

Final draft **ETSI EN 300 356-18** V4.1.2 (2001-05)

---

*European Standard (Telecommunications series)*

**Integrated Services Digital Network (ISDN);  
Signalling System No.7 (SS7);  
ISDN User Part (ISUP) version 4 for the international interface;  
Part 18: Completion of Calls to Busy Subscriber (CCBS)  
supplementary service**

[ITU-T Recommendation Q.733, clause 3 (1997) modified]

---



---

**Reference**

REN/SPAN-01082-18

---

**Keywords**ISDN, ISUP, SS7, supplementary service, CCBS,  
endorsement**ETSI**

---

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

---

**Important notice**Individual copies of the present document can be downloaded from:  
<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at <http://www.etsi.org/tb/status/>

If you find errors in the present document, send your comment to:  
[editor@etsi.fr](mailto:editor@etsi.fr)

---

**Copyright Notification**

No part may be reproduced except as authorized by written permission.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2001.  
All rights reserved.

---

# Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

---

## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the Vote phase of the ETSI standards Two-step Approval Procedure.

The present document is part 18 of a multi-part deliverable covering the ISDN User Part (ISUP) version 4 for the international interface, as identified below:

- Part 1: "Basic services [ITU-T Recommendations Q.761 to Q.764 (1999) modified]";
- Part 2: "ISDN supplementary service [ITU-T Recommendation Q.730 (1999) modified]";
- Part 3: "Calling Line Identification Presentation (CLIP) supplementary service [ITU-T Recommendation Q.731, clause 3 (1993) modified]";
- Part 4: "Calling Line Identification Restriction (CLIR) supplementary service [ITU-T Recommendation Q.731, clause 4 (1993) modified]";
- Part 5: "Connected Line Identification Presentation (COLP) supplementary service [ITU-T Recommendation Q.731, clause 5 (1993) modified]";
- Part 6: "Connected Line Identification Restriction (COLR) supplementary service [ITU-T Recommendation Q.731, clause 6 (1993) modified]";
- Part 7: "Terminal Portability (TP) supplementary service [ITU-T Recommendation Q.733, clause 4 (1993) modified]";
- Part 8: "User-to-User Signalling (UUS) supplementary service [ITU-T Recommendation Q.737, clause 1 (1997) modified]";
- Part 9: "Closed User Group (CUG) supplementary service [ITU-T Recommendation Q.735, clause 1 (1993) modified]";
- Part 10: "Subaddressing (SUB) supplementary service [ITU-T Recommendation Q.731, clause 8 (1992) modified]";
- Part 11: "Malicious Call Identification (MCID) supplementary service [ITU-T Recommendation Q.731, clause 7 (1997) modified]";
- Part 12: "Conference Call, add-on (CONF) supplementary service [ITU-T Recommendation Q.734, clause 1 (1993) and implementors guide (1998) modified]";
- Part 14: "Explicit Call Transfer (ECT) supplementary service [ITU-T Recommendation Q.732, clause 7 (1996) and implementors guide (1998) modified]";
- Part 15: "Diversion supplementary service [ITU-T Recommendation Q.732, clauses 2 to 5 (1999) modified]";
- Part 16: "Call Hold (HOLD) supplementary service [ITU-T Recommendation Q.733, clause 2 (1993) modified]";

- Part 17: "Call Waiting (CW) supplementary service [ITU-T Recommendation Q.733, clause 1 (1992) modified]";
- Part 18: "Completion of Calls to Busy Subscriber (CCBS) supplementary service [ITU-T Recommendation Q.733, clause 3 (1997) modified]";**
- Part 19: "Three-Party (3PTY) supplementary service [ITU-T Recommendation Q.734, clause 2 (1996) and implementors guide (1998) modified]";
- Part 20: "Completion of Calls on No Reply (CCNR) supplementary service [ITU-T Recommendation Q.733, clause 5 (1999) modified]";
- Part 21: "Anonymous Call Rejection (ACR) supplementary service [ITU-T Recommendation Q.731, clause 4 (1993)]";
- Part 31: "Protocol Implementation Conformance Statement (PICS) proforma specification for basic services";
- Part 32: "Test Suite Structure and Test Purposes (TSS&TP) specification for basic services";
- Part 33: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for basic services";
- Part 34: "Protocol Implementation Conformance Statement (PICS) proforma specification for supplementary services";
- Part 35: "Test Suite Structure and Test Purposes (TSS&TP) specification for supplementary services";
- Part 36: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for supplementary services".

In accordance with ITU-T Recommendation I.130 [1], the following three level structure is used to describe the supplementary telecommunication 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 stand-point;
- 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 three aspects (signalling system protocols and switching functions) needed to support the Completion of Calls to Busy Subscriber (CCBS) supplementary service. The stage 1 and stage 2 aspects are detailed in ETS 300 357 [5] and ETS 300 358 [6], respectively.

<b>Proposed national transposition dates</b>	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

---

## Endorsement notice

The text of ITU-T Recommendation Q.733, clause 3 (1997), was approved by ETSI as an EN with agreed modifications as given below.

NOTE: New or modified text is indicated using sidebars. In addition, underlining and/or strike-out are used to highlight detailed modifications where necessary.

---

# Global modifications to ITU-T Recommendation Q.733, clause 3

Replace the two clauses (Scope and References) with the following two clauses.

---

## 1 Scope

The present document specifies the stage three of the Completion of Calls to Busy Subscriber (CCBS) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by the European public telecommunications operators by means of the Signalling System No.7 protocol for the ISDN User Part (ISUP). Stage three identifies the protocol procedures and switching functions needed to support a telecommunication service (see ITU-T Recommendation I.130 [1]).

