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Foreword

ETSI Technical Reports (ETRs) are informative documents resulting from ETSI studies which are not appropriate for European Telecommunication Standard (ETS) or Interim-European Telecommunication Standard (I-ETS) status. An ETR may be used to publish material which is either of an informative nature, relating to the use or application of ETSs or I-ETSs, or which is immature and not yet suitable for formal adoption as an ETS or I-ETS.

This ETR discusses the possible types and categories of Universal Personal Telecommunication (UPT) terminals and access devices, and a range of possible features relating to these.

This ETR constitutes Part 5 of a multi-part ETR, with the following titles:

ETR 055-1: "Universal Personal Telecommunication (UPT); The service concept Part 1: Principles and objectives".

ETR 055-2: "Universal Personal Telecommunication (UPT); The service concept Part 2: General service description".

ETR 055-3: "Universal Personal Telecommication (UPT); The service concept Part 3: Service aspects of charging, billing and accounting".

ETR 055-4: "Universal Personal Telecommication (UPT); The service concept Part 4: Service requirements on security mechanisms".

ETR 055-5: "Universal Personal Telecommication (UPT); The service concept Part 5: UPT terminals and UPT access devices".

ETR 055-6: "Universal Personal Telecommunication (UPT); The service concept Part 6: UPT subscription and service profile".

ETR 055-7: "Universal Personal Telecommunication (UPT); The service concept Part 7: User procedures and user states".

ETR 055-8: "Universal Personal Telecommunication (UPT); The service concept Part 8: Man-machine interface aspects".

ETR 055-9: "Universal Personal Telecommunication (UPT); TThe service concept Part 9: Service requirements on numbering, addressing and identification".

ETR 055-10: "Universal Personal Telecommunication (UPT); The service concept Part 10: Supplementary services".

An additional part (Part 11) which details the requirements on the protection of third parties, is due for publication in 1993.

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1 Scope

This ETSI Technical Report (ETR) discusses the possible types and categories of Universal Personal Telecommunication (UPT) terminals and access devices, and a range of possible features relating to these. Detailed specifications of the various types of UPT terminals and access devices are given in other technical specifications.

2 Abbreviations

DTMF	Dual Tone Multi Frequency
PIN	Personal Identification Number
UPT	Universal Personal Telecommunication
UPT-TA	UPT-Terminal Adapter
UPT-TE	UPT-Terminal Equipment

3 Types of UPT terminals

3.1 General

A UPT terminal is a terminal which provides at least the minimum UPT terminal functionality. The minimum UPT terminal functionality is the ability to support the minimum UPT procedures required for normal operation of the terminal for incoming and outgoing calls (i.e. personal mobility and UPT call handling procedures) with the aid of a UPT access device, if applicable. A UPT terminal should ideally support all UPT procedures and may be an existing non-UPT terminal.

UPT facilities must be accessible, both for calls and for registrations, at least from break-pulse dialling and Dual Tone Multi Frequency (DTMF) telephones.

3.2 General service requirements with existing terminals

The UPT service must take into account a great number of existing terminals in existing networks. The following requirements apply to the UPT service when existing terminals are involved:

1) it should be possible to register for incoming or outgoing calls to any existing terminal;

2) it should be possible to receive UPT calls on any terminal to which a UPT user has registered for incoming calls;

3) it should be possible to make outgoing UPT calls from any terminal to which a UPT user has registered for outgoing calls;

4) it should be possible to call a UPT user from any terminal by the use of his UPT number, subject to UPT specific charging arrangements;

5) it should be possible to interrogate and modify the service profile from many possible terminal types, UPT terminals and non-UPT terminals.

3.3 General requirements on UPT terminals

3.3.1 Generalised model of UPT terminals

A UPT-Terminal Equipment (UPT-TE) may, in most cases need additional functionality to that of a non-UPT terminal. This functionality may logically be carried out by a UPT-Terminal Adapter (UPT-TA). Logically, the UPT-TA may also be transparent, i.e. non-existent. The UPT-TA may be an integral part of the UPT-TE or may be a physically separate part. The UPT access device may interface with the UPT-TE either via the non-UPT terminal part or via the UPT-TA part.

This leaves the following three types of generalised UPT terminals. The three types are illustrated in figures 1, 2 and 3 :

1) a terminal with a separate UPT-TA, where the UPT access device interfaces with the standard TE;

2) a terminal with a separate UPT-TA, where the UPT access device interfaces with the UPT-TA;

3) integrated UPT terminal which provides the UPT terminal adaptation functions. The UPT access device interfaces with the integrated UPT-TE.

