



SLOVENSKI STANDARD
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8 [[]HJbc`ca fYy`Y`n`]bH[f]fUb]a]gfcf]Hj Ua]fG8 BŁ!`8 cdc`b] bUgfcf]Hj .
cbZfYb b]`]VEdcglcdbc`j ndcglHj `Ub`Y`f7 CB: Ł!`Dfctc_c`X[[]HJbY`bUfc b]y_Y
g[[bU]nUW`Y`yH`%fB GG%Ł!`%`XY.`GdYW]Z_UM`Udfctc_c`U

Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification

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European Standard (Telecommunications series)

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Conference call, add-on (CONF) 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) Conference call, add-on (CONF) 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) to support the Conference call, add-on (CONF) supplementary service. The stage 1 and stage 2 aspects are detailed in ETS 300 183 and ETS 300 184, 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
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1 Scope

This first part of EN 300 185 specifies the stage three of the Conference call, add-on (CONF) 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 an intermediate 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 CONF supplementary service provides a user with the ability to have a multi-connection call, i.e. a simultaneous communication between more than two parties.

The CONF supplementary service is applicable to all 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 CONF 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] 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".
- [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 300 195-1: "Integrated Services Digital Network (ISDN); Supplementary service interactions; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [6] 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".

- [7] CCITT Recommendation I.112: "Vocabulary of terms for ISDNs".
- [8] CCITT Recommendation X.208 (1988): "Specification of 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] ETS 300 184: "Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service; Functional capabilities and information flows".
- [12] CCITT Recommendation Q.71 (1988): "ISDN 64 kbit/s circuit mode switched bearer services".
- [13] CCITT Recommendation I.210 (1988): "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:

add: An action initiated by the served user that adds a new remote user to the conference.

auxiliary state: A state as defined in EN 300 196-1 [3], subclause 7.4. An auxiliary state may exist for a call reference in parallel with the call state.

call state: A state as defined in EN 300 403-1 [4], subclause 2.1 for either the user or the network as appropriate. A call state may exist for each call reference (and for each additional responding CEI in the incoming call states).

conference ID: An identifier that identifies an instance of the CONF supplementary service.

drop: An action initiated by the served user that disconnects a remote user from the conference.

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

invoke component: See EN 300 196-1 [3], subclause 8.2.2.1. Where reference is made to a "xxxx" invoke component, an invoke component is meant with its operation value set to the value of operation "xxxx".

isolate: An action initiated by the served user that restricts communications with a participant of the conference.

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

party ID: An identifier that identifies a participant within an instance of the CONF supplementary service.

reattach: An action initiated by the served user that re-establishes the communication with a participant of the conference.

remote user: The DSS1 protocol entity at the user side of the user-network interface which is involved in an instance of the CONF supplementary service but which has no control of it.

return error component: See EN 300 196-1 [3], subclause 8.2.2.3. Where reference is made to a "xxxx" return error component, a return error component is meant which is related to a "xxxx" invoke component.

return result component: See EN 300 196-1 [3], subclause 8.2.2.2. Where reference is made to a "xxxx" return result component, a return result component is meant which is related to a "xxxx" invoke component.

served user: The DSS1 protocol entity at the user side of the user-network interface used to request and control the CONF supplementary service.

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

split: An action initiated by the served user that creates a normal call between the served user and a remote user.

supplementary service: See CCITT Recommendation I.210 [13], § 2.4.

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:

ASN.1	Abstract Syntax Notation One
CONF	Conference call, add-on
DSS1	Digital Subscriber Signalling System No. one
ISDN	Integrated Services Digital Network
PSTN	Public Switched Telephone Network
SDL	Specification Description Language

5 Description

The CONF supplementary service can be invoked either from the Null call state (N0, U0) or, additionally, as a network option from an existing call in the Active call state (N10, U10).

When the CONF supplementary service is invoked, conference resources (e.g. a "bridge") are allocated to the served user. In the case of invocation from an active call, this call shall be automatically connected by the network to the conference resources.

Once a conference is active, remote users may be added, dropped, isolated (i.e. prevented from communicating with the conference), reattached or split (i.e. removed from the conference but remain connected to the conference controller).

Remote users are notified of these actions.

NOTE: During an interim period of time, some networks may not support the transfer of notifications.

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6 Operational requirements

6.1 Provision and withdrawal

Not applicable.

6.2 Requirements on the originating network side

Not applicable.

6.3 Requirements on the destination network side

Not applicable.

7 Coding requirements

Table 1 shows the definition of the operations and errors required for the CONF supplementary service using ASN.1 as specified in CCITT Recommendation X.208 [8] and using the OPERATION and ERROR macro as defined in figure 4/X.219 of CCITT Recommendation X.219 [9].

