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Private Integrated Services Network (PISN);
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Location handling services;
Service description

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Contents

Foreword

This European Telecommunication Standard (ETS) has been produced by the Business Telecommunications (BTC) Technical Committee of the European Telecommunications Standards Institute (ETSI).

Transposition dates	
Date of adoption of this ETS:	15 March 1996
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1 Scope

This European Telecommunication Standard (ETS) describes the stage one of the location handling services for Private Integrated Services Networks (PISNs). It comprises two related but distinct service descriptions. The first is a service allowing a Cordless Terminal Mobility (CTM) user to register or deregister at a location area in the PISN (SS-CTLR). The second is an Additional Network Feature (ANF) used by different parts of the PISN to transfer or access service profiles (ANF-CTSP). Stage one 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 [5].

The Cordless Terminal Location Registration Supplementary Service (SS-CTLR) enables a CTM user to register at, or deregister from, the current location area within the PISN. The ability to register at different location areas in the PISN at different times enables the CTM user to maintain the provided services (including the ability to make and receive calls) at different access points. Deregistration is used to inform the PISN that the CTM user is temporarily unable to make use of the provided services (including the receipt of incoming calls).

The Transfer of Service Profiles Additional Network Feature (ANF-CTSP) enables different parts of the PISN to transfer or access service profiles, thereby allowing CTM users to maintain their service profiles when changing location area within the PISN.

This ETS contains the stage 1 specification of the location handling services. Service specifications are produced in three stages according to the method described in ETS 300 387 [4].

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 authorisation leaving freedom as a capability or possibility) this is reflected in the text of the relevant stage 2 and stage 3 standards.

This ETS applies to CTM only within a single PISN.

Conformance to this 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 ETS.

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 300 171 (1992): "Private Telecommunication Network (PTN); Specification, functional models and information flows; Control aspects of circuit mode basic services".

[2]   ETS 300 415 (1995): "Private Telecommunication Network (PTN); Terms and definitions".

[3]   ISO/IEC 11579-1 (1994): "Information Technology - Telecommunications and information exchange between systems - Private integrated services network - Part 1: Reference configurations for PISN exchanges (PINX)".

[4]   ETS 300 387 (1994): "Private Telecommunication Network (PTN); Method for the specification of basic and supplementary services".

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

[6]	ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
[7]	ITU-T Recommendation Z.100 (1993): "Specification and description language (SDL)".

3 Definitions and abbreviations

3.1 Definitions

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

Additional Network Feature (ANF): See ETS 300 415 [2].

authentication: See ETS 300 415 [2].

Cordless Terminal Mobility (CTM): The ability of a cordless terminal to be in continuous motion whilst accessing and using the telecommunication services offered by the PISN, as well as the capability of the network to keep track of the location of the cordless terminal within the coverage area of the radio system used.

CTM user: The user of Supplementary Service "Cordless Terminal Location Registration" (SS-CTLR).

location area: The coverage area in which a cordless terminal may receive and make calls as a result of a single location registration.

PISN: See ISO/IEC 11579-1 [3].

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

PISN user: The user of the network layer services provided by a PISN.

service profile: The specific collection of PISN services and service options which a PISN user can utilize.

supplementary service: See ITU-T Recommendation I.210 [6].

visitor area: See ETS 300 415 [2].

3.2 Abbreviations

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

ANF-xxx	"xxx" Additional Network Feature
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CD	Call Deflection
CFB	Call Forwarding Busy
CFNR	Call Forwarding on No Reply
CFU	Call Forwarding Unconditional
CI	Call Intrusion
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
CO	Call Offer
COLP	Connected Line Identification Presentation
CONP	Connected Name Identification Presentation
CT	Call Transfer
CTLR	Cordless Terminal Location Registration
CTM	Cordless Terminal Mobility

CTMI   Incoming CTM Call Handling
CTMO   Outgoing CTM Call Handling
CTSP   Transfer of Service Profile
DND   Do Not Disturb
DNDO   Do Not Disturb Override
PISN   Private Integrated Services Network
PR   Path Replacement
SDL   Specification and Description Language
SS-xxx   "xxx" Supplementary Service

4   SS-CTLR

4.1   Description

4.1.1   General description

SS-CTLR makes the location of a CTM user known to the PISN. By updating location information in the PISN, incoming calls can be routed to a CTM user, and the CTM user can access the PISN services from the current location area. CTLR also enables a CTM user to inform the PISN that the current location area is no longer to be used to make and receive calls.

