisions approved for publication in a process involving the national standards organisations and/or ETSI national delegations with implications concerning standstill and national transposition.

ETSI technical report, (ETR): An ETSI deliverable, containing informative elements, approved for publication by a technical committee.

5. **The three-stage specification methodology used by ETSI**

In the list stage 1, 2 and 3 standards are included where appropriate. These refer to the three-stage specification methodology used by ETSI (see ETR-010).

Stage 1 is an overall service description from the user's standpoint. Stage 2 is a description of the functional capabilities and the information flows needed to support the service described in stage 1. Stage 3 is the specification of the signalling protocol at the user-network access interface or at the gateway between two public networks.

6. **Addresses where documents referenced can be obtained**

ETSI Publications Office (¹) postal address:

F-06921 Sophia Antipolis Cedex
tel. (33-4) 92 94 42 41 or (33-4) 92 94 42 58
fax (33-4) 93 95 81 33
e-mail: publications@etsi.fr
website: http://www.etsi.fr

ITU Sales and Marketing Service (For ITU-T documents) postal address:

Place des Nations
CH-1211 Geneva 20
tel. (41-22) 730 61 41 (English)
(41-22) 730 61 42 (French)
(41-22) 730 61 43 (Spanish)
fax (41-22) 730 51 94
e-mail: sales@itu.int
website: http://www.itu.int

7. **References to EU legislation**

The list refers to the following legislative documents which may be found at http://europa.eu.int/information_society/topics/telecoms/regulatory/index_en.htm.

Directive 2002/21/EC (Framework Directive) of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (OJ L 108, 24.4.2002, p. 33).

Directive 2002/19/EC (Access Directive) of the European Parliament and of the Council on access to, and interconnection of, electronic communications networks and services and associated facilities (OJ L 108, 24.4.2002, p. 7).

Directive 2002/22/EC (Universal Service Directive) of the European Parliament and of the Council on Universal service and users' rights relating to electronic communications networks and services (OJ L 108, 24.4.2002, p. 51).

Directive 2002/58/EC (Directive on privacy and electronic communications) of the European Parliament and of the Council on the processing of personal data and the protection of privacy in the electronic communications sector (OJ L 201, 31.7.2002, p. 27).

Directive 2002/20/EC (Authorisation Directive) of the European Parliament and of the Council on the authorisation of electronic communications networks and services (OJ L 108, 24.4.2002, p. 21).

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(¹) ETSI documents can be downloaded from the ETSI publications download area: http://pda.etsi.org/pda/queryform.asp

Recommendation 2000/417/EC of the Commission on unbundled access to the local loop (OJ L 156, 29.6.2000, p. 44).

Regulation EC/2887/2000 of the European Parliament and of the Council on unbundled access to the local loop (OJ L 336, 30.12.2000, p. 4).

Directive 90/387/EEC of the Council on the establishment of the internal market for the telecommunication services through the implementation of open network provision (OJ L 192, 24.7.1990, p. 1), as amended by Directive 97/51/EC of the European Parliament and the Council amending Council Directives 90/387/EEC and 92/44/EEC for the purpose of adaptation to a competitive environment in tele-communications (OJ L 295, 29.10.1997, p. 23).

Directive 92/44/EEC of the Council on the application of open network provision to leased lines (OJ L 165, 19.6.1992, p. 27), as amended by Directive 97/51/EC of the European Parliament and the Council amending Council Directives 90/387/EEC and 92/44/EEC for the purpose of adaptation to a competitive environment in tele-communications (OJ L 295, 29.10.1997, p. 23), as amended by Commission Decision of 7 January 1998 on amendment of Annex II to Directive 92/44/EEC of the Council (OJ L 14, 20.1.1998, p. 27).

Directive 95/47/EC (Television standards Directive) on the use of standards for the transmission of television signals (OJ L 281, 23.11.1995, p. 51).

Directive 97/33/EC of the European Parliament and the Council on interconnection in telecommunications with regard do ensuring universal service and interoperability through application of the principles of open network provision (OJ L 199, 26.7.1997, p. 32).

