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# Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification for the user

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## Foreword

This draft European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Public Enquiry phase of the ETSI standards approval procedure.

This ETS is part 3 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) Malicious Call Identification (MCID) supplementary service, as described below:

Part 1: "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

**Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";**

Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";

Part 5: "TSS&TP specification for the network";

Part 6: "ATS and partial PIXIT proforma specification for the network".

| **Proposed transposition dates** | |
|---|---|
| Date of latest announcement of this ETS (doa): | 3 months after ETSI publication |
| Date of latest publication of new National Standard or endorsement of this ETS (dop/e): | 6 months after doa |
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# 1 Scope

This third part of ETS 300 130 specifies the Test Suite Structure and Test Purposes (TSS&TP) for the User side of the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [7]) of implementations conforming to the stage three standard for Malicious Call Identification (MCID) supplementary service for the pan-European Integrated Services Digital Network (ISDN) by means of Digital Subscriber Signalling System No. one (DSS1) protocol.

A further part of this ETS specifies the Abstract Test Suite (ATS) and partial PIXIT proforma based on this ETS. Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the Network side of the T reference point or coincident S and T reference point of implementations conforming to ETS 300 130-1 [1].

# 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 amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] 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".

NOTE: ETS 300 130-1 (1992) was initially published as ETS 300 130 (1992).

[2] ETS 300 130-2 (1995): "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

[3] ISO/IEC 9646-1: "Information Technology - OSI Conformance Testing Methodology and Framework; Part 1: General Concepts".

[4] ISO/IEC 9646-2: "Information Technology - OSI Conformance Testing Methodology and Framework; Part 2: Abstract Test Suite specification".

[5] ISO/IEC 9646-3: "Information Technology - OSI Conformance Testing Methodology and Framework; Part 3: The Tree and Tabular Combined Notation".

[6] ETS 300 196-1 (1993): "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

NOTE: ETS 300 196-1 (1993) was initially published as ETS 300 196 (1993).

[7] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".

[8] ETS 300 102-1: "Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control".

[9] ITU-T Recommendation I.112 (1993): "Vocabulary and terms for ISDNs".

[10] CCITT Recommendation E.164 (1991): "Numbering plan for the ISDN era".

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

# 3 Definitions

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

## 3.1 Definitions related to conformance testing

**abstract test case:** Refer to ISO/IEC 9646-1 [3].

**abstract test suite:** Refer to ISO/IEC 9646-1 [3].

**active test:** A test case where the IUT is required to send a particular message, but not in reaction to a received message. This would usually involve the use of PIXIT information to see how this message can be generated and quite often is specified in an ATS using an Implicit Send event.

**implementation under test:** Refer to ISO/IEC 9646-1 [3].

**implicit send event:** Refer to ISO/IEC 9646-3 [5].

**lower tester:** Refer to ISO/IEC 9646-1 [3].

**passive test:** A test case where the IUT is required to respond to a protocol event (e.g. received message) with another protocol event (sends message) and normally does not require an any special operator intervention such as is associated with the Implicit Send event.

**point of control and observation:** Refer to ISO/IEC 9646-1 [3].

**Protocol Implementation Conformance Statement (PICS):** Refer to ISO/IEC 9646-1 [3].

**PICS proforma:** Refer to ISO/IEC 9646-1 [3].

**Protocol Implementation eXtra Information for Testing (PIXIT):** Refer to ISO/IEC 9646-1 [3].

**PIXIT proforma:** Refer to ISO/IEC 9646-1 [3].

**system under test:** Refer to ISO/IEC 9646-1 [3].

**test purpose:** Refer to ISO/IEC 9646-1 [3].

## 3.2 Definitions related to ETS 300 130-1

**call reference:** See ETS 300 102-1 [8], subclause 4.3.

**component:** See ETS 300 196-1 [6], subclause 11.2.2.1.

**Integrated Services Digital Network (ISDN):** See CCITT Recommendation I.112 [9], definition 308.

**invoke component:** See ETS 300 196-1 [6], subclause 11.2.2.1.

**ISDN number:** A number conforming to the numbering and structure specified in CCITT Recommendation E.164 [10].

**return error component:** See ETS 300 196-1 [6], subclause 11.2.2.1.

**return result component:** See ETS 300 196-1 [6], subclause 11.2.2.1.

**served user:** The served user is the user who invokes the MCID supplementary service.

**service; telecommunication service:** see ITU-T Recommendation I.112 [9], definition 201.

**supplementary service:** See CCITT Recommendation I.210 [11], subclause 2.4.

**user:** The DSS1 protocol entity at the User side of the user-network interface where a T reference point or coincident S and T reference point applies.

**user (S/T):** The DSS1 protocol entity at the User side of the user-network interface where a coincident S and T reference point applies.

