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Contents

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 gives a general description of the various Universal Personal Telecommunication (UPT) procedures and the related states of the UPT user. It describes the UPT procedures as seen from the UPT user or any other user in terms of possible interactions with the UPT service.

This ETR constitutes Part 7 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 Telecommunication (UPT); The service concept Part 3: Service aspects of charging, billing and accounting".

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

ETR 055-5:   "Universal Personal Telecommunication (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); The 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) gives a general description of the various Universal Personal Telecommunication (UPT) procedures and the related states of the UPT user. It describes the UPT procedures as seen from the UPT user or any other user in terms of possible interactions with the UPT service.

No restrictions in terms of network implementation or man-machine interface are included. Such requirements are given in Part 8 of this ETR.

2   Abbreviations

For the purposes of this ETR, the following abbreviations apply.

ARA   Access Registration Address

PIN   Personal Identification Number

PSTN   Public Switched Telephone Network

UPT   Universal Personal Telecommunication

3   UPT procedures

The following basic categories of UPT procedures have been identified:

1)   personal mobility procedures;

2)   UPT call handling procedures;

3)   UPT service profile management procedures;

4)   exceptional procedures.

Personal mobility procedures are UPT procedures relating to the personal, or discrete, mobility of the UPT user, used in order to ensure that the UPT user is able to receive or make UPT calls. The personal mobility procedures do not involve, however, actual making or receiving of calls. The personal mobility procedures are:

-      registration for incoming calls;

-      deregistration for incoming calls;

-      registration for outgoing calls;

-      deregistration for outgoing calls;

-      combined registration for incoming and outgoing calls;

-      combined deregistration for incoming and outgoing calls.

UPT call handling procedures are procedures relating to the actual making or receiving of UPT calls. The UPT call handling procedures are:

-      outgoing UPT call;

-      alerting for incoming UPT call;

-      answering of incoming UPT calls.

UPT service profile management procedures are procedures used by the UPT user in order to manage the UPT user's own accessible UPT service profile data. The UPT service profile management procedures are:

- profile interrogation;

- profile modification.

Exceptional procedures are procedures intended for the protection of the **privacy, integrity and security of third parties** (e.g. subscriber of terminal access). These procedures are intended to be carried out by third parties (i.e. non-UPT users) and thus identification and authentication are not required for any of them. The following exceptional procedures have been identified:

- reset of registrations for incoming UPT calls;

- blocking of registrations for incoming UPT calls;

- deblocking of registrations for incoming UPT calls;

- blocking of incoming UPT calls;

- deblocking of incoming UPT calls;

- reset of registration for outgoing UPT calls;

- suspension of registration for outgoing UPT calls.

    NOTE: The exceptional procedures are for further study.

In addition to, or included as a part of, these basic procedures, the following **elementary procedures** have been identified:

- access;

- identification;

- authentication;

- follow on.

In most UPT procedures, some information will have to be supplied by the UPT user, some of which is mandatory and some is optional. All optional information may be included in the UPT user's service profile as default parameters, or may be supplied on a case-by-case basis.

3.1   Elementary procedures

3.1.1   Access

An access procedure may be required before a UPT procedure can be carried out.

3.1.2   Identification

The identification procedure is used by the UPT user for self-identification to the UPT service provider.

The identification procedure may be required before, or as a part of, other UPT procedures.

For a UPT user to self-identify it is necessary to provide some identification information (e.g. UPT number).

3.1.3 Authentication

The authentication procedure is used by the UPT service provider to ensure that the calling party or answering party is the claimed UPT user, as the UPT subscriber associated with the UPT user may have to pay part of the charges for the UPT calls.

The authentication procedure may be required before, or as a part of, other UPT procedures.

The identification procedure may be required before, or as a part of, the authentication procedure.

For the authentication procedure, the mandatory information is the required authentication information.

The UPT user may have a choice between various authentication procedures. The authentication procedures are for further study.

3.1.4 Follow on

The follow on procedure is used by the UPT user to terminate a UPT procedure in order to follow it by a new UPT procedure without having to repeat the identification and authentication procedures.

For the follow on procedure, the mandatory information to be supplied by the UPT user is the UPT procedure type.

