



SLOVENSKI STANDARD
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8] [] H U b c ` c a f Y y ` Y ` n `] b h Y [f] f U b] a] g h c f] h j U a] f G 8 B L ! ` D c g h c d _] j U f c j U b Y [U c f c X U
f G 9 H L ! ` D f c h c _ c ` X] [] H U b Y b U f c b] y _ Y g] [b U] n U W Y ` Y ` y h ` % f B G G % L ! ` % ` X Y .
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Integrated Services Digital Network (ISDN); Security tools (SET) procedures; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification

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**Integrated Services Digital Network (ISDN);
Security tools (SET) procedures;
Digital Subscriber Signalling System No. one (DSS1) protocol;
Part 1: Protocol specification**

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS).

The present document is part 1 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) Security tools (SET) procedures, 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: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network";

Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

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 ISDN:

- Stage 1: is an overall service description, from the user's standpoint;
- 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 3 aspects (signalling system protocols and switching functions) needed to support the SET procedures. The stage 1 aspects are detailed in EN 301 132.

NOTE: Currently no stage 2 document exists.

National transposition dates	
Date of adoption of this EN:	30 October 1998
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1 Scope

This first part of EN 301 002 specifies the stage three of the Security tools (SET) procedures for the pan-European Integrated Services Digital Network (ISDN) as provided by the European public telecommunications operators at the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [2]) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol. Stage three identifies the protocol procedures and switching functions needed to support a telecommunications service (see CCITT Recommendation I.130 [10]).

In addition, the present document specifies the protocol requirements at the T reference point where the service is provided to the user via an intermediate private ISDN.

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 SET procedures are a means of providing an appropriate level of security and protection to the user of a given telecommunication service.

Further parts of the present document specify the method of testing required to identify conformance to the present document.

The present document is applicable to equipment supporting the SET procedures, to be attached at either side of a T reference point or coincident S and T reference point when used as an access to the public ISDN.

2 References

References may be made to:

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- specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or
 - all versions up to and including the identified version (identified by "up to and including" before the version identity); or
 - all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or
 - publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

2.1 Normative references

- [1] EN 300 196-1: "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".
- [2] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces; Reference configurations".
- [3] CCITT Recommendation X.208 (1988): "Specification of Abstract Syntax Notation One (ASN.1)".
- [4] CCITT Recommendation X.219 (1988): "Remote operations: Model, notation and service definition".
- [5] ITU-T Recommendation Z.100 (1993): "Specification and Description Language (SDL)".

2.2 Informative references

- [6] EN 301 132: "Integrated Services Digital Network (ISDN); Security tools (SET) for use within telecommunication services".
- [7] ETR 232 (1995): "Security Techniques Advisory Group (STAG); Glossary of security terminology".
- [8] ITU-T Recommendation E.164 (1997): "The international public telecommunications numbering plan".
- [9] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [10] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [11] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means used to describe them".

3 Definitions

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

Integrated Services Digital Network (ISDN): See ITU-T Recommendation I.112 [9], definition 308.

ISDN number: A number conforming to the numbering plan and structure specified in ITU-T Recommendation E.164 [8].

invoke component: See EN 300 196-1 [1], subclause 8.2.2.1. Where reference is made to a "xxxx" invoke component, an invoke component is meant with its operation value set to the value of the operation "xxxx".

network: The DSS1 protocol entity at the network side of the user-network interface.

Personal Identification Number (PIN): See ETR 232 [7].

reject component: See EN 300 196-1 [1], subclause 8.2.2.4.

return error component: See EN 300 196-1 [1], subclause 8.2.2.3. Where reference is made to a "xxxx" return error component, a return error component is meant which is related to a "xxxx" invoke component.

return result component: See EN 300 196-1 [1], subclause 8.2.2.2. Where reference is made to a "xxxx" return result component, a return result component is meant which is related to a "xxxx" invoke component.

security tool: See EN 301 132 [6], clause 3.

served user: The user to whom the SET procedures are provided in combination with a telecommunication service.

