

Telecommunications: open network provision ONP list of standards (sixth issue)

(98/C 339/04)

EXPLANATORY NOTE CONCERNING THE SIXTH ISSUE OF THE ONP LIST OF STANDARDS

In accordance with the Council Directive 90/387/EEC, as amended by Directive 97/51/EC of the European Parliament and of the Council, the Commission publishes on a regular basis a list of standards suitable for open network provision (ONP).

This publication, the sixth issue, follows the previous publication of 14 June 1997 (OJ C 180, 14.6.1997, p. 3). The current list updates and replaces all previous publications. No standards have been withdrawn from the previous list.

Changes in Issue 6

A number of changes have occurred in the relevant legislation since the fifth list of standards was published in 1997, and these affect both the status of standards published in this list and the content of the list, as indicated below:

- The purpose of publishing standards in the ONP List of Standards is to encourage the provision of harmonised telecommunications services to the benefit of users throughout the Community. Amendment of the ONP framework Directive means that standards published in this list no longer carry any presumption (e.g. presumption of compliance with essential requirements). The preface to the List of Standards has been amended accordingly.
- A new chapter VII on Standards for Interconnection has been included, as a result of the adoption of Directive 97/33/EC on Interconnection. In view of the complexity of interconnection standards, an informative annex has also been added to explain the interrelationship of the standards listed.
- Adoption of Directive 98/10/EC on voice telephony has resulted in a number of additional features being added in chapter III on Standards for PSTN offerings.

ONP LIST OF STANDARDS

Sixth issue

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.

In accordance with the above-mentioned Directive, Member States shall encourage the use of the standards referenced in this list.

The ONP List of Standards will be revised on a regular basis to take account of requirements resulting from new developments.

2. Structure of the list of standards

The list in this publication contains the following chapters:

- Chapter I: Reference list for leased lines listed in Annex II of Directive 92/44/EEC
- Chapter II: Reference list for leased lines listed in Annex III of Directive 92/44/EEC
- Chapter III: Standards for PSTN offerings included in Directive 98/10/EC
- Chapter IV: Standards for packet-switched data services listed in Recommendation 92/382/EEC

- Chapter V: Standards for ISDN offerings listed in Recommendation 92/383/EEC
- Chapter VI: Standards for switched broadband networks
- Chapter VII: Standards for interconnection in respect of Directive 97/33/EC.

Each chapter contains a list of technical interfaces and/or services features of relevance to ONP.

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

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

3. Status of the standards in the list

Publication of standards in this list carries no legal obligation to implement the standards so listed. Similarly, the inclusion of a technical interface or service feature in this list should not be construed as an obligation to provide that offering.

However, obligations to offer specific network interfaces or service features, and/or to implement specific standards, may be imposed via other legislative measures.

To purpose of publishing standards in this list is to encourage the provision of harmonised telecommunications services to the benefit of users throughout the Community, and to support implementation of Community policy. This should be borne in mind when implementing standards which contain alternatives or optional clauses.

Where flexibility of implementation is permitted, implementations which best support the Community ONP policy as described in the relevant Directive or Recommendation are to be preferred. Any standards or parts of standards which are found not to support Community ONP policy may be removed from future editions of this list, in accordance with the procedure in Article 5 of Directive 90/387/EEC.

4. Technical Specifications

Given below is a key to abbreviations used in the list.

EN: CEN/Cenelec European Standard.

ENV: CEN/Cenelec European pre-standard.

CEPT: Comité Européen des Postes et Télécommunications. CEPT issued (CEPT) Recommendations.

CCITT: Former name for ITU-T (see below). In this publication, references to CCITT Recommendations refer to the 1988 versions, unless stated otherwise.

ETS: European Telecommunication Standard (ETS).

An ETS is referenced by a 300 000 number, preceded by a lettered code which indicates the document's status.

ETS signifies that the document has been approved as a candidate European Telecommunication Standard by its ETSI Technical Committee (TC), has been submitted for public enquiry, and has been approved by ETSI's national weighted voting procedure. An ETS is an officially published document and is available from the ETSI secretariat or from participating National Standards Organisations (NSOs).

ETSI has now changed regime and future standards will be labelled EN or ES.

EN: European Standard (EN).

EN is an ETSI deliverable in the new regime 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.

ES: ETSI Standard (ES).

ES is an ETSI deliverable in the new regime, containing normative provisions, approved for publication by application of the Membership Approval Procedure (a new level of deliverable which does not directly equate with anything in the old regime, but may be used instead of the I-ETS deliverable type).

I-ETS: Interim European Telecommunication Standard (I-ETS).

An I-ETS is also referenced by a 300 000 number, preceded by a lettered code which indicates the document's status.

An I-ETS has been approved by the relevant Technical Committee as an Interim European Telecommunication Standard (I-ETS), has been submitted for public enquiry and has been approved by the ETSI national weighted voting procedure. This document will remain an Interim European Telecommunication Standard for a period of two to five years, before being discarded, or converted to a European Telecommunication Standard.

pr: The prefix is used in standards (prETS, prI-ETS, prES and prEN) to indicate that they are still in the course of development. They have been approved by the relevant ETSI Technical Committee, but has not yet completed the ETSI standards approval process.