Directive 97/51/EC of the European Parliament and of the Council amending Council Directives 90/387/EEC and 92/44/EEC for the purpose of adaptation to a competitive environment in telecommunications (OJ L 295, 29.10.1997, p. 23).

Directive 98/10/EC of the European Parliament and the Council on the application of open network provision (ONP) to voice telephony and on universal service for tele-communication in a competitive environment (OJ L 101, 1.4.1998, p. 24) as amended by Commission Decision of 22 December 2000 on amendment of Annex III of the Directive 98/10/EC of the European Parliament and the Council (OJ L 5, 10.1.2001, p. 12).

The present list deals with standards on telecommunication networks and broadcasting networks and associated facilities. It is without prejudice to the Directive 1999/5/EC of the European Parliament and of the Council on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity [1], and any list of standards published pursuant to that Directive.

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[1] OJ L 91, 7.4.1999, p. 10.

LIST OF STANDARDS AND/OR SPECIFICATIONS FOR ELECTRONIC NETWORKS, SERVICES AND ASSOCIATED FACILITIES AND SERVICES

The purpose of publishing standards in the list is to encourage the provision of harmonised electronic communications services to the benefit of users throughout the Community, to ensure interoperability and to support the implementation of the current and future regulatory framework. The main guiding principle to include standards is to focus on standards related closely to the provisions in the Directives.

CHAPTER I

Reference list for leased lines beyond the minimum set defined in Chapter I of the Annex

The technical interfaces and/or service features listed in this chapter include those listed in Annex III to Directive 92/44/EEC.

DIGITAL

Technical interfaces and/or service features	Reference	Notes
Notes N x 64 kbit/s	— ETSI EN 300 766	Connection characteristics and network interface presentation

Comments: ETSI EN 300 766 specifies connection characteristics and network interface presentation for multiple 64 kbit/s digital unrestricted leased lines with octet integrity presented at a structured 2 048 kbit/s interface at either of both ends.

Technical interfaces and/or service features	Reference	Notes
34 368 kbit/s — E3	— ETSI EN 300 686 — ETSI EN 300 687	Network interface presentation Connection characteristics

Comments: E3 is the market denomination for this type of leased line. The associated standard for terminal equipment is ETSI EN 300 89. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 24.

139 264 kbit/s — E4	— ETSI EN 300 686 — ETSI EN 300 688	Network interface presentation Connection characteristics

Comments: E4 is the market denomination for this type of leased line. The associated standard for terminal equipment is ETSI ETS 300 690. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 25.

SDH VC-based leased digital bandwidth	— ETSI EN 301 164 — ETSI EN 301 165	Connection characteristics Interface presentation

Comments: ETSI EN 301 164 specifies the technical requirements for leased line connections of SDH virtual containers, i.e. VC-4, VC-3, VC-2 and VC12. ETSI EN 301 165 defines the functions relevant for the interface presentations of SDH leased lines with STM-1 (155 520 kbit/s) in both electrical and optical forms and STM-4 (622 080 kbit/s) in optical form.

CHAPTER II

Standards for access and interconnection, number portability, carrier selection and carrier pre-selection

NETWORK INTERCONNECTION

This section contains standards for switched network interconnection, including intelligent network interconnection. The interconnection standards identified are based on Signalling System No 7 (SS7).

Technical interfaces and/or service features	Reference	Notes
ISUP	— ETSI EN 300 356-1 to 12 — ETSI EN 300 356-14 to 20 — ETSI EN 300 356-21	version 3 and 4 version 3 and 4 version 4
SCCP	— ETSI EN 300 009-1	
MTP	— ETSI EN 300 008-1	

Comments: ISUP is the user part of Signalling System No 7 (SS7). SS7 provides common channel signalling for use in circuit switched networks: PSTN, ISDN and GSM. ISUP has been designed first at an international boundary, but is also appropriate for the interconnections of different operators' networks in the same country. ISUP uses the layers 1 to 3 protocols (MTP) and may also use SCCP. Different ETSI versions for ISUP exist. ISUP version 2 of ETSI is specified in the ETS 300 356-series and in ETS 300 344.

