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Foreword

This European Telecommunication Standard (ETS) has been produced by the Special Mobile Group (SMG) Technical Committee (TC) of the European Telecommunications Standards Institute (ETSI).

This ETS describes the Call Barring (CB) supplementary services within the European digital cellular telecommunications system (Phase 2) and corresponds to GSM technical specification GSM 02.88 version 4.4.2.

The specification from which this ETS has been derived was originally based on CEPT documentation, hence the presentation of this ETS may not be entirely in accordance with the ETSI/PNE rules.

Reference is made within this ETS to GSM-TSs (NOTE).

NOTE: TC-SMG has produced documents which give the technical specifications for the implementation of the European digital cellular telecommunications system. Historically, these documents have been identified as GSM Technical Specifications (GSM-TSs). These TSs may have subsequently become I-ETSs (Phase 1), or ETSs (Phase 2), whilst others may become ETSI Technical Reports (ETRs). GSM-TSs are, for editorial reasons, still referred to in GSM ETSs.

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0 Call restriction supplementary services

0.1 Scope

This specification describes the supplementary services belonging to the group CALL RESTRICTION SUPPLEMENTARY SERVICES.

The general aspects - including definitions and recommended provision - of the description of the GSM supplementary services are given in specification GSM 02.04.

The Call Restriction supplementary services allow the possibility for a mobile subscriber to have barring of certain categories of outgoing or incoming calls at her access.

The group of Call Restriction Services includes two supplementary services:

- barring of outgoing calls;
- barring of incoming calls.

By use of subscription options the mobile subscriber can at provision time select a set of one or more barring programs to determine the categories of calls to be barred. The following categories are defined:

- all outgoing calls;
- outgoing international calls;
- outgoing international calls except those directed to the home PLMN country;
- all incoming calls;
- incoming calls when roaming outside the home PLMN country.

    NOTE 1: Each category (barring program) is handled as a single supplementary service.

    NOTE 2: The call barring program "incoming calls when roaming outside the home PLMN country" is only relevant if as a general rule the called mobile subscriber pays the charges for the forwarded part of the call from his home PLMN country to any other country.

The barring services can be offered to a mobile subscriber with a password option allowing the activation and deactivation by the subscriber. One password per mobile subscriber is supported by the network for all barring services. For the definition of the password, the description of its use and its management, see Specification GSM 02.04

0.2 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]   GSM 01.04 (ETR 100): "European digital cellular telecommunication system (Phase 2); Definitions, abbreviations and acronyms".

[2]   GSM 02.04 (ETS 300 503): "European digital cellular telecommunication system (Phase 2); General on supplementary services".

[3]   GSM 02.30 (ETS 300 511): "European digital cellular telecommunication system (Phase 2); Man-Machine Interface (MMI) of the Mobile Station (MS)".

[4]   GSM 02.82 (ETS 300 515): "European digital cellular telecommunication system (Phase 2); Call Forwarding (CF) supplementary services - Stage 1".

[5]   GSM 02.84 (ETS 300 517): "European digital cellular telecommunication system (Phase 2); MultiParty (MPTY) supplementary services - Stage 1".

0.3   Definitions and abbreviations

Abbreviations used in this specification are listed in GSM 01.04.

1 Barring of outgoing calls

1.1 Definition

This service makes it possible for a mobile subscriber to have barring of certain categories of outgoing calls according to a barring program which is selected from a set of one or more barring programs chosen at provision time and is valid for all outgoing calls, or just those associated with a specific basic service group.

The ability of the served mobile subscriber to receive calls and to set-up emergency calls remains unaffected.

1.2 General description

1.2.1 Description

The mobile subscriber may determine by subscription of a set of one or more unique barring programs what kind of outgoing calls shall be barred.

The following barring programs are defined:

1) Barring of all outgoing calls;
2) Barring of outgoing international calls;
3) Barring of outgoing international calls except those directed to the home PLMN country.

The PLMN will ensure that only one of the barring programs is active per basic service group. The activation of one specific barring program will override an already active one (i.e. the old one will be permanently deactivated).

Description of contents of barring programs:

Barring of all outgoing calls:

With this barring program there are no outgoing set-up possibilities, except emergency calls.