3.2 Personal mobility procedures

3.2.1 Core procedures

3.2.1.1 Registration for incoming calls (InCall registration)

Registration for incoming calls is a means for a UPT user to indicate where incoming calls shall be presented. Such a registration will override any previous registration.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

    - UPT procedure type;

- optional information, including:

    - whether or not subsequent answering of incoming UPT calls shall require authentication;

    - the duration of the registration, if needed. This may also be specified in terms of number of incoming UPT calls;

    - one or more Access Registration Addresses (ARAs), if needed (e.g. if the user chooses to specify a terminal access other than the one that the user is currently using, or for group registration). Each ARA can be either a complete access address or a pointer to one of a number of pre-selected access addresses for registrations for incoming UPT calls, stored in the UPT service profile. Each of the ARAs may be restricted to call answering and/or call alerting. If no address is specified, the address of the used terminal access is assumed;

    - an indication of the telecommunications services to which the registration applies, if needed. If no service is specified, the default service for registrations for incoming UPT calls, indicated in the UPT service profile, is assumed;

- an indication of any special conditions to be placed on the registration, if needed (e.g. a list of permitted callers).

The network will indicate to the UPT user if the registration is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could depend on the authentication procedure, UPT service profile restrictions, etc.

3.2.1.2 Deregistration for incoming calls (InCall deregistration)

A registration for incoming calls can be deregistered (cancelled) in the following ways:

1) the UPT user can explicitly deregister;

2) the UPT user can register to another terminal access, therefore causing the previous registration to be overridden;

3) the UPT service provider can specifically deregister the UPT user in order to terminate the registration;

4) other users, whether UPT users or non-UPT users, may deregister the UPT user to terminate the registration to a specific terminal access (this is for further study);

5) by timer or counter expiry.

When a UPT registration for incoming calls has been deregistered, except when overridden by a new registration, i.e. case 2), the presentation of incoming calls will go to an appropriate default terminal access defined in the UPT service profile. Examples of default terminal accesses are:

- a kind of mailbox;

- a paging network; and

- "no terminal access".

Unless "no terminal access" is specified, the UPT user will never be completely deregistered for incoming UPT calls.

The deregistration for incoming calls procedure is used in case 1), when the UPT user explicitly deregisters.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

  - UPT procedure type;

- optional information, including:

  - one or more ARAs, if needed (e.g. if the user chooses to specify another terminal access than the one he is currently using, or for group deregistration). Each ARA can be either a complete access address or a pointer to one of a number of pre-selected access addresses for registrations for incoming UPT calls, stored in the UPT service profile. The ARA could also indicate all terminals registered for incoming UPT calls.

    If no address is specified, the address of the used terminal is assumed;

  - an indication of the telecommunications services to which the deregistration applies, if needed. If no service is specified, all services for which the registration applied are assumed.

The network will indicate to the UPT user if the deregistration is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could depend on, e.g. the authentication procedure, ARA or service specified not in line with the registration, etc.

3.2.1.3 Registration for outgoing calls (OutCall registration)

A UPT user may register for outgoing calls to a particular terminal access to initiate a session. During the session, the UPT user will not have to self-authenticate any further (except for an optional Personal Identification Number ((PIN) code) in order to make subsequent outgoing calls. The terminal access registered to is personalised for the user and all outgoing calls from that terminal access will be charged to the UPT user's UPT number. Only one UPT user may register for outgoing calls to a specific terminal access at a time.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

    - UPT procedure type;

- optional information, including:

    - one or more ARAs, if needed (e.g. if the user chooses to specify another terminal access than the one that the user is currently using, or for group registration). Each ARA can be either a complete access address or a pointer to one of a number of pre-selected access addresses for registrations for outgoing UPT calls, stored in the UPT service profile. If no address is specified, the address of the used terminal access is assumed;

    - an indication of the telecommunications services to which the registration applies, if needed. If no service is specified, the default service for registrations for outgoing UPT calls, indicated in the UPT service profile, is assumed;

    - the duration of the registration, if needed. This may also be specified in terms of number of outgoing calls;

    - whether or not a PIN code is required at each call set-up;

    - whether any other UPT user shall be allowed to deregister the UPT user for outgoing calls from a terminal access by override.

