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SERIES Q: SWITCHING AND SIGNALLING

Specifications of Signalling System No. 7 – ISDN supplementary services

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Stage 3 description for number identification supplementary services using Signalling System No. 7: Malicious call identification (MCID)

ITU-T Recommendation Q.731.7

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION Q.731.7

STAGE 3 DESCRIPTION FOR NUMBER IDENTIFICATION SUPPLEMENTARY SERVICES USING SIGNALLING SYSTEM NO. 7: MALICIOUS CALL IDENTIFICATION (MCID)

Summary

This Recommendation defines the essential functions, procedures and messages of the ISUP protocol required for the provisioning to ISDN users of the Malicious Call Identification supplementary service, which enables a user to request that the source of an incoming call is identified and registered in the network.

Source

ITU-T Recommendation Q.731.7 was prepared by ITU-T Study Group 11 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 5th of June 1997.

FOREWORD

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In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, the ITU had/had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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Recommendation Q.731.7

STAGE 3 DESCRIPTION FOR NUMBER IDENTIFICATION SUPPLEMENTARY SERVICES USING SIGNALLING SYSTEM No. 7: MALICIOUS CALL IDENTIFICATION (MCID)

(Geneva, 1997)

7 Malicious Call Identification (MCID)

7.1 Introduction

7.1.1 Scope

The Malicious Call Identification (MCID) supplementary service enables a user to request that the source of an incoming call is identified and registered in the network.

7.1.2 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; all 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.

[1] ITU-T Recommendation I.112 (1993), *Vocabulary of terms for ISDNs*.

[2] CCITT Recommendation I.130 (1988), *Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN.*

[3] ITU-T Recommendation I.210 (1993), *Principles of telecommunication services supported by an ISDN and the means to describe them.*

[4] CCITT Recommendation I.250 (1988), *Definition of supplementary services.*

[5] ITU-T Recommendation E.164 (1997), *The international public telecommunication numbering plan*.

[6] CCITT Recommendation I.251.7 (1992), *Number identification supplementary services: Malicious Call Identification*.

[7] ITU-T Recommendation Q.81.7 (1997), *Stage 2 description for number identification supplementary services: Malicious Call Identification (MCID).*

[8] ITU-T Recommendation Q.730 (1993), *ISDN supplementary services.*

[9] ITU-T Recommendation Q.761 (1993), *Functional description of the ISDN user part of Signalling System No.7*.

[10] ITU-T Recommendation Q.762 (1993), *General function of messages and signals of the ISDN user part of Signalling System No.7*.

[11] ITU-T Recommendation Q.763 (1993), *Formats and codes of the ISDN user part of Signalling System No.7*.

[12] ITU-T Recommendation Q.764 (1993), *ISDN user part signalling procedures.*

[13] ITU-T Recommendation Q.951.7 (1997), *Stage 3 description for number identification supplementary services using DSS 1: Malicious Call Identification (MCID).*

7.1.3 Terms and definitions

None identified.

7.2 Description

7.2.1 General description

The Malicious Call Identification supplementary service gives the possibility to obtain by an appropriate request, the identification of the calling party. The identification request invokes, in the destination exchange, the registration of the following items:

– called party number;

– calling party number;

– time and date of the call;.

– optionally: calling party sub-address (if provided).

As a national option, besides the above registration of call information, the holding of the connection may be provided until the intervention of the Service Provider.

The stage 1 description of the Malicious Call Identification supplementary service is given in Recommendation I.251.7 [6]. The stage 2 description is given in Recommendation Q.81.7 [7]. The stage 3 DSS 1 description is given in Recommendation Q.951.7 [13]. This stage 3 description of the Malicious Call Identification supplementary service uses the ISUP user part protocol as defined in Recommendations Q.761 [9]-Q.764 [12] and Q.730 [8].

7.2.2 Specific terminology

See 7.1.3, Terms and definitions.

7.2.3 Qualification on the applicability to telecommunications services

Provision and withdrawal of the MCID supplementary service are specified in Recommendation I.251.7 [6].

7.2.4 State definitions

No specific state definitions are required.

7.3 Operational requirements

7.3.1 Provision/withdrawal

See Recommendation I.251.7 [6].

7.3.2 Requirements on the originating network side

Not applicable.

7.3.3 Requirements in the network

No specific requirements are needed in the network.

7.3.4 Requirements on the destination network side.

Not applicable.

7.4 Coding requirements

Recommendation Q.763 [11] defines the messages and parameters for the MCID supplementary service. The following messages and parameters are used to support the MCID supplementary service.

a) *Messages*

- Identification request.
- Identification response.

b) *Parameters*

- MCID request indicators.
- MCID response indicators.

