ETSI

INTERIM
EUROPEAN
TELECOMMUNICATION
STANDARD

DRAFT
pr I-ETS 300 768

September 1996

Source: ETSI TC-BTC

Reference: DI/BTC-01037

ICS: 35.120

Key words: CTM, mobility, PISN, PTN, supplementary service, stage 1

Private Integrated Services Network (PISN);
Cordless Terminal Mobility (CTM);
Authentication;
Service Description

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address:** F-06921 Sophia Antipolis CEDEX - FRANCE
Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE
X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

Contents

Foreword

This draft Interim European Telecommunication Standard (I-ETS) has been produced by the Business TeleCommunications (BTC) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted to for the Public Enquiry phase of the ETSI standards approval procedure.

An ETSI standard may be given I-ETS status either because it is regarded as a provisional solution ahead of a more advanced standard, or because it is immature and requires a "trial period". The life of an I-ETS is limited to three years after which it can be converted into an ETS, have it's life extended for a further two years, be replaced by a new version, or be withdrawn.

Proposed announcement date	
Date of latest announcement of this I-ETS (doa):	3 months after ETSI publication

Blank page

1 Scope

This Interim European Telecommunication Standard (I-ETS) describes the stage one of the Authentication services for Private Integrated Services Networks (PISNs). It comprises two related but distinct service descriptions. The first is a supplementary service allowing a PISN to authenticate a CTM user (SS-CTAT). The second is a service whereby a CTM user may authenticate the PISN (SS-CTAN). Stage 1 is an overall service description from the user's point of view, but does not deal with the details of the human interface itself (see CCITT Recommendation I.130 [4]).

Authentication of a CTM user (SS-CTAT) is a supplementary service that enables a PISN, as a security measure, to validate the identity provided by the CTM user.

Authentication of the PISN (SS-CTAN) is a supplementary service that enables a served CTM user, as a security measure, to validate the identity of the PISN.

The mechanisms used in these services are based on the challenge and response method of authentication.

Service specifications are produced in three stages according to the method described in ENV41005 [1]. This I-ETS contains the stage 1 specification of the authentication supplementary services.

The purpose of the stage 1 specification is to guide and constrain the work at stage 2 and stage 3. Where the text indicates the status of a requirement (i.e. as strict command or prohibition or as authorization leaving freedom as a capability or possibility) this shall be reflected in the text of the relevant stage 2 and stage 3 standards.

This I-ETS applies to CTM only within a single PISN.

2 Conformance

Conformance to this I-ETS is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for this I-ETS.

3 Normative references

This I-ETS incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at 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 I-ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1]   ENV41005 (1989): "Method for the specification of basic and supplementary services of private telecommunication networks".

[2]   ETS 300 171 (1992): "Private Telecommunication Network (PTN) - Specification, functional model and information flows - Control aspects of circuit mode basic services".

[3]   CCITT Recommendation Z.100 (1988): "Functional specification and description language (SDL)".

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

[5]   CCITT Recommendation I.210 (1988): "Principles of telecommunication services supported by an ISDN and means to describe them".

[6]   ETS 300 415 (1994): "Private Telecommunication Networks (PTN) - Terms and Definitions".

[7]   ETS 300 691 (1996): "Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM); Location handling services; Service description".

4   Definitions

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

additional network feature: A capability over and above that of a basic service, provided by a PISN, but not directly to a PISN user.

authentication: See ETS 300 415 [6].

cordless terminal mobility: See ETS 300 691 [7].

cordless terminal mobility user: For the purpose of this I-ETS a CTM user is defined as a user of the supplementary services SS-CTAT and SS-CTAN.

PISN authority: The body or its representative responsible for arranging the service with the service provider.

PISN user: See ETS 300 691 [7].

supplementary service: See CCITT Recommendation I.210 [5] paragraph 2.4.

5   Symbols and abbreviations

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

ANF   Additional Network Feature
CT   Cordless Terminal
CTM   Cordless Terminal Mobility
PISN   Private Integrated Service Network
PTN   Private Telecommunication Network
SS   Supplementary Service
SS-CTAT   Supplementary Service - Authentication of a CTM user
SS-CTAN   Supplementary Service - Authentication of a PISN

6   SS-CTAT

6.1   Description

6.1.1   General description

SS-CTAT enables the PISN, as a security measure, to validate the identity provided by the CTM user.

6.1.2   Qualifications on applicability to telecommunication services

This supplementary service is applicable to all basic services as defined in ETS 300 171 [2].

6.2   Procedures

6.2.1   Provision and withdrawal

SS-CTAT shall be provided and withdrawn by arrangement with the PISN authority.

6.2.2   Normal procedures

6.2.2.1   Activation, deactivation, registration and interrogation

SS-CTAT shall be activated on provision and deactivated on withdrawal.

Registration and interrogation are not applicable to this supplementary service.

