



# SLOVENSKI STANDARD

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Integrated Services Digital Network (ISDN); Three-Party (3PTY) supplementary service;  
Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol  
specification

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# EN 300 188-1 V1.2.4 (1998-06)

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*European Standard (Telecommunications series)*

**Integrated Services Digital Network (ISDN);  
Three Party (3PTY) supplementary service;  
Digital Subscriber Signalling System No. one (DSS1) protocol;  
Part 1: Protocol specification**

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# 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.....	11
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 Request for a three-way conversation .....	12
9.2.1.1 Normal operation.....	12
9.2.1.2 Exceptional procedures .....	13
9.2.2 Disconnection of one remote user, and retention of the other.....	13
9.2.2.1 Normal operation.....	13
9.2.2.2 Exceptional procedures .....	15
9.2.3 Disconnection of both remote users, and terminating the call .....	15
9.2.3.1 Normal operation.....	15
9.2.3.2 Exceptional procedures .....	15
9.2.4 Creation of a private communication with a remote user.....	16
9.2.4.1 Normal operation.....	16
9.2.4.2 Exceptional procedures .....	17
9.2.5 Remote user terminates the call .....	18
9.2.5.1 Normal operation.....	18
9.2.5.2 Exceptional procedures .....	19

10	Procedures for interworking with private ISDNs .....	19
11	Interactions with other networks.....	19
12	Interactions with other supplementary services.....	19
13	Parameter values (timers).....	19
14	Dynamic description (SDL diagrams).....	19
<b>Annex A (informative): Signalling flows .....</b>		<b>31</b>
A.1	Request for a three-way conversation.....	31
A.2	Disconnection of one remote user, and retention of the other.....	32
A.3	Disconnection of both remote users and terminating the call .....	33
A.4	Creation of a private communication with a remote user.....	34
A.5	Remote user terminates the call .....	35
<b>Annex B (informative): Changes with respect to the previous ETS 300 188-1 .....</b>		<b>36</b>
History .....		37

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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) Three Party (3PTY) 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 Three Party (3PTY) supplementary service. The stage 1 and stage 2 aspects are detailed in ETS 300 186 and ETS 300 187, respectively.

The present version updates the references to the basic call specifications and incorporates all previous amendments and corrigenda.

**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

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# 1 Scope

This first part of EN 300 188 specifies the stage three of the Three Party (3PTY) 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 [5]) 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 telecommunications service (see CCITT Recommendation I.130 [3]).

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 3PTY supplementary service enables a user to establish, participate in and control, a three-way conversation, i.e. a simultaneous communication involving the served user and two remote users.

The 3PTY supplementary service is applicable to all circuit-switched telecommunication services carrying speech.

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 3PTY 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.112: "Vocabulary of terms for ISDNs".
- [3] CCITT Recommendation I.130 (1988): "Method for the characterisation of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [4] CCITT Recommendation I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [5] CCITT Recommendation I.411 (1988): "ISDN user-network interfaces - Reference configurations".
- [6] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".
- [7] CCITT Recommendation X.208 (1988): "Specification of Abstract Syntax Notation One (ASN.1)".
- [8] CCITT Recommendation X.209 (1988): "Specification of basic encoding rules for Abstract Syntax Notation One (ASN.1)".

- [9] CCITT Recommendation X.219 (1988): "Remote operations: Model, notation and service definition".
- [10] CCITT Recommendation Z.100 (1988): "Functional 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] ETS 300 402-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 1: General aspects".
- [14] EN 300 195-1: "Integrated Services Digital Network (ISDN); Supplementary service interactions; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [15] 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:

**active-held connection:** A connection between two users where at the served user, the call state is Active, and the auxiliary state is Call Held.

**active-idle connection:** A connection between two users where at the served user, the call state is Active, and the auxiliary state is Idle.

**call reference:** See EN 300 196-1 [15], clause 3.

**call state:** A state as defined in EN 300 403-1 [11] subclause 2.1 for either the user side or the network side 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 state).

**call:** See CCITT Recommendation Q.9 [6], definition 2201.

**connection endpoint identifier:** The identifier that identifies the data link connection which is used to transfer the signalling information (for the complete definition see EN 300 402-1 [13], subclause 3.4.1).

**connection:** See CCITT Recommendation Q.9 [6], definition 0011.

**Integrated Services Digital Network (ISDN):** See CCITT Recommendation I.112 [2], definition 308.

**invoke component:** See EN 300 196-1 [15], subclause 8.2.2.1. Where reference is made to "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 communication:** Communication between the served user and one remote user. This excludes communication with the other remote user.