The MTP standard ETSI EN 300 008-1 has been designed for international interconnection.

Application of ISUP version 3 for the ISDN-GSM signalling interface	— ETSI EN 302 646-1 to 64	

Comments: EN 302 646 contains modification to ISUP version 3 in order to interconnect ISDN and GSM.

TCAP	— ETSI ETS 300 287-1 to 3	
MAP	— ETSI TS 100 974 — ETSI TS 129 002	Phase 2+, Releases 1996-1998 Phase 2+, Release 1999 and Releases 4 and 5

Comments: MAP is the user part of Signalling system No 7 (SS7) for handling roaming in mobile networks. MAP uses the SS7 protocols MTP, SCCP and TCAP.

INAP	— ETSI EN 301 140-series — ETSI EN 301 193-series — ETSI EN 301 039-series	Capability set 2 (CS2) Capability set 3 (CS3) Capability set 4 (CS4)

Comments: INAP is the user part of Signalling system No 7 (SS7) for intelligent network interconnection. INAP uses the SS7 protocols MTP, SCCP and TCAP. Different ETSI capability set versions exist.

Technical interfaces and/or service features	Reference	Notes
Quality of service parameter definitions and measurement methods	— ETSI TR 101 949	

Comments: ETSI TR 101 949 contains harmonised definitions and measurement methods for a range of quality of service parameters that relate to public network-public network interconnection. The public network can be either fixed or mobile.

ACCESS TO SERVICE PROVIDERS

This section contains standards suitable for access to the network at points other than the network termination points offered to the majority of end-users.

Technical interfaces and/or service features	Reference	Notes
Service provider access requirements	— ETSI EG 201 722 — ETSI EG 201 897	

Comments: ETSI EG 201 722 lists the first set of access requirements that service providers have in delivering services over one or more public telecommunications networks primarily fixed public switched telecommunications networks (PSTNs) and Integrated Services Digital Networks (ISDNs).

ETSI EG 201 897 lists the second set of network access requirements that service providers have in delivering services including mobile, cordless and fixed services, over one or more public telecommunication networks.

Network operators' requirements for the delivery of service provider access	— ETSI EG 201 807	

Comments: ETSI EG 201 807 lists the first set of requirements that public network operators have for the delivery of service provider access to ensure network integrity, security and other aspects such as provisions for charging and billing.

Development of standards to support open inter-network interfaces and service provider access	— ETSI EG 201 916	

Comments: ETSI EG 201 916 contains information to enable service providers and network operators to determine and compare standardised facilities that are available in published ETSI protocols to support the introduction of new services.

NUMBER PORTABILITY AND CARRIER SELECTION AND CARRIER PRE-SELECTION

The technical interfaces and/or services features given in this section are based upon Article 19 of the Universal Service Directive with regard to operator number portability, carrier selection and carrier pre-selection.

Number portability in fixed public networks

Technical interfaces and/or service features	Reference	Notes
High level description of number portability	— ETSI TR 101 119	
High level network architecture and solutions to support number portability	— ETSI TR 101 118	
Guidance on choice of network	— ETSI TR 101 697	
Administrative support for number portability	— ETSI TR 101 698	
Numbering and addressing for number portability	— ETSI TR 101 122	

Technical interfaces and/or service features	Reference	Notes
Signalling requirements to support number portability	— ETSI TR 102 081	
SS7 ISUP: Enhancements for support of number portability	— ETSI EN 302 097	
IN and Intelligence Support for number portability	— ETSI EG 201 367	
Number portability for pan-European services	— ETSI TR 101 073	

Comments: The ETSI deliverables cover geographic as well as non-geographic numbers. Different solutions for number portability exist. An IN solution can provide high functionality with fairly high throughput or traffic handling capability. Depending on the number portability requirements, also other solutions with lower functionality are possible.

