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SERIES Q: SWITCHING AND SIGNALLING, AND ASSOCIATED MEASUREMENTS AND TESTS

Specifications of Signalling System No. 7 – ISDN supplementary services

Stage 3 description for number identification supplementary services using Signalling System No. 7 – Calling line identification restriction

Recommendation ITU-T Q.731.4

ITU-T Q-SERIES RECOMMENDATIONS

SWITCHING AND SIGNALLING, AND ASSOCIATED MEASUREMENTS AND TESTS

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100–Q.119
SPECIFICATIONS OF SIGNALLING SYSTEMS No. 4, 5, 6, R1 AND R2	Q.120–Q.499
DIGITAL EXCHANGES	Q.500–Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700–Q.799
General	Q.700
Message transfer part (MTP)	Q.701–Q.710
Signalling connection control part (SCCP)	Q.711–Q.719
Telephone user part (TUP)	Q.720–Q.729
ISDN supplementary services	**Q.730–Q.739**
Data user part	Q.740–Q.749
Signalling System No. 7 management	Q.750–Q.759
ISDN user part	Q.760–Q.769
Transaction capabilities application part	Q.770–Q.779
Test specification	Q.780–Q.799
Q3 INTERFACE	Q.800–Q.849
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850–Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200–Q.1699
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR IMT-2000	Q.1700–Q.1799
SPECIFICATIONS OF SIGNALLING RELATED TO BEARER INDEPENDENT CALL CONTROL (BICC)	Q.1900–Q.1999
BROADBAND ISDN	Q.2000–Q.2999
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR THE NGN	Q.3000–Q.3709
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR SDN	Q.3710–Q.3899
TESTING SPECIFICATIONS	Q.3900–Q.4099
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR IMT-2020	Q.5000–Q.5049
COMBATING COUNTERFEITING AND STOLEN ICT DEVICES	Q.5050–Q.5069

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T Q.731.4

Stage 3 description for number identification supplementary services using Signalling System No. 7 – Calling line identification restriction

Summary

Recommendation ITU-T Q.731.4 provides a signalling procedure for calling line identification restriction (CLIR). The Recommendation specifies service description, coding requirements and operation requirements of CLIR. It also presents the signalling requirements for originating local exchange, transit exchange, international gateway exchange and destination local exchange. Interaction with other supplementary services, interaction with other networks and dynamic description are also included.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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Keywords

CLIR, number identification, signalling system No.7

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* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

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Table of Contents

Recommendation ITU-T Q.731.4

Stage 3 description for number identification – Supplementary services using Signalling System No. 7 – Calling line identification restriction

1 Scope

This Recommendation provides a signalling procedure for calling line identification restriction (CLIR). It specifies service description, coding requirements and operation requirements of CLIR. It also presents the signalling requirements for originating local exchange, transit exchange, international gateway exchange and destination local exchange. Interaction with other supplementary services, interaction with other networks and dynamic description are also considered.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T E.164] Recommendation ITU-T E.164 (2010), *The international public telecommunication numbering plan.*

[ITU-T I.251.3] Recommendation ITU-T I.251.3 (Rev.1), (1992), *Number identification supplementary services: Calling Line Identification Presentation.*

[ITU-T I.251.4] Recommendation ITU-T I.251.4 (Rev.1), (1992), *Number identification supplementary services: Calling Line Identification Restriction.*

[ITU-T Q.81.3] Recommendation ITU-T Q.81.3 (1991), *Stage 2 description for number identification supplementary services: Calling line identification presentation (CLIP) and calling line identification restriction (CLIR).*

[ITU-T Q.730] Recommendation ITU-T Q.730 (1999), *ISDN User Part supplementary services.*

[ITU-T Q.731.3] Recommendation ITU-T Q.731.3 (2019), *Stage 3 description for number identification supplementary services using Signalling System No. 7 – Calling line identification restriction.*

[ITU-T Q.761] Recommendation ITU-T Q.761 (1999), *Signalling System No. 7 – ISDN User Part functional description.*

[ITU-T Q.762] Recommendation ITU-T Q.762 (1999), *Signalling System No. 7 – ISDN User Part general functions of messages and signals.*

[ITU-T Q.763] Recommendation ITU-T Q.763 (1999), *Signalling System No. 7 – ISDN User Part formats and codes.*

[ITU-T Q.764] Recommendation ITU-T Q.764 (1999), *Signalling System No. 7 – ISDN User Part signalling procedures.*

[ITU-T Q.951.4] Recommendation ITU-T Q.951.4 (1993), *Stage 3 description for number identification supplementary services using DSS 1: Calling line identification restriction.*

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

This Recommendation defines the following term:

3.2.1 calling line identification restriction (CLIR): A supplementary service offered to the calling user to restrict presentation of the calling user's number, with additional address information (e.g., calling party sub-address) if any, to the called user.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

