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│                          RELEASE NOTE                             │
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│                  Recommendation GSM 02.88                         │
│                                                                   │
│            Call Restriction Supplementary Services                │
│                                                                   │
│                                                                   │
│     Previously distributed version : 3.6.1 (Updated Release 1/90) │
│   New Released version February 92 : 3.6.1 (Release 92, Phase 1)  │
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1. Reason for changes

No changes since the previously distributed version.

Note that the descriptions of "Interactions with other Supplementary Services" where 'other Supplementary Services' are others than Call Forwarding (sections x.6.82.1-4) are for Further Study.

ETSI/GSM

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CHAPTER 0

CALL RESTRICTION SUPPLEMENTARY SERVICES

0   GENERAL.

This recommendation 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 recommendation 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 of a provisioned barring program. 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 Recommendation GSM 02.04

CHAPTER 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.

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

1.2 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 for one basic service. 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.

<u>Barring of all outgoing international calls except those directed to the home PLMN country:</u>

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 <u>Applicability to telecommunication services</u>

Barring of outgoing calls is applicable to all telecommunication services except emergency calls.

1.2.3 <u>Terminology</u>

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

1.3 <u>NORMAL PROCEDURES WITH SUCCESSFUL OUTCOME</u>

1.3.1 <u>Provision</u>

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 Recommendation 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 Rec. 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. 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 should be barred.
  Note: If no Basic Service code is inserted by the user this is interpreted as 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 services 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.

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 should be deactivated.
  Note: If no Basic Service code is inserted by the user this is interpreted as 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 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 that basic service.

1.3.8   Normal operation with successful outcome

When barring of outgoing calls is active for a basic service, each outgoing call set-up to a number not allowed by the barring program related to that basic service 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 services for which the given barring program is active.

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 Rec. 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 Rec. GSM 02.04

The barring of outgoing calls activation request must specify the basic service and the selected barring program. If the subscriber does not completely specify for which basic service (individual basic services or all basic services) 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 code is inserted by the user this is interpreted as All Basic Services.

Note 2:   "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 Rec. GSM 02.04.

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

Note: If no Basic Service code is inserted by the user this is interpreted as 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.

1.6.82.5 Call transfer

If barring of outgoing calls is activated and operative, the mobile subscriber is not allowed to invoke a call transfer to a number not allowed by the barring program.

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.

1.6.83.3 Completion of calls to busy subscribers

If barring of outgoing calls is activated before CCBS is requested:

- CCBS will only be permitted when outgoing call set-up is allowed by the barring program.

If CCBS is activated before barring of outgoing calls is activated :

- the CCBS procedure in progress will be completed,

  Note: The CCBS procedure is completed at the moment a recall has been made (irrespective of the outcome of this recall, so a new activation of CCBS is not permitted) or if any of the exceptional operations specified in GSM 02.83 occurs.

- a new activation of CCBS will only be permitted when outgoing call set-up is allowed by the barring program.

1.6.84.1 Three party service

If barring of outgoing calls is activated after a three party service is invoked, any outgoing call in progress within that three party service will not be barred. Any new outgoing call to a number not allowed by the barring program is barred.

1.6.84.2 Conference calling

If barring of outgoing calls is activated after a conference calling is invoked, any outgoing call in progress within that conference call will not be barred. Any new outgoing call to a number not allowed by the barring program is barred.

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.

1.6.87.1 User-to-user signalling

For calls originated by a mobile subscriber with barring of outgoing calls activated and subscribed to user-to-user signalling :

- any user-to-user information inserted into an outgoing call set-up to a number not allowed by the barring program is not transferred through the network.

Incoming calls to a mobile subscriber with barring of outgoing calls activated :

- the mobile subscriber can receive and send user-to-user information.

1.7 INTERWORKING CONSIDERATIONS

None identified

1.8   DYNAMIC DESCRIPTION OF THE SERVICE

Served mobile subscriber's side:

```
        served mobile
          subscriber           network

                     | call attempt      |
                     |------------------>|
                     |                   |
                     | rejection         |
                     |<------------------|
                     | (cause: barring)  |
```
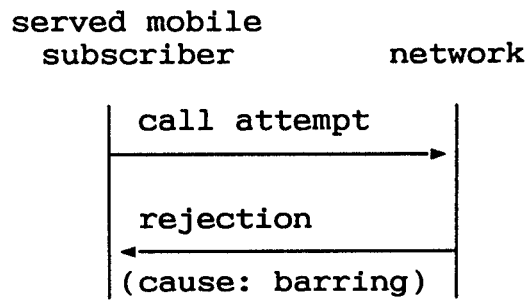
Figure 1.1/GSM 02.88:   Dynamic description of the barring of
                        an outgoing call

CHAPTER 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.

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

2.2 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 for one basic service. 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. The ability to receive calls in the home PLMN country remains unaffected.

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 Rec. 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", apassword can be erased as described in Rec. 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.The activation of the barring programm 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 should be barred
  Note: If no Basic Service code is inserted by the user
               this is interpreted as 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 services 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.

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 should be deactivated
  Note: If no Basic Service code is inserted by the user this is interpreted as 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 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 that basic service.

2.3.8   Normal operation with successful outcome

When barring of incoming calls is active for a basic service, each incoming call set-up not allowed by the barring program related to that basic service 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 services for which the given barring program is active.

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 Rec. 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 Rec. GSM 02.04.

The barring of incoming calls activation request must specify the basic service and the selected barring program. If the subscriber does not completely specify for which basic service (individual basic services or all basic services) 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 code is inserted by the user this is interpreted as 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 Rec. GSM 02.04.

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

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

2.5 ALTERNATE PROCEDURES

None identified.

2.6 INTERACTIONS WITH OTHER SUPPLEMENTARY SERVICES

2.6.81.5 Malicious call identification

If barring of incoming calls is activated, barred incoming calls will be registered and stored if the subscriber subscribed to the automatic invocation of malicious call identification (see GSM 02.81).

Note :   Allowed incoming calls will normally be registered and stored.

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.

2.6.83.3 Completion of calls to busy subscribers

If barring of incoming calls is activated at the called subscriber's side:

- a busy condition is never returned for effectively barred calls, therefore no interaction can occur.

If the calling mobile subscriber A activates CCBS and subsequently barring of incoming calls is activated:

- the CCBS procedure will be completed by the calling mobile subscriber.

2.6.84.1 Three party service

If barring of incoming calls is activated after a three party service is invoked, any incoming call in progress within that three party service will not be barred. Any new incoming call not allowed by the barring program is barred.

2.6.84.2 Conference calling

If barring of incoming calls is activated after a conference calling is invoked, any incoming call in progress within that conference call will not be barred. Any new incoming call not allowed by the barring program is barred.

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.

2.6.87.1 User-to-user signalling

For calls originated by a mobile subscriber with barring of incoming calls activated and subscribed to user-to-user signalling:

- the mobile subscriber can receive and send user-to-user information.

Calls originated by a subscriber who has subscribed to user-to-user signalling destinated to a mobile subscriber with barring of incoming calls activated:

- any user-to-user information inserted into an outgoing call set-up is not transferred to the called mobile subscriber if the barring program does not allow any incoming call

2.7 INTERWORKING CONSIDERATIONS

None identified

2.8 DYNAMIC DESCRIPTION OF THE SERVICE

The served mobile subscriber does not experience anything while an incoming call is being barred.