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Technical Specification

**GEO-Mobile Radio Interface Specifications;
Part 2: Service specifications;
Sub-part 7: Operator Determined Barring (ODB);
GMR-2 02.041**



Reference

DTS/SES-002-02041

KeywordsCB, GMR, GSM, GSO, interface, MES, mobile,
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IPRs:

Project	Company	Title	Country of Origin	Patent n°	Countries Applicable
TS 101 377 V1.1.1	Digital Voice Systems Inc		US	US 5,715,365	US
TS 101 377 V1.1.1	Digital Voice Systems Inc		US	US 5,754,974	US
TS 101 377 V1.1.1	Digital Voice Systems Inc		US	US 5,226,084	US
TS 101 377 V1.1.1	Digital Voice Systems Inc		US	US 5,701,390	US
TS 101 377 V1.1.1	Digital Voice Systems Inc		US	US 5,826,222	US

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Project	Company	Title	Country of Origin	Patent n°	Countries Applicable
TS 101 377 V1.1.1	Ericsson Mobile Communication	Improvements in, or in relation to, equalisers	GB	GB 2 215 567	GB
TS 101 377 V1.1.1	Ericsson Mobile Communication	Power Booster	GB	GB 2 251 768	GB
TS 101 377 V1.1.1	Ericsson Mobile Communication	Receiver Gain	GB	GB 2 233 846	GB
TS 101 377 V1.1.1	Ericsson Mobile Communication	Transmitter Power Control for Radio Telephone System	GB	GB 2 233 517	GB

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Project	Company	Title	Country of Origin	Patent n°	Countries Applicable
TS 101 377 V1.1.1	Hughes Network Systems		US	Pending	US

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Project	Company	Title	Country of Origin	Patent n°	Countries Applicable
TS 101 377 V1.1.1	Lockheed Martin Global Telecommunic. Inc	2.4-to-3 KBPS Rate Adaptation Apparatus for Use in Narrowband Data and Facsimile Communication Systems	US	US 6,108,348	US
TS 101 377 V1.1.1	Lockheed Martin Global Telecommunic. Inc	Cellular Spacecraft TDMA Communications System with Call Interrupt Coding System for Maximizing Traffic Throughput Cellular Spacecraft TDMA Communications System with Call Interrupt Coding System for Maximizing Traffic Throughput	US	US 5,717,686	US
TS 101 377 V1.1.1	Lockheed Martin Global Telecommunic. Inc	Enhanced Access Burst for Random Access Channels in TDMA Mobile Satellite System	US	US 5,875,182	
TS 101 377 V1.1.1	Lockheed Martin Global Telecommunic. Inc	Spacecraft Cellular Communication System	US	US 5,974,314	US
TS 101 377 V1.1.1	Lockheed Martin Global Telecommunic. Inc	Spacecraft Cellular Communication System	US	US 5,974,315	US
TS 101 377 V1.1.1	Lockheed Martin Global Telecommunic. Inc	Spacecraft Cellular Communication System with Mutual Offset High-argin Forward Control Signals	US	US 6,072,985	US
TS 101 377 V1.1.1	Lockheed Martin Global Telecommunic. Inc	Spacecraft Cellular Communication System with Spot Beam Pairing for Reduced Updates	US	US 6,118,998	US

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Satellite Earth Stations and Systems (SES).

The present document is part 2, sub-part 7 of a multi-part deliverable covering Geo-Mobile Radio Interface Specification, as identified below:

Part 1: "General specifications";

Part 2: "Service specifications":

Sub-part 1: "Teleservices supported by a GMR-2 Public Satellite Mobile Network (PSMN); GMR-2 02.003";

Sub-part 2: "General on Supplementary Services; GMR-2 02.004";

Sub-part 3: "Security Aspects; GMR-2 02.009";

Sub-part 4: "Call Waiting (CW) and Call Hold (HOLD) Supplementary Services - Stage 1; GMR-2 02.083";

Sub-part 5: "Multiparty (MPTY) Supplementary Services; GMR-2 02.084";

Sub-part 6: "Service Accessibility; GMR-2 02.001";

Sub-part 7: "Operator Determined Barring (ODB); GMR-2 02.041";

Sub-part 8: "Call Barring Supplementary Services; GMR-2 02.088";

Sub-part 9: "Bearer Services (BS) supported by a GMR-2 Public Satellite Mobile Network (PSMN); GMR-2 02.002".