6.2.2.2 Invocation and operation

SS-CTAT may be invoked at any time.

The operation of SS-CTAT is based on the "challenge and response" method of authentication. Upon invocation of this service, the PISN sends specific information (challenge) to the CTM user and awaits a response. The response from the CTM user to the PISN may either indicate a success or failure or contain sufficient information for the PISN to determine the result. If the response is not the expected response, the PISN may take any action as appropriate.

6.2.3 Exceptional procedures

6.2.3.1 Activation, deactivation, registration and interrogation

Not applicable

6.2.3.2 Invocation and operation

If SS-CTAT fails for any of the following reasons, the PISN may withdraw or limit the service to the CTM user.

Possible reasons for failure are:

- Incorrect authentication parameters;
- CT not accessible.

6.3 Interactions with other supplementary services and ANFs

The following interactions shall apply:

6.3.1 Number identification services, (SS-CLIP, SS-COLP, SS-CLIR)

No interaction.

6.3.2 Name identification services, (SS-CNIP, SS-CONP, SS-CNIR)

No interaction.

6.3.3 Call diversion services, (SS-CFU, SS-CFB, SS-CFNR, SS-CD)

No interaction.

6.3.4 Call transfer, SS-CT (with Recall)

No interaction.

6.3.5 Path replacement, ANF-PR

No interaction.

6.3.6 Call completion services (SS-CCBS, SS-CCNR)

No interaction.

6.3.7 Do not disturb services (SS-DND, SS-DNDO)

No interaction.

6.3.8   Call offer, SS-CO

No interaction.

6.3.9   Call intrusion, SS-CI

No interaction.

6.3.10   CTM Incoming call routing, ANF-CTMI

No interaction.

6.3.11   CTM Outgoing call identification, ANF-CTMO

No interaction.

6.3.12   Authentication of a PISN, SS-CTAN

No interaction.

6.3.13   CTM Location Handling, (SS-CTML, ANF-CTSP)

No interaction.

6.4   Inter working considerations

Not applicable.

6.5 Overall SDL

Figure 1 contains the dynamic description of SS-CTAT in SDL format CCITT Recommendation Z.100 [4]. The SDL process represents the behaviour of the PISN in providing SS-CTAT.

Input signal from the left and output signals to the left represent internal stimuli within the PISN. Input signals from the right represent primitives from the CTM user. Output signals to the right represent primitives to the CTM user.
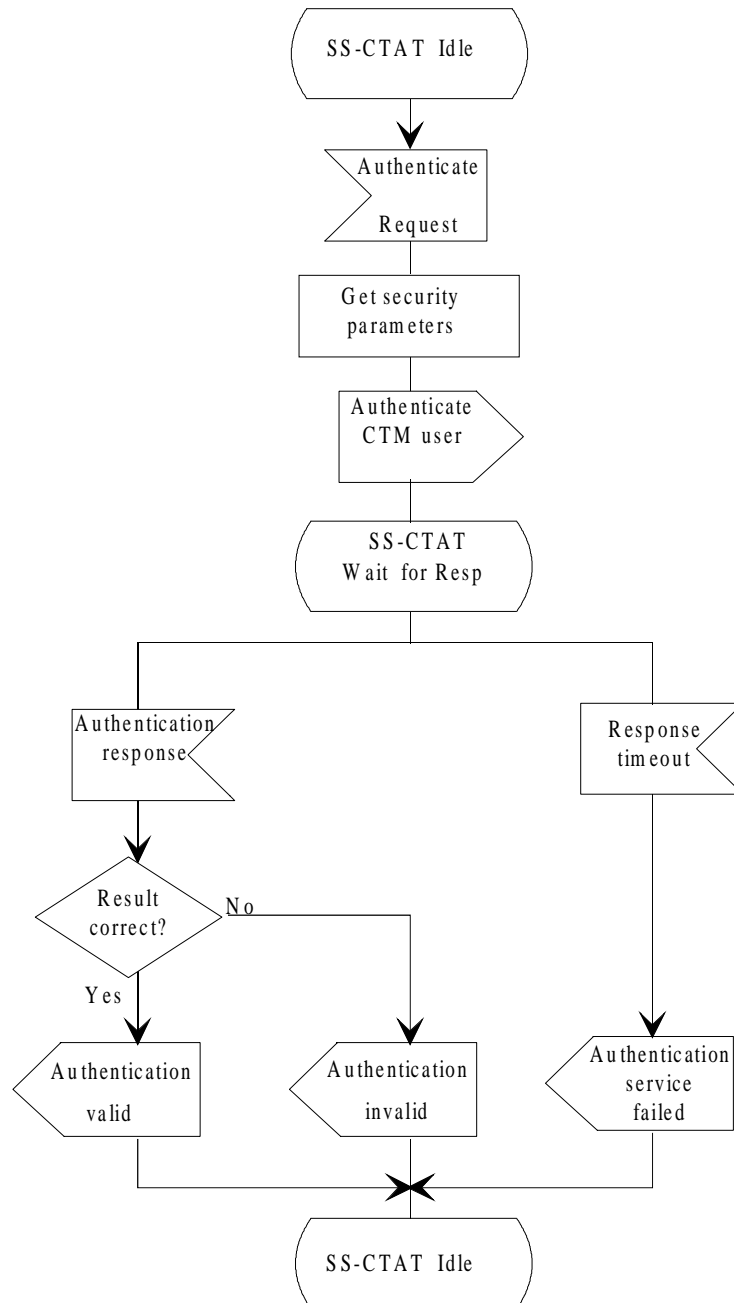