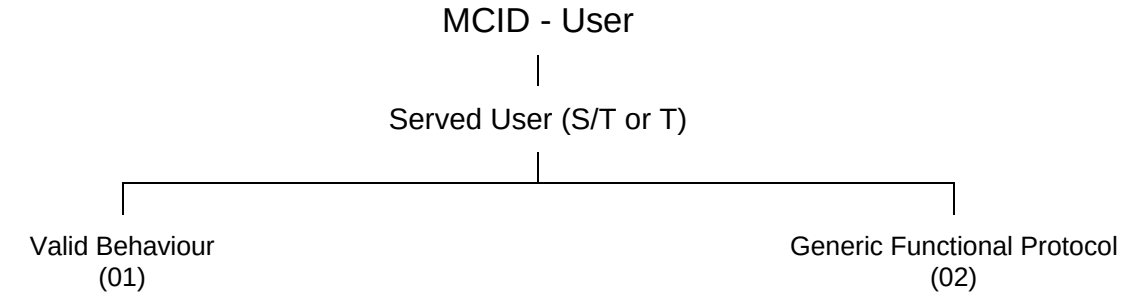
**user (T):** The DSS1 protocol entity at the User side of the user-network interface where a T reference point applies (User is the Private ISDN).

## 4 Abbreviations

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

| | |
|---|---|
| (Held) | Call Held Auxiliary state |
| (Idle) | Idle Auxiliary state |
| CR1 | Call Reference for a call in the Call Held auxiliary state. |
| CR2 | Call Reference for a call in the Idle auxiliary state. |
| CR3 | Call Reference for a second call in the Idle auxiliary state. |
| IUT | Implementation Under Test |
| MCID | Malicious Call Identification |
| TP | Test Purpose |
| TSS | Test Suite Structure |
| U00 | Null Call state |
| U01 | Call Initiated Call state |
| U02 | Overlap Sending Call state |
| U03 | Outgoing Call Proceeding Call state |
| U04 | Call Delivered Call state |
| U06 | Call Present Call state |
| U07 | Call Received Call state |
| U08 | Connect Request Call state |
| U09 | Incoming Call Proceeding Call state |
| U10 | Active Call state |
| U12 | Disconnect Indication Call state |
| U19 | Release Request Call state |
| U25 | Overlap Receiving Call state |

## 5 Test Suite Structure (TSS)




NOTE: Numbers in brackets represent group numbers and are used in Test Purpose identifiers.

**Figure 1: Test suite structure**

# 6 Test Purposes (TP)

## 6.1 Introduction

For each test requirement a Test Purpose (TP) is defined.

### 6.1.1 Test Purpose (TP) naming convention

Test Purposes are numbered, starting at 001, within each group. Groups are organised according to the TSS. Additional references are added to identify the actual Test Suite and whether it applies to the Network or the User side (see table 1).

**Table 1: TP Identifier naming convention scheme**

| | | | |
|---|---|---|---|
| Identifier: | **<ss>_<iut><group>_<nnn>** | | |
| <ss> = | supplementary service: | e.g. "MCID_" | |
| <iut> = | type of IUT: | U<br>N | User side<br>Network side. |
| <group> | group | 2 digit field representing group reference according to TSS | |
| <nnn> = | sequential number | (001-999) | |

### 6.1.2 Source of test purpose definition

The test purposes are based on ETS 300 130-1 [1] and on clause 8 of ETS 300 196-1 [6].

### 6.1.3 Test purpose structure

Each TP has been written in a manner which is consistent with all other TPs. The intention of this is to make the TPs more readable and checkable. A particular structure has been used and this is illustrated in table 2. This table should be read in conjunction with any TP i.e. use a TP as an example to fully understand the table.

**Table 2: Structure of a single test purpose for MCID**

| TP Part | Text | Example |
|---|---|---|
| **Header** | <Identifier> *tab*<br><paragraph number in base ETS> *tab*<br><type of test> *tab*<br><condition> *CR.* | see table 1<br>subclause 0.0.0<br>valid, invalid, inopportune<br>mandatory, optional, conditional |
| **Stimulus** | Ensure that the IUT in the<br><basic call state><br><trigger> *see below for message structure*<br>*or* <goal> | <br>U00, U10, etc.<br>receiving a XXXX message<br>to request a .... |
| **Reaction** | <action><br><conditions><br>*if the action is sending*<br>*see below for message structure*<br><next action>, *etc.*<br>and enters <supplementary service state><br>*and/or* and remains in the same state(s)<br>*or* and enters state <state> with CR<number(s)> | sends, saves, does, etc.<br>using en bloc sending, ... |
| **Message structure** | <message type><br>message containing a<br>*a)* <info element><br>information element with<br>*b)* a <field name><br>encoded as *or* including<br><coding of the field> and *back to a or b,* | SETUP, FACILITY, CONNECT,<br><br>Bearer capability, Facility, ... |
| NOTE: | Text in italics will not appear in TPs and text between <> is filled in for each TP and may differ from one TP to the next. | |

### 6.1.4 Test strategy

As the base standard contained no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and PICS. The criteria applied included the following:

- only the requirements from the point of view of the T or S/T reference point are considered;

- whether or not a test case can be built from the test purpose is not considered.