The Identification request and Identification response messages are accompanied by the Message compatibility information parameter. The MCID request and MCID response indicators are accompanied by the Parameter compatibility information parameter. The procedures for compatibility are defined in Recommendation Q.764 [12].

7.5 Signalling requirements

7.5.1 Activation/deactivation/registration

No specific signalling requirements for activation, deactivation and registration are identified.

7.5.2 Invocation and operation

7.5.2.1 Actions at the originating local exchange

7.5.2.1.1 Normal operation

On receipt of the Identification request message with bit A of the MCID request indicator set to 1, the originating local exchange sends an Identification response message with bit A of the MCID response indicator set to 1. The number information of the calling user is included in the Calling party number parameter.

When the MCID information is not available, an Identification response message with bit A of the MCID response indicator set to 0 is returned.

The originating local exchange must be able to support the MCID request until the reception of the Answer or Connect message.

7.5.2.1.2 Exceptional procedures

When the MCID supplementary service is not supported, an Identification response message with bit A of the MCID response indicator set to 0 is returned.

7.5.2.2 Actions at the transit exchange

7.5.2.2.1 Normal operation

The transit exchange shall pass a received Identification request message transparently to the preceding exchange. The subsequent Identification response message is passed transparently to the succeeding exchange.

7.5.2.2.2 Exceptional procedures

No exceptional procedures are identified.

7.5.2.3 Actions at the outgoing international gateway exchange

7.5.2.3.1 Normal operation

An outgoing international exchange shall pass a received Identification request message transparently into the national network. The subsequent Identification response message is passed into the international network. The outgoing international gateway exchange shall add the country code to the number(s) (if necessary) according to the procedures for the CLIP/CLIR supplementary services and set the nature of address indicator(s) accordingly.

7.5.2.3.2 Exceptional procedures

When the MCID supplementary service is not supported, an Identification response message with bit A of the MCID response indicator set to 0 is returned.

7.5.2.4 Actions at the incoming international gateway exchange

7.5.2.4.1 Normal operation

An incoming international exchange shall pass a received Identification request message transparently into the international network. The subsequent Identification response message is passed into the national network. The incoming international gateway exchange shall treat the Calling party number parameter included in an Identification response message according to the procedures for the CLIP/CLIR supplementary service.

7.5.2.4.2 Exceptional procedures

When the Identification response message is received with bit A of the MCID response indicator set to 0, the incoming international gateway exchange may modify this indicator according to the information available in the exchange.

7.5.2.5 Actions at the destination local exchange

7.5.2.5.1 Normal procedure

In the case of an incoming call to a user having the MCID supplementary service, the call set-up procedure depends on whether or not the complete calling party number is included in the Initial address message.

a) If the complete calling party number is included in the Initial address message and the called party has the MCID indication, the calling party number and optionally the calling party subaddress is stored in the destination local exchange.

b) If the complete calling party number is not included in the Initial address message and the called party has the MCID indication, an Identification request message is sent to the originating local exchange requesting further information. The destination local exchange shall request the MCID information in an Identification request message with the bit A of the MCID request indicator set to 1.

   After sending of the Identification request message, timer T39 is started. When the Identification response message is received, the timer T39 is stopped, the MCID information is stored and the user is alerted according to the basic call procedures.

7.5.2.5.2 Exceptional procedures

When a Identification response message is received without the MCID information, timer T39 is stopped and the user is alerted according to the basic call procedures.

When the timer T39 expires before an Identification response message is received, the user is alerted according to the basic call procedures.

7.6 Interactions with other supplementary services

7.6.1 Call Waiting (CW)

No impact on ISUP.

7.6.2 Call transfer services

No impact on ISUP.

7.6.3 Connected Line Identification Presentation (COLP)

No impact on ISUP.

7.6.4 Connected Line Identification Restriction (COLR)

No impact on ISUP.

7.6.5 Calling Line Identification Presentation (CLIP)

No impact on ISUP.

7.6.6 Calling Line Identification Restriction (CLIR)

Even if the calling number is a secret (restricted) number, MCID invocation is possible.

7.6.7 Closed User Group (CUG)

No impact on ISUP.

7.6.8 Conference Calling (CONF)

No impact on ISUP.

7.6.9 Direct-Dialling-In (DDI)

Called party: the number of the called party, including DDI digits, is registered/stored.

Calling party: the number, including the DDI digits if provided by the originating local exchange, is registered/stored.

7.6.10 Call Diversion (call forwarding) services (CDIV)

7.6.10.1 Call Forwarding busy (CFB)

This service (MCID) may also be invoked for forwarded calls. In this case the numbers of the calling and forwarding parties (originally called number and redirecting number) received in the IAM are registered in the local destination exchange.

