SLOVENSKI STANDARD
SIST EN 300 210-1 V1.2.4:2005

01-april-2005

Digitalno omrežje z integriranimi storitvami (ISDN) - Dopolnilna storitev: brezplačni telefonski klic (FPH) - Protokol digitalne naročniške signalizacije št. 1 (DSS1) - 1. del: Specifikacija protokola

Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification

Ta slovenski standard je istoveten z: **EN 300 210-1 Version 1.2.4**

ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)

SIST EN 300 210-1 V1.2.4:2005 **en**

EN 300 210-1 V1.2.4 (1998-06)

European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification

Reference

REN/SPS-05145-P-1 (1y090iqo.PDF)

Keywords

ISDN, FPH, DSS1, supplementary service

ETSI

Postal address

F-06921 Sophia Antipolis Cedex - FRANCE

Office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16
Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Internet

secretariat@etsi.fr
http://www.etsi.fr
http://www.etsi.org

Contents

Intellectual Property Rights 5
Foreword 5
1 Scope 7
2 Normative references 7
3 Definitions 8
4 Abbreviations 9
5 Description 9
6 Operational requirements 10
6.1 Provision and withdrawal 10
6.2 Requirements on the originating network side 10
6.3 Requirements on the destination network side 10
7 Coding requirements 10
7.1 Coding of the Facility information element components 10
7.2 Coding of the Notification indicator information element 11
8 State definitions 12
9 Signalling procedures at the coincident S and T reference point 12
9.1 Activation, deactivation and registration 12
9.2 Invocation and operation 12
9.2.1 Operation at the calling user 12
9.2.1.1 Normal operation 12
9.2.1.2 Exceptional procedures 12
9.2.2 Operation at the served user 12
9.2.2.1 Normal operation 12
9.2.2.2 Exceptional procedures 13
9.2.3 Operation at the served user when queueing is required 13
9.2.3.1 Acceptance of a monitoring request for the FPH supplementary service 13
9.2.3.1.1 Normal operation 13
9.2.3.1.2 Exceptional procedures 13
9.2.3.2 Queue processing for the FPH supplementary service 13
9.2.3.2.1 Normal operation 13
9.2.3.2.2 Exceptional procedures 13
9.2.3.3 Determination of the served user free 13
9.2.3.3.1 Normal operation 13
9.2.3.3.2 Exceptional procedures 14
9.2.3.4 Presentation of a queued call 14
9.2.3.4.1 Normal operation 14
9.2.3.4.2 Exceptional procedures 14
10 Procedures for interworking with private ISDNs 14
10.1 Procedures where a private ISDN exists at the calling side 14
10.2 Procedures where a private ISDN exists at the called side, and busy monitoring is performed by the private ISDN 14
10.2.1 Normal operation 14
10.2.2 Exceptional procedures 16

11 Interactions with other networks 16
12 Interactions with other supplementary services 16
13 Parameter values (timers) 16
14 Dynamic description (SDL diagrams) 16

Annex A (informative): Signalling flows 20

Annex B (informative): Premature release reasons and corresponding cause value 24

Annex C (informative): Assignment of object identifier values 25

Annex D (informative): Changes with respect to the previous ETS 300 210-1 26

History 27

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available **free of charge** from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://www.etsi.fr/ipr or http://www.etsi.org/ipr).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS).

The present document is part 1 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) Freephone (FPH) supplementary service, as described below:

Part 1: "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";

Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";

Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network";

Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

In accordance with CCITT Recommendation I.130, the following three level structure is used to describe the supplementary telecommunication services as provided by European public telecommunications operators under the pan-European ISDN:

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

The present document details the stage 3 aspects (signalling system protocols and switching functions) needed to support the FPH supplementary service. The stage 1 and stage 2 aspects are detailed in ETS 300 208 and ETR 209, respectively.

The present version updates the references to the basic call specifications.

National transposition dates	
Date of adoption of this EN:	19 June 1998
Date of latest announcement of this EN (doa):	30 September 1998
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 March 1999
Date of withdrawal of any conflicting National Standard (dow):	31 March 1999

1 Scope

This first part of EN 300 210 specifies the stage three of the Freephone (FPH) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators at the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [6]) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol. Stage three identifies the protocol procedures and switching functions needed to support a telecommunication service (see CCITT Recommendation I.130 [2]).

In addition, the present document specifies the protocol requirements at the T reference point where the service is provided to the user via a private ISDN.

The present document does not specify the additional protocol requirements where the service is provided to the user via a telecommunication network that is not an ISDN.

The FPH supplementary service enables to allocate to the served user the charges for calls placed to the freephone number.

