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**Integrated Services Digital Network (ISDN);
Signalling System No.7;
ISDN User Part (ISUP) version 2 for the international interface;
Part 11: Malicious Call Identification (MCID)
supplementary service**

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is part 11 of a multi-part standard covering the ISDN User Part (ISUP) version 2 for the international interface, as described below:

- Part 1: "Basic services";
- Part 2: "ISDN supplementary services";
- Part 3: "Calling Line Identification Presentation (CLIP) supplementary service";
- Part 4: "Calling Line Identification Restriction (CLIR) supplementary service";
- Part 5: "Connected Line Identification Presentation (COLP) supplementary service";
- Part 6: "Connected Line Identification Restriction (COLR) supplementary service";
- Part 7: "Terminal Portability (TP) supplementary service";
- Part 8: "User-to-User Signalling (UUS) supplementary service";
- Part 9: "Closed User Group (CUG) supplementary service";
- Part 10: "Subaddressing (SUB) supplementary service";
- Part 11: "Malicious Call Identification (MCID) supplementary service";**
- Part 12: "Conference call, add-on (CONF) supplementary service";
- Part 14: "Explicit Call Transfer (ECT) supplementary service";
- Part 15: "Diversion supplementary services";
- Part 16: "Call Hold (HOLD) supplementary service";
- Part 17: "Call Waiting (CW) supplementary service";
- Part 18: "Completion of Calls to Busy Subscriber (CCBS) supplementary service";
- Part 19: "Three party (3PTY) supplementary service".

NOTE: Part 13 has been withdrawn.

In accordance with CCITT Recommendation I.130, 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.

This ETS details the stage three aspects (signalling system protocols and switching functions) needed to support the Malicious Call Identification (MCID) supplementary service. The stage 1 and stage 2 aspects are detailed in ETS 300 128 and ETS 300 129, respectively.

Transposition dates	
Date of latest announcement of this ETS (doa):	31 May 1995
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1 Scope

This eleventh part of ETS 300 356 specifies the stage three of the Malicious Call Identification (MCID) 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 CCITT Recommendation I.130 [2]).

This ETS does not specify the additional protocol requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

This ETS does not specify the additional protocol requirements for the national signalling interface.

Although this ETS applies only to the international section, the specification of functions, formats and codes of messages and signals, and actions performed at originating and destination local exchanges are retained. All formats, codes and procedures, if any, marked for national use are included for informative purposes only.

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

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

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendments or revision. For undated references the latest edition of the publication referred to applies.

- [1] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [2] CCITT Recommendation I.130 (1988): "Method for the characterisation 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] ETS 300 128 (1992): "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Service description".
- [5] ETS 300 129 (1992): "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary services; Functional capabilities and information flows".
- [6] ETS 300 130-1 (1992): "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

- [7] ETS 300 356-1 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 1: Basic services [ITU-T Recommendations Q.761 to Q.764 (1993), modified]".
- [8] ETS 300 356-2 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 2: ISDN supplementary services [ITU-T Recommendation Q.730 (1993), modified]".
- [9] ETS 300 356-14 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 14: Explicit Call Transfer (ECT) supplementary service".
- [10] ETS 300 356-18 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 18: Completion of Calls to Busy Subscriber (CCBS) supplementary service".

3 Definitions

For the purposes of this ETS, the following definitions apply:

calling party number: A public network provided number which identifies either the calling party's number or at least the access into the public network of the call from the calling party.

Identification request message: Message sent in the backward direction to request the MCID.

Identification response message: Message sent in the forward direction to respond to an Identification request message.

Integrated Services Digital Network (ISDN): See ITU-T Recommendation I.112 [1], definition 308.

MCID request indicator: Indicator sent in the backward direction to request the MCID.

MCID response indicator: Indicator sent in the forward direction to respond to a MCID request, and indicating whether or not the MCID information is available.

served user (user B): The user who has subscribed to and can invoke the MCID supplementary service.

service; telecommunication service: See ITU-T Recommendation I.112 [1], definition 201.

