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Cordless Terminal Mobility (CTM); Phase 1; Service description

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Network Aspects (NA).

In analogy with CCITT Recommendations I.130 [6], the first stage of the following three level structure is used to describe the telecommunications services as provided by European public telecommunications operators:

- Stage 1: is an overall service description, from the service subscriber's and 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 1 aspects (overall service description) for the Cordless Terminal Mobility (CTM) service, taking into account the various network architectures, e.g., Intelligent Network (IN).

The application of stage 2 and stage 3 may be different when the service is supported on an IN environment.

National transposition dates

Date of adoption of this EN:	7 August 1998
Date of latest announcement of this EN (doa):	30 November 1998
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 May 1999
Date of withdrawal of any conflicting National Standard (dow):	31 May 1999

1 Scope

The present document defines the stage 1 service description for phase 1 of the Cordless Terminal Mobility (CTM) service. Stage 1 is an overall service description, primarily from the service subscriber's and user's point of view, but does not deal with the details of the human interface itself. The present document includes information applicable to network operators and terminal, switch and database manufacturers.

The present document specifies the requirements where the service is provided to the CTM user via a telecommunications network that is either the pan-European Integrated Services Digital Network (ISDN) or a Public Switched Telephone Network (PSTN) as provided by European public telecommunications operators.

The present document includes interworking requirements for cases where users in a call are located on different networks.

The provision of the CTM service on mobile networks is outside the scope of the present document.

The present document contains the core requirements for phase 1 of the Cordless Terminal Mobility (CTM) service. A service may be provided on the basis of these core requirements alone.

The present document also documents some optional service features which may be used to enhance the service.

Furthermore, additional functionalities not documented in the present document may be implemented. The requirements of which are considered outside of the scope of the present document and consequently outside the scope of the corresponding stage 2 and stage 3 standards. Such additional functionality may be on a network-wide basis, or particular to one CTM user or a group of CTM users. Such additional functionality does not compromise conformance to the core requirements of the service.

Charging principles are outside the scope of the present document, unless specific service requirements are stated. These requirements deal with the allocation of certain call charges to particular CTM users.

Interactions with services/supplementary services not listed in clauses 8 and 9 are outside the scope of the present document.

The Cordless Terminal Mobility (CTM) service allows users of cordless terminals to be mobile within and between networks. Where radio coverage is provided and the cordless terminal has appropriate access rights the CTM user is able to make calls from, and to receive calls at, any location within the fixed public and/or private networks, and may move without interruption of a call in progress.

Phase 1 of the Cordless Terminal Mobility (CTM) service is applicable to the telephony 3,1 kHz teleservice (see ETS 300 111 [2]). Phase 1 of the CTM service is also applicable to the speech bearer service (see ETS 300 109 [3]) and the 3,1 kHz audio bearer service (see ETS 300 110 [4]).

If the present document is applicable to the stage 2 and stage 3 standards for the phase 1 of the CTM service, where the text indicates the status of a requirement (i.e. as strict command or prohibition, as authorization leaving freedom, as a capability or a possibility), this shall be reflected in the relevant stage 2 and stage 3 standards. Otherwise, the status of a requirement shall be reflected in the relevant standards for the underlying protocols. Furthermore, conformance to the present document is either met by:

- conforming to the stage 3 standards; or
- implicitly covered by conforming to the standards for the underlying protocols,

with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for the present document.

2 Normative references

References may be made to:

- a) 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
- b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or
- c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or
- d) 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.

- [1] ETS 300 345 (1994): "Integrated Services Digital Network (ISDN); Interworking between public ISDNs and private ISDNs for the provision of telecommunication services; General aspects".
- [2] ETS 300 111 (1992): "Integrated Services Digital Network (ISDN); Telephony 3,1 kHz teleservice; service description".
- [3] ETS 300 109 (1992): "Integrated Services Digital Network (ISDN); Circuit-mode 64 kbit/s 8 kHz structured bearer service category usable for speech information transfer; Service description".
- [4] ETS 300 110 (1992): "Integrated Services Digital Network (ISDN); Circuit-mode 64 kbit/s 8 kHz structured bearer service category usable for 3,1 kHz audio information transfer; Service description".
- [5] CCITT Recommendation E.164 (1991): "Numbering plan for the ISDN era".
- [6] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [7] CCITT Recommendation I.112 (1988): "Vocabulary of terms for ISDNs".
- [8] CCITT Recommendation I.210 (1988): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [9] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".

3 Definitions

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

authentication: A security mechanism allowing the verification of the provided identity.

access rights: An indication that the cordless terminal has appropriate access allowance to the CTM service.

NOTE 1: This definition does not refer to any specific access technology.

access rights identity: An identity which is globally unique to a service provider and which shows the access rights related to this service provider.