ETR: ETSI Technical Report (ETR).

An ETR is numbered from 001 onwards. It does not necessarily contain technical specifications but rather gives complementary information about the technical environment relating to standardisation issues, and it does not specify conformance requirements. An ETR does not undergo the same approval procedures as an ETSI standard and is published once it has been approved by the Technical Committee(s) concerned.

TR: Technical Report (TR).

ETSI has changed regime and ETR are now labelled TR.

TBR: Technical Bases for Regulation.

TBR is referenced from 001 onwards. TBR draws together essential re-

quirements from various ETSs or other base standards to form a complete set of specifications, which will be used to form the technical basis for Common Technical Regulations (CTR). A TBR undergoes a similar approval procedure to that for ETSs and I-ETSs.

CTR: Common Technical Regulation.

CTR is a common technical regulation for the attachment requirements for terminal equipment interfaces. A CTR is based on a Decision of the European Commission.

ITU-T: International Telecommunications Union — Telecommunications standardisation sector. The ITU-T issues Recommendations.

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 description from the user's standpoint. Stage 2 is an overall description of the organisation of the network function to map service requirements into network capabilities. Stage 3 is the definition of switching and signalling capabilities needed to support services at the access protocol.

Compliance with stage 1 and stage 2 standards included in the list is established by compliance with the corresponding stage 3 standards, where the requirements of stages 1 and 2 are included in the stage 3 standard.

6. Addresses where documents referenced can be obtained

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7. References to EU Legislation

The list refers to the following legislative documents:

Directive 90/387/EEC

Council Directive 90/387/EEC of 28 June 1990 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 European Parliament and Council Directive 97/51/EC of 6 October 1997 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 92/44/EEC

Council Directive 92/44/EEC of 5 June 1992 on the application of Open Network Provision to leased lines (OJ L 165, 19.6.1992, p. 27), as amended by European Parliament and Council Directive

97/51/EC of 6 October 1997 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), as amended by Commission Decision of 7 January 1998 on amendment of Annex II to Council Directive 92/44/EEC (OJ L 14, 20.1.1998, p. 27).

Directive 97/33/EC

European Parliament and the Council Directive 97/33/EC of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP) (OJ L 199, 26.7.1997, p. 32).

Directive 97/66/EC

European Parliament and Council Directive 97/66/EC of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector (OJ L 24, 30.1.1998, p. 1).

Directive 98/10/EC

European Parliament and Council Directive 98/10/EC of 12 February 1998 on the application of open network provision (ONP) to voice telephony and on universal service for telecommunication in a competitive environment (OJ L 101, 1.4.1998, p. 24), replacing European Parliament and Council Directive 95/62/EC.

Recommendation 92/382/EEC

Council Recommendation of 5 June 1992 on the harmonized provision of a minimum set packet-switched data services (PSDS) in accordance with open network provision (ONP) principles (OJ L 200, 18.7.1992, p. 1).

Recommendation 92/383/EEC

Council Recommendation of 5 June 1992 on the provision of harmonized integrated services digital network (ISDN) access arrangements and a minimum set of ISDN offerings in accordance with open network provision (ONP) principles (OJ L 200, 18.7.1992, p. 10).

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/EEC certain organisations are obliged to provide a minimum set of leased lines conforming to the technical specifications given in Annex II of the Directive. In accordance with the procedures identified in Article 7 of Directive 92/44/EEC, revisions may occur to Annex II of the Directive. In such cases those revisions will be included in a subsequent publication of the ONP list of standards.

ANALOGUE

| Technical Interfaces and/or service features | Reference | Notes |
|--|---------------|---|
| Ordinary Quality Voice Bandwidth (2 wire) | — ETS 300 448 | Interface presentation and Connection characteristics |

Comments: Previously provided in accordance with CCITT M.1040.
The associated standard for terminal equipment is ETS 300 450.
The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 15 (CTR 15).

| | | |
|---|---------------|---|
| Ordinary Quality Voice Bandwidth (4 wire) | — ETS 300 451 | Interface presentation and Connection characteristics |
|---|---------------|---|

Comments: Previously provided in accordance with CCITT M.1040.
The associated standard for terminal equipment is ETS 300 453.
The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 17 (CTR 17).

| | | |
|--|---------------|---|
| Special Quality Voice Bandwidth (2 wire) | — ETS 300 449 | Interface presentation and Connection characteristics |
|--|---------------|---|

Comments: Previously provided in accordance with CCITT M.1020/M.1025.
The associated standard for terminal equipment is ETS 300 450.
The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 15 (CTR 15).

| | | |
|--|---------------|---|
| Special Quality Voice Bandwidth (4 wire) | — ETS 300 452 | Interface presentation and Connection characteristics |
|--|---------------|---|

Comments: Previously provided in accordance with CCITT M.1020/M.1025.
The associated standard for terminal equipment is ETS 300 453.
The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 17 (CTR 17).

DIGITAL

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|--|
| 64 kbit/s | — ETS 300 288 — ETS 300 288/A1 — ETS 300 289 | Interface presentation Connection characteristics |

Comments: The associated standard for terminal equipment is ETS 300 290 as amended by ETS 300 290/A1.
The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 14 (CTR 14).