Barring of outgoing international calls:

Outgoing call set-up possibilities exist only to subscribers of the PLMN(s) and the fixed network(s) of the country where the mobile subscriber is presently located. So the present PLMN may be the home PLMN or a visited PLMN, respectively the fixed network may be that of the home PLMN country or that of a visited PLMN country.

> NOTE: This definition implies that mobile subscribers, subscribed to a PLMN in the country in which the served mobile subscriber roams, can be called irrespective where they roam. On the other hand, mobile subscribers, subscribed to any PLMN in another country than the one in which the served mobile subscriber roams, cannot be called even if they roam in the same PLMN area as the served mobile subscriber.

Barring of all outgoing international calls except those directed to the home PLMN country:

Outgoing call set-up possibilities exist only to subscribers of the PLMN(s) and the fixed network(s) of the country where the mobile subscriber is presently located or to mobile subscribers of the home PLMN country of the served mobile subscriber and to subscribers of the fixed network(s) in the home PLMN country. So the present PLMN may be the home PLMN or a visited PLMN, respectively the fixed network may be that of the home PLMN country or that of a visited PLMN country.

NOTE: This definition implies that mobile subscribers, subscribed to a PLMN in the country in which the served mobile subscriber roams or mobile subscribers subscribed to any PLMN in the same country as the served mobile subscriber home PLMN can be called irrespective where they roam. On the other hand, mobile subscribers, subscribed to any PLMN in another country than the one in which the served mobile subscriber roams and not belonging to the same country as the served mobile subscriber, cannot be called even if they roam in the same PLMN area as the served mobile subscriber or if they roam in the home PLMN country of the served mobile subscriber.

1.2.2   Applicability to telecommunication services

Barring of outgoing calls is applicable to all tele-communication services except emergency calls.

In addition, the barring of programs "Barring of outgoing international calls" and "Barring of all outgoing international calls except those directed to the HPLMN country" are not applicable to dedicated PAD and dedicated packet access.

1.2.3   Terminology

A barring program defines the subscribed barring condition and will determine the categories of calls to be barred.

1.3   Normal procedures with successful outcome

1.3.1   Provision

The supplementary service will be provided after pre-arrangement with the service provider. At provision subscription options should be selected by the served mobile subscriber.

The service can be offered with two subscription options.

The first subscription option is the definition of the barring condition by a set of one or more barring programs. This subscription option applies to all basic services subscribed. Only one value can be selected for the barring condition.

The second subscription option relates to the control of the call barring supplementary service(s). The subscriber may choose to have the control of the service(s) by use of a password, or may leave the control to the service provider. The value of this subscription option is valid collectively for all basic services and all call barring supplementary services to which the subscriber subscribes to.

Subscription options are summarized below:

Subscription option	Value
Barring condition	- barring program 1
	- barring program 2
	- barring program 3
	- barring program 1 and barring program 2
	- barring program 1 and barring program 3
	- barring program 2 and barring program 3
	- barring program 1 and barring program 2 and barring program 3

Control of barring services   - by subscriber using password
                                                        - by the service provider

> NOTE: A service provider needs not offer the option "control of barring services" to his subscribers. However, the support of the password facility is mandatory in the network for visiting subscribers.

1.3.2 Withdrawal

The service will be withdrawn at the subscribers's request or for administrative reasons.

1.3.3 Registration

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", the service provider has to register a password at provision time. Furthermore the served mobile subscriber can change the password at any time by an appropriate control procedure which is described in specification GSM 02.04.

1.3.4 Erasure

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", a password can be erased as described in GSM 02.04.

1.3.5 Activation

Activation takes place with an appropriate control procedure by the subscriber or by the service provider. The activation of barring of outgoing calls does not affect any current communication. Only one barring program may be activated at a time for one basic service group.. The activation of a barring program will deactivate an already active one.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", the supplementary service is activated if the subscriber provides the following information to the network:

- password;
- information as to whether all calls or calls of a specific basic service group should be barred.

> NOTE: If no Basic Service code is inserted by the user this is interpreted as the group "All Basic Services".

- selected barring program.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by service provider", the supplementary service cannot be activated by the subscriber. The activation has to be performed by the service provider.

The activation status attached to different basic service groups can be modified separately.