**reject component:** See EN 300 196-1 [15], subclause 8.2.2.4.

**remote user:** The two other users to the served user which are involved in the two calls that are joined together in a three-way conversation. The remote users are distinguished as user B and user C.

**return error component:** See EN 300 196-1 [15], subclause 8.2.2.3. Where reference is made to "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 [15], subclause 8.2.2.2. Where reference is made to "xxxx" return result component, a return result component is meant which is related to an "xxxx" invoke component.

**served user:** The user (DSS1 protocol entity) which invokes this supplementary service; this user is also referred to as user A.

**service; telecommunications service:** See CCITT Recommendation I.112 [2], definition 201.

**supplementary service:** See CCITT Recommendation I.210 [4], § 2.4.

**three-way bridge:** The network equipment which performs connections between three users to allow three-way conversation.

**three-way conversation:** Communication between all three users, i.e. the served user and both remote users.

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

## 4 Abbreviations

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

3PTY	Three Party
ASN.1	Abstract Syntax Notation one
CEI	Connection Endpoint Identifier
CR	Call Reference
DSS1	Digital Subscriber Signalling System No. one
ISDN	Integrated Services Digital Network
PSTN	Public Switched Telephone Network
SDL	Specification and Description Language

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## 5 Description

The served user, which has only one Active-Idle connection, and at least one Active-Held connection can join the Active-Idle connection with one of the Active-Held connections, to form a three-way conversation.

NOTE 1: Each call, to be involved in the 3PTY supplementary service, can have been originated by either the served user, or by the appropriate remote user.

During the three-way conversation the served user can request that the network:

- explicitly disconnects one of the remote users, and the connection to that remote user;
- terminates the three-way conversation; or
- creates a private communication with one of the remote users.

Either of the remote users (user B or user C) can request that the network disconnects the connection.

Remote users are notified of these actions.

NOTE 2: During an interim period of time, some networks may not support the transfer of the notification to the remote users.

NOTE 3: The protocol for implementation of the 3PTY supplementary service is restricted to implementations where only one call within an Active-Idle connection exists for that CEI value. User implementations, e.g. multifunctional terminals, that in a normal operation support more than one call with an Active-Idle connection on the same CEI value, cannot make effective use of this protocol.

## 6 Operational requirements

### 6.1 Provision and withdrawal

The 3PTY supplementary service shall be provided by prior arrangement with the service provider.

The 3PTY supplementary service shall be withdrawn by the service provider upon request of the subscriber or for service provider reasons.

### 6.2 Requirements on the originating network side

The requirements of EN 300 403-1 [11], subclause 5.1 shall apply.

### 6.3 Requirements on the destination network side

The requirements of EN 300 403-1 [11], subclause 5.2 shall apply.

## 7 Coding requirements

### 7.1 Coding of the Facility information element components

Table 1 shows the definition of the operations and types required for the 3PTY supplementary service using ASN.1 as defined in CCITT Recommendations X.208 [7] and X.209 [8], and using the OPERATION macro as defined in CCITT Recommendation X.219 [9], figure 4/X.219.

The formal definition of the component types to encode these operations and types is provided in EN 300 196-1 [15], clause D.1.

The inclusion of components in Facility information elements is defined in EN 300 196-1 [15], subclause 11.2.2.1.

**Table 1: Definition of operations for the 3PTY supplementary service**

```

Three-Party-Operations {ccitt identified-organization etsi (0) 188 operations-and-types (1)}
DEFINITIONS EXPLICIT TAGS ::=
BEGIN
EXPORTS
    Begin3PTY, End3PTY;
IMPORTS
    OPERATION
    FROM Remote-Operation-Notation
        {joint-iso-ccitt remote-operations (4) notation (0)}

    notSubscribed, notAvailable, invalidCallState,
    resourceUnavailable,
    supplementaryServiceInteractionNotAllowed
    FROM General-Errors
        {ccitt identified-organization etsi (0) 196 general-errors (2)};

Begin3PTY      ::= OPERATION
                RESULT
                ERRORS {notSubscribed, notAvailable, invalidCallState,
                resourceUnavailable,
                supplementaryServiceInteractionNotAllowed}

```

**Table 1 (concluded): Definition of operations for the 3PTY supplementary service**

```

-- The present document does not provide procedures for the generation of the error
"notAvailable"

```