The present document specifies the additional requirements where the service is provided to the user via an intermediate 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.

Although the present document applies only to the international interconnection, the specification of functions, formats and codes of messages and signals, and actions performed at originating and destination local exchanges are retained.

Formats, codes and procedures marked for national use are included for informative purposes for the international interface specification. If these items so marked are supported within a national network and operator's network, then it is proposed that they shall be supported in this manner.

NOTE: In the case where a national signalling system behaves differently, the international gateway exchange is to support both the concerned national and international network.

Charging aspects are outside the scope of the present document.

The CCBS supplementary service enables user A, encountering a busy destination B, to have the call completed without having to make a new call attempt when the destination B becomes not busy.

The CCBS supplementary service is applicable to all circuit-switched basic services.

---

## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ITU-T Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[2] ETSI ETS 300 121 (1992): "Integrated Services Digital Network (ISDN); Application of the ISDN User Part (ISUP) of CCITT Signalling System No.7 for international ISDN interconnections (ISUP version 1)".

[3] ETSI EN 300 356-1: "Integrated Services Digital Network (ISDN); Signalling System No.7 (SS7); ISDN User Part (ISUP) version 4 for the international interface; Part 1: Basic services [ITU-T Recommendations Q.761 to Q.764 (1999) modified]".

- [4] ETSI EN 300 356-2: "Integrated Services Digital Network (ISDN); Signalling System No.7 (SS7); ISDN User Part (ISUP) version 4 for the international interface; Part 2: ISDN supplementary service [ITU-T Recommendation Q.730 (1999) modified]".
- [5] ETSI ETS 300 357 (1995): "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Service description".
- [6] ETSI ETS 300 358 (1995): "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Functional capabilities and information flows".
- [7] ETSI EN 300 403-1 (V1.3.2): "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]".

### Throughout the text of ITU-T Recommendation Q.733, clause 3

Replace references as shown in table 1.

**Table 1**

Reference in ITU-T Recommendation Q.733, clause 3	Modified reference
ITU-T Recommendation Q.730	ITU-T Recommendation Q.730 as modified by EN 300 356-2 [4]
ITU-T Recommendation Q.761	ITU-T Recommendation Q.761 as modified by EN 300 356-1 [3]
ITU-T Recommendation Q.762	ITU-T Recommendation Q.762 as modified by EN 300 356-1 [3]
ITU-T Recommendation Q.763	ITU-T Recommendation Q.763 as modified by EN 300 356-1 [3]
ITU-T Recommendation Q.764	ITU-T Recommendation Q.764 as modified by EN 300 356-1 [3]
ITU-T Recommendation Q.767	ETS 300 121 [2]
ITU-T Recommendation Q.931	ITU-T Recommendation Q.931 as modified by EN 300 403-1 [7]

### Subclause 3.6.10.2.2

Replace the complete text in part a) by:

a) Call forwarding is (are) already activated on receipt of a CCBS request.

On receipt of a CCBS request:

- if destination B has a CFU activated, the destination B's local exchange rejects the CCBS request with short-term denial as the reason [see 3.5.5.4.1 c)]. If any other call diversion is activated in addition to CFU, the result should be the same;
- if destination B has only a CFB activated, destination B's local exchange accepts the CCBS request;
- if destination B has CFNR activated (with or without a CFB in addition), destination B's local exchange accepts the CCBS request if destination B is busy and rejects the CCBS request if destination B is free.

NOTE: A local exchange is not aware of the activation of any call deflection. Consequently, a CCBS request is always accepted by the local exchange of such a user.

Add the following at the end:

d) Call diversion is invoked at destination B.

On receipt of a release message with cause parameter containing value #17 or #34 (regardless of the value of the CCBS indicator in the diagnostic field):

- if the reason for the call diversion is CFU or CFNR or CD, the diagnostic field is changed to a "CCBS not possible" indication;
- if the reason for the call diversion is CFB, the diagnostic field is changed to indicate whether or not CCBS is possible. If CCBS is not possible, e.g. if destination B's local exchange knows that destination B's CCBS queue is set to zero, then the diagnostic field shall be set to "CCBS not possible" otherwise the diagnostic field shall be set to "CCBS possible".

---

## Annex ZA (informative): Coding of the compatibility information

It is recommended that the parameter compatibility information for the CCSS parameter should be coded as follows:

- a) N<sup>th</sup> upgraded parameter:
  - 0100 1011 CCSS parameter.
- b) Instruction indicators:
  - bit A: Transit at intermediate exchange indicator;
    - 0 transit interpretation;
  - bit B: Release call indicator;
    - 0 do not release call;
  - bit C: Send notification indicator;
    - 0 do not send notification;
  - bit D: Discard message indicator;
    - 0 do not discard message (pass on);
  - bit E: Discard parameter indicator;
    - 0 do not discard parameter (pass on);
  - bits GF: Pass on not possible indicator;
    - 10 discard parameter;
  - bits JI: Broadband/narrowband interworking indicator;
    - 00 pass on.



---

# History

<b>Document history</b>		
Edition 1	February 1995	Publication as ETS 300 356-18
V3.1.3	August 1998	Publication
V4.1.1	September 2000	Public Enquiry PE 20010126: 2000-09-27 to 2001-01-26
V4.1.2	May 2001	Vote V 20010713: 2001-05-14 to 2001-07-13