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|--|
| 2 048 kbit/s — E1 (unstructured) | — ETS 300 418 — ETS 300 247 — ETS 300 247/A1 | Interface presentation Connection characteristics |

Comments: E1 is the market denomination for this type of leased line. ETSI has developed the ETS 300 418 that replaces the ETS 300 246.

The associated standard for terminal equipment is ETS 300 248 as amended by ETS 300 248/A1.

The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 12 (CTR 12).

| | | |
|-----------------------------------|--------------------------------|--|
| 2 048 kbit/s — E1 (structured) | — ETS 300 418 — ETS 300 419 | Interface presentation Connection characteristics |
|-----------------------------------|--------------------------------|--|

Comments: E1 is the market denomination for this type of leased line. Previously provided in accordance with CCITT G.703, G.704 (excluding section 5) and G.706 (cyclic redundancy checking) instead of ETS 300 418 and previously provided in accordance with relevant CCITT G.800 series instead of ETS 300 419.

The associated standard for terminal equipment is ETS 300 420.

The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 13 (CTR 13).

CHAPTER II

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

The technical interfaces and/or service features included in this chapter are those listed in Annex III to Directive 92/44/EEC. According to Article 7(2)a the standards are not mandatory, but the Member States are to encourage provision of the leased lines listed in this chapter.

| Technical Interfaces and/or service features | Reference | Notes |
|--|--------------------------------|--|
| 34 368 kbit/s — E3 | — ETS 300 686 — ETS 300 687 | Interface presentation Connection characteristics |

Comments: E3 is the market denomination for this type of leased line.

The associated standard for terminal equipment is ETS 300 689.

The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 24 (CTR 24).

| | | |
|---------------------|--------------------------------|--|
| 139 264 kbit/s — E4 | — ETS 300 686 — ETS 300 688 | Interface presentation Connection characteristics |
|---------------------|--------------------------------|--|

Comments: E4 is the market denomination for this type of leased line.

The associated standard for terminal equipment is ETS 300 690.

The attachment requirements for terminal equipment to be connected to these leased lines are described in Common Technical Regulation 25 (CTR 25).

| Technical Interfaces and/or service features | Reference | Notes |
|--|---------------|------------------------|
| N × 155 520 kbit/s — STM-N | — ETS 300 299 | Interface presentation |

Comments: SDH VC-based leased digital bandwidth.
 ETSI is currently working on standards for this type of facility (prEN 301 164 and prEN 301 165).
 ETSI is currently revising ETS 300 299.

CHAPTER III

Standards for PSTN offerings included in Directive 98/10/EC

The technical interfaces and/or services features given in this Chapter are those suitable for implementing PSTN offerings in accordance with Directive 98/10/EC. In conformity with the procedures identified in Article 28 of Directive 98/10/EC, revisions may occur to these technical interfaces and/or service features. In such cases these revisions will be included in a subsequent publication of the ONP list of standards.

PSTN SUPPLEMENTARY SERVICES

| Technical Interfaces and/or service features | Reference | Notes |
|---|---------------|---------|
| Calling Line Identification Presentation (CLIP) | — ETS 300 648 | Stage 1 |

Comments: None.

| | | |
|--|---------------|---------|
| Calling Line Identification Restriction (CLIR) | — ETS 300 649 | Stage 1 |
|--|---------------|---------|

Comments: None.

| | | |
|--|------------------------------------|---------------------|
| Signalling protocol for support Calling Line Identification Services | — ETS 300 659-1 — ETS 300 659-2 | On-hook Off-hook |
|--|------------------------------------|---------------------|

Comments: None.

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| Outgoing Call Barring | | |
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Comments: The CEPT SF Handbook Section II Chapter 3.1.2 and 3.1.3 contain recommendation for Outgoing Call Barring.

| | | |
|--------------------------|--|--|
| Direct Dialling In (DDI) | | |
|--------------------------|--|--|

Comments: The CEPT SF Handbook Section II Chapter 12.1 contains recommendation for Direct Dialling In.

| Technical Interfaces and/or service features | Reference | Notes |
|--|---------------|---------|
| Call forwarding services | | |
| <i>Comments:</i> The CEPT SF Handbook Section II Chapter 4.1.3, 4.1.14, 4.1.15, 6.3.4 and 6.3.8 contain recommendation for call forwarding services. | | |
| Premium Rate (PRM) service | — ETS 300 712 | Stage 1 |

Comments: None.

OTHER FEATURES

| Technical Interfaces and/or service features | Reference | Notes |
|---|-----------|-----------------------------------|
| Indicators for the quality of service of PSTN services | | — ETR 138 (Edition 1 — July 1994) |
| <i>Comments:</i> None. | | |
| Alternative sender for multifrequency signalling system to be used for push-button telephones | | — ETR 207 |

Comments: None.

CHAPTER IV

Standards for packet-switched data services listed in Recommendation 92/382/EEC

The technical interfaces and/or services features given in this Chapter are those required to implement PSDS offerings in accordance with Recommendation 92/382/EEC. In conformity with the procedures provided in point 2 of the Recommendation, revisions may occur to these technical interfaces and/or service features. In such cases those revisions will be included in a subsequent publication of the ONP list of standards.