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

4 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
DDI	Direct Dialling In
DSS1	Digital Subscriber Signalling System No. one
ISDN	Integrated Service Digital Network
ISUP	ISDN User Part
MCID	Malicious Call Identification
MSN	Multiple Subscriber Number
PSTN	Public Switched Telephone Network

5 Description

The MCID supplementary service gives the possibility to obtain, by an appropriate request, the storage and registration of the following call information:

- called party number;
- calling party number;
- time and date of the request.

As an option, the calling party subaddress can be 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. This option is beyond the scope of this ETS.

The service description is given in ETS 300 128 [4] and the functional capabilities and information flows are given in ETS 300 129 [5]. The stage three Digital Subscriber Signalling System No. one (DSS1) description is given in ETS 300 130-1 [6].

This stage three description of the MCID supplementary service is based on the ISUP protocol as defined in ETS 300 356-1 [7] and ETS 300 356-2 [8].

6 Operational requirements

6.1 Provision and withdrawal

See subclause 6.1 of ETS 300 128 [4].

6.2 Requirements on the originating network side

Not applicable.

6.3 Requirements on the destination network side

Not applicable.

7 Coding requirements

ETS 300 356-1 [7] defines the messages and parameters for the MCID supplementary service. The following messages and parameters are used to support the MCID supplementary service.

The Identification request and response messages contain the message compatibility parameter (see clause A.2). The MCID request and response indicators are accompanied by the parameter compatibility information parameter (see clause A.1). The procedures for compatibility are defined in the basic call procedures in ETS 300 356-1 [7].

The format and coding of the Identification request and response messages are specified in tables 47 and 48 of ITU-T Recommendation Q.763 as modified by ETS 300 356-1 [7].

The format and coding of the MCID request and response indicators are specified in subclauses 3.31 and 3.32 of ITU-T Recommendation Q.763 as modified by ETS 300 356-1 [7].

8 State definitions

No specific state definitions are required.

9 Signalling procedures

9.1 Activation, deactivation and registration

Not applicable.

9.2 Actions at the originating local exchange

9.2.1 Normal operation

On receipt of the Identification request message with bit A of the MCID request indicator set to 1 "MCID requested", the originating exchange shall send an Identification response message with bit A of the MCID response indicator set to 1 "MCID included". The calling party number shall be 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 "MCID not included" shall be returned.

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

9.2.2 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 "MCID not included" shall be returned.

9.3 Actions at a transit exchange

9.3.1 Normal operation

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

9.3.2 Exceptional procedures

No exceptional procedures are identified.

9.4 Actions at the outgoing international gateway exchange

9.4.1 Normal operation

An outgoing international exchange shall pass a received Identification request message transparently into the national network. The subsequent Identification response message shall be 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 Calling Line Identification Presentation/Restriction (CLIP/CLIR) supplementary services and shall set the nature of address indicator(s) accordingly.

9.4.2 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 "MCID not included" shall be returned.

9.5 Actions at the incoming international gateway exchange

9.5.1 Normal operation

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

9.5.2 Exceptional procedures

When the Identification response message is received with bit A of the MCID response indicator set to 0 "MCID not included", the incoming international gateway exchange may modify this indicator according to the information available in the exchange.

9.6 Actions at the destination local exchange

9.6.1 Normal procedure

In the case of an incoming call to a user having subscribed to 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 shall be stored in the destination 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 shall be sent to the originating exchange requesting further information. The destination exchange shall request the MCID information in an Identification request message with the bit A of the MCID Request indicator set to 1 "MCID requested".

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

9.6.2 Exceptional procedures

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

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

10 Interactions with other networks

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

In national networks, it may be possible to provide additional information about the routing of the call depending on the capabilities of the Public Switched Telephone Network (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 with the mobile network or a private network providing unscreened numbers at the originating side, also the generic number (with additional calling party number) shall be passed on to the appropriate functions (e.g. recording functions) in the destination exchange.