The network may allow the CTM user to perform location registration using a permanent identifier. Alternatively, for security reasons, a procedure supporting the use of temporary identifiers may be used.

SS-CTLR may cause the invocation of ANF-CTSP in order to provide a consistent service to a CTM user independent of the CTM user's location area.

SS-CTLR may use an authentication procedure in order to validate the identity provided by the CTM user to the PISN before completing the location registration.

4.1.2   Qualifications on applicability to telecommunication services

This supplementary service is applicable to all basic services defined in ETS 300 171 [1].

4.2   Procedures

4.2.1   Provision and withdrawal

SS-CTLR shall be provided by arrangement with the PISN authority.

4.2.2   Normal procedures

4.2.2.1   Activation, deactivation and interrogation

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

Interrogation is not applicable to this supplementary service.

4.2.2.2   Invocation and operation

The following procedures apply on the basis of individual basic services. On invocation, a unique identification and, optionally, an indication of the affected basic services shall be provided to the network.

SS-CTLR shall be invoked to register a CTM user's current location area either when the location area has changed or following a period of deregistration.

Location registration shall cause the PISN to register the CTM user at the current location area. The location information at the previously visited location area shall be deleted. When the procedures are completed, the location registration is confirmed to the CTM user. As the result of a location registration, the PISN may assign a temporary identity to the CTM user. This identity may be stored by the CTM user and used for identification in a subsequent location registration. The identity is valid until a new location

registration has successfully completed and shall be sufficient to access information specific to the CTM user at the previously visitor area from any location area within the PISN.

SS-CTLR may be invoked to deregister a CTM user when the CTM user is unable to make use of the services provided by the PISN.

> NOTE: The decision to invoke deregistration can be either explicit (e.g. by switching off a cordless terminal) or implicit (e.g. by detecting that the cordless terminal is out of range).

Location deregistration shall cause the PISN to treat the CTM user as unavailable until the CTM user performs location registration again.

4.2.3 Exceptional procedures

4.2.3.1 Activation, deactivation and interrogation

Not applicable.

4.2.3.2 Invocation and operation

Location registration shall be rejected under, at least, the following circumstances:

- user identity not known;
- CTM user not permitted to register in the current location area;
- CTM user failed authentication;
- location registration temporarily not possible.

An indication of the reason for rejection shall be sent to the CTM user.

The rejection cause "CTM user failed authentication" is only applicable if authentication is supported.

If the reason for rejection is "User identity not known" and the identity used was a temporary identifier, SS-CTLR may be invoked again using the CTM user's permanent identity.

Location deregistration shall be rejected if the CTM user was not registered at that location area.

4.3 Interactions with other supplementary services and ANFs

The interactions given in subclauses 4.3.1 to 4.3.12 shall apply.

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

No interaction.

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

No interaction.

4.3.3 Call diversion services (SS-CFU, SS-CFB, SS-CFNR)

No interaction.

4.3.4 Call Transfer (SS-CT)

No interaction.

4.3.5 Path Replacement (ANF-PR)

No interaction.

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

If the CTM user is either the served user or the called user in a call completion attempt, the following interactions shall apply.

Location registration may cause call completion to be cancelled.

NOTE: From a service point of view, it is desirable that implementations are able to process the call completion even if the CTM user has moved to a new location area.

If the CTM user deregisters, an existing call completion request shall be cancelled. Invocation of call completion on a deregistered CTM user shall be rejected.

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

No interaction.

4.3.8 Call Offer (SS-CO)

No interaction.

4.3.9 Call Intrusion (SS-CI)

No interaction.

4.3.10 Incoming CTM Call Handling (ANF-CTMI)

An incoming call may be rejected if it occurs between the invocation and completion of the SS-CTLR procedures or if the incoming call occurs during a period of deregistration.