Basic Call (procedures): The procedures by which a call (as an instance of a basic telecommunication service) is established and terminated.

NOTE 2: Emergency call is not a basic call.

cordless terminal: A physical entity that provides access to the telecommunication services of a network via a radio interface.

core service feature: Particular service feature fundamental to the telecommunication service, i.e., in the absence of this service feature, the telecommunication service does not make sense as a commercial offering to the service subscriber.

coverage area: The area within the radio coverage area in which the user has subscribed to use the CTM service.

CTM identity: The identity by which a user is known to the CTM service providers and networks supporting CTM, and it is used for flexibility and security purposes. The CTM identity identifies a CTM user unambiguously. The CTM identity does not need to be known by users.

CTM number: A number that uniquely and unambiguously identifies each user. It is used by a calling party to reach the CTM user. The number is independent of the calling terminal, network or service used and it is an E.164 number.

E.164 number: A number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [5].

forwarded-to number: A number to which the call is redirected as a result of call forwarding.

handover: The process by which a call in progress is maintained when the CTM user moves with the cordless terminal with a call in progress within a network where continuous radio coverage is provided.

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

location registration: The process whereby the position of a CTM terminal is determined to the level of one location area.

network operator: An entity that provides the network operating elements and resources for the execution of the CTM service.

not reachable: The status in the network when an incoming call is offered to a cordless terminal but the cordless terminal is out of radio coverage, switched off or there is radio congestion.

optional service feature: A service feature added to core feature to optionally enhance a service offering.

radio coverage: The area in which cordless terminals may be used to establish and maintain telecommunication services via the radio base stations supported by the network supporting the CTM service.

NOTE 3: The radio coverage supported by an individual network supporting the CTM service may be continuous or discontinuous, i.e. it may correspond to the complete geographical territory served by the network or it may not.

In the case of discontinuous radio coverage, the areas of radio coverage may consist of individual radio cells, serving for example isolated houses or very small businesses, or cordless islands consisting of a collection of radio cells providing continuous coverage of larger areas.

The radio coverage supported by a network supporting the CTM service may overlap with the radio coverage supported by one or more other networks supporting the CTM service or it may be complementary.

roaming: The CTM user moves with the cordless terminal without a call in progress from one location area to another location area within the same and/or between different networks supporting the CTM service.

service feature: A specific aspect of a telecommunication service that can also be used in conjunction with other telecommunication services or service features as part of a commercial offering. It is either a core part of a telecommunication service or an optional part offered as an enhancement to a telecommunication service.

service profile: A record containing all the service information related to a CTM user.

service provider: An actor who provides CTM services to its service subscribers on a contractual basis and who is responsible for the CTM services offered. The same organization may act as a network operator and a service provider.

service subscriber: An entity that contracts for services offered by service providers.

service: That which is offered by an administration or a public or private service provider to its service subscriber in order to satisfy a telecommunication requirement.

terminal mobility: The ability of a terminal to access telecommunication services, while in motion, and the capability of the network to locate and identify that terminal as it moves.

user: A person or machine delegated by a service subscriber to use the services and/or facilities of a telecommunication network .

4 Abbreviations

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

CFNRc	Call Forwarding on Not Reachable
CLIR	Calling Line Identification Restriction
COLR	Connected Line Identification Restriction
CTM	Cordless Terminal Mobility
DTMF	Dual Tone Multi Frequency
IN	Intelligent Network
ISDN	Integrated Services Digital Network
PISN	Private Integrated Services Network
PSPDN	Packet-Switched Public Data Network
PSTN	Public Switched Telephone Network
UPT	Universal Personal Telecommunication

5 Description

The CTM service allows users of cordless terminals to be mobile within and between networks. Where radio coverage is provided and the cordless terminal has appropriate access rights the CTM user shall be able to make calls from, and to receive calls at, any location within the fixed public and/or private networks, and may move without interruption of a call in progress.

The CTM service can be composed by "core service features" and "optional service features". The core service features provide a basic service, available to all CTM users.

The optional service features contain functionality that is additional to the core service features, that customize the service according to the needs of a specific service subscriber. These additional parts may be offered either to all the service provider's service subscribers, or to a group of service subscribers or even to a single service subscriber.

In addition to core service features, a network can implement optional service features. The availability to roaming CTM users of the optional features depends on the implementation of the optional features in other networks.

5.1 Core service features

The core service features are listed hereafter.

5.1.1 Numbering

The CTM number can be a non-geographical number or a geographical number according to the operator's choice.

It may therefore be possible for a user subscribing to the CTM service to keep the user's existing E.164 number as a network option.

NOTE: When a user subscribes to the CTM service using the user's existing E.164 number as the CTM number, calls to the served user's E.164 number may be routed either to the served user's cordless terminal or to the served user's fixed terminal according to the operator's choice.