DIRECT ACCESS

| Technical Interfaces and/or service features | Reference | Notes |
|--|---|----------------------|
| X.25 service | — ENV 41104 (FS T/31) — CEPT T/CD 08-02 — CEPT T/CD 08-03 — CEPT T/CAC 2 — CEPT T/CAC 3 — CEPT T/CAC 4 | Network aspects only |

Comments: CEPT T/CAC 2, 3 and 4 define indicators and monitoring techniques for the network performance aspects of quality of service for International Packet Switched Services, CCITT X.137 contains a definition of the availability parameter which may be used in this context. See Annex III of Recommendation 92/382/EEC.

The attachment requirements for Data Terminal Equipment (DTE) to be connected to Packet Switched Public Data Networks (PSPDNs) for CCITT Recommendation X.25 interfaces at data signalling rates up to 1920 kbit/s utilising interfaces derived from CCITT Recommendations X.21 and X.21 bis are described in Common Technical Regulation 2 (CTR 2).

INDIRECT ACCESS

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|----------------------|
| X.28 service | <ul style="list-style-type: none"> — CEPT T/CD 08-02 — CEPT T/CD 08-03 — ENV 41901 — ETR 058 | Network aspects only |

Comments: None.

| | | |
|--------------|--|----------------------|
| X.32 service | <ul style="list-style-type: none"> — CEPT T/CD 08-02 — CEPT T/CD 08-03 — ENV 41105 (FS T/32) — ETR 059 | Network aspects only |
|--------------|--|----------------------|

Comments: None.

CHAPTER V

Standards for ISDN offerings listed in Recommendation 92/383/EEC

The technical interfaces and/or services features given in this Chapter cover those required to implement ISDN offerings in accordance with Recommendation 92/383/EEC. In conformity with the procedures provided in point 2 of the Recommendation, revisions may occur to these technical interfaces and/or service features. In such cases those revisions will be included in a subsequent publication of the ONP list of standards.

USER NETWORK INTERFACE

| Technical Interfaces and/or service features | Reference | Notes |
|--|---|-------------------------------|
| Basic rate access (S/T interface) | <ul style="list-style-type: none"> — ETS 300 012 — ETS 300 125 — ETS 300 403-2 and 4 to 7 — EN 300 403-1 and 3 | Layer 1 Layer 2 Layer 3 |
| Primary rate access (S/T interface) | <ul style="list-style-type: none"> — ETS 300 011-1 to 3 — ETS 300 125 — ETS 300 403-2 and 4 to 7 — EN 300 403-1 and 3 | Layer 1 Layer 2 Layer 3 |

Comments: ETS/EN 300 403 is an updated and extended version of ETS 300 102. ETSI is currently revising ETS 300 403-5 and 7.

The attachment requirements for terminal equipment to be connected to an ISDN using ISDN basic access are described in Common Technical Regulation 3 (CTR 3).

The attachment requirements for terminal equipment to be connected to an ISDN using ISDN primary rate access are described in Common Technical Regulation 4 (CTR 4).

| Technical Interfaces and/or service features | Reference | Notes |
|--|----------------------|---------|
| Safety and protection (basic access) | — ETS 300 047-1 to 5 | Layer 1 |
| Safety and protection (primary access) | — ETS 300 046-1 to 5 | Layer 1 |

Comments: None.

| | | |
|--|---------------|--|
| Support of packet mode terminal equipment by an ISDN (S/T interface) | — ETS 300 007 | |
|--|---------------|--|

Comments: None.

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|--------------------------------------|--|--|
| Mechanical Interface (S/T interface) | | |
|--------------------------------------|--|--|

Comments: Technical specifications relevant to this technical interface and/or service feature: EN 28 877, ENV 41 001.

ISDN BEARER SERVICES

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|-------------------------------|
| Circuit-mode 64 kbit/s unrestricted bearer service | — ETS 300 108 — ETS 300 350 — ETS 300 403-2 and 4 to 7 — EN 300 403-1 and 3 | Stage 1 Stage 2 Stage 3 |

Comments: See ETR 018 for additional information on how bearer services can be used to support various user applications (sub-clause 7.1 is relevant).

ETS/EN 300 403 is an updated and extended version of ETS 300 102. ETSI is currently revising ETS 300 403-5 and 7.

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| Circuit-mode speech bearer service | — ETS 300 109 — ETS 300 350 — ETS 300 403-2 and 4 to 7 — EN 300 403-1 and 3 | Stage 1 Stage 2 Stage 3 |
|------------------------------------|--|-------------------------------|

Comments: ETS 300 083 is the standard specification for the end to end protocol for speech information transfer.

Circuit-mode speech bearer service may be used as a support for 3.1 KHz teleservice.

ETS/EN 300 403 is an updated and extended version of ETS 300 102. ETSI is currently revising ETS 300 403-5 and 7.

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|-------------------------------|
| Circuit-mode 3,1 KHz audio bearer service | <ul style="list-style-type: none"> — ETS 300 110 — ETS 300 350 — ETS 300 403-2 and 4 to 7 — EN 300 403-1 and 3 | Stage 1 Stage 2 Stage 3 |

Comments: ETS 300 084 is the standard specification for the end to end protocol for audio information transfer.