The network will indicate to the UPT user if the registration is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could depend on the authentication procedure, UPT service profile restrictions, etc. Specifically, the registration will be rejected if another UPT user has already registered for outgoing calls to the terminal access specified (without permitting override).

3.2.1.4 Deregistration for outgoing calls (OutCall deregistration)

A registration for outgoing calls can be deregistered (cancelled) in the following ways:

1) the UPT user can explicitly deregister;

2) the UPT service provider can specifically deregister the UPT user to terminate the registration;

3) by timer or counter expiry;

4) as given by the UPT user's registration for outgoing calls, another UPT user may register for outgoing calls to the same terminal access, causing the current registration to be cancelled (by override);

5)   other users, whether UPT users or non-UPT users, may deregister the UPT user to terminate the registration to a specific terminal access (this is for further study).

When all registrations for outgoing UPT calls have been deregistered, the registration will fall back to the default terminal access for outgoing call registration defined in the UPT service profile. Such a default terminal access can also include "no terminal access". Unless "no terminal access" is specified, the UPT user will thus never be completely deregistered for outgoing UPT calls.

The deregistration for outgoing calls procedure is used in case 1), when the UPT user explicitly deregisters.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

-       mandatory information:

        -       UPT procedure type;

-       optional information, including:

        -       the ARA, if needed (i.e. if the user chooses to specify a terminal access other than the one which the user is currently using). Each ARA can be either a complete access address or a pointer to one of a number of pre-selected access addresses for registrations for outgoing UPT calls, stored in the UPT service profile. The ARA could also indicate all terminals registered for outgoing UPT calls. If no address is specified, the address of the used terminal access is assumed;

        -       an indication of the telecommunications services to which the deregistration applies, if needed. If no service is specified, all services to which the registration applied are assumed.

The network will indicate to the UPT user if the deregistration is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could depend on, e.g. the authentication procedure, ARA or service specified not in line with the registration, etc.

3.2.1.5   Combined registration for incoming and outgoing calls (AllCall registration)

This procedure is a combination of a registration for incoming calls and a registration for outgoing calls, however, restricted to the same terminal access. The procedure initiates a session during which the UPT user will not have to self-authenticate any further (except for an optional PIN code) in order to make outgoing calls or receive incoming calls. The effect of this procedure is as if an InCall registration and an OutCall registration had been carried out separately to the same terminal access.

This procedure can also be used to link the InCall and OutCall registrations to each other (and to the same terminal access). This linkage can only be changed by another linked AllCall registration procedure or by an AllCall deregistration procedure. Any previous InCall or linked AllCall registration of the UPT user will be replaced by the new registration.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

    - UPT procedure type;

- optional information, including:

    - whether the InCall and OutCall parts of the registration are linked (overriding any previous linked AllCall registration);

    - the duration of the registration, if needed. This may also be specified in terms of number of incoming and/or outgoing calls;

    - the ARA, if needed (i.e. if the user chooses to specify a terminal access other than the one which the user is currently using). The ARA can be either a complete access address or a pointer to one of a number of pre-selected access addresses for combined registration, stored in the UPT service profile. If no address is specified, the address of the used terminal access is assumed;

    - an indication of the telecommunications services to which the registration applies, if needed. If no service is specified, the default service for combined registration, indicated in the UPT service profile, is assumed;

    - an indication of any special conditions to be placed on the registration, if needed (e.g. a list of permitted callers);

    - whether a PIN code is required for each call set-up;

    - whether any other UPT user shall be allowed to deregister the UPT user for outgoing calls from a terminal access by override.

The network will indicate to the UPT user if the registration is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could depend on the authentication procedure, UPT service profile restrictions, etc. Specifically, the registration will be rejected if another UPT user has already registered for outgoing calls or AllCalls to the terminal. Specifically, the AllCall registration will be rejected if another UPT user has already registered for outgoing calls to the terminal access (without permitting override).

3.2.1.6   Combined deregistration for incoming and outgoing calls (AllCall deregistration)

A combined registration for incoming and outgoing calls can be deregistered (cancelled) in the following ways:

1)   the UPT user can specifically deregister;

2)   the UPT user can perform an AllCall registration to another terminal access, causing the previous registration to be overridden;

3)   the UPT service provider can specifically deregister the user to terminate the session;

4)   by timer or counter expiry.