1.3.6 Deactivation

Deactivation takes place by means of an appropriate control procedure by the subscriber, or by the service provider, or finally by activation of a new barring program for the same basic service group.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", the supplementary service is deactivated if the subscriber provides the following information to the network:

- password
- information as to whether barring of all calls or calls of a specific basic service group should be deactivated.

NOTE: If no Basic Service code is inserted by the user this is interpreted as the group "All Basic Services".

- selected barring program (ie. the code for one specific Outgoing Barring program given in TS GSM 02.30) or selected barring supplementary service (ie. the code for Outgoing Barring Service or the code for All Barring Services given in TS GSM 02.30).

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by service provider", the supplementary service cannot be deactivated by the subscriber. The deactivation has to be performed by the service provider.

1.3.7 Invocation

The supplementary service is automatically invoked by the network upon a request for an outgoing call for a basic service not allowed by an active barring program for the corresponding basic service group. In the case of Short Message, only the Service Centre Address is relevant for the Call Barring service.

1.3.8 Normal operation with successful outcome

When barring of outgoing calls is active for a basic service group, each outgoing call set-up to a number not allowed by the barring program related to that basic service group will be refused by the network. In this case the served mobile subscriber will receive an indication that the call is not permitted and has been barred.

When barring of outgoing calls is active, the ability of the served mobile subscriber to receive calls is not affected.

When barring of outgoing calls is active, the ability of the served mobile subscriber to set-up emergency calls is not affected.

1.3.11 Interrogation

The subscriber shall by an appropriate control procedure be given the possibility to get a list of all basic service groups for which the given barring program is active (irrespective of whether it is operative or quiescent).

In the situation when a subscriber has activated BOICexHC and is roaming in a PLMN not supporting this supplementary service the local PLMN will return - as an answer to interrogation - the status "not supported".

This information may be translated by the mobile station to inform the user about the replacement of BOICexHC with BOIC.

If the served mobile subscriber wants to retrieve informations from the local PLMN about the status of BOIC, she has to repeat the interrogation procedure with the supplementary service code for BOIC.

1.4 Exceptional procedures or unsuccessful outcome

1.4.1 Provision

A GSM PLMN which does not support the barring program "Barring of Outgoing International Calls Except Those Directed to the Home PLMN Country", shall replace this program with "Barring of Outgoing International Calls".

1.4.2 Registration

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by service provider", an attempt to register a password will be denied and the served mobile subscriber should receive a notification.

When the served mobile subscriber at provision time has selected the subscription option "control of barring services by the subscriber using password", the handling of incorrect password entry is described in GSM 02.04.

1.4.4   Activation

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by the service provider", an attempt to activate the barring services will be denied and the served mobile subscriber should receive a notification.

When the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using a password", the handling of incorrect password entry is described in GSM 02.04.

The barring of outgoing calls activation request must specify the basic service group and the selected barring program. If the subscriber does not completely specify for which basic service group (individual basic service group or all basic service groups) barring of outgoing calls is to be activated and the selected barring program, the network will reject the activation request with appropriate cause.

>   NOTE 1:   If no basic service group code is inserted by the user this is interpreted as the group "All Basic Services".

>   NOTE 2:   The group "all basic services" in the context of barring of outgoing calls means all except emergency calls.

1.4.5   Deactivation

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by the service provider", an attempt to deactivate will be denied and the served mobile subscriber should receive a notification.

If the served mobile subscriber at provision time has selected the subscription option "control of the barring services by the subscriber using password", the handling of incorrect password entry is described in GSM 02.04.

The barring of outgoing calls deactivation request must specify the basic service group and the selected barring program (ie. the code for one specific Outgoing Barring program given in TS GSM 02.30) or the selected barring supplementary service (ie. the code for Outgoing Barring Service or the code for All Barring Services given in TS GSM 02.30). If the subscriber does not completely specify for which basic service group (individual basic service group or all basic service groups) barring of outgoing calls is to be deactivated and the selected barring program or supplementary service, the network will reject the deactivation request with appropriate cause.

>   NOTE: If no basic service group code is inserted by the user this is interpreted as the group "All Basic Services".

1.5   Alternate procedures

None identified.

1.6   Interactions with other supplementary services

1.6.82.1   Call forwarding unconditional

See GSM 02.82.