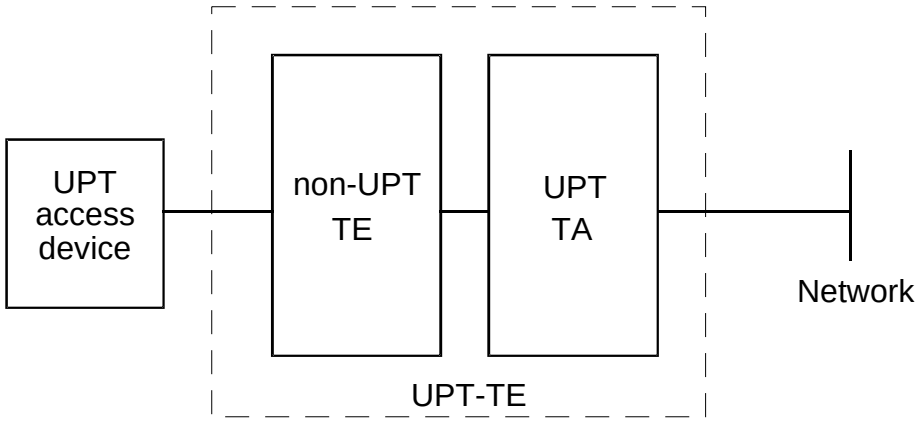

Figure 1: UPT-TE type 1
Separate terminal adapter - UPT access via an existing terminal

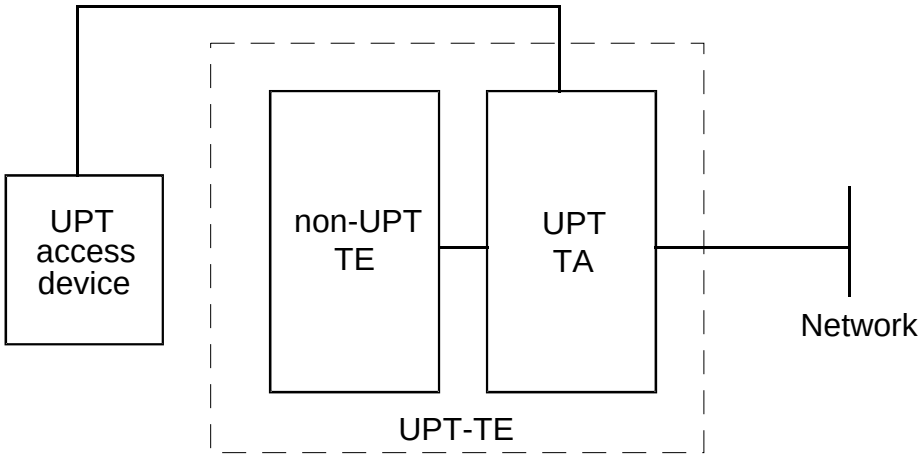

Figure 2: UPT-TE type 2
Separate terminal adaptor - UPT access via the UPT-TA

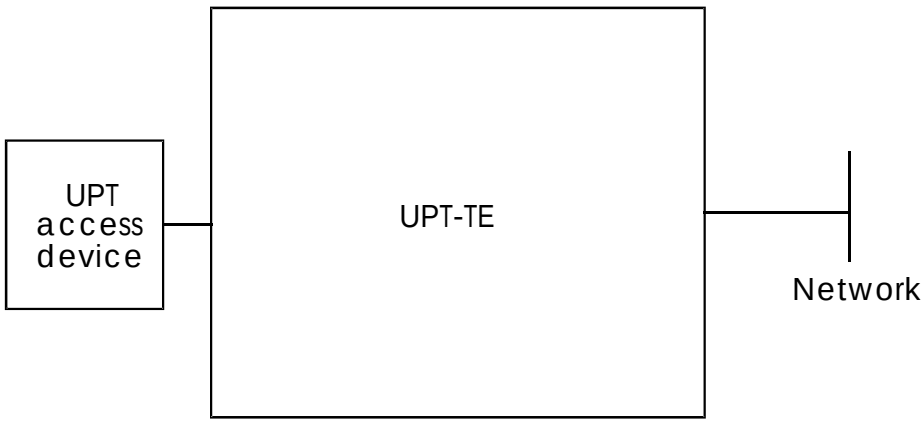

**Figure 3: UPT-TE type 3
Integrated UPT terminal**

3.3.2 Requirements relating to type of network

The UPT terminal needs to be able to carry out the defined UPT procedures in communication with the UPT service entity over the local network access point. The connection over the local network access point depends on the type of network used. Therefore, the UPT terminal is dependent on the network used.

3.3.3 Requirements relating to UPT terminal type

The requirements of UPT terminals will depend on the UPT terminal type, and specifically on whether or not the UPT terminal is integrated:

- requirements on type 1 and type 2 UPT terminals will simply be requirements on UPT-TAs. The non-UPT terminal part is not influenced;

- requirements on type 3 UPT terminals will be on the complete UPT terminal.

3.3.4 Requirements relating to type of UPT access device

The requirements of UPT terminals will depend on the UPT access device and its realisation. These requirements may include:

- requirements on the physical and mechanical interface to the UPT access device;

- requirements relating to any special features of the UPT access device.

4 Features of UPT terminals

A UPT-TE may consist of non-UPT-TE and a UPT-TA. The features of UPT terminals discussed in this Clause concern complete UPT-TE.

The features discussed in this Clause are UPT specific only, i.e. features provided because of the UPT functionality. Basic, supplementary or additional features of standard terminals are not discussed, but are not excluded. These may be part of the standard terminals.

A UPT terminal feature is defined as a function or piece of equipment directly related to the operation of the UPT terminal.

