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Zasebno telekomunikacijsko omrežje (PTN) - Specifikacija, funkcijski model in informacijski pretoki - Dopolnilna storitev: dokončanje klica

Private Telecommunication Network (PTN); Specification, functional models and information flows; Call completion supplementary services

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New presentation - see History box

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Foreword

This European Telecommunication Standard (ETS) has been produced by the European Computer Manufacturers Association (ECMA) on behalf of its members and those of the European Telecommunications Standards Institute (ETSI).

This ETS is one of a series of standards defining services and signalling protocols applicable to Private Telecommunication Networks (PTNs) incorporating one or more interconnected nodes. The series uses the Integrated Services Digital Network (ISDN) concepts as developed by CCITT and is also within the framework of standards for open systems interconnection as defined by ISO.

This ETS specifies the Call Completion to Busy Subscriber and Call Completion on No Reply Supplementary Services.

The ETS is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO, CCITT, ETSI and other international and national standardisation bodies. It represents a pragmatic and widely based consensus.

The services specified are compatible with the equivalent services specified by ETSI for public ISDNs. The references for the ETSI specifications of the Completion of Calls to Busy Subscriber Supplementary Service are contained in the Bibliography (Annex B) of this ETS. ETSI currently does not define the Call Completion on No Reply Supplementary Service (SS-CCNR).

This ETS was produced by ECMA using the ECMA guidelines for the production of standards and using the ECMA stylesheet. In order to avoid undue delays in the voting process for this ETS it has been agreed that this ETS will not be converted to the ETSI stylesheet.

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1 Scope

This European Telecommunication Standard (ETS) specifies Supplementary Services Call Completion (SS-CC), which are applicable to various basic services supported by Private Telecommunication Networks (PTN). Basic services are specified in ETS 300 171.

SS-CC consists of two Supplementary services: the Completion of Calls to Busy Subscribers Supplementary Service (SS-CCBS) and the Completion of Calls on No Reply Supplementary Service (SS-CCNR). SS-CCBS enables a calling User A, encountering a busy destination User B, to have the call completed when User B becomes not busy, without having to make a new call attempt. SS-CCNR enables a calling User A, encountering a destination User B that, though alerted, does not answer, to have the call completed when User B becomes not busy again after a period of activity, without having to make a new call attempt.

Service specifications are produced in three stages, according to the method described in ENV 41005. This ETS specifies the stage 1 and stage 2 specifications of SS-CC. The stage 1 specifications (Clauses 6 and 7) specify the supplementary services as seen by the users of PTNs. The stage 2 specification (Clause 8) specifies the functional entities involved in the supplementary services and the information flows between them.

2 Conformance

In order to conform to this ETS, a Stage 3 Standard shall specify signalling protocols and equipment behaviour that are capable of being used in a PTN which supports the supplementary services specified in this ETS. This means that, to claim conformance, a Stage 3 Standard is required to be adequate for the support of those aspects of Clauses 6 and 7 (stage 1) and Clause 8 (stage 2) which are relevant to the interface or equipment to which the Stage 3 Standard applies.

The stage 1 and stage 2 clauses which a stage 3 standard for the Call Completion of Calls to Busy Subscriber supplementary service is required to support are Clauses 6 and 8 respectively.

The stage 1 and stage 2 clauses which a stage 3 standard for the Call Completion of Calls on No Reply supplementary service is required to support are Clauses 7 and 8 respectively.

3 References

ETS 300 171:	Private Telecommunication Network (PTN); Specification, functional models and information flows; Control aspects of circuit mode basic services (1992)
CCITT Recommendation I.112:	Vocabulary of terms for ISDNs (1988)
CCITT Recommendation I.210:	Principles of telecommunications services supported by an ISDN and the means to describe them (1988)
CCITT Recommendation I.221:	Common specific characteristics of services (1988)
CCITT Recommendation Z.100:	Specification and description language (SDL) (1988)
ENV 41005:	Method for the specification of basic and supplementary services of private telecommunication networks (1989)
ENV 41007-1:	Definition of terms in private telecommunication networks (1989)

4 Definitions

For the purposes of this ETS the following definitions shall apply.