## 6.2 User side test purposes for MCID

### 6.2.1 Served user (S/T or T)

#### 6.2.1.1 Valid behaviour

**MCID_U01_001 subclause 9.2.1, 1st paragraph. valid mandatory**
Ensure that the IUT, while in the Active call state U10,
is able to send a FACILITY message with a Facility information element containing a mCIDRequest invoke component.

**MCID_U01_002 subclause 9.2.1, 1st paragraph. valid mandatory**
Ensure that the IUT, while in the Disconnect Indication call state U12,
is able to send a FACILITY message with a Facility information element containing a mCIDRequest invoke component.

**MCID_U01_003 subclause 9.2.1 valid mandatory**
Ensure that the IUT, while in the Active call state U10, on receipt of a FACILITY message with a Facility information element containing a mCIDRequest return result component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
is able to accept the message and continue normal call handling.

**MCID_U01_004 subclause 9.2.1 valid mandatory**
Ensure that the IUT, while in the Disconnect Indication call state U12, on receipt of a FACILITY message with a Facility information element containing a mCIDRequest return result component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
is able to accept the message and continue normal call handling.

**MCID_U01_005 subclause 9.2.2 inopportune mandatory**
Ensure that the IUT, while in the Active call state U10, on receipt of a FACILITY message with a Facility information element containing a mCIDRequest return error component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
is able to accept the message and continue normal call handling.

**MCID_U01_006 subclause 9.2.2 inopportune mandatory**
Ensure that the IUT, while in the Disconnect Indication call state U12, on receipt of a FACILITY message with a Facility information element containing a mCIDRequest return error component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
is able to accept the message and continue normal call handling.

**MCID_U01_007 subclause 9.2.2 inopportune mandatory**
Ensure that the IUT, while in the Active call state U10, on receipt of a FACILITY message with a Facility information element containing a mCIDRequest return reject component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
is able to accept the message and continue normal call handling.

**MCID_U01_008 subclause 9.2.2 inopportune mandatory**
Ensure that the IUT, while in the Disconnect Indication call state U12, on receipt of a FACILITY message with a Facility information element containing a mCIDRequest return reject component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
is able to accept the message and continue normal call handling.

#### 6.2.1.2 Generic functional protocol part

**MCID_U02_001 subclause 7 & 9.2.2 invalid mandatory**
Ensure that the IUT, while in the Active call state U10, on receipt of a FACILITY message with a Facility information element containing an invalid mCIDRequest return result component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
transmits a FACILITY message containing a Facility information element with a reject component including the invoke identifier associated with the mCIDRequest operation.

**MCID_U02_002 subclause 7 & 9.2.2 invalid mandatory**
Ensure that the IUT, while in the Disconnect Indication call state U12, on receipt of a FACILITY message with a Facility information element containing an invalid mCIDRequest return result component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
transmits a FACILITY or RELEASE message containing a Facility information element with a reject component including the invoke identifier associated with the mCIDRequest operation.

**MCID_U02_003 subclause 7 & 9.2.2 invalid mandatory**
Ensure that the IUT, while in the Active call state U10, on receipt of a FACILITY message with a Facility information element containing an invalid mCIDRequest return error component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
transmits a FACILITY message containing a Facility information element with a reject component including the invoke identifier associated with the mCIDRequest operation.

**MCID_U02_004 subclause 7 & 9.2.2 invalid mandatory**
Ensure that the IUT, while in the Disconnect Indication call state U12, on receipt of a FACILITY message with a Facility information element containing an invalid mCIDRequest return error component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,
transmits a FACILITY or RELEASE message containing a Facility information element with a reject component including the invoke identifier associated with the mCIDRequest operation.

**MCID_U02_005 ETS 300 196-1 8.3.1.1.2 invalid mandatory**

Ensure that the IUT, while in the Active call state U10, on receipt of a FACILITY message containing no Facility information element in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,

ignores the message contents, remains in the same state and transmits a STATUS message containing a Cause information element with value #96 "mandatory information element is missing".

**MCID_U02_006 ETS 300 196-1 8.3.1.1.2 invalid mandatory**

Ensure that the IUT, while in the Active call state U10, on receipt of a FACILITY message with a Facility information element containing an invalid protocol profile and a mCIDRequest return result component in response to a FACILITY message with a Facility information element containing a mCIDRequest invoke component,

ignores the message contents, remains in the same state and transmits a STATUS message containing a Cause information element with value #100 "invalid information element contents".

## History

| Document history | | | |
|---|---|---|---|
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