1.6.82.2   Call forwarding on mobile subscriber busy

See GSM 02.82.

1.6.82.3 Call forwarding on no reply

See GSM 02.82.

1.6.82.4 Call forwarding on mobile subscriber not reachable

See GSM 02.82.

1.6.83.1 Call waiting

The activation of barring of outgoing calls at the calling mobile subscriber's side does not affect any currently waiting calls originated by the calling mobile subscriber.

1.6.83.2 Call hold

If barring of outgoing calls is activated after a call hold is invoked on an outgoing call, the held call can be retrieved. Any new outgoing call to a number not allowed by the barring program is barred.

1.6.84 MultiParty service

See GSM 02.84.

1.6.85.1 Closed user group

Barring of outgoing calls takes precedence over the CUG restrictions. The activation of barring of outgoing calls during an outgoing call does not affect any current CUG call.

1.7 Interworking considerations

None identified.

2 Barring of incoming calls

2.1 Definition

This service makes it possible for a mobile subscriber to have barring of certain categories of incoming calls according to a barring program which is selected from a set of one or more barring programs chosen at provision time and is valid for all incoming calls, or just those associated with a specific basic service group.

The ability of the served mobile subscriber to set-up outgoing calls remains unaffected.

2.2 General description

2.2.1 Description

The mobile subscriber may determine by subscription of a set of one or more barring programs what kind of incoming calls shall be barred.

The following barring programs are defined:

1) Barring of all incoming calls;
2) Barring of incoming calls when roaming outside the home PLMN country.

The PLMN will ensure that only one of the barring programs is active per basic service group. The activation of one specific barring program will override an already active one (i.e. the old one will be permanently deactivated).

Description of contents of barring programs:

Barring of all incoming calls:

With this barring program there will be no set-up of incoming calls to the served subscriber.

Barring of incoming calls when roaming outside the home PLMN country:

With this barring program, calls which are terminated for the served subscriber will be barred if the subscriber is roaming outside the home PLMN country (ie. the program is active and operative). The ability to receive calls in the home PLMN country remains unaffected (ie. the program is active and quiescent).

2.2.2 Applicability to telecommunication services

Barring of incoming calls is applicable to all tele-communication services.

2.2.3 Terminology

A barring program defines the subscribed barring condition and will determine the categories of calls to be barred.

2.3 Normal procedures with successful outcome

2.3.1 Provision

The supplementary service will be provided after pre-arrangement with the service provider. At provision subscription options should be selected by the served mobile subscriber.

The service can be offered with two subscription options.

The first subscription option is the definition of the barring condition by a set of one or more barring programs. This subscription option applies to all basic services subscribed to. Only one value can be selected for the barring condition.

The second subscription option relates to the control of the call barring supplementary service(s). The subscriber may choose to have the control of the service(s) by use of a password, or may leave the control to the service provider. The value of this subscription option is valid collectively for all basic services and all call barring supplementary services to which the subscriber subscribes to.

Subscription options are summarized below:

Subscription option	Value
Barring condition	- barring program 1
	- barring program 2
	- barring program 1 and barring program 2
Control of barring services	- by subscriber using password
	- by the service provider

NOTE: A service provider needs not offer the option "control of barring services" to his subscribers. However, the support of the password facility is mandatory in the network for visiting subscribers.

2.3.2   Withdrawal

The service will be withdrawn at the subscribers's request or for administrative reasons.

2.3.3   Registration

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", the service provider has to register a password at provision time. Furthermore the served mobile subscriber can change the password at any time by an appropriate control procedure which is described in GSM 02.04.

2.3.4   Erasure

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", a password can be erased as described in GSM 02.04.

2.3.5   Activation

Activation takes place with an appropriate control procedure by the subscriber or by the service provider. The activation of barring of incoming calls does not affect any current communication. Only one barring program may be activated at a time for one basic service group. The activation of the barring program will deactivate an already active one.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", the supplementary service is activated if the subscriber provides the following information to the network:

- password;
- information as to whether all calls or calls of a specific basic service group should be barred.

NOTE: If no Basic Service code is inserted by the user this is interpreted as the group "All Basic Services".