When an AllCall registration has been deregistered, except when overridden by a new registration, i.e. case 2), the registration will fall back to the default terminal access for linked AllCall registration defined in the UPT service profile. Such a default address can also include "no terminal access". Unless "no terminal access" is specified, the UPT user will never be completely deregistered for incoming and outgoing UPT calls.

The combined deregistration for incoming and outgoing calls procedure is used in case 1), when the UPT user explicitly deregisters.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

    - UPT procedure type;

- optional information, including:

    - the ARA, if needed (i.e. if the user chooses to specify a terminal access other than the one which the user is currently using). The ARA can be either a complete access address or a pointer to one of a number of pre-selected access addresses for combined registration, stored in the UPT service profile. If no address is specified, the address of the used terminal access is assumed;

    - an indication of the telecommunications services to which the deregistration applies, if needed. If no service is specified, the services to which the registration applied are assumed.

The network will indicate to the UPT user if the deregistration is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could depend on, e.g. the authentication procedure, ARA or service specified not in line with the registration, etc.

3.2.2 Additional procedures

None identified.

3.3 UPT call handling procedures

3.3.1 Core procedure - outgoing UPT call.

This procedure may be used by a UPT user in order to make a single outgoing UPT call independent of any previous registrations by himself or any other UPT user for incoming and/or outgoing calls to the used terminal access. No personal mobility state of any UPT user is affected by this procedure. The outgoing UPT call is charged to the UPT number.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

    - UPT procedure type;

    - B-party address;

- no optional information is needed.

The network will indicate to the UPT user if the outgoing UPT call procedure is not accepted, and the procedure will be terminated. Any rejection could depend on the authentication procedure, UPT service profile restrictions, etc.

3.3.2 Additional procedures

3.3.2.1 Alerting for incoming UPT calls

This procedure is used by the UPT service for incoming calls to UPT users. It can only be carried out towards a UPT user who has previously has registered for incoming calls.

The network performs an alerting for incoming call on the terminal accesses given by the UPT user's registration for incoming calls. This may be one or several terminal accesses, also a paging network.

If the UPT user has a registration for incoming calls indicating "no terminal access", the calling user will receive an appropriate indication that the UPT user is not reachable for the moment. No charges shall be incurred to the calling user.

The procedure is terminated in one of the following ways:

1)   by explicit action from the calling party;

2)   by a successful answering of incoming UPT calls procedure;

3)   by timer expiry.

During this procedure, no information needs to be supplied by the UPT user.

3.3.2.2 Answering of incoming UPT calls

Having registered for incoming calls, this procedure is used by the UPT user to answer incoming UPT calls indicated to him by the alerting for incoming UPT calls procedure. When the answering of incoming UPT calls procedure is successfully terminated, call completion can proceed in the normal way.

When alerted by the alerting for incoming UPT calls procedure, the UPT user answers this alerting on a terminal of his choice, given by his registration for incoming calls. If the UPT user is registered for incoming calls on a paging network, then any terminal can be used.

The identification and authentication procedures may have to be successfully completed before, or as a part of, this procedure, if required.

During this procedure, the UPT user must supply the following information:

-       mandatory information:

    -       UPT procedure type;

-       no optional information is needed.

The network will indicate to the UPT user if the call answering is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could, e.g. depend on the authentication procedure.

3.3.2.3 Ongoing call redirection

This procedure is used by a UPT user to transfer an ongoing UPT call to another terminal access of his choice.

The first part of the procedure is that the UPT user indicates to the network that the call is to be transferred to another terminal access. The network then parks the call, waiting for the UPT user access from another terminal. The UPT user then moves to the new terminal access and indicates to the network that this is the terminal at which the call is to be resumed.

The identification and authentication procedures must be successfully completed as part of the choice of the new terminal access:

- mandatory information to be provided by the UPT user:

    - UPT procedure type;

- no optional information is needed.

3.4 UPT service profile management procedures

UPT service profile management procedures are procedures which in many cases may be rather complicated, and which most successfully may be implemented in an interactive way on advanced terminals. This should not preclude, however, the use of such procedures with a single command and response on simple terminals.

