



SLOVENSKI STANDARD
SIST EN 301 134 V1.1.1:2003
01-december-2003

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Integrated Services Digital Network (ISDN); Completion of Calls on No Reply (CCNR)
supplementary service; Service description

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Ta slovenski standard je istoveten z: **EN 301 134 Version 1.1.1**
<https://standards.iteh.ai/catalog/standards/sist/cb521abc-977a-466a-b112-710505d44f8f/sist-en-301-134-v1-1-1-2003>

ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
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SIST EN 301 134 V1.1.1:2003 en

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EN 301 134 V1.1.1 (1998-10)

European Standard (Telecommunications series)

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Reference

DEN/NA-010027 (ai000ico.PDF)

Keywords

ISDN, stage 1, supplementary service, CCNR

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Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Network Aspect (NA).

In accordance with CCITT Recommendation I.130 [1], 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 1 aspects (overall service description) for the Completion of Calls on No Reply (CCNR) supplementary service. The stage 3 aspects are detailed in EN 301 065-1 (1998) and EN 300 356-20 (1998).

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National transposition dates	
Date of adoption of this EN:	9 October 1998
Date of latest announcement of this EN (doa):	31 January 1999
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 July 1999
Date of withdrawal of any conflicting National Standard (dow):	31 July 1999

1 Scope

The present document defines the stage one of the Completion of Calls on No Reply (CCNR) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage one is an overall service description from the user's point of view (see CCITT Recommendation I.130 [1]), but does not deal with the details of the human interface itself.

The present document defines the interworking requirements of private ISDNs with the public ISDN.

In addition, the present document specifies the base functionality where the service is provided to the user via a private ISDN.

The present document does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN but does include interworking requirements of other networks with the public ISDN.

Interactions with supplementary services not listed in clause 7 are outside the scope of the present document.

Charging principles are outside the scope of the present document.

The CCNR supplementary service enables user A, encountering a destination B which does not answer the call (No Reply), to have the call completed without having to make a new call attempt when the destination B becomes not busy after having initiated an activity.

The CCNR supplementary service is applicable to all circuit-switched telecommunications services with the following exceptions:

- a) call 2 of the videotelephony teleservice (see ETS 300 264 [8]);
- b) call 2 of the audiographic conference teleservice (see ETS 300 675 [10]);
- c) call 2 and subsequent calls of videoconference teleservice (see ETS 300 678 [11]);
- d) all other circuit-switched telecommunication services requiring the use of more than one B-channel.

The present document is applicable to the stage two and stage three standards for the ISDN CCNR supplementary service. The terms "stage two" and "stage three" are also defined in CCITT Recommendation I.130 [1]. Where the text indicates the status of a requirement (i.e. as strict command or prohibition, as authorization leaving freedom, or as a capability or possibility), this shall be reflected in the text of the relevant stage two and stage three standards.

Furthermore, conformance to the present document is met by conforming to the stage three standard with the field of application appropriate to the equipment being implemented. Therefore, no method of testing is provided for the present document.

2 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.

2.1 Normative references

- [1] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [3] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [4] ITU-T Recommendation E.164 (1997): "The international public telecommunication numbering plan".
- [5] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".
- [6] ITU-T Recommendation I.221 (1993): "Common specific characteristics of services".
- [7] ETS 300 345: "Integrated Services Digital Network (ISDN); Interworking between public ISDNs and private ISDNs for the provision of telecommunication services; General aspects".

2.2 Informative references

- [8] ETS 300 264: "Integrated Services Digital Network (ISDN); Videotelephony teleservice; Service description".
- [9] ETS 300 357: "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Service description".
- [10] ETS 300 675: "Integrated Services Digital Network (ISDN); Audiographic conference teleservice; Service description".
- [11] ETS 300 678: "Integrated Services Digital Network (ISDN); Videoconference teleservice; Service description".

3 Definitions and abbreviations

3.1 Definitions

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

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [2], subclause 2.3, definition 308.

service; telecommunications service: see ITU-T Recommendation I.112 [2], subclause 2.2, definition 201.

supplementary service: see ITU-T Recommendation I.210 [3], subclause 2.4.