Number portability in mobile public networks

Support of mobile number portability — Service description	— ETSI EN 301 715	Stage 1
Support of mobile number portability — Technical Realisation	— ETSI EN 301 716	Stage 2

Comments: ETSI has produced TR 101 621 'Consequences of mobile number portability on the PSTN/ISDN and synergy between geographic and mobile number portability'.

Carrier selection and carrier preselection

Report on carrier selection	— ETSI TR 101 092	

Comments: ETSI TR 101 092 identifies the essential requirements and related network capabilities for introducing carrier selection and carrier pre-selection; a variety of possible methods are considered and the likely impact of each is assessed. ITU-T E.164 (Supplement 1) presents a summary of the potential methods for carrier selection and network identification on the public network.

CHAPTER III

Unbundled access to the local loop

The technical interfaces and/or services features given in this section are related to unbundled access to the local loop in accordance with Recommendation 2000/417/EC and Regulation (EC) No 2887/2000 on unbundled access to the local loop.

Technical interfaces and/or service features	Reference	Notes
Spectral management on metallic access networks	— ETSI TR 101 830-1	

Comments: ETSI TR 101 830-1 gives guidance on a common language for spectral management specifications. It provides a first set of definitions on spectral management quantities and an informative library of signal definitions.

Technical interfaces and/or service features	Reference	Notes
Asymmetrical digital subscriber line (ADSL)	— ETSI TS 101 388	
Symmetrical single-pair high bit rate digital subscriber line (SDSL)	— ETSI TS 101 524	
High bit-rate digital subscriber line (HDSL)	— ETSI TS 101 135	
Very high-speed digital subscriber line (VDSL)	— ETSI TS 101 270-1 — ETSI TS 101 270-2	Functional requirements Transceiver specification

Comments: ETSI TS 101 388 endorses ITU-T Recommendation G.992.1, the contents of which apply together with the addition of the modifications being covered in the specification. In addition ITU has worked out a variant ADSL solution in its Recommendation G.992.2, also known as G.Lite or 'splitter-less' ADSL, that is very easy to deploy in the customer premises. ETSI is developing specifications for DSL splitters in the TS 101 952 series.

CHAPTER IV

Standards for implementing various user services

The technical interfaces and/or services features given in this chapter are those suitable for implementing offerings regarding various user services in accordance with the Universal Service Directive.

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SINGLE LINE ANALOGUE INTERFACE AND TELEPHONE TONES

In accordance with Article 4 of the Universal Service Directive Member States shall ensure that all reasonable requests for connection to the public telephone network at a fixed location and for access to publicly available telephone services at a fixed location are met by at least one operator.

Technical interfaces and/or service features	Reference	Notes
PSTN network termination point (NTP) analogue interface	— ETSI ES 201 970	

Comments: The objective of ES 201 970 is to specify the physical and electrical characteristics at a 2-wire analogue presented NTP for short to medium length loop applications, particularly suitable for use by new network operators of public switched telephone networks (PSTN).

Technical interfaces and/or service features	Reference	Notes
Network generated tones	— ETSI TR 101 041-1	

Comments: The objective of ETSI TR 101 041-1 is to review the different existing tones in use. Recommendations are made for the tones most appropriate for harmonisation and for their technical characteristics.

STANDARDS FOR SERVICES AND OTHER MEASURES FOR DISABLED USERS

In accordance with Article 7 of the Universal Service Directive Member States shall, where appropriate take specific measures to ensure equal access to and affordability of publicly available telephone services for disabled users.

Technical interfaces and/or service features	Reference	Notes
Operational and interworking requirements for DCEs operating in the text telephone mode	— ITU-T V.18	

Technical interfaces and/or service features	Reference	Notes
Basic user requirements and recommendations for text telephony	— ETSI ETR 333	
Guidelines for telecommunication relay services for text telephones	— ETSI TR 101 806	

Comments: ETSI has published EG 202 116 'Guidelines for ICT products and services; design for all'.

DIRECTORY ENQUIRY SERVICES

In accordance with Article 5 of the Universal Service Directive Member States shall ensure that at least one telephone directory enquiry service covering all listed subscribers' numbers is available to all users.