See ETR 018 for additional information on how bearer services can be used to support various user applications (sub-clause 7.2 is relevant).

ETS/EN 300 403 is an updated and extended version of ETS 300 102. ETSI is currently revising ETS 300 403-5 and 7.

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| Packet-mode bearer service (D channel) | <ul style="list-style-type: none"> — ETS 300 049 — ETS 300 007 | Stage 1 Stage 3 |
|--|--|--------------------|

Comments: None.

| | | |
|--|--|--------------------|
| Packet-mode bearer service (B channel) | <ul style="list-style-type: none"> — ETS 300 048 — ETS 300 007 | Stage 1 Stage 3 |
|--|--|--------------------|

Comments: None.

ISDN SUPPLEMENTARY SERVICES

| Technical Interfaces and/or service features | Reference | Notes |
|---|---|-------------------------------|
| Calling Line Identification Presentation (CLIP) | <ul style="list-style-type: none"> — ETS 300 089 — ETS 300 091 — EN 300 092-1 to 6 | Stage 1 Stage 2 Stage 3 |

Comments: Options relating to interworking considerations with the PSTN contained in paragraph 7 (Note and subparagraph 7.1) of ETS 300 089, and their consequences reflected in ETS 300 091 and EN 300 092, should comply with the requirements of Directive 97/66/EC.

ETSI is currently revising EN 300 092-4 and 6.

| | | |
|--|---|-------------------------------|
| Calling Line Identification Restriction (CLIR) | <ul style="list-style-type: none"> — ETS 300 090 — ETS 300 091 — EN 300 093-1 to 6 | Stage 1 Stage 2 Stage 3 |
|--|---|-------------------------------|

Comments: Options relating to interworking considerations with the PSTN contained in paragraph 7 (Note and subparagraph 7.1) of ETS 300 090, and their consequences reflected in ETS 300 091 and EN 300 093, should comply with the requirements of Directive 97/66/EC.

ETSI is currently revising EN 300 093-4 and 6.

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| Direct Dialling In (DDI) | <ul style="list-style-type: none"> — ETS 300 062 — ETS 300 063 — EN 300 064-1 to 6 | Stage 1 Stage 2 Stage 3 |
|--------------------------|---|-------------------------------|

Comments: ETSI is currently revising EN 300 064-4 and 6.

| Technical Interfaces and/or service features | Reference | Notes |
|--|---|-------------------------------|
| Multiple Subscriber Number (MSN) | — ETS 300 050 — ETS 300 051 — EN 300 052-1 to 6 | Stage 1 Stage 2 Stage 3 |

Comments: ETSI is currently revising EN 300 052-4 and 6.

| | | |
|---------------------------|---|-------------------------------|
| Terminal Portability (TP) | — ETS 300 053 — ETS 300 054 — EN 300 055-1 to 2 | Stage 1 Stage 2 Stage 3 |
|---------------------------|---|-------------------------------|

Comments: None.

| | | |
|-----------------|---|---|
| Freephone (FPH) | — ETS 300 208 — EN 300 210-1 to 3 and 5 — ETS 300 210-4 and 6 | Stage 1 Stage 2 is described in ETR 209 Stage 3 |
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Comments: ETSI is currently revising ETS 300 210-4 and 6.

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|-------------------------|---|-------------------------------|
| Closed User Group (CUG) | — ETS 300 136 — ETS 300 137 — EN 300 138-1 to 6 | Stage 1 Stage 2 Stage 3 |
|-------------------------|---|-------------------------------|

Comments: ETSI is currently revising EN 300 138-4 and 6.

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| Explicit Call Transfer (ECT) | — ETS 300 367 — ETS 300 368 — ETS 300 369-1 to 6 | Stage 1 Stage 2 Stage 3 |
|------------------------------|--|-------------------------------|

Comments: ETSI is currently revising ETS 300 367, ETS 300 368 and all parts of ETS 300 369.

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|--|--|-------------------------------|
| Call Forwarding on Busy subscriber (CFB) | — ETS 300 199 — ETS 300 203 — ETS 300 207-1 to 6 — ETS 300 207-1/C1 | Stage 1 Stage 2 Stage 3 |
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Comments: ETSI is currently revising all parts of ETS 300 207.

| | | |
|------------------------------------|--|-----------------------------------|
| Call Forwarding on No Reply (CFNR) | — ETS 300 201 — ETS 300 201/A1 — ETS 300 205 — ETS 300 207-1 to 6 — ETS 300 207-1/C1 | Stage 1 Stage 2 Stage 3 |
|------------------------------------|--|-----------------------------------|

Comments: ETSI is currently revising all parts of ETS 300 207.

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|-------------------------------|
| Call Forwarding Unconditional (CFU) | <ul style="list-style-type: none"> — ETS 300 200 — ETS 300 204 — ETS 300 207-1 to 6 — ETS 300 207-1/C1 | Stage 1 Stage 2 Stage 3 |

Comments: ETSI is currently revising all parts of ETS 300 207.

| | | |
|----------------------|--|-----------------------------------|
| Call Deflection (CD) | <ul style="list-style-type: none"> — ETS 300 202 — ETS 300 202/A1 — ETS 300 206 — ETS 300 207-1 to 6 — ETS 300 207-1/C1 | Stage 1 Stage 2 Stage 3 |
|----------------------|--|-----------------------------------|

Comments: ETSI is currently revising all parts of ETS 300 207.