3.4.1 Core procedures

3.4.1.1 Profile interrogation

A UPT user uses the profile interrogation procedure to obtain information on the current status of the UPT user's own service profile.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

    - UPT procedure type;

- optional information, including:

    - information concerning the type of UPT service profile information that is requested. Such information could include information like telecommunications services subscribed to, default parameters, activated supplementary services, current registrations for incoming or outgoing calls, etc.

The network will respond with the wanted information to the UPT user if the information can be disclosed, and the procedure will be terminated. Any rejection could depend on the authentication procedure, UPT service profile restrictions, etc.

3.4.1.2 Profile modification

The profile modification procedure is a procedure by which the UPT user can change appropriate UPT service profile parameters.

The identification and authentication procedures must have been successfully completed before, or as a part of, this procedure.

During this procedure, the UPT user must supply the following information:

- mandatory information:

    - UPT procedure type;

- optional information, including:

    - information concerning the type of UPT service profile information that is wanted modified. Such information could concern activation or deactivation of supplementary services, change of various default parameters, etc.

    NOTE: It is assumed that more fundamental modifications, e.g. of services subscribed to, etc. are treated outside the scope of UPT as a part of intelligent network specifications, or otherwise.

The network will indicate to the UPT user if the modification is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could depend on the authentication procedure, UPT service profile restrictions, etc.

3.4.2 Additional procedures

None identified.

3.5 Exceptional procedures

NOTE: The exceptional procedures are for further study.

3.5.1 Core procedures

3.5.1.1 Reset of registrations for incoming UPT calls

Reset of registrations for incoming UPT calls is a means for third parties to explicitly deregister all UPT users which may have registered for incoming UPT calls to a terminal access. This procedure cancels all registrations for incoming UPT calls to a specific terminal access. No announcement is given to the deregistered UPT users.

No identification or authentication procedures are required in connection with this procedure.

During this procedure, the user must supply the following information:

- mandatory information:

    - UPT procedure type;

- no optional information is needed.

The address of the used terminal access will be assumed for the reset. Reset of a remote terminal is therefore not allowed.

In case a registration for incoming UPT calls to the terminal access is part of a group registration, the effect should be as if this group registration had been deregistered, i.e. all terminal accesses part of the group registration should be cancelled, and the registration for the UPT user in question should fall back to the default terminal accesses for incoming calls.

The network will indicate to the user if the reset is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could, e.g. occur when there is no registration for incoming calls to the used terminal access.

3.5.2 Additional procedures

3.5.2.1 Blocking of registrations for incoming UPT calls

The blocking of registrations for incoming UPT calls is a means for third parties to prohibit UPT users to register for incoming calls to a specific terminal access. When this procedure has been carried out, any attempts by UPT users to register for incoming UPT calls to the terminal access will be rejected.

No identification or authentication procedures are required in connection with this procedure.

During this procedure, the user must supply the following information:

- mandatory information:

    - UPT procedure type;

- no optional information is needed.

The address of the used terminal access is assumed for the blocking. Blocking of a remote terminal is therefore not allowed.

The network will indicate to the user if the blocking is accepted, or will give an appropriate announcement if not, and the procedure will be terminated.

3.5.2.2 Deblocking of registrations for incoming UPT calls

The deblocking of registrations for incoming UPT calls is a means for third parties to open a terminal access for subsequent registrations for incoming UPT calls. When this procedure has been carried out, any UPT user may register for incoming UPT calls to the terminal access.

No identification or authentication procedures are required in connection with this procedure.

During this procedure, the user must supply the following information:

- mandatory information:

    - UPT procedure type;

- no optional information is needed.

The address of the used terminal access is assumed for the deblocking. Deblocking of a remote terminal is therefore not allowed.

The network will indicate to the user if the deblocking is accepted, or will give an appropriate announcement if not, and the procedure will be terminated.

3.5.2.3 Blocking of incoming UPT calls

The blocking of incoming UPT calls is a means for third parties to block all incoming UPT calls to a specific terminal access. When this procedure has been carried out, any incoming UPT calls will be rejected, even if a successful registration for incoming calls has been carried out by a UPT user, and an announcement will be given to the calling users to indicate this. No announcements will be given to the UPT users, neither to those already registered, nor during subsequent registration attempts for incoming UPT calls.