Technical interfaces and/or service features	Reference	Notes
Interconnection of computerised directory assistance services	— ITU-T F.510	

Comments: TU-T F.510 was developed for international public directory services but is also suitable for interconnecting national directory databases.
ITU-T E.115 is currently used to implement international public directory services.

CALLER LOCATION

In accordance with Article 26(3) of the Universal Service Directive Member States shall ensure that providers of public telephone networks make caller location information available to emergency services authorities, to the extent technically feasible, for all '112' calls. In fixed networks caller location will be provided by means of CLIP service.

Technical interfaces and/or service features	Reference	Notes
Caller location in GSM networks		

Comments: The Commission services are preparing a recommendation on the implementation of caller location in public telecommunication networks, for calls to emergency services.

EUROPEAN TELEPHONE ACCESS CODE ('3883')

In accordance with Article 27 of the Universal Service Directive Member States shall ensure that all providers of public telephone networks handle all calls to the European telephony numbering space (ETNS).

Technical interfaces and/or service features	Reference	Notes
Routeing of calls to European telephony numbering space (ETNS) services	— ETSI EN 301 160	
Management of the European telephony numbering space.	— ETSI EN 301 161	
Human factors requirements for a European telephony numbering space (ETNS)	— ETSI EN 301 104	
Considerations on network mechanisms for charging and revenue accounting for European telephony numbering space (ETNS) services	— ETSI EN 101 617	

Comments: None.

ADDITIONAL FACILITIES

In accordance with Article 29 of the Universal Service Directive operators operating public telephone networks must support the use of DTMF tones and make available calling-line identification as listed in Annex I part B.

Dual-tone multi-frequency (DTMF)

Technical interfaces and/or service features	Reference	Notes
Specification of dual-tone multi-frequency system	— ETSI ES 201 235-1 — ETSI ES 201 235-3	Part 1 — General Part 3 — Receivers

Comments: Dual-tone multi-frequency transmitters are specified in ETSI ES 201 235-2. Dual-tone multi-frequency transmitters and receivers for use in terminal equipment for end-to-end signalling are specified in ETSI ES 201 235-4.

Calling-line identification in PSTN — Networks

Technical interfaces and/or service features	Reference	Notes
Calling line Identification Presentation (CLIP)	— ETSI ETS 300 648	Stage 1
Calling line identification Restriction (CLIR)	— ETSI ETS 300 649	Stage 1
Signalling protocol for support calling line identification Services	— ETSI EN 300 659-1 — ETSI EN 300 659-2 — ETSI EN 300 659-3	On-hook Off-hook Data link message and parameter coding

Comments: European telecommunications platform (ETP) has developed guidelines for CLI to telephone companies and organisations transmitting and receiving CLI information, as well as for terminal and network equipment manufacturers.

The implementation of these guidelines should ensure the ability of public networks to use CLI information for network and/or account management purposes and customer care or, in co-operation with the relevant authorities, handling of emergency calls and the tracing of malicious calls and similar services and activities.

Calling-line identification in ISDN — Networks

Technical interfaces and/or service features	Reference	Notes
Calling line identification Presentation (CLIP)	— ETSI EN 300 089 — ETSI ETS 300 091 — ETSI EN 300 092-1	Stage 1 Stage 2 Stage 3
Calling line identification Restriction (CLIR)	— ETSI EN 300 090 — ETSI ETS 300 091 — ETSI EN 300 093-1	Stage 1 Stage 2 Stage 3

Comments: None.

Calling-line identification in GSM — Networks

Technical interfaces and/or service features	Reference	Notes
Calling line identification	— ETSI GTS GSM 02.81	Stage 1
Supplementary services	— ETSI GTS GSM 03.81	Stage 2
	— ETSI EN 300 951	Stage 3

Comments: None.

CONTROL OF EXPENDITURE

In accordance with Article 10 and Annex I part A of the Universal Service Directive operators with universal service obligations must offer a number of services so consumers can monitor and control expenditure. As universal service does not include ISDN only standards for services within the PSTN network are listed.