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| Automatic Reverse Charging | | |
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Comments: See ITU-T Recommendation I.256.3 for details of stage 1 specification of the service.

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|-------------------------------|---|---|
| User to User Signalling (UUS) | <ul style="list-style-type: none"> — ETS 300 284 — EN 300 286-1 to 3 and 5 — ETS 300 286-4 | Stage 1 Stage 2 is described in ETR 285 Stage 3 |
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Comments: ETSI has developed a draft version of EN 300 286-6. ETS 300 286-4 is currently under revision.

| | | |
|--------------------------------------|---|-----------------------------------|
| Malicious Call Identification (MCID) | <ul style="list-style-type: none"> — ETS 300 128 — ETS 300 128/A1 — ETS 300 129 — EN 300 130-1 to 6 | Stage 1 Stage 2 Stage 3 |
|--------------------------------------|---|-----------------------------------|

Comments: ETSI is currently revising EN 300 130-4 and 6.

| | | |
|--------------------------|--|--------------------|
| Meet-Me Conference (MMC) | <ul style="list-style-type: none"> — ETS 300 164 — ETS 300 165 | Stage 1 Stage 2 |
|--------------------------|--|--------------------|

Comments: There is no specific stage 3 specification for this supplementary service.

| | | |
|--------------------------------|---|---------------------------------------|
| Conference Call, add-on (CONF) | <ul style="list-style-type: none"> — ETS 300 183 — ETS 300 183/A1 — ETS 300 184 — ETS 300 184/C1 — EN 300 185-1 to 6 | Stage 1 Stage 2 Stage 3 |
|--------------------------------|---|---------------------------------------|

Comments: ETSI is currently revising EN 300 185-4 and 6.

| Technical Interfaces and/or service features | Reference | Notes |
|---|---|-------------------------------|
| Connected Line Identification Presentation (COLP) | — ETS 300 094 — ETS 300 096 — EN 300 097-1 to 6 | Stage 1 Stage 2 Stage 3 |

Comments: ETSI is currently revising EN 300 097-4 and 6. Options relating to intercommunication considerations with the PSTN contained in paragraph 7 (Note and subparagraph 7.1) of ETS 300 094, and their consequences reflected in ETS 300 096 and EN 300 097, should comply with the requirements of Directive 97/66/EC.

| | | |
|--|---|-------------------------------|
| Connected Line Identification Restriction (COLR) | — ETS 300 095 — ETS 300 096 — EN 300 098-1 to 6 | Stage 1 Stage 2 Stage 3 |
|--|---|-------------------------------|

Comments: ETSI is currently revising EN 300 098-4 and 6. Options relating to interworking considerations with the PSTN contained in paragraph 7 (Note and subparagraph 7.1) of ETS 300 095, and their consequences reflected in ETS 300 096 and EN 300 098, should comply with the requirements of Directive 97/66/EC.

| | | |
|----------------------|---|-------------------------------|
| Sub-addressing (SUB) | — ETS 300 059 — ETS 300 060 — EN 300 061-1 to 6 | Stage 1 Stage 2 Stage 3 |
|----------------------|---|-------------------------------|

Comments: ETSI is currently revising EN 300 061-4 and 6.

| | | |
|-------------------|---|-----------------------------------|
| Call Waiting (CW) | — ETS 300 056 — ETS 300 056/A1 — ETS 300 057 — EN 300 058-1 to 6 | Stage 1 Stage 2 Stage 3 |
|-------------------|---|-----------------------------------|

Comments: ETSI is currently revising EN 300 058-4 and 6.

| | | |
|---|---|-------------------------------|
| Call Completion to Busy Subscriber (CCBS) | — ETS 300 357 — ETS 300 358 — EN 300 359-1 to 6 | Stage 1 Stage 2 Stage 3 |
|---|---|-------------------------------|

Comments: ETSI is currently revising EN 300 359-4 and 6.

| | | |
|----------------------------|---|-----------------------------------|
| Three Party Service (3PTY) | — ETS 300 186 — ETS 300 187 — ETS 300 187/C1 — EN 300 188-1 to 6 | Stage 1 Stage 2 Stage 3 |
|----------------------------|---|-----------------------------------|

Comments: ETSI is currently revising EN 300 188-4 and 6.

| | | |
|------------------------|---|---------------------------------------|
| Advice of Charge (AOC) | — ETS 300 178 — ETS 300 179 — ETS 300 180 — ETS 300 181 — EN 300 182-1 to 6 | Stage 1 Stage 2 Stage 3 |
|------------------------|---|---------------------------------------|

Comments: Advice of charge encompasses advice at call set up time, during the call and at the end of the call, respectively ETS 300 178, 179, 180.