No identification or authentication procedures are required in connection with this procedure.

During this procedure, the user must supply the following information:

- mandatory information:

    - UPT procedure type;

- no optional information is needed.

The address of the used terminal access is assumed for the blocking. Blocking of a remote terminal is therefore not allowed.

The network will indicate to the user if the blocking is accepted, or will give an appropriate announcement if not, and the procedure will be terminated.

3.5.2.4 Deblocking of incoming UPT calls

The deblocking of incoming UPT calls is a means for third parties to open a terminal access for subsequent incoming UPT calls. When this procedure has been carried out, any UPT user registered for incoming UPT calls to the terminal access may receive incoming UPT calls.

No identification or authentication procedures are required in connection with this procedure.

During this procedure, the user must supply the following information:

- mandatory information:

    - UPT procedure type;

- no optional information is needed.

The address of the used terminal access is assumed for the deblocking. Deblocking of a remote terminal is therefore not allowed.

The network will indicate to the user if the deblocking is accepted, or will give an appropriate announcement if not, and the procedure will be terminated.

3.5.2.5 Reset of registrations for outgoing UPT calls

The reset of registration for outgoing UPT calls is a means for third parties to explicitly deregister the UPT user who has registered for outgoing calls to a specific terminal access. No announcements will be given to the deregistered UPT user.

No identification or authentication procedures are required in connection with this procedure.

During this procedure, the user must supply the following information:

- mandatory information:

    - UPT procedure type;

- no optional information is needed.

The address of the used terminal access is assumed for the reset. Reset of a remote terminal is therefore not allowed.

In case the registration for outgoing UPT calls to the used terminal access was part of a group registration, only the used terminal access should be cancelled from the group.

The network will indicate to the user if the reset is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could, e.g. occur when there is no registration for outgoing calls to the used terminal access.

3.5.2.6 Suspension of registrations for outgoing UPT calls

The suspension of registration for outgoing UPT calls is a means for third parties to temporarily override a registration for outgoing UPT calls to a specific terminal access. When this procedure has been carried out, a normal outgoing call (charged to the terminal access, or otherwise, as appropriate) can be made. When the call is terminated, the registration for outgoing UPT calls is resumed.

No identification or authentication procedures are required in connection with this procedure.

During this procedure, the user must supply the following information:

- mandatory information:

    - UPT procedure type;

- no optional information is needed.

The address of the used terminal access is assumed for the suspension. Suspension of a remote terminal is therefore not allowed.

In case the registration for outgoing UPT calls to the used terminal access was part of a group registration, only the used terminal access should be temporarily cancelled from the group.

The network will indicate to the user if the suspension is accepted, or will give an appropriate announcement if not, and the procedure will be terminated. Any rejection could, e.g. occur when there is no registration for outgoing calls to the used terminal access.

4 UPT user states

4.1 Introduction

This Clause identifies the possible UPT user states in terms of **personal mobility** only, and its consequences on charging and possible actions. It should be noted that the states concern UPT **users**, not terminals.

4.2 General requirements on personal mobility states

The UPT user may carry out a set of actions. These may relate to any of the types of UPT procedures listed in Clause 3, and may be carried out by the reference UPT user (i.e. the UPT user concerned) or by another UPT user, and may concern the current terminal access or another terminal access. In principle, these actions may all influence the personal mobility state of the reference UPT user.

In terms of the personal mobility only, any UPT user may register/deregister for incoming UPT calls and for outgoing UPT calls. When registered for incoming calls, the registration may also require authentication of the UPT user when receiving UPT calls or not (simplified registration). In addition, a special case exists when the registrations for incoming and outgoing UPT calls are linked to the same terminal (combined registration for incoming and outgoing calls). Summarised, this leaves a total of seven possible personal mobility states:

state 0:   DETACHED   (deregistered for incoming calls, deregistered for outgoing calls);

state 1:   READY_TO_CALL   (deregistered for incoming calls, registered for outgoing calls);

state 2:   REACHABLE   (registered for incoming calls - further authentication required, deregistered for outgoing calls);

state 3:   READY_TO_ANSWER (registered for incoming calls - no further authentication required, deregistered for outgoing calls);

state 4:   ATTACHED   (registered for incoming calls - further authentication required, registered for outgoing calls);

state 5:   READY_FOR_ALL   (registered for incoming calls - no further authentication required, registered for outgoing calls);

state 6:   LINKED   (READY_FOR_ALL with linked registrations for incoming and outgoing calls).