4.1 External definitions

This ETS uses the following terms defined in other documents:

Basic Service	(CCITT Recommendation I.210)
Connection	(ENV 41007-1)
Network determined user busy	(CCITT Recommendation I.221)
Private	(ENV 41007-1)
Private Telecommunication Network Exchange (PTNX)	(ENV 41007-1)
Public	(ENV 41007-1)
Public ISDN	(ENV 41007-1)
Service	(CCITT Recommendation I.112)
Signalling	(CCITT Recommendation I.112)
Supplementary Service	(CCITT Recommendation I.210)
Telecommunication Network	(ENV 41007-1)
Terminal, Terminal Equipment	(ENV 41007-1)
User	(ETS 300 171)
User determined user busy	(CCITT Recommendation I.221)

This ETS refers to the following basic call functional entity (FEs) defined in ETS 300 171:

- Call Control (CC)
- Call Control Agent (CCA)

This ETS refers to the following basic call inter-FE relationships defined in ETS 300 171:

- r1
- r2
- r3

This ETS refers to the following basic call information flows defined in ETS 300 171:

- r1_setup request/indication/response/confirmation
- r1_report request/indication
- r1_disconnect request/indication
- r2_setup request/indication/response/confirmation
- r2_report request/indication
- r2_release request/indication
- r3_setup request/indication/response/confirmation
- r3_setup_reject request/indication
- r3_report request/indication
- r3_disconnect request/indication

This ETS refers to the following basic call information flow elements defined in ETS 300 171:

- Connection Type (CT)
- Destination Number (DN)
- Originating Subaddress (OS)
- Destination Subaddress (DS)

4.2 Additional Network Feature

A capability, over and above that of a basic service, provided by a PTN, but not directly to a User.

4.3 Busy

A property of a User for whom either a Network determined user busy or User determined user busy condition exists.

4.4 Call, Basic call

An instance of the use of a basic service.

4.5 Call Completion

The successful presentation of a previously unsuccessful Call to a destination user (User B) which occurs when the call has entered an alerting phase or has been answered.

4.6 Originating Number

Element Originating Number is as defined in Standard ETS 300 171 with the exception that Screening indicator does not apply.

4.7 Path reservation

The reservation of resources prior to SS-CC Recall in order that a connection path through the PTN is available when User A accepts the SS-CC Recall.

Note 1

Path Reservation does not guarantee that User B will be not busy when User A accepts the SS-CC Recall.

4.8 Service retention

The capability to continue with a SS-CC request after the call resulting from acceptance of a SS-CC recall fails due to User B being busy again.

4.9 SS-CC Recall

An indication informing User A that User B is no longer busy (in the case of SS-CCBS) or has just completed a period of activity (in the case of SS-CCNR). Acceptance of this indication by User A will cause the call to be completed by the PTN.

4.10 User A

The specific User that originated the call and requested the supplementary service.

4.11 User B

The User that was initially addressed in the original call set up.

5 List of Acronyms

ANF Additional Network Feature

CC Call Control (functional entity)

CCA Call Control Agent (functional entity)

CCI CC Identifier

CR Cancellation Reason

DN Destination Number

FC Failure Cause

FE Functional Entity

FEA Functional Entity Action

ISDN Integrated Services Digital Network

NDUB Network Determined User Busy

NPR No Path Reservation

PTN Private Telecommunication Network

PTNX Private Telecommunication Network Exchange

RC Reject Cause

RL Request List

RM Request Maintained

SDL Specification and Description Language

SI Status Indicator

SR Service Retention

SS-CC Supplementary Service Call Completion

NOTE 2

This is a generic term, used to describe aspects common to both SS-CCBS and SS-CCNR.

SS-CCBS Supplementary Service Call Completion to Busy Subscriber

SS-CCNR Supplementary Service Call Completion on No Reply

TE Terminal Equipment

UDUB User Determined User Busy

6 SS-CCBS stage 1 specification

6.1 Description

6.1.1 General Description

Completion of Call to Busy Subscriber (SS-CCBS) is a supplementary service which is offered to a calling User A. On encountering a busy called User B, it allows User A to request that the PTN monitors User B and notifies User A when User B becomes not busy. On response by User A to that notification, the PTN will attempt to complete the call to User B.

6.1.2 Qualifications on Applicability to Telecommunication Services

SS-CCBS is applicable to all circuit-mode basic services defined in ETS 300 171.

6.2 Procedures

6.2.1 Provision/Withdrawal

SS-CCBS may be provided after pre-arrangement with the service provider (by means of service profile control), or may be available generally to all Users. SS-CCBS may be withdrawn on request of the User or for administrative reasons.

The subscription parameters and values offered by a PTN shall be an implementation matter. A PTN may offer more or less parameters and values than those specified below.

Possible subscription options are summarised in Table 1.

Table 1 - SS-CCBS Subscription parameters

Subscription option	Values:
Recall mode	- SS-CC Recall offered to all compatible terminals (Note 3) - SS-CC Recall offered to the terminal which has invoked SS-CCBS

Note 3

If the user has more than one compatible terminal (e.g. passive bus arrangement), this option will result in SS-CC Recall being offered simultaneously to all those terminals, thereby allowing acceptance by any one of those terminals.