Technical Specification Group Services and System Aspects Meeting #5, Kyongju, Korea, 11-13 October 1999

TSGS#5(99)441

Source:	**TSG S1**
Title:	**Collection of CRs related to GPRS Barring and Notification of Server IP address**
Document for:	**Approval**
Agenda Item:	**5.1.3**

3GPP TSG-S1 meeting #5 ***Document*** ***TSGS1#5(99) 841***

Munich, Germany, 29 Sep – 3Oct 1999

3G CHANGE REQUEST

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22.060	**CR**	**002**	Current Version:	3.0.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG SA#5 *list TSG meeting no. here ↑*

for approval [X]
for information [ ]

(only one box should be marked with an X)

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [X] UTRAN [X] Core Network [X]

Source: NTT DoCoMo **Date:** Oct 1st, 1999

Subject: The function that gives the notification of the server IP address from the GPRS network to the subscriber.

3G Work item: GPRS

Category: *(only one category shall be marked with an X)*

F	Correction	[ ]
A	Corresponds to a correction in a 2G specification	[ ]
B	Addition of feature	[X]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Reason for change: The function is required that notifies the server IP address from the GPRS network to the subscriber, when the subscriber activates.

Clauses affected: 10.1

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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10 Network interworking

Network interworking is required whenever a PLMN and a non-PLMN are involved in the execution of a GPRS Service request.
In general the mobile user of a GPRS network will receive and experience all the services provided by an external data network. In this case the external data network refers to the network that the GPRS PLMN interworks with as determined by the network operator. With this in mind it can be said that a user :-

1) will require a universal identity(ies) of the form compatible with the interworked with network(s);

2) and experience access to and provision of all services as offered by the interworked with networks (some reduction of capability may result from unavoidable restrictions due to the complexity of implementation).

10.1 Interworking with other data networks and other PLMNs

GPRS shall provide means to interwork with external data networks. The GPRS operator may provide an appropriate address to the external data network for the subscriber as part of the GPRS subscription. That address can be either dynamic (e.g. the user's IP address is allocated from a pool of unused IP addresses every time the subscriber activates the access to an IP network) or static (e.g. a certain IP address is permanently allocated to a particular subscriber). In addition, the GPRS network shall be able to notify the server IP address (e.g. the gateway IP address) to the subscriber, when the subscriber activates. When connected with some external data networks, the routeing protocols of these networks may limit the data network addresses that can be allocated. For example, when interworking with IP networks, the IP address for the GPRS subscriber shall belong to that GPRS operator's IP subnetwork that allocates the address. In the case of a simple point to point connection, a GPRS subscriber need not have an associated network address.
The type of interworking between a PLMN and data networks is determined by the network operator.
Interworking with the following types of data networks shall be defined:

- X.25 networks; (via X.75 or X.75' interfaces). Note: In the US, X.75' interface is used for interworking with BOC's data networks for intra-LATA packet data calls.

- IP networks;

other PLMNs, directly or via a transit network;

- other fixed networks (e.g. PSTN, ISDN);

The MS should interwork with the X.25 network using standardized X.3, X.28 and X.29 mechanisms for asynchronous access and X.25 mechanisms for synchronous access.

TSG-SA Working Group 1 (Services) meeting #5
Munich, Germany, 27-01 09-10 1999

Document S1#5 99802

3G CHANGE REQUEST

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22.060 **CR** **003** Current Version: 3.0.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG SA#5 *list TSG meeting no. here ↑*

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Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [ ] UTRAN [ ] Core Network [X]

Source: BT Cellnet **Date:**

Subject: Introduction of Barring for GPRS.

3G Work item: 3TS/SA-0122060

Category: *(only one category shall be marked with an X)*

F	Correction	[ ]
A	Corresponds to a correction in a 2G specification	[ ]
B	Addition of feature	[X]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Reason for change: GPRS does not allow different GPRS barring scenarios.

Clauses affected: 2, & New clause 11.

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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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, 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.
- For this Release 1999 document, references to GSM documents are for Release 1999 versions (version 8.x.y).

[1] GSM 02.01: "Digital cellular telecommunications system (Phase 2+); Principles of telecommunication services supported by a GSM Public Land Mobile Network (PLMN)".

[2] GSM 04.02: "Digital cellular telecommunications system (Phase 2+); GSM Public Land Mobile Network (PLMN) access reference configuration".

[3] ITU-T Recommendation X.25: "Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".

[4] ISO 8208: "Information processing systems - data communications - X.25 packet level protocol for data terminal equipment".

[5] ISO 8348: "Information processing systems - data communications - network service definition".

[6] ISO 8473: "Information technology - protocol for providing the connectionless mode network service".

[7] ISO 8878: "Information processing systems - data communications - use of X.25 to provide the OSI connection-mode network service".