- selected barring program.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by service provider", the supplementary service cannot be activated by the subscriber. The activation has to be performed by the service provider.

The activation status attached to different basic service groups can be modified separately.

2.3.6 Deactivation

Deactivation takes place by means of an appropriate control procedure by the subscriber, or by the service provider, or finally by activation of a new barring program for the same basic service group.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", the supplementary service is deactivated if the subscriber provides the following information to the network:

- password;
- information as to whether barring of all calls or calls of a specific basic service group should be deactivated.

    NOTE: If no Basic Service code is inserted by the user this is interpreted as the group "All Basic Services".

- selected barring program (ie. the code for one specific Incoming Barring program given in TS GSM 02.30) or selected barring supplementary service (ie. the code for Incoming Barring Service or the code for All Barring Services given in TS GSM 02.30).

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by service provider", the supplementary service cannot be deactivated by the subscriber. The deactivation has to be performed by the service provider.

2.3.7 Invocation

The supplementary service is automatically invoked by the network upon a request for an incoming call for a basic service not allowed by an active and operative barring program for the corresponding basic service group.

2.3.8 Normal operation with successful outcome

When barring of incoming calls is active for a basic service group, each incoming call set-up not allowed by the barring program related to that basic service group will be refused by the network. In this case the calling mobile subscriber will receive an indication that the call is not permitted and has been barred.

When barring of incoming calls is active, the ability of the served mobile subscriber to originate calls is not affected.

2.3.11 Interrogation

The subscriber shall by an appropriate control procedure be given the possibility to get a list of all basic service groups for which the given barring program is active (irrespective of whether it is operative or quiescent).

2.4 Exceptional procedures or unsuccessful outcome

2.4.2 Registration

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by service provider", an attempt to register a password will be denied and the served mobile subscriber should receive a notification.

When the served mobile subscriber at provision time has selected the subscription option "control of barring services by subscriber using password", the handling of incorrect password entry is as described in GSM 02.04.

2.4.4 Activation

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by the service provider", an attempt to activate the barring services will be denied and the served mobile subscriber should receive a notification.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by the subscriber using password", the handling of incorrect password entry is as described in GSM 02.04.

The barring of incoming calls activation request must specify the basic service group and the selected barring program. If the subscriber does not completely specify for which basic service (individual basic service group or all basic service groups) barring of incoming calls is to be activated and the selected barring program, the network will reject the activation request with appropriate cause.

> NOTE: If no Basic Service group code is inserted by the user this is interpreted as the group "All Basic Services".

2.4.5 Deactivation

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by the service provider", an attempt to deactivate will be denied and the served mobile subscriber should receive a notification.

If the served mobile subscriber at provision time has selected the subscription option "control of barring services by the subscriber using password", the handling of incorrect password entry is as described in GSM 02.04.

The barring of incoming calls deactivation request must specify the basic service group and the selected barring program (ie. the code for one specific Incoming Barring program given in TS GSM 02.30) or the selected barring supplementary service (ie. the code for Incoming Barring Service or the code for All Barring Services given in TS GSM 02.30). If the subscriber does not completely specify for which basic service group (individual basic service group or all basic service groups) barring of incoming calls is to be deactivated and the selected barring program or supplementary service, the network will reject the deactivation request with appropriate cause.

> NOTE: If no Basic Service group code is inserted by the user this is interpreted as the group "All Basic Services".

2.5 Alternate procedures

None identified.

2.6 Interactions with other supplementary services

2.6.82.1 Call forwarding unconditional

See GSM 02.82.

2.6.82.2 Call forwarding on mobile subscriber busy

See GSM 02.82.

2.6.82.3 Call forwarding on no reply

See GSM 02.82.

2.6.82.4 Call forwarding on mobile subscriber not reachable

See GSM 02.82.

2.6.83.2   Call hold

If barring of incoming calls is activated after a call hold is invoked on an incoming call, the held call can be retrieved. Any new incoming call not allowed by the barring program is barred.

2.6.84   MultiParty service

See GSM 02.84.

2.6.85.1   Closed user group

Barring of incoming calls takes precedence over the CUG restrictions. The activation of barring of incoming calls during an incoming call does not affect any current CUG call.

2.7   Interworking considerations

None identified.

History

Document history	
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