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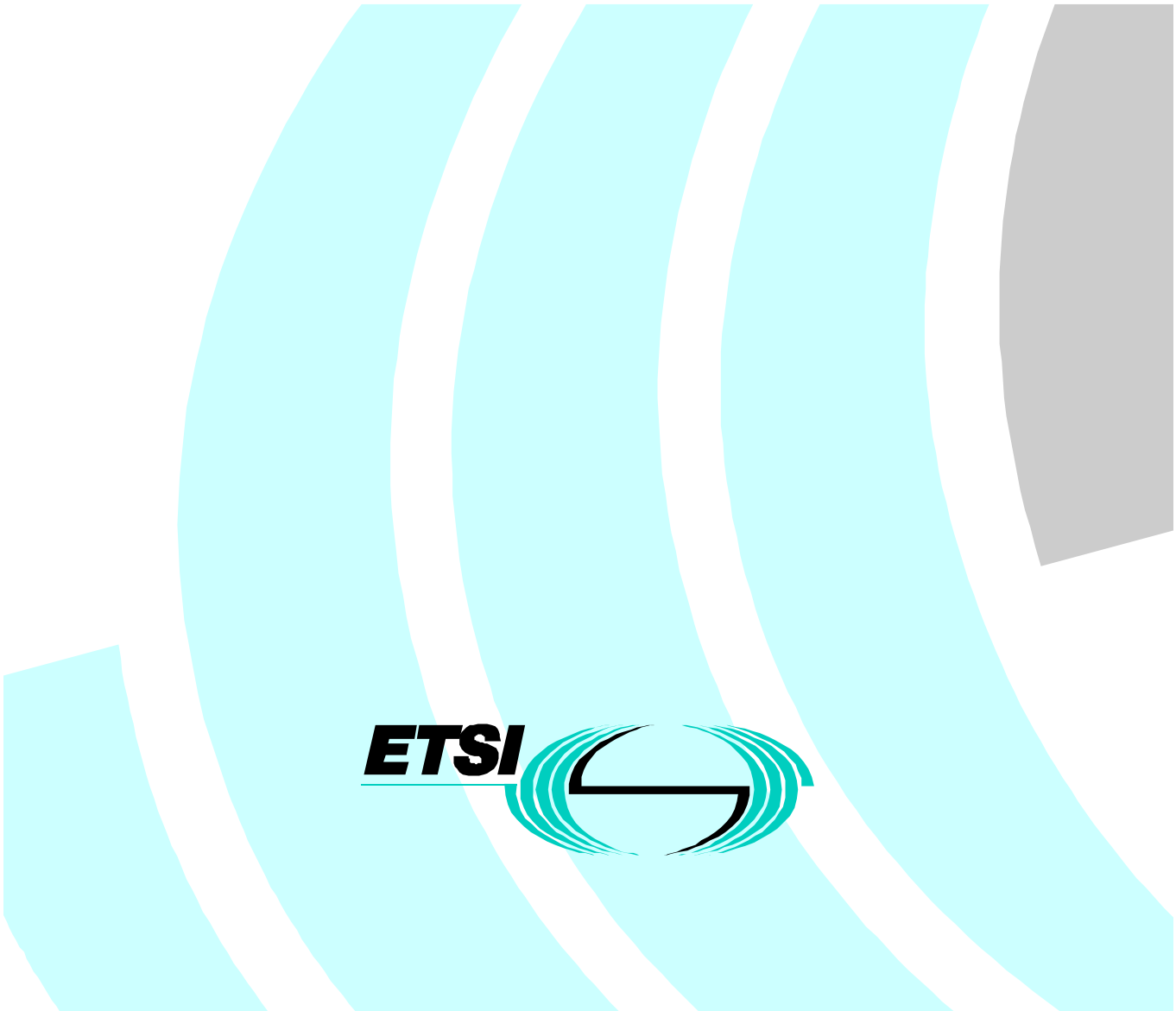
European Standard (Telecommunications series)

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



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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) Subaddressing (SUB) 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 telecommunications services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (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 Subaddressing (SUB) supplementary service. The stage 1 and stage 2 aspects are detailed in ETS 300 059 and ETS 300 060, 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 300 061 specifies the stage three of the Subaddressing (SUB) 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 CCITT Recommendation I.411 [1]) by means of the Digital Subscriber Signalling System No. one (DSS1). Stage 3 identifies the protocol procedures and switching functions needed to support a telecommunications 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 telecommunications network that is not an ISDN.