A forwarding exchange shall act as a transit exchange (see 7.5.2.2) when receiving an Identification Request message.

7.6.10.2 Call Forwarding No Reply (CFNR)

This service (MCID) may also be invoked for forwarded calls. In this case, the numbers of the calling and forwarding parties (originally called number and redirecting number) received in the IAM are registered in the local destination exchange.

A forwarding exchange shall act as a transit exchange (see 7.5.2.2) when receiving an Identification Request message.

7.6.10.3 Call Forwarding Unconditional (CFU)

This service (MCID) may also be invoked for forwarded calls. In this case, the numbers of the calling and forwarding parties (originally called number and redirecting number) received in the IAM are registered in the local destination exchange.

A forwarding exchange shall act as a transit exchange (see 7.5.2.2) when receiving an Identification Request message.

7.6.10.4 Call Deflection (CD)

This service (MCID) may also be invoked for forwarded calls. In this case, the numbers of the calling and forwarding parties (originally called number and redirecting number) received in the IAM are registered in the local destination exchange.

A forwarding exchange shall act as a transit exchange (see 7.5.2.2) when receiving an Identification Request message.

7.6.11 Line Hunting (LH)

No impact on ISUP.

7.6.12 Three-Party Service (3PTY)

No impact on ISUP.

7.6.13 User-to-User Signalling (UUS)

7.6.13.1 Service 1 (UUS1)

No impact on ISUP.

7.6.13.2 Service 2 (UUS2)

No impact on ISUP.

7.6.13.3 Service 3 (UUS3)

No impact on ISUP.

7.6.14 Multiple Subscriber Number (MSN)

No impact on ISUP.

7.6.15 Call Hold (HOLD)

No impact on ISUP.

7.6.16 Advice of Charge (AOC)

No impact on ISUP.

7.6.17 Sub-addressing (SUB)

Sub-addressing information may be registered.

7.6.18 Terminal Portability (TP)

No impact on ISUP.

7.6.19 Completion of Calls to Busy Subscriber (CCBS)

No applicable interaction at this time.

7.6.20 Malicious Call Identification (MCID)

Not applicable.

7.6.21 Reverse Charging (REV)

No applicable interaction at this time.

7.6.22 Multi-level precedence and preemption (MLPP)

No impact on ISUP.

7.6.23 Private Numbering Plan (PNP)

No applicable interaction at this time.

7.6.24 International Telecommunication Charge Card

No applicable interaction at this time.

7.7 Interactions with other networks

In the case of interworking with networks that do not provide the calling party number, the known part of the calling party number (including the country code) may be sent in the Identification Request message. In case of an incomplete number, the address incomplete indicator is set to 1. The partial number identifies the originating area and in some cases can allow to locate the interworking exchange.

In the national networks, it may be possible to provide additional information about the routing of the call depending on the capabilities of the PSTN.

When a call is forwarded or deflected into the PSTN and the PSTN supports only the transmission of one number, then only the calling party number shall be provided.

In case of interworking to PSTN, the interworking exchange may have returned an ACM. In this case, the interworking exchange must be able to treat a subsequent MCID request from the PSTN correctly before the answering state is reached.

7.8 Signalling flows

Figure 7-1 describes the signalling flow for an MCID request.

The following abbreviations are used in the diagram:

IDR Identification request

IRS Identification response

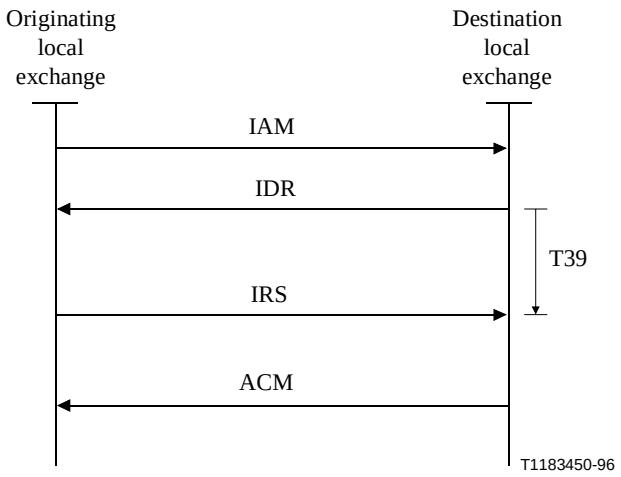

Figure 7-1/Q.731.7 – MCID Request/Response cycle

7.9 Parameter value (timers)

A new timer is identified in the destination exchange:

Timer T39: 4-15 seconds.

Timer T39 is initiated only at the local destination exchange after sending an MCID request in an Identification Request message and is stopped at the receipt of an Identification Response message.

At expiry of the timer, the call continues according to the basic call procedures.

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