The FPH supplementary service is applicable to all circuit-switched telecommunication services.

Further parts of the present document specify the method of testing required to identify conformance to the present document.

The present document is applicable to equipment, supporting the FPH supplementary service, to be attached at either side of a T reference point or coincident S and T reference point when used as an access to the public ISDN.

2 Normative references

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or

b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] CCITT Recommendation E.164: "Numbering plan for the ISDN era".

[2] CCITT Recommendation I.130 (1988): "Method for the characterisation of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[3] ITU-T Recommendation I.112: "Vocabulary of terms for ISDNs".

[4] ITU-T Recommendation I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them".

[5] ITU-T Recommendation I.221 (1993): "Common specific characteristics of services".

[6] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".

[7] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".

[8] CCITT Recommendation X.208 (1988): "Specification of Abstract Syntax Notation One (ASN.1)".

[9] CCITT Recommendation X.219 (1988): "Remote operations: Model, service and notation".

[10] CCITT Recommendation Z.100 (1988): "Specification and Description Language (SDL)".

[11] EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".

[12] EN 300 403-2: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 2: Specification and Description Language (SDL) diagrams".

[13] EN 300 195-1: "Integrated Services Digital Network (ISDN); Supplementary service interactions; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[14] EN 300 196-1: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

3 Definitions

For the purposes of the present document, the following definitions apply:

busy: See ITU-T Recommendation I.221 [5], subclause 2.1.5.

call: See CCITT Recommendation Q.9 [7], definition 2201.

call control message: A message defined in EN 300 403-1 [11], subclause 3.1, which on sending or receipt causes a change of the call state at either the network or the user. Call control messages also include the INFORMATION message and PROGRESS message.

call queuing: The possibility for a served user to have freephone calls meeting busy at the scheduled destination to be placed in a queue and connected as soon as a not busy is detected.

call reference: (excluding dummy call reference) an identifier of a signalling transaction. The signalling transaction may either be bearer related, in which case the signalling transaction can be used to control that bearer, or bearer independent, in which case there is no bearer associated with that signalling transaction. Where there is only one bearer required for a call, then the call reference of the associated bearer related signalling transaction may be used to identify the call.

call state: A state as defined in EN 300 403-1 [11], subclause 2.1 for either the user or the network as appropriate. A call state may exist for each call reference value (and for each additional responding Connection Endpoint Identifier (CEI) in the incoming call states.

Data Link Connection Endpoint Identifier; Connection Endpoint Identifier (CEI): Identifier used by a layer 3 protocol entity to address its peer entity.

freephone call: A call to which the FPH supplementary service applies, and made to a freephone number.

freephone number: A number identifying the freephone subscriber. The freephone service access code and the freephone number concatenated are an ISDN number.

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

invoke component: See EN 300 196-1 [14], subclause 8.2.2.1. Where reference is made to an "xxxx" invoke component, an invoke component is meant with its operation value set to the value of the operation "xxxx".

ISDN number: A number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [1].

network: The DSS1 protocol entity at the network side of the user-network interface.

private network: The DSS1 protocol entity at the user side of the user-network interface when a T reference point applies.

reject component: See EN 300 196-1 [14], subclause 8.2.2.4.

return error component: See EN 300 196-1 [14], subclause 8.2.2.3. Where reference is made to an "xxxx" return error component, a return error component is meant which is related to an "xxxx" invoke component.

return result component: See EN 300 196-1 [14], subclause 8.2.2.2. Where reference is made to an "xxxx" return result component, a return result component is meant which is related to an "xxxx" invoke component.

served user: The DSS1 protocol entity at the user side of the user-network interface used to control the FPH supplementary service when a coincident S and T reference point applies.

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

service access code; freephone service access code: A number allocated by the network operator, to indicate that the following freephone number is a destination to be called using the FPH supplementary service.

subscriber: The customer who has subscribed to the FPH supplementary service. The customer may have a set of accesses visible through a unique freephone number.

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

user: The DSS1 protocol entity at the user side of the user-network interface when a coincident S and T reference point applies.

4 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ASN.1	Abstract Syntax Notation one
CEI	Connection Endpoint Identifier
DSS1	Digital Subscriber Signalling System No. one
FPH	Freephone
ISDN	Integrated Services Digital Network

5 Description

The procedures for activation and deactivation of a record are outside the scope of the present document.

If a user subscribes to the FPH supplementary service, then the network, in conjunction with the appropriate numbering authorities, shall allocate a special number (freephone number) to that user.

In particular, the served user may have incoming calls routed to his accesses or rejected according to a set of features.

Following the arrangement between the network operator and the subscriber, the network operator provides for the registration of these features in the network.