> NOTE 1: When registered for outgoing calls, the UPT user may have the option of entering a PIN code before each outgoing call. This may, in principle, add a sub-state to each of the user states 1, 4, 5 and 6, but these are not listed as separate states.

> NOTE 2: The usefulness of having a simplified authentication procedure in connection with state 6 (LINKED), which is mainly intended to cover the Public Switched Telephone Network (PSTN) case, is for further study.

The following general requirements apply to the personal mobility states for a specific basic service:

-   procedures other than personal mobility procedures will not influence the personal mobility state. Specifically, a UPT user may in each personal mobility state, use a UPT specific procedure like outgoing UPT call to make an outgoing UPT call. A UPT user may also in each personal mobility state interrogate or modify the user's UPT service profile;

-   registration for incoming UPT calls and registration for outgoing UPT calls are completely independent actions, except when these are linked together by use of the link option of the AllCall registration procedure. To the linked AllCall registration procedure, more restrictive requirements apply, due to this linkage. The only way to modify or cancel a linked AllCall registration is by another linked AllCall registration procedure, an AllCall deregistration procedure or by an exceptional procedure;

-   a UPT user may not have more than one registration for incoming UPT calls at the same time. A new registration for incoming UPT calls will cancel the previous registration. This does not prevent, however, a UPT user within one InCall registration procedure defining a set of incoming call addresses, where the UPT user may search either simultaneously, or in sequence;

-   a UPT user may have more than one registration for outgoing UPT calls at the same time;

-   several UPT users may be registered for incoming UPT calls to the same terminal access simultaneously;

-   due to charging implications, more than one UPT user may not be registered for outgoing UPT calls to the same terminal access simultaneously;

-   the UPT service provider may explicitly deregister the UPT user in any personal mobility state;

-   for registrations for incoming calls, other users, whether UPT users or non-UPT users, may deregister a UPT user for incoming calls to a specific terminal access (this is for further study).

4.3   Description of state 0 (DETACHED)

In this state, the reference UPT user is completely detached from the UPT service and cannot receive incoming calls, nor can the reference UPT user make outgoing UPT calls without first using a specific UPT procedure requiring authentication. Consequently, the reference UPT user's associated UPT subscription will not be charged for anything without involving further UPT specific actions.

In this state, the UPT service entity cannot locate the UPT user, and any calling subscriber may receive an announcement to this effect:

- if, in this state, the reference UPT user attempts to register for incoming UPT calls or outgoing UPT calls to any terminal, this may be allowed;

- if, in this state, the reference UPT user attempts to deregister for incoming UPT calls or outgoing UPT calls to any terminal, this should be rejected, and an announcement should be given to the reference UPT user indicating that the UPT user is already deregistered.

Any actions of other UPT users do not affect the reference UPT user in this state.

4.4 Description of state 1 (READY_TO_CALL)

In this state, the reference UPT user has registered for outgoing UPT calls to a terminal so that the reference UPT user can make outgoing UPT calls **without** first using a specific UPT procedure requiring authentication, or optionally, if indicated in the registration procedure, to use a simplified authentication in the form of a PIN code. In this state, all outgoing UPT calls from the terminal will be charged to the UPT subscription associated with the reference UPT user according to the charging principles:

>   NOTE: From a technical point of view, it is not necessary to register for outgoing UPT calls in order to be able to make outgoing calls. The sole purpose of this state is to give the UPT user the possibility to avoid any specific UPT procedure (except for the optional PIN code), each time he wants to make an outgoing UPT call.

- if, in this state, the reference UPT user attempts to register for outgoing UPT calls to the same terminal access, this should be allowed, and the previous registration should be cancelled;

- if, in this state, another UPT user attempts to register for outgoing UPT calls to the same terminal access, this should be rejected (unless the optional override by other UPT users was allowed by the registration for outgoing calls), and an announcement should be given to the UPT user indicating that another UPT user has already registered for outgoing UPT calls to this terminal access. If the optional override by other UPT users is allowed, then the registration by the other UPT user should be accepted and the registration for the reference UPT user should be cancelled;

- if, in this state, the reference UPT user attempts to register for outgoing UPT calls to another terminal, this should be allowed, without influencing the previous registration;

- in this state, the reference UPT user may explicitly deregister for outgoing calls, on a terminal by terminal basis, or for all at once.