ETSI is currently revising EN 300 182-1, 2, 4 and 6.

| Technical Interfaces and/or service features | Reference | Notes |
|--|--------------|---------|
| Outgoing Call Barring — Fixed (OCB-F) | — EN 301 082 | Stage 1 |

Comments: None.

| | | |
|--|--------------|---------|
| Outgoing Call Barring — User Controlled (OCB-UC) | — EN 301 084 | Stage 1 |
|--|--------------|---------|

Comments: None.

| | | |
|----------------------------|---------------|---------|
| Premium Rate (PRM) service | — ETS 300 712 | Stage 1 |
|----------------------------|---------------|---------|

Comments: None.

| | | |
|--|--|--|
| Association of supplementary services to bearer services | | |
|--|--|--|

Comments: Reference is made to Table 1 of ITU-T Recommendation I.250 for details of the association of supplementary services to bearer services.

TELESERVICES

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|--|
| Telephony 3.1 kHz Teleservice | — ETS 300 111 — ETS 300 403-2 and 4 to 7 — EN 300 403-1 and 3 — ETS 300 082 | Stage 1 Stage 3 End-to-end protocol; only network aspects are relevant |

Comments: ETS/EN 300 403 is an updated and extended version of ETS 300 102. ETSI is currently revising ETS 300 403-5 and 7.

The attachment requirements for handset terminals to be connected to ISDN and providing for the Telephony 3,1 kHz Teleservice are described in Common Technical Regulation 8 (CTR 8).

OTHER FEATURES

| Technical Interfaces and/or service features | Reference | Notes |
|---|-----------|-----------------------------------|
| Indicators for the quality of service of ISDN bearer services | | — ETR 138 (Edition 1 — July 1994) |

Comments: None.

CHAPTER VI

Standards for switched broadband networks

The standards listed in this chapter are considered to be suitable for the requirement of open and efficient access to broadband network services, in particular Asynchronous Transfer Mode.

| Technical Interfaces and/or service features | Reference | Notes |
|--|--------------------------------|-------|
| 2 Mbit/s user network interface | | |
| 155 Mbit/s user network interface | — ETS 300 299 — ETS 300 300 | |
| 622 Mbit/s user network interface | — ETS 300 299 — ETS 300 300 | |

Comments: Interfaces at these bit rates are primary candidates for the user-network interfaces to switched broadband networks.

Technical specifications relevant to these interfaces and/or service features: ETS 300 742 and ITU-T Recommendation I.432-1.

ETSI is currently revising ETS 300 299.

| | | |
|--------------------------------------|--------------------------------|--|
| 34 Mbit/s user network interface | — ETS 300 337 — ETS 300 686 | |
| 140 Mbit/s user network interface | — ETS 300 337 — ETS 300 686 | |

Comments: Interfaces at these bit rates are additional candidates for user-network interfaces to switched broadband networks.

Technical specifications relevant to these interfaces and/or service features: ITU-T Recommendation I.432-2.

CHAPTER VII

Standards for Interconnection in respect of Directive 97/33/EC

The technical interfaces and/or services features given in this Chapter are considered relevant for implementing Directive 97/33/EC. Revisions may occur to this chapter. In such cases those revisions will be included in a subsequent publication of the ONP list of standards.

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). Annex A provides a schematic overview of signalling system No 7, and explains the abbreviations used in this section.

For the PSTN, ISDN and GSM network interconnection, the standards below should at least be provided at the international gateways. National standards may be used for interconnection of networks within a Member State.

| Technical Interfaces and/or service features | Reference | Notes |
|--|--|--|
| PSTN, ISDN and GSM interconnection | <ul style="list-style-type: none"> — ETS 300 356-1 to 12 — ETS 300 356-14 to 19 — ETS 300 356-19/C1 — ETS 300 356-31 to 36 — ETS 300 009-1 to 2 — ETS 300 008-1 to 2 | <p>ISUP version 2</p> <p>SCCP</p> <p>MTP</p> |

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.

ETSI has developed draft versions for ISUP version 3.

ETSI is currently revising ETS 300 009-1, 2 and has developed a draft version of ETS 300 009-3.

| | | |
|--|----------------------|---|
| ISDN and GSM interconnection (Additional standard) | — ETS 300 646-1 to 4 | Application of ISUP version 2 for the ISDN-GSM signalling interface |
|--|----------------------|---|

Comments: ETS 300 646 contains modification to ISUP version 2 in order to interconnect ISDN and GSM.

| | | |
|--|---|---|
| Interconnection to support roaming in GSM-networks | <ul style="list-style-type: none"> — ETS 300 599 — ETS 300 287-1 to 3 — ETS 300 009-1 to 2 — ETS 300 008-1 to 2 | <p>MAP (Phase 2) — Handling mobility</p> <p>TCAP</p> <p>SCCP</p> <p>MTP</p> |
|--|---|---|

Comments: MAP is the user part of Signalling System No 7 (SS7) for handling roaming in a GSM network. MAP uses the SS7 protocols MTP, SCCP and TCAP.

ETSI is currently revising ETS 300 009-1, 2 and has developed a draft version of ETS 300 009-3.

| | | |
|-------------------------------------|--|--|
| Intelligent Network interconnection | <ul style="list-style-type: none"> — ETS 300 374-1 to 5 and 9 — ETS 300 287-1 to 3 — ETS 300 009-1 to 2 — ETS 300 008-1 to 2 | <p>INAP and Capability Set 1 (CS-1)</p> <p>TCAP</p> <p>SCCP</p> <p>MTP</p> |
|-------------------------------------|--|--|

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.

