

ETSI TS 122 041 V3.3.1 (2001-04)

Technical Specification

**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
Operator Determined Barring (ODB)
(3GPP TS 22.041 version 3.3.1 Release 1999)**



Reference

RTS/TSGS-0122041UR2

Keywords

GSM, UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at <http://www.etsi.org/tb/status/>

If you find errors in the present document, send your comment to:
editor@etsi.fr

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2001.

All rights reserved.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by the ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under www.etsi.org/key.

Contents

Foreword	4
1 Scope	5
1.1 References	5
1.2 Definitions and abbreviations	5
2 Description	5
3 Applicability to Basic Services (BS)	6
4 Applicability to Supplementary Services (SS)	6
5 Normal procedure	7
5.1 Circuit Oriented Services	7
5.2 Void	9
6 Exceptional procedures	9
7 Alternate procedures	9
8 Interworking considerations	9
Annex A (informative): Change history	10

Foreword

This Technical Specification has been produced by the 3GPP.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document describes the network feature Operator Determined Barring (ODB).

This allows the network operator or service provider to regulate, by means of an exceptional procedure, access by the subscribers to Circuit services by the barring of certain categories of outgoing or incoming calls or of roaming. ODB shall take effect immediately and shall terminate ongoing calls and bar future calls.

The purpose of this network feature is to be able to limit the service provider's financial exposure to new subscribers, or to those who have not promptly paid their bills. It may only be applied to the service provider's own subscribers.

1.1 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] GSM 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".
- [2] 3GPP TS 22.088: " Call Barring (CB) supplementary services - Stage 1".
- [3] ITU-T Recommendation E.164 : "Numbering plan for the ISDN era".
- [4] 3GPP TS 22.082: " Call Forwarding (CF) supplementary services - Stage 1".
- [5] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications"

1.2 Definitions and abbreviations

In addition to the following definitions, abbreviations used in the present document are listed in GSM 01.04 [1] and TR 21.905 [5].

premium rate call: A telecommunications network, possibly but not necessarily a PLMN, may make available certain services, for which the tariff is comparable to, or may exceed, International Call rates. Examples of such premium rate services might be information and entertainment services. The exact definition of what constitutes a premium rate call is the responsibility of the VPLMN operator, possibly subject to inter-operator agreements.

2 Description

Application of Operator Determined Barring is controlled by the Service Provider, by administrative interaction with the HLR; this interface is not standardized.

With the exception of the barring of roaming, the HLR effects Operator Determined Barring in a similar manner to Service Provider - activated use of the Call Barring Supplementary service. Consequently, the VLR and MSC also execute the relevant Barring Conditions in similar manners. It is noted that there is no password usage. Roaming is barred by the HLR when the MS is in a PLMN other than the Home PLMN or not in the Home PLMN Country as applicable.

In addition to ensuring the barring integrity for future calls, the HLR, and consequently the MSC and VLR, shall provide means to terminate the calls of a user that have been established prior to the application of the ODB service and which are still ongoing.

3 Applicability to Basic Services (BS)

This network feature is applied to all Teleservices and Bearer Services except as noted below. The Operator Determined Barring feature shall not be applied to Teleservice-Emergency Call. It is not possible to apply Operator Determined Barring independently to individual Basic Services.

4 Applicability to Supplementary Services (SS)

Operator Determined Barring is a network feature and hence applies to Supplementary Service aspects of subscriptions.

Operator Determined Barring is applied independently from Supplementary Services. Nevertheless the following interactions occur:

Call Barring:

Calls will be denied if either Operator Determined Barring or Subscriber Controlled Barring determine that the call should be barred.

If a call is barred due to both Operator Determined Barring and Subscriber Controlled Barring, then the message or notification returned towards the caller will be the same as if the barring was due solely to Operator Determined Barring (see Section 5).

There is no other interaction.

Call Forwarding:

If a call forwarding programme is in contravention of an Operator Determined Barring Category, when the latter is activated, then the activation shall result in making call forwarding quiescent. If the subscriber attempts to activate a new call forwarding programme in contravention of an Operator Determined Barring Category, then the activation shall be denied, and the subscriber informed of the denial. There is no other interaction.