4.3.11 Outgoing CTM Call Handling (ANF-CTMO)

An outgoing call may be rejected if attempted between the invocation and completion of the SS-CTLR procedures or if the outgoing call occurs during a period of deregistration.

4.3.12 Transfer of Service Profile (ANF-CTSP)

SS-CTLR may cause the invocation of ANF-CTSP.

4.4 Interworking considerations

Not applicable

4.5 Overall SDL diagram

Figure 1 contains the dynamic description of SS-CTLR in SDL format according to ITU-T Recommendation Z.100 [7]. The SDL process represents the behaviour of the PISN providing SS-CTLR.

Input signals from the right represent primitives from the served user. Output signals to the right represent primitives to the served user.
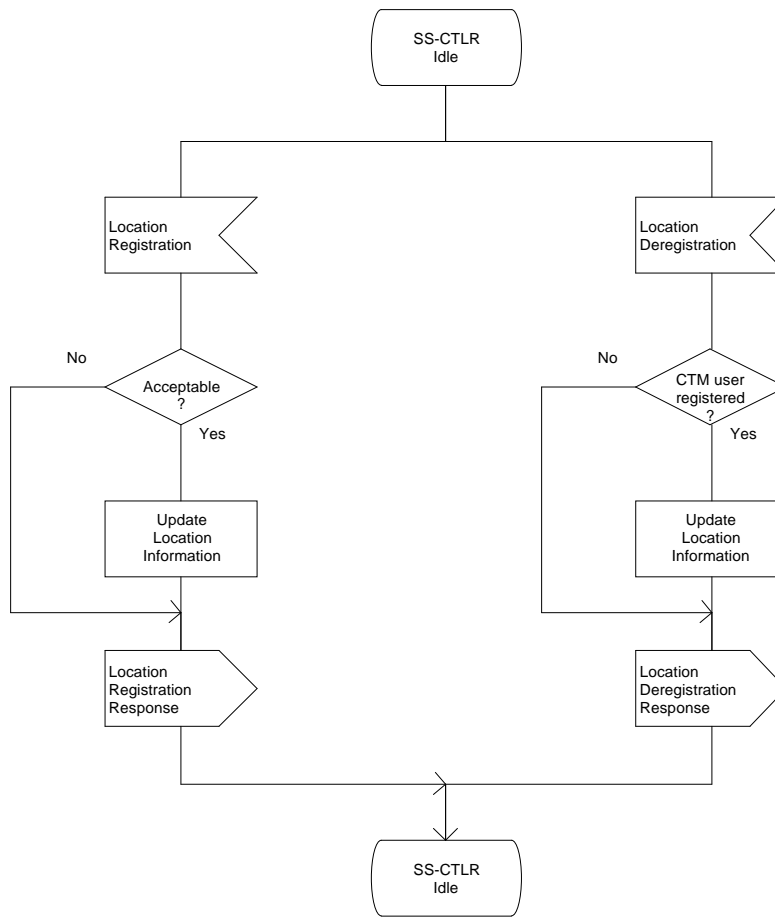
Figure 1: SS-CTLR, overall SDL diagram

5 ANF-CTSP

5.1 Description

5.1.1 General description

The ANF-CTSP enables a CTM user's service profile to be maintained independent of the CTM user's location area within the PISN.

ANF-CTSP enables the transfer of the service profile information and also provides access to remotely available service profile details. The transfer of, or access to a particular service profile may occur at any time.

Following a transfer of service profile details, if a change is made to the original, the copy may be updated. If a change is made to the copy, the original may also be modified.

5.1.2 Qualifications on applicability to telecommunication services

Not applicable.

5.2 Procedures

5.2.1 Provision and withdrawal

ANF-CTSP shall be provided by arrangement with the PISN authority.

5.2.2 Normal procedures

5.2.2.1 Activation, deactivation and interrogation

ANF-CTSP shall be permanently activated. Interrogation is not applicable.

5.2.2.2 Invocation and operation

ANF-CTSP may be invoked when the details of a requested service are not available at the current location area. ANF-CTSP may also be invoked following a subsequent change of service profile details.

5.2.3 Exceptional procedures

5.2.3.1 Activation, deactivation and interrogation

Not applicable.

5.2.3.2 Invocation and operation

Not applicable.