3PTY	Three-Party service
AOC	Advice Of Charge
CCBS	Completion of Calls to Busy Subscriber
CD	Call Deflection
CDIV	Call Diversion services
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
COLP	Connected Line Identification Presentation
COLR	Connected Line Identification Restriction
CONF	Conference calling
CPE	Customer Premises Equipment
CPE-SS7	CPE Connected Signalling System No. 7
CUG	Closed User Group
CW	Call Waiting
DDI	Direct Dialling-In
DSS1	Digital Subscriber Signalling System No. 1
HOLD	call Hold
ISDN	Integrated Services Digital Network
ISUP	Integrated Services Digital Network User Part
LH	Line Hunting
MCID	Malicious Call Identification
MLPP	Multi-Level Precedence and Pre-Emption
MSN	Multiple Subscriber Number

PNP Private Numbering Plan

REV Reverse charging

SS Signalling System

SUB Sub-addressing

TP Terminal Portability

UUS User-to-User Signalling

UUS1 User-to-User Signalling, service 1

UUS2 User-to-User Signalling, service 2

UUS3 User-to-User Signalling, service 3

5 Conventions

None.

6 Calling line identification restriction

This Recommendation is to be read together with [ITU–T Q.731.3], which defines the CLIP supplementary service. Only the procedures that can be clearly separated from the CLIP supplementary service are indicated.

6.1 Description

6.1.1 General description

The CLIR supplementary service is a supplementary service offered to the calling user to prevent presentation of the calling user's number, and additional address information (e.g., calling party sub-address) if any, to the called user.

When the CLIR supplementary service is applicable and activated, the originating network shall provide the destination network with a notification that the calling party number is not allowed to be presented to the called user. In this case, the calling line identity shall be marked as presentation restricted, in the address presentation restricted indicator(s) of the calling party number parameter and generic number parameter (if present), when it is passed across the network. In the case of the CLIR supplementary service the calling party's number, and sub-address (if any), shall not be included in the call offered to the called user's installation. It is a function of the user-network interface not to present the identification of the calling user to the called user if the information is marked "presentation restricted" or to override the presentation restricted indication if the called user has an override category (e.g., police).

Information indicating that a subscriber has the CLIR supplementary service facility is available in the exchange to which the subscriber is connected to.

The stage 1 service description is given in [ITU-T I.251.3] and [ITU-T I.251.4], and the stage 2 functional capabilities and information flows are given in [ITU-T Q.81.3]. The stage 3 DSS 1 description is given in [ITU-T Q.951.4]. This stage 3 description of the CLIR supplementary service uses the ISDN user part protocol as defined in [ITU-T Q.761] to [ITU-T Q.764] and [ITU-T Q.730].

6.1.2 Specific terminology

In addition to the term defined in clause 3, this Recommendation uses the following specific terminology:

ISDN number – A number conforming to the numbering plan and structure specified in [ITU-T E.164].

National (ISDN) number; **National significant (ISDN) number** – See [ITU-T E.164].

International (ISDN) number – See [ITU-T E.164].

Sub-address – See [ITU-T E.164].

Served user – It is the user of a particular ISDN number who has subscribed to the restriction of the calling line identification information (on a permanent or on a per-call basis) in association with outgoing calls. The served user is also known as the calling user.

Called user – It is the receiver of a call, initiated by the served user, on which the CLIR supplementary service has been activated.

Default number – A national significant ISDN number registered within the public ISDN following prior arrangement between the calling party and the public ISDN.

Access signalling system – A part in the local exchange which handles the user-network interface protocol. It also includes the screening functions.

6.1.3 Qualification on the applicability to telecommunication services

See clause 2.3 of [ITU-T I.251.4].

6.1.4 State definitions

No specific state definitions are required.

6.2 Operational requirements

6.2.1 Provision/withdrawal

See clause 3.1 of [ITU-T I.251.4].

6.2.2 Requirements on the originating network side

Not applicable.

6.2.3 Requirements in the network

No specific requirements are needed in the network.

6.2.4 Requirements on the terminating network side

Not applicable.

6.3 Coding requirements

See clause 6.3 of [ITU-T Q.731.3].

6.4 Signalling requirements

6.4.1 Activation/deactivation/registration

Not applicable.

6.4.2 Invocation and operation

6.4.2.1 Actions at the originating local exchange

6.4.2.1.1 Normal operation

The originating local exchange shall set the address presentation restricted indicator of the calling party number parameter and of the generic number parameter (if applicable) to the value as asked for by the access signalling system of the calling user.

6.4.2.1.2 Exceptional procedures

No exceptional procedures are identified.

6.4.2.2 Actions at the transit exchange

6.4.2.2.1 Normal operation

See clause 6.4.2.2.1 of [ITU-T Q.731.3].

6.4.2.2.2 Exceptional procedures

See clause 6.4.2.2.2 of [ITU-T Q.731.3].