The SUB supplementary service allows the called (served) user to expand his addressing capacity beyond the one given by the ISDN number.

The SUB supplementary service is applicable to all 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 SUB 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 I.411 (1988): "ISDN user-network interfaces - Reference configurations".

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

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

[4] 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]".

[5] 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".

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

[7] CCITT Recommendation I.112: "Vocabulary of terms for ISDNs".

[8] CCITT Recommendation I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them".

3 Definitions

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

Integrated Services Digital Network (ISDN): See CCITT Recommendation I.112 [7], § 2.3, definition 308.

service; telecommunications service: See CCITT Recommendation I.112 [7], § 2.2, definition 201.

supplementary service: See CCITT Recommendation I.210 [8], § 2.4.

ISDN number: A number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [3].

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

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

served user: The served user for the SUB supplementary service is the called user or other private installation on the destination side of the network. Only this served user defines the significance of the subaddress information.

4 Abbreviations

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

DSS1	Digital Subscriber Signalling System No. one.
ISDN	Integrated Services Digital Network.
PSTN	Public Switched Telephone Network.
SUB	Subaddressing.

5 Description

The SUB supplementary service shall offer an additional addressing capacity beyond that of the ISDN number of the called user. The functions offered by the SUB supplementary service can be used to identify a particular endpoint of a call beyond the ISDN access .

If a calling user wants to transfer called party subaddress information to the called user, the calling user shall insert the called party subaddress information into the SETUP message as part of the basic service (see figure B.1).

The subaddress information shall be transferred transparently through the network from the originating to the destination user-network interface. At the called user side, the called party subaddress shall be offered to the served user within the SETUP message, if the SUB supplementary service is provided to the called user.

NOTE 1: Other subaddress information elements, e.g. Calling party subaddress or Connected party subaddress information elements are not the subject of the SUB supplementary service and hence are described in the appropriate supplementary service specifications (e.g. in the calling line identification presentation and connected line identification presentation supplementary services specifications).

NOTE 2: The maximum size of the subaddress is 20 octets. However, for a certain period of time, the size of the subaddress can be limited to a maximum of four octets either within certain networks or between networks.

6 Operational requirements

The SUB supplementary service shall use the incoming call and call offering procedures described in EN 300 403-1 [4], clause 5. The Called party subaddress information element shall be carried by the SETUP message sent to the called user.

6.1 Provision and withdrawal

The SUB supplementary service may be available without prior arrangement or it may be provided after subscription agreement between the user and the service provider.

If the subscription option is required, the user shall subscribe to the SUB supplementary service in order to receive called party subaddress information in incoming SETUP messages.

The SUB supplementary service shall be withdrawn on the subscriber's request or for administrative reasons.

6.2 Requirements on the originating network side

The basic call control procedures according to EN 300 403-1 [4], subclause 5.1, shall apply.

6.3 Requirements on the destination network side

The basic call control procedures according to EN 300 403-1 [4], subclause 5.2, shall apply.

7 Coding requirements

For the SUB supplementary service the calling user shall use the Called party subaddress information element defined in EN 300 403-1 [4], subclause 4.5.9.

8 State definitions

The states associated with basic call control according to EN 300 403-1 [4] shall apply.

9 Signalling procedures at the coincident S and T reference point

9.1 Activation, deactivation and registration

Not applicable.

9.2 Delivery of called party subaddress

9.2.1 Normal operation

The Called party subaddress information element shall be delivered from the network to the served user in the SETUP message according to the procedures of EN 300 403-1 [4], subclause 5.2, if the calling user has provided the subaddress information.

9.2.2 Exceptional procedures

If the SUB supplementary service is not provided to the called user or the length of the Called party subaddress information element exceeds the authorised length, the network shall discard the Called party subaddress information element. No indication shall be given to the calling user.

If the SUB supplementary service is provided to the called user but no subaddress information has been included by the calling user in the Called party subaddress information element, the SUB supplementary service cannot be provided and the call shall be offered to the called user without the Called party subaddress information element.