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

supplementary service: See ITU-T Recommendation I.210 [11], subclause 2.4.

user: The DSS1 protocol entity at the user side of the user-network interface.

4 Abbreviations

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

ASN.1	Abstract Syntax Notation one
DSS1	Digital Subscriber Signalling System No. one
ISDN	Integrated Services Digital Network
OAM	Operation And Maintenance

PIN	Personal Identification Number
SDL	Specification and Description Language
SET	Security Tools

5 Description

The SET procedures allow a served user to be provided with a PIN. The PIN is used when accessing a telecommunication service to ensure that this service is used with an appropriate level of security. The served user can change the PIN at any time after initial provision.

6 Operational requirements

6.1 Provision and withdrawal

The SET procedures shall be provided in connection with the provision of certain telecommunication services, and shall consist of the initial registration of the PIN. This initial registration is performed by the network provider, after selection of the PIN by the served user. The PIN shall either be related to an ISDN number, or to an access or set of accesses, depending on how the telecommunication service using the PIN, is provided. The PIN shall consist of a minimum of 4 alphanumeric characters. The maximum number of characters is a network option, but shall not exceed 12 alphanumeric characters.

Withdrawal of the SET procedures is outside the scope of the present document.

The served user may, as a network option, be notified when one or more attempts (but less than the blocking limit N whereby all procedures using the PIN are blocked) have been made to use an invalid PIN, either during the operation of a telecommunication service using the PIN, or during the PIN registration procedure. The blocking limit N whereby all procedures using the PIN are blocked, is also a network option.

The network options are summarized in table 1.

Table 1: Network options for the SET procedures

Network option	Value
Notification of possible fraudulent use	no yes
Maximum number of PIN characters	4 to 12
Blocking limit N	≥ 3

6.2 Requirements on the originating network side

Not applicable.

6.3 Requirements on the destination network side

Not applicable.

7 Coding requirements

7.1 Coding of the Facility information element components

Table 2 shows the definitions of the operations and errors required for the SET procedures using ASN.1 as specified in CCITT Recommendation X.208 [3] and using the OPERATION and ERROR macro as defined in figure 4 of CCITT Recommendation X.219 [4].

The formal definition of the component types to encode these operations and errors is provided in clause D.1 of EN 300 196-1 [1].

The inclusion of components in Facility information elements is defined in subclause 11.2.2.1 of EN 300 196-1 [1].

All components (invoke, return result, return error and reject) shall be included within a Facility information element. This Facility information element may be included in any appropriate message as specified in subclause 11.2.2.1 of EN 300 196-1 [1], unless a more restrictive specification is given in clause 9.

Table 2: Definition of operations and errors for the SET procedures

```

Set-Operations-and-Errors {ccitt identified-organization etsi(0) 1002 operations-and-errors(1)}
DEFINITIONS EXPLICIT TAGS ::=
BEGIN
EXPORTS
    ModifyPin,
    Pin,
    InvalidPin,
    PinNotProvided,
    InvalidNewPin,
    ChangeOfPinRequired,
    PrimitivePin,
    NewPinIsOldPin,
    UserControlBlocked,
    PossibleFraudulentUse
;
IMPORTS
    OPERATION, ERROR
    FROM Remote-Operation-Notation
        {joint-iso-ccitt remote-operations(4) notation(0)}

    PartyNumber
    FROM Addressing-Data-Elements
        {ccitt identified-organization etsi(0) 196 addressing-data-elements(6)}

    invalidServedUserNr
    FROM General-Errors
        {ccitt identified-organization etsi(0) 196 general-errors(2)}
;
ModifyPin          ::= OPERATION
                    ARGUMENT   ModifyPinArgument
                    RESULT
                    ERRORS     {InvalidPin,
                               PinNotProvided,
                               InvalidNewPin,
                               invalidServedUserNr,
                               PrimitivePin,
                               NewPinIsOldPin,
                               UserControlBlocked}

PossibleFraudulentUse ::= OPERATION

```

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