Outgoing call-barring

Technical interfaces and/or service features	Reference	Notes
Outgoing call-barring in PSTN networks		

Comments: The CEPT SF Handbook (¹) Section II Chapters 3.1.2 and 3.1.3 contain recommendations for outgoing call-barring.

CHAPTER V

Standards for implementing data-protection requirements

The technical interfaces and/or services features given in this chapter are those suitable for implementing the offerings in accordance with the Directive on privacy and electronic communications and the Universal Service Directive. However for some of the facilities which are also addressed in the Universal Service Directive the relevant standards are placed elsewhere in this list.

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CALLING AND CONNECTED LINE IDENTIFICATION SERVICES

The technical interfaces and/or services features given in this section are related to the calling and connected line identification services required under Article 8 of the Directive on privacy and electronic communications.

Technical interfaces and/or service features	Reference	Notes
Anonymous call rejection (service that rejects incoming call without CLI)	— ETSI EN 301 798	

Comments: ETSI EN 301 798 contains the service description for the anonymous call rejection (ACR) supplementary service.

Technical interfaces and/or service features	Reference	Notes
Restrict the presentation of the calling line identification of incoming calls		

Comments: No standards exist.

Technical interfaces and/or service features	Reference	Notes
Restrict the presentation of the connected line identification		

Comments: No standards exist.

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(¹) The CEPT SF Handbook can be obtained from ETNO, Avenue Louise 54, B-1050 Brussels.

LOCATION DATA FOR PUBLIC TELEPHONE SERVICES

In accordance with Article 26(3) of the Universal Service Directive, undertakings operating public telephone networks should make caller location information available to the authorities handling emergencies, for all calls to the single European emergency number '112'. In accordance with Articles 9 of the Directive on privacy and electronic communications, the subscriber must have the possibility, via a simple means, to temporarily deny the processing of location data for each connection to the network or for each transmission of a communication. In accordance with Article 10 of the Directive on privacy and electronic communications, the temporary denial of the subscriber may be overridden for the processing of location data for organisations dealing with emergency calls.

Technical interfaces and/or service features	Reference	Notes
Presentation of location data (data format)		
Restrict presentation of location data		

Comments: The Commission Services are preparing a recommendation on the implementation of caller location in public telecommunication networks, for calls to emergency services.

AUTOMATIC CALL FORWARDING

In accordance with Article 11 of the Directive on privacy and electronic communications Member States shall ensure that any subscriber is provided, free of charge and via a simple means, with the possibility to stop automatic call forwarding by a third party to the subscriber's terminal.

Technical interfaces and/or service features	Reference	Notes
Cancellation of call forwarding by the user that receive the forwarded call		

Comments: No standardised service exists. Requests to cancel call forward are handled by operators in an ad hoc basis.

CHAPTER VI

Standards for electronic communications networks established for the distribution of digital broadcasting services including their associated facilities

This chapter lists the relevant standards for the provision of broadcasting services in accordance with the Access and Interconnection Directive, the Universal Service Directive and the Framework Directive. These carry over or extend the relevant provisions from Directive 95/47/EC on the use of standards for the transmission of television signals (hereafter referred to as the 'television standards Directive').

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INTEROPERABILITY OF CONSUMER TELEVISION EQUIPMENT

In accordance with Articles 3 and 4(d) of the television standards Directive, television sets should be fitted with at least one open interface socket (as standardised by a recognised European standardisation body). These obligations are carried over in modified form to Article 24 and Annex VI of the Universal Service Directive.

Technical interfaces and/or service features	Reference	Notes
Open interface for analogue television sets, e.g. peritelevision connector	— Cenelec EN 50049-1	
Open interface for digital television sets, e.g. common interface	— EN 50049-1/A1	
Interface for DVB Integrated receiver decoder	— ETSI TS 102 201	

Comments: As stated in recital 33 of the Universal Service Directive, user requirements and functionality of digital interface sockets are still evolving in line with technological developments.