Figure 1: SS-CTAT, Overall SDL

7 SS-CTAN

7.1 Description

7.1.1 General description

SS-CTAN enables the CTM user, as a security measure, to validate the identity of the PISN, prior to accepting certain instructions from it.

In the case where authentication fails, the CTM user shall be informed. The CTM user can then take any action as appropriate. e.g., release the call.

7.1.2 Qualifications on applicability to telecommunication services

This supplementary service is applicable to all basic services as defined in ETS 300 171 [2].

7.2 Procedures

7.2.1 Provision and withdrawal

SS-CTAN shall be provided to and withdrawn from a CTM user by arrangement with the PISN authority.

7.2.2 Normal procedures

7.2.2.1 Activation, deactivation, registration and interrogation

SS-CTAN shall be activated on provision and deactivated on withdrawal.

Registration and interrogation are not applicable to this supplementary service.

7.2.2.2 Invocation and operation

SS-CTAN may be invoked by the CTM user, before accepting certain instructions from the PISN.

The operation of SS-CTAN is based on the "challenge and response" method of authentication. Upon invocation of this service, the CTM user sends specific information (challenge) to the PISN and awaits a response. The response from the PISN shall contain sufficient information for the CTM user to determine the result. If the response is not the expected response, the CTM user may take any action as appropriate.

7.2.3 Exceptional procedures

7.2.3.1 Activation, deactivation, registration and interrogation

Not applicable

7.2.3.2 Invocation and operation

If SS-CTAN fails the CTM user shall be informed

Possible reasons for failure are:

- Incorrect authentication parameters
- Not authorized to use SS-CTAN
- SS-CTAN not available

7.3   Interactions with other supplementary services and ANFs

The following interactions shall apply:

7.3.1   Number identification services, (SS-CLIP, SS-COLP, SS-CLIR)

No interaction.

7.3.2   Name identification services, (SS-CNIP, SS-CONP, SS-CNIR)

No interaction.

7.3.3   Call diversion services, (SS-CFU, SS-CFB, SS-CFNR, SS-CD)

No interaction.

7.3.4   Call transfer, SS-CT (with Recall)

No interaction.

7.3.5   Path replacement, ANF-PR

No interaction.

7.3.6   Call completion services, (SS-CCBS, SS-CCNR)

No interaction.

7.3.7   Do not disturb services, (SS-DND, SS-DNDO)

No interaction.

7.3.8   Call offer, SS-CO

No interaction.

7.3.9   Call intrusion, SS-CI

No interaction.

7.3.10   CTM Incoming call routing, ANF-CTMI

No interaction.

7.3.11   CTM Outgoing call identification, ANF- CTMO

No interaction.

7.3.12   Authentication of a CTM user SS-CTAT

No interaction.

7.3.13   CTM Location Handling, (SS-CTML, ANF-CTSP)

No interaction.

7.4   Inter working considerations

Not applicable.

7.5   Overall SDL

Figure 2 contains the dynamic description of SS-CTAN in SDL format CCITT Recommendation Z.100 [4]. The SDL process represents the behaviour of the PISN in providing SS-CTAN.

Input signals from the right represent primitives from the CTM user's current access. Output signals to the right represent primitives to the CTM user's current access.
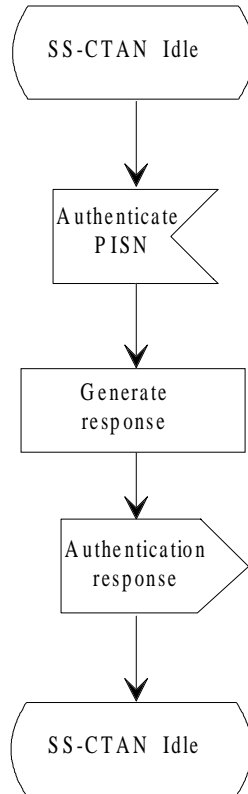

Figure 2: SS-CTAN, Overall SDL

History

Document history		
September 1996	Public Enquiry	PE 114: 1996-09-23 to 1997-01-17