5.3 Interactions with other supplementary services and ANFs

The interactions given in subclauses 5.3.1 to 5.3.12 shall apply.

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

No interaction.

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

No interaction.

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

The activation and deactivation of the call diversion supplementary services may result in invocation of ANF-CTSP if a CTM user is the served user of call diversion.

5.3.4 Call Transfer (SS-CT, with recall)

No interaction.

5.3.5 Path Replacement (ANF-PR)

No interaction.

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

No interaction.

5.3.7 Do not disturb services

5.3.7.1 Do Not Disturb (SS-DND)

The activation and deactivation of SS-DND may result in invocation of ANF-CTSP if a CTM user is the served user of SS-DND.

5.3.7.2 Do Not Disturb Override (SS-DNDO)

No interaction.

5.3.8 Call Offer (SS-CO)

No interaction.

5.3.9 Call Intrusion (SS-CI)

No interaction.

5.3.10 Incoming CTM Call Handling (ANF-CTMI)

ANF-CTMI may cause the invocation of ANF-CTSP.

5.3.11 Outgoing CTM Call Handling (ANF-CTMO)

ANF-CTMO may cause the invocation of ANF-CTSP.

5.3.12 Cordless Terminal Location Registration (SS-CTLR)

SS-CTLR may cause the invocation of ANF-CTSP.

5.4 Interworking considerations

Not applicable.

5.5   Overall SDL diagram

Figure 2 contains the dynamic description of ANF-CTSP in SDL format according to ITU-T Recommendation Z.100 [7]. The SDL process represents the behaviour of the PISN providing ANF-CTSP.

Input signals from the right represent requests from the current location area. Output signals to the right represent responses to the current location area. Input signals from the left represent other PISN internal events.
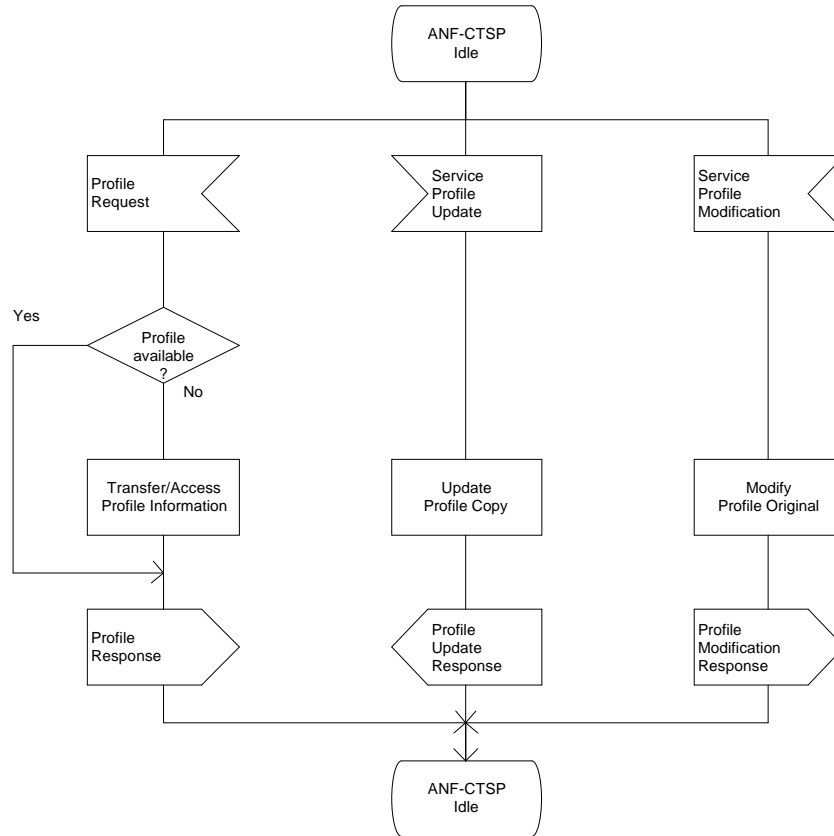

Figure 2: ANF-CTSP, overall SDL diagram

History

Document history			
May 1995	Public Enquiry	PE 84:	1995-05-22 to 1995-09-15
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