6.4.2.3 Actions at the outgoing international gateway exchange

6.4.2.3.1 Normal operation

See clause 6.4.2.3.1 of [ITU-T Q.731.3].

6.4.2.3.2 Exceptional procedures

Depending on bilateral agreement, the originating network may restrict the information conveyed in the generic number and/or calling party number parameter(s) from being sent to the destination network when the CLIR supplementary service is applicable.

6.4.2.4 Actions at the incoming international gateway exchange

6.4.2.4.1 Normal operation

See clause 6.4.2.4.1 of [ITU-T Q.731.3].

6.4.2.4.2 Exceptional procedures

See 6.4.2.4.2/Q.731.3.

6.4.2.5 Actions at the destination local exchange

6.4.2.5.1 Normal operation

See clause 6.4.2.5.1 of [ITU-T Q.731.3].

6.4.2.5.2 Exceptional procedures

See clause 6.4.2.5.2 of [ITU-T Q.731.3].

6.5 Interaction with other supplementary services

6.5.1 Call waiting (CW)

No impact on ISUP.

6.5.2 Call transfer services

No applicable interaction at this time.

6.5.3 Connected line identification presentation (COLP)

No impact on ISUP.

6.5.4 Connected line identification restriction (COLR)

No impact on ISUP.

6.5.5 Calling line identification presentation (CLIP)

The CLIR supplementary service shall take precedence over the CLIP supplementary service.

Depending on bilateral agreement, the originating network may restrict the information conveyed in the generic number and/or calling party number parameter(s) from being sent to the destination network when the CLIR supplementary service is applicable.

6.5.6 Calling line identification restriction (CLIR)

Not applicable.

6.5.7 Closed user group (CUG)

No impact on ISUP.

6.5.8 Conference calling (CONF)

No impact on ISUP.

6.5.9 Direct-dialling-in (DDI)

No impact on ISUP.

6.5.10 Call diversion services (CDIV)

6.5.10.1 Call forwarding busy (CFB)

No impact on ISUP.

6.5.10.2 Call forwarding no reply (CFNR)

No impact on ISUP.

6.5.10.3 Call forwarding unconditional (CFU)

No impact on ISUP.

6.5.10.4 Call deflection (CD)

No impact on ISUP.

6.5.11 Line hunting (LH)

No impact on ISUP.

6.5.12 Three-party service (3PTY)

No impact on ISUP.

6.5.13 User-to-user signalling (UUS)

6.5.13.1 User-to-user signalling, service 1 (UUS1)

No impact on ISUP.

6.5.13.2 User-to-user signalling, service 2 (UUS2)

No impact on ISUP.

6.5.13.3 User-to-user signalling, service 3 (UUS3)

No impact on ISUP.

6.5.14 Multiple subscriber number (MSN)

No impact on ISUP.

6.5.15 Call hold (HOLD)

No impact on ISUP.

6.5.16 Advice of charge (AOC)

No impact on ISUP.

6.5.17 Sub-addressing (SUB)

No impact on ISUP.

6.5.18 Terminal portability (TP)

No impact on ISUP.

6.5.19 Completion of calls to busy subscriber (CCBS)

No applicable interaction at this time.

6.5.20 Malicious call identification (MCID)

When the malicious call identification supplementary service is invoked, the information conveyed in an incoming call is registered in the network regardless of whether the calling user has activated the CLIR supplementary service or not.

6.5.21 Reverse charging (REV)

No applicable interaction at this time.

6.5.22 Multi-level precedence and preemption (MLPP)

No impact on ISUP.

6.5.23 Private numbering plan (PNP)

No applicable interaction at this time.

6.5.24 International telecommunication charge card

No applicable interaction at this time.

6.6 Interactions with other networks

When a call originates in one ISDN and terminates in another ISDN and the CLIR supplementary service is applied, the rules and regulations of the destination network shall apply.

NOTE – When the CLIR supplementary service is invoked, some network providers may not send the number(s) of the calling user to other network providers.

On calls to or via non-ISDNs, it cannot be assured that the address presentation restriction indication can be carried to the destination network. As a national option, the originating network may restrict information identifying the calling user from being forwarded to the destination network when the CLIR supplementary service is applicable. For further information, see clause 6.6 of [ITU-T Q.731.3].

6.7 Signalling flows

No CLIR supplementary service specific signalling flow is necessary in addition to the basic call control according to [ITU-T Q.764].

6.8 Parameter values (timers)

No specific timers are required.

6.9 Dynamic description

The dynamic description of the ISUP protocol relevant to the CLIR supplementary service is contained in the dynamic description of the CLIP supplementary service. For further information, see clause 6.9 of [ITU-T Q.731.3].

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Series A	Organization of the work of ITU-T
Series D	Tariff and accounting principles and international telecommunication/ICT economic and policy issues
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
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Series M	Telecommunication management, including TMN and network maintenance
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Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
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Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
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