INAP CS-1 was designed as an intra-network protocol, therefore the use of these protocols for interconnection will require bilateral negotiation.

ETSI has developed draft versions for INAP CS-2.

ETSI is currently revising ETS 300 009-1 and 2 and has developed a draft version of ETS 300 374-6 and ETS 300 009-3.

NETWORK ACCESS

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. The inclusion of appropriate standards will be considered for a future publication of the ONP list of standards.

| Technical Interfaces and/or service features | Reference | Notes |
|--|-----------|-------|
| Service provider access to network functions | | |

Comments: ETSI has two work items covering service provider access requirements. The first work item specifies access requirements that service providers have when delivering telephony services over one or more operator's networks. (Enhanced telephony services). The second work item has a broader scope and specifies network access requirements that service providers have in delivering telecommunication services including, but not limited to, third generation mobile, cordless and fixed services, over one or more operator's networks. The second work item may include the support of Virtual Private Network, Broadband bearer services, multimedia and Internet.

NUMBER PORTABILITY AND CARRIER PRE-SELECTION

The technical interfaces and/or services features given in this section are based upon the proposed amendment to Directive 97/33/EC with regard to operator number portability and carrier pre-selection.

| Technical Interfaces and/or service features | Reference | Notes |
|--|-----------|-------|
| Number Portability | | |

Comments: ETSI has several work items addressing Number Portability, and has produced the following technical reports concerning number portability in the fixed telecommunications network: TR 101 073, TR 101 118, TR 101 119 and TR 101 122.

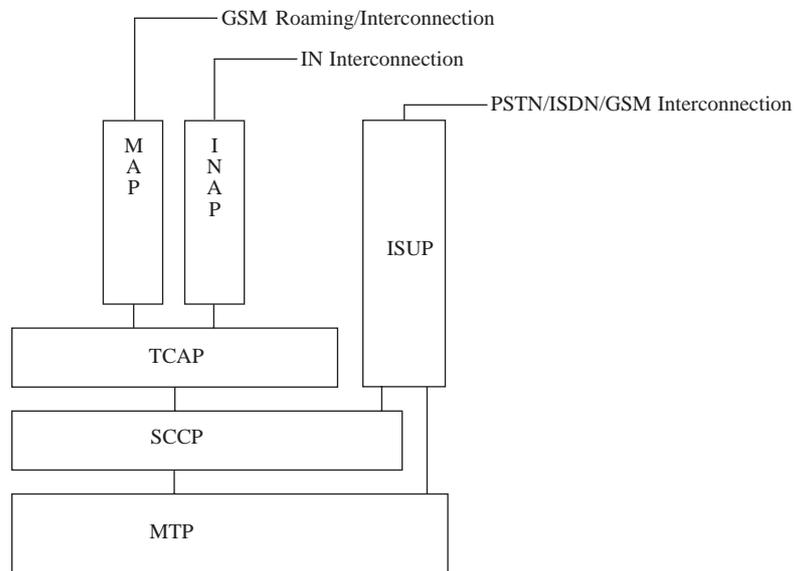
| | | |
|-----------------------|--|--|
| Carrier pre-selection | | |
|-----------------------|--|--|

Comments: ETSI has produced TR 101 092, which identifies the essential requirements and related network capabilities for introducing carrier selection; a variety of possible methods are considered and the likely impact of each is assessed.

ANNEX A

SCHEMATIC OVERVIEW OF RELEVANT PARTS OF SIGNALLING SYSTEM No 7

The figure below shows the parts of Signal System No 7 (SS7) where standards are listed in Chapter VII. The SS7 model contains other parts, which are not shown in the figure.



SS7 aims at providing a common channel signalling for use in circuit switched networks PSTN, ISDN and GSM. Signalling information is carried in separate channels from voice or data circuits. A signalling channel is common to several voice or data circuits and carries the signalling information for those circuits.

SS7 is structured according to a layered model similar to Open System Interconnection (OSI). The parts of SS7 shown in the figure are described below:

MTP: Message Transfer Part

MTP belongs to the three lower layers and carries the signalling packets and is responsible for error-free transfer of signal messages between two exchanges.

SCCP: Signalling Connection Control Part

SCCP has been introduced to provide a service compatible with OSI network service. SCCP should be viewed as an extension of MTP to support connection oriented and connectionless mode for network service.

TCAP: Transaction Capabilities Application Part

TCAP belongs to the application layer of the OSI model and is used by application (in the OSI sense) e.g. MAP and INAP.

MAP: Mobile Application Part

MAP is designed for handling mobility between two GSM networks (e.g. roaming).

INAP: Intelligent Network Application Part

INAP is designed for intelligent network applications and is used to communicate with IN databases. Because of the complexity of the protocol ETSI has adopted a phased approach: The work has been divided into Capability Sets (CS). At the moment standards for CS-1 exist. ETSI is currently working on CS-2 standards.

ISUP: ISDN User Part

ISUP is the part defining formats and procedures signalling for purposes of ISDN calls for basic and supplementary services. Early versions of ISUP were based on MTP while the latest use both MTP and SCCP.