Closed User Group:

CUG restrictions must be met in addition to Operator Determined Barring restrictions for a call to proceed.

If a call is barred due to both Operator Determined Barring and CUG restrictions, then the message or notification returned towards the caller will be the same as if the barring was due solely to Operator Determined Barring (see Section 5).

There is no other interaction.

Call Transfer:

If the subscriber attempts to invoke a call transfer in contravention of an Operator Determined Barring category, then the invocation shall be denied, and the subscriber informed of the denial. There is no other interaction.

Multi-Party, Advice of Charge, CLIP, CLIR, COLP, COLR, Call Transfer, Call Wait, Call Hold:

There is no interaction.

Call Completion to Busy Subscriber, User to User Signalling, Malicious Call Identification, Mobile Access Hunting:

For further study.

The application of a Barring of Roaming category (see subclauses 3.1 and 3.2 below) will, if the Mobile Station is roaming appropriately, prevent the Mobile Subscriber from undertaking any form of Supplementary Service management.

5 Normal procedure

5.1 Circuit Oriented Services

As described in the following categories, the Service Provider may at any time activate this feature and this shall terminate any relevant calls in progress, including forwarded calls, and bar future calls covered by the barring category:

Independently, one of:

- 1.1 Barring outgoing calls;
- or: 1.2 Barring outgoing international calls;
- or: 1.3 Barring outgoing international calls except those directed to the home PLMN country;
- or: 1.4 Barring of outgoing calls when roaming outside the home PLMN country;
- or: 1.5 Barring of outgoing inter-zonal calls;
- or: 1.6 Barring of outgoing inter-zonal calls except those directed to the home PLMN country;
- or: 1.7 Barring of outgoing international calls except those directed to the home PLMN country AND barring of outgoing inter-zonal calls.

and/or one of:

- 2.1 Barring incoming calls;
- or: 2.2 Barring incoming calls when roaming outside the home PLMN country;
- or: 2.3 Barring incoming calls when roaming outside the zone of the home PLMN country.

and/or one of:

- 3.1 Barring of Roaming outside the home PLMN;
- or: 3.2 Barring of Roaming outside the home PLMN country.

and/or one or both of:

- 4.1 Barring of outgoing Premium Rate Calls (Information);
- 4.2 Barring of outgoing Premium Rate Calls (Entertainment).

and/or one or more of:

- 5.1 When registered in the HPLMN, Operator Specific Barring (Type 1);
- or: 5.2 When registered in the HPLMN, Operator Specific Barring (Type 2);
- or: 5.3 When registered in the HPLMN, Operator Specific Barring (Type 3);
- or: 5.4 When registered in the HPLMN, Operator Specific Barring (Type 4).

and/or

- 6.1 Barring of Supplementary Services Management, which prevents user control of any supplementary service (registration, erasure, activation, deactivation, user invocation, interrogation, password registration and mobile initiated USSD). However, this does not prevent invocation by other action - e.g. an existing call forwarding or barring state will remain.

and/or one of:

- 7.1 Barring of registration of any call forwarded-to number;
- or: 7.2 Barring of registration of any international call forwarded-to number;
- or: 7.3 Barring or registration of any international call forwarded-to number except to a number within the HPLMN country;
- or: 7.4 Barring of registration of any inter-zone call forwarded-to number.
- or: 7.5 Barring of registration of any inter-zone call forwarded-to number except to a number within the HPLMN country;

NOTE: The definition of an international call is based on the equivalent definition of an international call in TS 22.088 [2]. The principles for deciding whether a forwarded-to number is international or inter-zonal are the same as those given in TS 22.082 [4] to determine the interactions between call forwarding and call barring.

and/or one of:

- 8.1 Barring of invocation of call transfer;
- or: 8.2 Barring of invocation of call transfer where at least one of the two calls is a call charged to the served subscriber; i.e. the call is either an outgoing call or an incoming call when the served subscriber roams outside the HPLMN;
- or: 8.3 Barring of invocation of call transfer where at least one of the two calls is a call charged to the served subscriber at international rates, i.e. the call is either an outgoing international call or an incoming call when the served subscriber roams outside the HPLMN country;
- or: 8.4 Barring of invocation of call transfer where at least one of the two calls is a call charged to the served subscriber at inter-zonal rates, i.e. the call is either an outgoing inter-zonal call or an incoming call when the served subscriber roams to a VPLMN in a different zone from the HPLMN.

and/or:

- 9 Barring of invocation of call transfer where both calls are calls charged to the served subscriber, i.e. both calls are either outgoing calls or incoming calls when the served subscriber roams outside the HPLMN;

and/or:

- 10 Barring of further invocation of call transfer if there is already one ongoing transferred call for the served subscriber in the serving MSC/VLR.

"User invocation", as it relates to ODB, consists of the following action:

- invocation of the call hold supplementary service.

"Zone" is based on the first digit of their international dialling code as defined in ITU-T Recommendation E.164 [3].

NOTE: For the purposes of this TS, zone 3 and zone 4 are treated as one zone.

NOTE: If control of Supplementary Services Management is barred, then the control of call forward will be barred as a consequence, so explicit barring of call forward activation is not necessary.

If a mobile subscriber attempts to use a mobile initiated service which is barred as described above (categories 1, 4, 5, 6, 7, 8, 9, and 10), an appropriate message shall be returned to the Mobile Station or alternatively (categories 1, 4, and 5), if located in the HPLMN, the mobile subscriber can be automatically connected to a destination address determined by the HPLMN operator. It is necessary for the message to indicate that the barring is due to Operator Determined Barring. It is not necessary to indicate the categories which are barred. For ongoing, or transferred calls, that are terminated due to ODB, the network operator may give an appropriate indication to the barred party.

A notification (announcement or ITU-T#7 cause value) may be returned to callers attempting to call a mobile subscriber who is appropriately barred incoming calls. It is not necessary to indicate to the called mobile station that an incoming call has been barred.

Only the HPLMN Operator can activate, change or deactivate application of this network feature.

In order to provide this feature securely when a subscriber roams to another network, the visited network needs to support the feature to ensure that the roaming subscriber cannot use a service which has been barred to him.

5.2 Void

6 Exceptional procedures

If a VPLMN does not support an operator determined barring category which an HPLMN requests it to apply, the VPLMN shall notify the HPLMN. The HPLMN may then request the VPLMN to apply a substitute operator determined barring category, or take any other action required by the HPLMN operator.

7 Alternate procedures

None identified.

8 Interworking considerations

None identified.

Annex A (informative): Change history

Change history											
TSG SA#	SA Doc.	SA1 Doc	Spec	CR	Rev	Rel	Cat	Subject/Comment	Old	New	WI
Jun 1999			GSM 02.41					Transferred to 3GPP SA1	7.0.0		
SA#04			22.041					Transferred to 3GPP SA1		3.0.0	
SP-05	SP-99479	S1-99616	22.041	001		R99	D	Editorial changes for alignment	3.0.0	3.1.0	
SP-05	SP-99441	S1-99850	22.041	002		R99	B	Addition of explicit requirements for Packet Oriented Services	3.0.0	3.1.0	
SP-10	SP-000532	S1-000852	22.041	003		R99	F	Operator Determined Barring of Packet Oriented Services	3.1.0	3.2.0	
SP-11	SP-010041	S1-010036	22.041	005		R99	F	Remove ODB for Packet Oriented Services from Release 99	3.2.0	3.3.0	
SP-11	SP-010042	S1-010173	22.041	007		R99	F	CR on Operator Determined Barring – Zonal Barring to 3GPP TSG SA WG1	3.2.0	3.3.0	
			22.041			R99	D	Change of history box from CR DB error in entry for CR 007	3.3.0	3.3.1	

History

Document history		
V3.1.0	January 2000	Publication
V3.2.0	January 2001	Publication
V3.3.1	April 2001	Publication