CONDITIONAL ACCESS SYSTEMS

In accordance with Article 4(a) of the television standards Directive, consumer equipment capable of descrambling digital television signals must allow the descrambling of such signals according to the common European scrambling algorithm, and the display of signals that have been transmitted in clear. This is also required by Article 24 and Annex VI of the Universal Service Directive.

In accordance with Article 6(1) and Annex I of the Access and Interconnection Directive, Member States must ensure the application of the conditions referred to therein regarding access to digital television and radio broadcasting services. These carry over most of the provisions in Article 4 of the television standards Directive and extend their scope to radio services.

Technical interfaces and/or service features	Reference	Notes
DVB-SimulCrypt; Head-end architecture synchronisation and implementation (DVB-SIM)	— ETSI TS 101 197 — ETSI TS 103 197	
Support for use of scrambling and conditional access within digital broadcasting systems (DVB-CS)	— ETSI ETR 289	
Common interface specification for conditional access and other DVB decoder applications (DVB-CI) and one relevant implementation guide	— Cenelec EN 50221 — Cenelec R206-001	

Comments: None.

TRANSMISSION SYSTEMS

Digital television broadcasting

In accordance with Article 2(a) of the television standards Directive 'all television services transmitted to viewers in the Community, whether by cable, satellite or terrestrial means shall (. . .) if they are fully digital, use a transmission system which has been standardised by a recognised European standardisation body.'

Technical interfaces and/or service features	Reference	Notes
Framing structure, channel coding and modulation for 11/12 GHz satellite services (DVB-S)	— ETSI EN 300 421	
Implementation of binary phase shift keying (BPSK) modulation in DVB satellite transmission systems (DVB-S)	— ETSI TR 101 198	
Framing structure, channel coding and modulation for cable systems (DVB-C)	— ETSI EN 300 429	
Framing structure, channel coding and modulation for digital terrestrial television (DVB-T)	— ETSI EN 300 744	
Implementation guidelines for DVB terrestrial services; transmission aspects	— ETSI TR 101 190	
Multipoint video distribution systems: — at 10 GHz and above (DVB-MS) — below 10 GHz (DVB-MC) — based on OFDM modulation (DVB-MT)	— ETSI EN 300 748 — ETSI EN 300 749 — ETSI EN 301 701	
Mega-frame for single frequency networks synchronisation	— ETSI TS 101 191	
MPEG-implementation guidelines for the use of MPEG-2 systems, video and audio in satellite, cable and terrestrial broadcasting applications	— ETSI TR 102 154	
MPEG-implementation guidelines for the use of MPEG-2 systems, video and audio in contribution applications	— ETSI TR 101 154	

Comments: None.

Digital radio broadcasting

This section contains a standard suitable for the transmission of digital radio broadcasts.

Technical interfaces and/or service features	Reference	Notes
Digital audio broadcasting (DAB) to mobile, portable and fixed receivers	— ETSI EN 300 401	

Comments: None.

SERVICES

In accordance with article 18 and Art.17(2) of the Framework Directive Member States shall encourage the interoperability of digital television services.

Technical interfaces and/or service features	Reference	Notes
Specification for service information (SI) in DVB (DVB-SI) and two relevant implementation guidelines	— ETSI EN 300 468 — ETSI TR 101 211 — ETSI ETR 162	

Comments: None.

APPLICATION PROGRAM INTERFACES (APIs)

Article 18(1)(a) of the Framework Directive requires Member States to encourage, in accordance with the provisions of Article 17(2), providers of digital interactive television services for distribution to the public in the Community on digital interactive television platforms, regardless of the transmission mode, to use an open API.

Multimedia home platform

Technical interfaces and/or service features	Reference	Notes
Multimedia home platform (MHP) specification 1.0	— ETSI TS 102 812	
Multimedia home platform (MHP) specification 1.1	— ETSI TS 101 812	

Comments: Work on the multimedia home platform (MHP) technical specification continues in the digital video broadcast group (DVB). DVB has grouped the MHP functionality into three classes of profiles, i.e. enhanced broadcasting, interactive broadcasting (both covered by MHP version 1.0) and Internet access (covered by version MHP 1.1). ETSI has already adopted version MHP 1.0.2 and MHP 1.1.