11 Interactions with other supplementary services

11.1 Advice of charge services

11.1.1 Charging information at call set-up time

No impact on ISUP.

11.1.2 Charging information during the call

No impact on ISUP.

11.1.3 Charging information at the end of a call

No impact on ISUP.

11.2 Call waiting

No impact on ISUP.

11.3 Call hold

No impact on ISUP.

11.4 Call transfer

11.4.1 Explicit call transfer

Interactions are described in ETS 300 356-14 [9].

11.5 Number identification services

11.5.1 Calling line identification presentation

No impact on ISUP.

11.5.2 Calling line identification restriction

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

11.5.3 Connected line identification presentation

No impact on ISUP.

11.5.4 Connected line identification restriction

No impact on ISUP.

11.6 Closed user group

No impact on ISUP.

11.7 Completion of calls to busy subscriber

Interactions are described in ETS 300 356-18 [10].

11.8 Conference services

11.8.1 Conference call, add-on

No impact on ISUP.

11.8.2 Meet-me conference

No impact on ISUP.

11.9 Direct dialling in

Called party: the number of the called party including Direct Dialling In (DDI) digits shall be registered/stored.

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

11.10 Diversion services

11.10.1 Call forwarding unconditional

The MCID supplementary service may also be invoked for forwarded calls. In this case the numbers of the calling and forwarding parties (originally called number and redirecting number) shall be registered.

11.10.2 Call forwarding busy

The MCID supplementary service may also be invoked for forwarded calls. In this case the numbers of the calling and forwarding parties (originally called number and redirecting number) shall be registered.

11.10.3 Call forwarding no reply

The MCID supplementary service may also be invoked for forwarded calls. In this case the numbers of the calling and forwarding parties (originally called number and redirecting number) shall be registered.

11.10.4 Call deflection

The MCID supplementary service may also be invoked for deflected calls. In this case the numbers of the calling and deflecting parties (originally called number and redirecting number) shall be registered.

11.11 Freephone

No impact on ISUP.

11.12 Malicious call identification

Not applicable.

11.13 Multiple subscriber number

Called party: the called Multiple Subscriber Number (MSN) shall be registered/stored.

Calling party: the calling MSN, if provided by the originating exchange, shall be registered/stored.

11.14 Subaddressing

No impact on ISUP.

11.15 Terminal portability

It shall not be possible to invoke MCID for a call which is suspended by the called user.

11.16 Three party

It shall not be possible to invoke MCID for calls which are held or put into a 3-way conversation.

11.17 User-to-user signalling

No impact on ISUP.

12 Parameter values (timers)

Timer T39, defined in annex A of ITU-T Recommendation Q.764 as modified by ETS 300 356-1 [7].

13 Dynamic description

No dynamic description is required.

Annex A (normative): Coding of the compatibility information

A.1 Coding of the parameter compatibility information parameter

The parameter compatibility information parameter for the MCID request indicator parameter shall be coded as follows:

- a) Nth upgraded parameter
0011 1011 MCID request indicator
- 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 |
| | 1 | discard parameter |
| bits | GF: | Pass on not possible indicator |
| | 10 | discard parameter |

The parameter compatibility information parameter for the MCID response indicator parameter is coded as follows:

- a) Nth upgraded parameter
0011 1100 MCID response indicator
- 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 |
| | 1 | discard parameter |
| bits | GF: | Pass on not possible indicator |
| | 10 | discard parameter |

A.2 Coding of the message compatibility information parameter

The message compatibility information parameter for the identification request message shall be coded as follows:

a) 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:	Pass on not possible indicator
	1	discard information

b) Extension indicator

1 last octet

The message compatibility information parameter for the identification response message shall be coded as follows:

a) 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:	Pass on not possible indicator
	1	discard information

b) Extension indicator

1 last octet

History

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