ISDN number: a number conforming to the numbering plan and structure specified in ITU-T Recommendation E.164 [4].

busy: see ITU-T Recommendation I.221 [6], clause 3.

user A: the user who originated the call and to whom the CCNR supplementary service is provided.

destination B: the entity addressed in the original call.

basic call procedures: the procedures by which a call (as an instance of a telecommunications service) is established and terminated.

retention timer: this timer specifies the amount of time the network retains all of the information supplied by the calling user if the call is terminated while destination B is being informed of the call. Although this timer is optional for the basic call procedures it is needed for the operation of the CCNR supplementary service. The minimum value of the timer shall be 15 seconds.

CCNR service duration timer: the maximum time the CCNR supplementary service will remain activated for user A within the network. The value of this timer shall be a minimum of 60 minutes and a maximum of 180 minutes.

CCNR recall timer: the maximum time the network will wait for user A to respond to a CCNR recall. The value of this timer shall be a minimum of 10 seconds and a maximum of 20 seconds.

destination B idle guard timer: the time the network will wait after destination B has become not busy, after having initiated an activity before informing user A. The value of this timer shall be a maximum of 15 seconds.

CCNR busy: any one of the following conditions will cause user A to be considered as CCNR busy:

- maximum number of calls reached at user A;
- no B-channels available at user A;
- CCNR recall pending on user A.

CCNR call: a call generated by the network from user A to destination B resulting from user A's acceptance of a CCNR recall.

CCNR recall: an indication informing user A that the network is ready to initiate a CCNR call to destination B and that the network is awaiting a response to this indication.

suspended CCNR request: a CCNR request which cannot be served even if destination B is not busy after having initiated an activity, because user A is busy or CCNR busy.

service provider: the entity which offers the CCNR supplementary service.

subaddress: see ITU-T Recommendation E.164 [4], subclause 11.2.1:2003

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compatible terminal: a terminal which can support the bearer service or teleservice requested for the original call to destination B and which can accept calls to the ISDN number and subaddress identifying the called user in the original call to destination B.

basic access: see CCITT Recommendation Q.9 [5], clause 1, definition 1551.

primary rate access: see CCITT Recommendation Q.9 [5], clause 1, definition 1552.

CCNR request: an instance of an activation of the CCNR supplementary service which is held in a queue pending the correct conditions for the CCNR supplementary service to be completed.

activity: answering an incoming call or originating an outgoing call or clearing of an established call or clearing of an outgoing call.

3.2 Abbreviations

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

CCBS	Completion of Calls to Busy Subscriber
CCNR	Completion of Calls on No Reply
ISDN	Integrated Services Digital Network

4 Description

The CCNR supplementary service enables user A, encountering a destination B which does not answer the call (No Reply), to have the call completed without having to make a new call attempt when the destination B becomes not busy after having initiated an activity.

When user A encounters a destination B which does not answer the call (No Reply), user A can request the CCNR supplementary service.

When user A requests the CCNR supplementary service, the network will monitor for destination B becoming not busy after having initiated an activity.

When destination B becomes not busy (i.e. access resources, e.g. at least one B-channel, are not busy) after having initiated an activity, then the network will wait a short time (as defined by the destination B idle guard timer) in order to allow the resources to be re-used for originating a call. If the resources are not re-used by destination B within this time, then the network will automatically recall user A.

When user A accepts the CCNR recall, then the network will automatically generate a CCNR call to destination B.

The CCNR supplementary service shall be available to users who are connected to the network via a basic access or a primary rate access.

NOTE: A supplementary service provided to destination B which prevents the registration of CCNR requests is outside the scope of the present document.

5 Procedures

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5.1 Provision and withdrawal

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The CCNR supplementary service shall be provided to user A after prior arrangement with the service provider or shall be generally available.

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

As a service provider option, the CCNR supplementary service can be offered with a subscription option which shall apply to the whole access of user A. The subscription option is detailed in table 1.

Table 1: Subscription option

Subscription option	Values
Recall mode	<ul style="list-style-type: none"> - Global, i.e. CCNR recall offered to all terminals on the access. - Specific, i.e. CCNR recall offered to the terminal that has activated the CCNR supplementary service.

If the subscription option is not offered, one of the two values shall be chosen by the service provider.