ANNEX

This annex sets out, for information purposes only, a list of standards and/or specifications the implementation of which is made mandatory under current Directives.

In the present list, the standards and specifications are:

— the leased lines standards that are specified in Annex II of Directive 92/44/EEC,

— quality of service parameters, as established in Annex III of Directive 98/10/EC as amended by Commission Decision of 22 December 2000 on amendment of Annex III of the Directive 98/10/EC.

CHAPTER I

Reference list for leased lines listed in Annex II to Directive 92/44/EEC

In accordance with Article 7 of Directive 92/44/EC, certain organisations are obliged to provide a minimum set of leased lines conforming to the technical specifications given in this list. Following repeal of this Directive on 24 July 2003, these obligations are carried forward in accordance with Article 16(1) of the Universal Service Directive. Obligations regarding the provision of the minimum set of leased lines shall be reviewed in accordance with Article 16(3) and Article 18(1) of that Directive. In accordance with Article 18(2) of the Universal Service Directive, Member States shall withdraw the obligations concerning the provision of leased lines when the relevant market is effectively competitive.

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ANALOGUE

Technical interfaces and/or service features	Reference	Notes
Ordinary quality voice bandwidth (2 wire)	— ETSI EN 300 488	Connection characteristics and network interface presentation

Comments: The associated standard for terminal equipment is ETSI EN 300 450. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 15.

Ordinary quality voice bandwidth (4 wire)	— ETSI EN 300 451	Connection characteristics and network interface presentation

Comments: The associated standard for terminal equipment is ETSI EN 300 453. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 17.

Technical interfaces and/or service features	Reference	Notes
Special quality voice bandwidth (2 wire)	— ETSI EN 300 449	Connection characteristics and network interface presentation

Comments: The associated standard for terminal equipment is ETSI EN 300 450. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 15.

Special quality voice bandwidth (4 wire)	— ETSI EN 300 452	Connection characteristics and network interface presentation

Comments: The associated standard for terminal equipment is ETSI ETS 300 453. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 17.

DIGITAL

Technical interfaces and/or service features	Reference	Notes
64 kbit/s	— ETSI EN 300 288 — ETSI EN 300 289	Network interface presentation Connection characteristics

Comments: The associated standard for terminal equipment is ETSI EN 300 290. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 14 and its amendment A1.

Technical interfaces and/or service features	Reference	Notes
2 048 kbit/s — E1 (unstructured)	— ETSI EN 300 418 — ETSI EN 300 247	Network interface presentation Connection characteristics

Comments: E1 is the market denomination for this type of leased line. The associated standard for terminal equipment is EN 300 248. The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 12 and its amendment A1.

Technical interfaces and/or service features	Reference	Notes
2 048 kbit/s — E1 (structured)	— ETSI EN 300 418 — ETSI EN 300 419	Network interface presentation Connection characteristics

Comments: E1 is the market denomination for this type of leased line. The associated standard for terminal equipment is ETSI EN 300 420.The attachment requirements for terminal equipment to be connected to these leased lines were specified in ETSI TBR 13.

CHAPTER II

Quality of service parameters

In accordance with Article 12 of Directive 98/10/EC on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment as amended by Commission Decision of 22 December 2000 on amendment of Annex III of the Directive 98/10/EC, where at least organisations with significant market power must keep up-to-date information concerning performance based on the quality of service parameters laid down in Annex III of this Directive. Following repeal of this Directive on 24 July 2003, these obligations are carried forward, in accordance with Article 11 of the Universal Service Directive, where operators with universal service obligations must publish adequate and up-to-date information concerning their performance in the provision of universal service, based on the quality of service parameters, definitions and measurement methods set out in Annex III of that Directive.

Technical interfaces and/or service features	Reference	Notes
Quality of service parameter definitions and measurement methods	— ETSI EG 201 769-1	Version number is 1.1.1 (April 2000)

Comments: None.