If a subaddress is assigned to a terminal and a SETUP message without subaddress is received, the terminal shall handle the call according to EN 300 403-1 [4], subclause 5.2.

10 Procedures for interworking with private ISDNs

The procedures specified in subclause 9.2 shall be used.

11 Interactions with other networks

If the call is not supported by the ISDN for the whole connection, the SUB supplementary service need not be applicable.

12 Interactions with other supplementary services

The interactions of the SUB supplementary service with other supplementary services shall be as specified in EN 300 195-1 [6].

13 Parameter values (timers)

No specific timers are required.

14 Dynamic description (SDL diagrams)

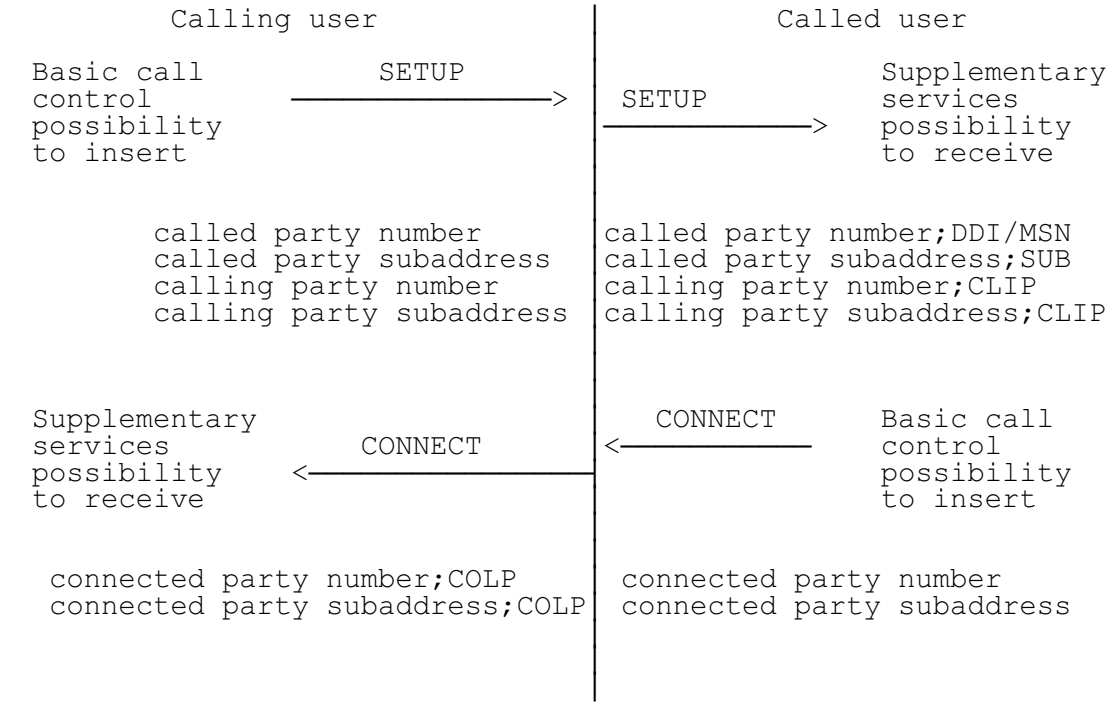
See EN 300 403-2 [5].

Annex A (informative): Signalling flows

No SUB supplementary service specific signalling flow is necessary in addition to basic call control according to EN 300 403-1 [4].

Annex B (informative): Relation of address information elements

The correlation of address information elements to the basic call control or supplementary service are shown in figure B.1.



The following symbols appearing after an information element name indicate the service to which they apply.

DDI	Direct Dialling In supplementary service
MSN	Multiple Subscriber Number supplementary service
SUB	Subaddressing supplementary service
CLIP	Calling Line Identification Presentation supplementary service
COLP	Connected Line Identification Presentation supplementary service

Figure B.1: Correlations of address information elements to the basic call control or supplementary services

Annex C (informative): Changes with respect to the previous ETS 300 061-1

The following changes have been done:

- conversion to EN layout;
- replacement of references to ETS 300 102 with EN 300 403;
- substitution of non-specific references to basic standards where the intention is to refer to the latest version.

History

Document history		
Edition 1	November 1991	Publication as ETS 300 061-1
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