Any actions concerning registration/deregistration for incoming UPT calls to the same terminal do not influence the reference UPT user. Neither do any actions carried out by another UPT user concerning other terminals.

4.5 Description of state 2 (REACHABLE)

In this state, the reference UPT user has registered for incoming UPT calls to one or several terminal accesses so that he can receive incoming calls, but the reference UPT user will have to use the answering of incoming UPT calls procedure **requiring authentication**. The UPT subscription associated with the reference UPT user will be charged for incoming UPT calls according to the charging principles:

- if, in this state, the reference UPT user attempts to register for incoming UPT calls to the same terminal access, this should be allowed, and the previous registration should be cancelled;

- if, in this state, another UPT user attempts to register for incoming UPT calls to the same terminal access, this should be allowed and should not influence the reference UPT user;

- if, in this state, the reference UPT user attempts to register for incoming UPT calls to another terminal, this should be allowed, and the previous registration should be cancelled;

- in this state, the reference UPT user may explicitly deregister for incoming calls.

Any actions concerning registration/deregistration for outgoing UPT calls to the same terminal do not influence the reference UPT user. Neither do any actions carried out by another UPT user concerning other terminals.

4.6 Description of state 3 (READY_TO_ANSWER)

This state is identical to state 2 (REACHABLE), but the reference UPT user will **not** have to carry out any UPT specific procedures requiring authentication before the reference UPT user can receive incoming UPT calls. The UPT subscription associated with the reference UPT user will be charged for incoming UPT calls according to the charging principles.

4.7 Description of state 4 (ATTACHED)

In this state, the reference UPT user has registered for outgoing UPT calls to a terminal so that he can make outgoing UPT calls **without** any authentication procedure (or optionally, by using a simplified authentication, in the form of a PIN code). In this state, all outgoing UPT calls will be charged to the UPT subscription associated to the reference UPT user according to the charging principles.

In this state, the reference UPT user has also registered for incoming UPT calls to a terminal so that he can receive incoming calls, but the reference UPT user will have to use the answering of incoming UPT calls procedure **requiring authentication**. The UPT subscription associated with the reference UPT user will be charged for incoming UPT calls according to the charging principles.

The restrictions on this state are exactly the same as for state 1 concerning outgoing calls, and exactly the same as for state 2 concerning incoming calls.

The registration for incoming UPT calls and outgoing UPT calls may concern the same terminal or different terminals. This state applies to the UPT user, not to a terminal.

4.8 Description of state 5 (READY_FOR_ALL)

This state is identical to state 4 (ATTACHED), but the reference UPT user will **not** have to carry out any UPT specific procedures requiring authentication before he can receive incoming UPT calls. The UPT subscription associated with the reference UPT user will be charged for incoming and outgoing UPT calls according to the charging principles.

4.9 Description of state 6 (LINKED)

This state is identical to state 5 (READY_FOR_ALL), but with the restriction that the registrations for incoming and outgoing calls are linked together and to the same terminal access (linked AllCall registration), and is used in order to provide a user-friendly combined registration for incoming and outgoing calls (e.g. leaving the situation of a standard PSTN terminal). This implies the following differences from state 5 (READY_FOR_ALL):

- if, in this state, the reference UPT user attempts to register for incoming UPT calls to the same or another terminal access (using the InCall or general AllCall registration procedure), this should be rejected, and an announcement should be given to the reference UPT user indicating that this user has already performed a linked AllCall registration to a terminal;

- if, in this state, the reference UPT user attempts to perform a linked AllCall registration to another terminal, this should be allowed, and the previous linked AllCall registration (InCall part as well as OutCall part) should be cancelled;

- in this state, the UPT user may also explicitly perform a linked AllCall deregistration procedure. Exit from this state is only possible by explicit or implicit deregistration;

- override by other UPT users for OutCall or AllCall registrations is not allowed in this state.

History

Document history	
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