4.1 Features of non-UPT terminals

For UPT operation of a UPT terminal supporting the minimum UPT procedures for duplex operation, the following features must be assumed included in non-UPT-TE:

- some form of addressing function (e.g. a numeric or alphanumeric keypad).

4.2 UPT specific terminal features

4.2.1 UPT alerting mechanisms

UPT offers the possibility of registering several UPT users for incoming calls at the same terminal. As a result of this, some form of selective alerting mechanism may be desirable. Examples of selective alerting mechanisms could include:

- a display indicating the UPT number of the called UPT user, or alternative indications like predetermined alphanumeric or numeric codes, etc.;

- a loudspeaker indicating the UPT number of the called UPT user, or alternative indications like predetermined names, etc., with artificial voice;

- an extension to some form of local paging equipment directly excluding the alerting of other UPT users.

4.2.2 UPT indicators

Other than the indicators directly involving the alerting, discussed in subclause 4.2.1, the UPT indications that may be provided in a UPT terminal include:

- an indication of whether an incoming call is a UPT call or non-UPT call;

- an indication of whether or not the incoming call will require authentication;

- an indication of whether or not the terminal already has a registration for outgoing calls;

- indications related to UPT supplementary services (e.g. some form of calling party identity), if applicable;

- an indication of whether or not the terminal already has a registration for incoming calls and how many UPT users have registered incoming calls on that terminal;

- an indication of advice UPT charge information for outgoing and incoming calls;

- an indication of call importance.

4.2.3 Other UPT terminal features

Other UPT specific features that may be provided in a UPT terminal include:

- features related to UPT specific supplementary services;

- downloading and use of the UPT user's personal directory, short numbers, etc.

4.3 Classification of UPT terminal features

UPT terminal features may be classified according to the features of the UPT service into:

- basic UPT terminal features;

- advanced UPT terminal features.

However, due to the various types of UPT terminals, all UPT terminal features must be classified as optional and manufacturer specific.

5 Types of UPT access devices

This Clause elaborates on the general requirements and possible realisations of UPT access devices.

5.1 General requirements on UPT access devices

The UPT access device is a physical device intended to facilitate the UPT user's interactions with the UPT service, i.e. to help the UPT user to carry out the defined UPT procedures, and to increase the security level while doing so.

The aim of UPT is to provide to the UPT user a service that will work on any terminal, with any service and in any network. Ultimately, it is therefore necessary to have a widely standardised UPT access device, both functionally and physically.

The UPT access device must be a user-friendly device which is easy and quick to use, and must have a size and weight so that it can be carried at most times, e.g. like a credit card.

A UPT access device may be part of a multi-purpose device with various applications, (e.g. banking purposes, etc.). The UPT access device would then be one of several applications supported, and should not be affected by other applications supported by the device.

5.2 Distribution of UPT access devices

The UPT access device is connected to the associated access of a UPT user, and may contain service provider specific information. The UPT access devices may, therefore, be distributed by the UPT service providers as a part of the UPT access.

5.3 Functional requirements on UPT access devices

The UPT access device is connected to the access of a UPT user and contains user specific information including at least:

- numbers and identities of the UPT user;

- authentication functions.

It may also, as an evolutionary path, be considered to include various other UPT service profile specific data in the UPT access devices. This could decrease the need for transfer and storage of data on the network side, and possibly make room for new service features.

5.4 Physical realisations of UPT access devices

Even though it is the aim of UPT to ultimately have a UPT access device that can work with all networks, all services and all terminals, it may be desirable to have various types of UPT access devices because:

- the support of UPT will not arrive in all networks, and hence not with all services, at the same time;

- the UPT subscriber associated to a UPT user may not wish to include all networks, terminals or services in his UPT access;

- the availability of specialised UPT terminals may be limited at a given time;

- the UPT subscriber associated to a UPT user may want a choice in UPT access devices and the facilities provided by it.

Some specific physical realisations of UPT access devices have, therefore, been identified, which all have their limitations. These physical realisations include:

- no UPT access device. In this case, the UPT user's number may have to be manually input for identification, and it may be necessary to restrict the authentication procedure to the use of a Personal Identification Number (PIN) code only;

- a magnetic strip-card UPT access device. This type of UPT access device requires a terminal equipped with a magnetic strip-card reader and a signalling interface to communicate with the network;

- a one-way tone type UPT access device (e.g. DTMF). This device could either simply simulate the sequence of tones that would be generated by the UPT user, who uses a PIN for authentication, or it could contain the intelligence to provide authentication procedures similar to that possible with an intelligent card, using one-way authentication (the UPT access device transmits data only);

- an intelligent card type UPT access device. Either a one-way or a two-way authentication procedure could be used. UPT service provider authentication could be combined with subscriber identity authentication (mutual authentication);

- a modem type UPT access device. This would be similar in functionality to the tone type device, but with the physical acoustic in-band signalling using a modem standard. Ideally, the authentication procedures should in this case be the same as with an intelligent card using one-way or two-way authentication (i.e. the UPT access device transmits and receives data).

History

Document history	
December 1992	First Edition
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