Part 3: "Network specifications";

Part 4: "Radio interface protocol specifications";

Part 5: "Radio interface physical layer specifications";

Part 6: "Speech coding specifications".

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Version 1.m.n

where:

- the third digit (n) is incremented when editorial only changes have been incorporated in the specification;
- the second digit (m) is incremented for all other types of changes, i.e. technical enhancements, corrections, updates, etc.

Introduction

GMR stands for GEO (Geostationary Earth Orbit) Mobile Radio interface, which is used for mobile satellite services (MSS) utilizing geostationary satellite(s). GMR is derived from the terrestrial digital cellular standard GSM and supports access to GSM core networks.

Due to the differences between terrestrial and satellite channels, some modifications to the GSM standard are necessary. Some GSM specifications are directly applicable, whereas others are applicable with modifications. Similarly, some GSM specifications do not apply, while some GMR specifications have no corresponding GSM specification.

Since GMR is derived from GSM, the organization of the GMR specifications closely follows that of GSM. The GMR numbers have been designed to correspond to the GSM numbering system. All GMR specifications are allocated a unique GMR number as follows:

GMR-n xx.zyy

where :

- xx.0yy ($z = 0$) is used for GMR specifications that have a corresponding GSM specification. In this case, the numbers xx and yy correspond to the GSM numbering scheme.
- xx.2yy ($z = 2$) is used for GMR specifications that do not correspond to a GSM specification. In this case, only the number xx corresponds to the GSM numbering scheme and the number yy is allocated by GMR.
- n denotes the first ($n = 1$) or second ($n = 2$) family of GMR specifications.

A GMR system is defined by the combination of a family of GMR specifications and GSM specifications as follows:

- If a GMR specification exists it takes precedence over the corresponding GSM specification (if any). This precedence rule applies to any references in the corresponding GSM specifications.

NOTE: Any references to GSM specifications within the GMR specifications are not subject to this precedence rule. For example, a GMR specification may contain specific references to the corresponding GSM specification.

- If a GMR specification does not exist the corresponding GSM specification may or may not apply. The applicability of the GSM specifications are defined in GMR-n 01.201.

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 GSM services, by the barring of certain categories of outgoing or incoming 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.

2 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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] GMR-2 01.004 (ETSI TS 101 377-1-1): "GEO-Mobile Radio Interface Specifications; Part 1: General specifications; Sub-part 1: Abbreviations and acronyms; GMR-2 01.004".

3 Definitions

For the purposes of the present document, the terms and definitions given in GMR-2 01.004 [1] and following apply:

premium rate call: a telecommunications network, possibly but not necessarily a PSMN, 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 VPSMN operator, possibly subject to inter-operator agreements.

4 General description

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

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.

5 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.

6 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 clause 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 clause 5);
- 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.

7 Normal procedure

The Service Provider may at any time activate this feature as described in the following categories:

Independently:

- 1) barring outgoing calls;

and/or:

- 2) barring incoming calls;

and/or one or both of:

- 3a) barring of outgoing Premium Rate Calls (information);
- 3b) barring of outgoing Premium Rate Calls (entertainment);

and/or one or more of:

- 4a) when registered in the HPSMN, Operator Specific Barring (type 1);
- 4b) when registered in the HPSMN, Operator Specific Barring (type 2);
- 4c) when registered in the HPSMN, Operator Specific Barring (type 3);
- 4d) when registered in the HPSMN, Operator Specific Barring (type 4).

and/or:

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

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

- invocation of the call hold supplementary service.

If a mobile subscriber attempts to use a mobile initiated service which is barred as described above (categories 1, 3, 4 and 5), an appropriate message shall be returned to the Mobile Earth Station, or alternatively (categories 1, 3, and 4), if located in the HPSMN, the mobile subscriber can be automatically connected to a destination address determined by the HPSMN 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.

A notification (announcement or CCITT#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 HPSMN Operator can activate, change or deactivate application of this network feature.

8 Exceptional procedures

None identified.

9 Alternate procedures

None identified.

10 Interworking considerations

None identified.

History

Document history		
V1.1.1	March 2001	Publication