The formal definition of the component types to encode these operations and errors is provided in EN 300 196-1 [3], annex D, clause D.1.

The inclusion of components in Facility information elements is defined in EN 300 196-1 [3], subclause 11.2.2.1.

Table 1: Definition of operations and errors for the CONF supplementary service

Conference-Add-On-Operations {ccitt identified-organization etsi (0) 185 operations-and-types (1)}	
DEFINITIONS EXPLICIT TAGS ::=	
BEGIN	
EXPORTS	BeginCONF, AddCONF, SplitCONF, DropCONF, IsolateCONF, ReattachCONF, PartyDISC, IllConferenceId, IllPartyId, NumberOfPartiesExceeded, NotActive, NotAllowed, PartyId, ConferenceId, ConfSize;
IMPORTS	OPERATION, ERROR FROM Remote-Operation-Notation {joint-iso-ccitt remote-operations(4) notation(0)} notSubscribed, notAvailable, supplementaryServiceInteractionNotAllowed, resourceUnavailable, invalidCallState FROM General-Errors {ccitt identified-organization etsi(0) 196 general-errors (2)};
BeginCONF ::=	OPERATION ARGUMENT ConfSize -- optional RESULT SEQUENCE { ConferenceId, PartyId OPTIONAL } ERRORS {notSubscribed, notAvailable, resourceUnavailable, invalidCallState, NumberOfPartiesExceeded}
AddCONF ::=	OPERATION ARGUMENT ConferenceId RESULT PartyId ERRORS {IllConferenceId, NumberOfPartiesExceeded, NotAllowed, supplementaryServiceInteractionNotAllowed, invalidCallState}
SplitCONF ::=	OPERATION ARGUMENT SEQUENCE { ConferenceId, PartyId} RESULT ERRORS {IllConferenceId, IllPartyId}
DropCONF ::=	OPERATION ARGUMENT PartyId RESULT ERRORS {IllPartyId, NotActive}
IsolateCONF ::=	OPERATION ARGUMENT PartyId RESULT ERRORS {IllPartyId, NotActive}
ReattachCONF ::=	OPERATION ARGUMENT PartyId RESULT ERRORS {IllPartyId, NotActive}

Table 1 (concluded): Definition of operations and errors for the CONF supplementary service

PartyDISC ::=	OPERATION	ARGUMENT	PartyId
IllConferenceId	::= ERROR		
IllPartyId	::= ERROR		
NumberOfPartiesExceeded	::= ERROR		
NotActive	::= ERROR		
NotAllowed	::= ERROR		
PartyId	::= INTEGER (0..127)		
ConferenceId	::= INTEGER (0..127)		
ConfSize	::= INTEGER (0..127)		
beginCONF	BeginCONF		::= 40
addCONF	AddCONF		::= 41
splitCONF	SplitCONF		::= 42
dropCONF	DropCONF		::= 43
isolateCONF	IsolateCONF		::= 44
reattachCONF	ReattachCONF		::= 45
partyDISC	PartyDISC		::= 46
illConferenceId	IllConferenceId		::= 28
illPartyId	IllPartyId		::= 29
numberOfPartiesExceeded	NumberOfPartiesExceeded		::= 30
notActive	NotActive		::= 31
notAllowed	NotAllowed		::= 32
END -- of Conference-Add-On-Operations			

All components (invoke, return result, return error and reject) shall be included within a Facility information element. This Facility information element may be included in any appropriate message as specified in EN 300 196-1 [3], subclause 8.3.1.1, unless a more restricting specification is given in clause 9.

Table 2 contains the additional codepoints for the CONF supplementary service which shall be employed in octet 3 of the Notification indicator information element (to be conveyed in the NOTIFY message).

Table 2: Additional codepoints in the Notification indicator information element

Bits	
8 7 6 5 4 3 2 1	
1 1 0 0 0 0 1 0	Conference established (note 1)
1 1 0 0 0 0 1 1	Conference disconnected (note 2)
1 1 0 0 0 1 0 0	Other party added
1 1 0 0 0 1 0 1	Isolated
1 1 0 0 0 1 1 0	Reattached
1 1 0 0 0 1 1 1	Other party isolated
1 1 0 0 1 0 0 0	Other party reattached
1 1 0 0 1 0 0 1	Other party split
1 1 0 0 1 0 1 0	Other party disconnected
NOTE 1: The user takes part in a multiparty call.	
NOTE 2: The user takes part in a normal two-party call.	

8 State definitions

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