

**Integrated Services Digital Network (ISDN);
Signalling System No.7 (SS7);
ISDN User Part (ISUP) version 4 for the international interface;
Part 21: Anonymous Call Rejection (ACR)
supplementary service**

[ITU-T Recommendation Q.731, clause 4 (1993)]



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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 21 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 Anonymous Call Rejection (ACR) supplementary service. The stage 1 aspects are detailed in EN 301 798 [3]. No stage 2 description is provided.

| Proposed national transposition dates | |
|--|---------------------------------|
| 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 |

1 Scope

The present document specifies the stage three of the Anonymous Call Rejection (ACR) 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 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 present document does not specify the additional protocol requirements for the national signalling interface.

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

The present document specifies the protocol procedures and switching functions for the ACR supplementary service as instructed by article 8, clause 3 of the EC Telecomms Data Protection Directive (Directive 97/66/EC [2]). As described in the ACR service description [3], this supplementary service offers the called user the possibility to reject incoming calls from users or subscribers who have restricted the presentation of their calling line identity according to the CLIR supplementary service [6].

The ACR supplementary service is applicable to all telecommunication services.

At which point in the network the actual rejection of incoming call will take place is subject to national regulations and network considerations. The ACR supplementary service could be realized in two ways, either as a network based solution or as a user based solution using the basic call procedure which implementation is left to user's equipment manufacturer.

- 1) Network based solution: a service offered as part of a function within the public network for all incoming calls for which the calling line identification is not available because of restriction according to the CLIR supplementary service [6];
- 2) User based solution: a service offered as part of a function within the end-user terminal for all incoming calls or to be decided by the end-user per incoming call for which the calling line identification is not available because of restriction according to the CLIR supplementary service [6].

NOTE 2: If the presentation of the calling party number is restricted for network reasons the ACR supplementary service shall not apply.

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] Directive 97/66/EC of the European Parliament and of the Council of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector.
- [3] ETSI EN 301 798: "Service and Protocols for Advanced Networks (SPAN); Anonymous Call Rejection (ACR) Supplementary Service; Service description".
- [4] 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]".
- [5] ETSI EN 300 356-3: "Integrated Services Digital Network (ISDN); Signalling System No.7 (SS7); ISDN User Part (ISUP) version 4 for the international interface; Part 3: Calling Line Identification Presentation (CLIP) supplementary service [ITU-T Recommendation Q.731, clause 3 (1993) modified]".
- [6] ETSI EN 300 356-4: "Integrated Services Digital Network (ISDN); Signalling System No.7 (SS7); ISDN User Part (ISUP) version 4 for the international interface; Part 4: Calling Line Identification Restriction (CLIR) supplementary service [ITU-T Recommendation Q.731, clause 4 (1993) modified]".
- [7] ETSI EN 300 485: "Integrated Services Digital Network (ISDN); Definition and usage of cause and location in Digital Subscriber Signalling System No. one (DSS1) and Signalling System No. 7 (SS7) ISDN User Part (ISUP) [ITU-T Recommendation Q.850 (1998) with addendum modified]".
- [8] ETSI EN 300 089: "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Service description".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following term and definition applies:

served user: user to whom the ACR supplementary service is provided

3.2 Abbreviations

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

| | |
|------|--|
| ACR | Anonymous Call Rejection |
| APRI | Address Presentation Restriction Indicator |
| CLI | Calling Line Identification |
| CLIP | Calling Line Identification Presentation |
| CLIR | Calling Line Identification Restriction |
| ISDN | Integrated Services Digital Network |
| ISUP | ISDN User Part |

4 Description

The ACR supplementary service allows the served user to reject incoming calls from users or subscribers who have restricted the presentation of their calling line identity according to the CLIR supplementary service [6].

The calling user shall be given an appropriate indication stating the reason for call rejection as application of the ACR supplementary service.

NOTE: The method of rejection of anonymous calls is a service provider option, and may include the functionality where all anonymous calls are forwarded to e.g. a voice mail service.

See the ACR service description [3] for further details.

5 Provision and withdrawal

When implemented as a network based solution:

- 1) The ACR supplementary service shall be provided after prior arrangement with the service provider.
- 2) The ACR supplementary service shall be withdrawn at the served user's request or for administrative reasons.

When implemented as a user based solution no specific procedures do apply.

6 Coding requirements

The ACR supplementary service acts upon the values signalled in the Address Presentation Restriction Indicator (APRI) field as specified as part of the calling party number parameter in EN 300 356-1 [4].

In addition, the ACR supplementary service shall use the cause value 24 "call rejected due to ACR supplementary service" as specified in EN 300 485 [7].

7 State definitions

No specific state definitions are required.

8 Signalling procedures

The normal ISUP basic call procedures apply as specified in EN 300 356-1 [4].

The setting of the APRI field is specified as part of the CLIP [5] and CLIR [6] supplementary services.

The ACR supplementary service, if active, will reject all calls with CLI marked "presentation restricted" according to the CLIR supplementary service [6]. The calls are rejected regardless of the current state (e.g. free or busy) of the served user's access. The ACR supplementary service shall not reject calls with a CLI marked "presentation restricted by network". The served user's ability to originate calls is unaffected by the ACR supplementary service.

When a call is rejected due to the ACR supplementary service, the calling user shall receive an appropriate indication by either;

- sending a Release message as specified in the "Unsuccessful call set-up" clause of [4] with cause value 24 "call rejected due to ACR supplementary service" as specified in EN 300 485 [7]; or
- by sending an Address Complete or Call Progress message, that may include cause value 24 and applying an in-band announcement as specified in the "Tones and announcements" clause of [4]; or
- the call may be forwarded to a voice message service to provide an announcement.

9 Interaction with other networks

NOTE: When interworking with existing implementations, the cause value 24 "call rejected due to ACR supplementary service" indicating that the call was rejected due to the ACR supplementary service, may be lost.

9.1 Interworking with non-ISDN networks

Due to limitations of non-ISDN networks calls may be subject to unintended rejections where any information identifying the calling party is signalled inside the network as "presentation restricted" although the calling user is willing to identify him/herself. The risk of these unintended rejections can be avoided by updating the network to support end-to-end a distinction between "presentation allowed" and "presentation restricted".

9.2 Interworking with existing ISDN networks

The risk of unintended rejections also applies to existing situations where an ISDN network enters a default number not presentable to the called user and signalled inside the network as "presentation restricted". The risk of these unintended rejections can be avoided when these numbers are handled inside the network as "presentation restricted by network" end-to-end and/or by use of the extended screening option as part of the CLIP supplementary service [8].

9.3 Interworking with Private Networks

When the calling user belongs to a private network the cause value 24 "call rejected due to ACR supplementary service" indicating that the call was rejected due to the ACR supplementary service shall be sent to the private network to which the calling user is attached for forwarding to the calling user.

When a private network returns the cause value 24 "call rejected due to ACR supplementary service" indicating that the call was rejected due to the ACR supplementary service, this cause shall be transferred by the public network.

10 Interaction with other supplementary services

For the interaction with other supplementary services the requirements as specified in the ACR service description apply [3].

History

| Document history | | |
|------------------|----------------|--|
| V4.1.1 | September 2000 | Public Enquiry PE 20010126: 2000-09-27 to 2001-01-26 |
| V4.2.1 | May 2001 | Vote V 20010713: 2001-05-14 to 2001-07-13 |
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