[8] Internet STD 5:RFC 791: Internet protocol, RFC 950: "Internet standard subnetting procedure", RFC 919: "Broadcasting internet datagrams", RFC 922: "Broadcasting internet datagrams in the presence of subnets", RFC 792: "Internet control message protocol", RFC 1112: "Host extensions for IP multicasting" RFC 1122:" Requirements for Internet hosts - communication layers". RFC 1920:" Internet official protocol standards", RFC 1458: "Requirements for multicast protocols", RFC 1301: "Multicast transport protocol".

[9] ITU-T Recommendation X.3: "Packet Assembly/Disassembly facility (PAD) in a public data network".

[10] ITU-T Recommendation X.28: "DTE/DCE interface for a start-stop mode Data Terminal Equipment accessing the Packet Assembly/Disassembly facility (PAD) in a public data network situated in the same country".
X.28 Add. 1 (7/94) Addendum 1 to Recommendation X.28 to enable MAP support in accordance with Recommendation X.8.

[11] ITU-T Recommendation X.29: "Procedures for the exchange of control information and user data between a Packet Assembly/Disassembly (PAD) facility and a packet mode DTE or another PAD".

[12] ITU-T Recommendation X.75: "Packet-switched signalling system between public networks providing data transmission services".

[14] ITU-T Recommendation X.121: "International numbering plan for public data networks".

[15] ITU-T Recommendation X.136: "Accuracy and dependability performance values for public data networks when providing international packet-switched services".

[16] ITU-T Recommendation X.137: "Availability performance values for public data networks when providing international packet-switched services".

[17] TS 22.068 (ETS 300 925): " Voice Group Call Service (VGCS) - Stage 1".

[18] GSM 02.06 (ETS 300 919): "Digital cellular telecommunications system; Types of Mobile Stations (MS)".

[19] TS22.004 (ETS 300 918): " General on supplementary services".

[20] TS22.030 (ETS 300 907): " Man-Machine Interface (MMI) of the Mobile Station (MS)".

[21] GSM 02.17 (ETS 300 922): "Digital cellular telecommunications system; Subscriber Identity Modules (SIM) Functional characteristics".

[22] TS23.068 (ETS 300 933): " Voice Group Call Service (VGCS) - Stage 2".

[23] TS24.068 (ETS 300 948): " Group Call Control (GCC) protocol".

[24] TR 22.905: "Vocabulary for 3GPP Specifications"

[25] TS 22.041: "Operator Determined Barring (ODB)"

10.4 Interworking for subscriber roaming

Interworking between different GPRS PLMNs is required in order to support subscriber roaming.
It shall be possible for the VPLMN to provide access to the external data network when the external non-GSM data network address is dynamically assigned by the VPLMN.

11 GPRS Operator Determined Barring

GPRS subscribers can request packet oriented services from access points within the HPLMN, or from access points within another GPRS enabled PLMN. Similarly, when roaming, a subscriber may request to be connected to an access point within the HPLMN which requires all of the packets to be sent over an international link, which may attract a higher charge from Service Providers. Therefore, similarly to circuit switched GSM, barring capability is required.
The specific requirements for ODB of GPRS can be found in 3G TS 22.041 (Operator Determined Barring) [25].

TSG-SA Working Group 1 meeting #5
Munich, Germany, 27-28 Sep 1999

TSG S1 ***(99)850***
Agenda: 6.2.1

3G CHANGE REQUEST

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22.041 **CR** **001** Current Version: 3.0.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG SA#5 *list TSG meeting no. here ↑*

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Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [ ] UTRAN [ ] Core Network [ ]

Source: BT Cellnet **Date:**

Subject: Addition of explicit requirements for Packet Oriented Services

3G Work item: 3TS/SA-0122041

Category: *(only one category shall be marked with an X)*

F	Correction	
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	X
C	Functional modification of feature	
D	Editorial modification	

Reason for change: The introduction of Packet Oriented Services requires the ability for ODB of these services, which are different from ODB cases for Circuit Oriented Services.

Clauses affected: 5

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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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 (both Circuit and Packet Oriented), by the barring of certain categories of outgoing or incoming calls/Packet Oriented Services -or of roaming. ODB shall take effect immediately and shall terminate ongoing calls/Packet Oriented Services and bar future calls/Packet Oriented Services.
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.

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:

5.2 Packet Oriented Services

Packet Oriented Services, particularly data services, are different in nature to Circuit Oriented Services, and therefore have different requirements for Operator Determined Barring.
As described in the following categories, the Service Provider may at any time activate this feature and this shall terminate any relevant services in progress, and bar future requests for service covered by the barring category:

- It shall be possible to bar subscribers completely from the Packet Oriented Services.
- It shall be possible to bar a subscriber from requesting Packet Oriented Services from access points that are outside the HPLMN whilst the subscriber is in the HPLMN.
- It shall be possible to bar a subscriber from requesting Packet Oriented Services from access points that are within the HPLMN whilst the subscriber is roaming in a VPLMN.
- It shall be possible to bar a subscriber from requesting Packet Oriented Services from access points that are within the roamed to VPLMN.
- Whilst roaming in a VPLMN, it shall be possible to bar a subscriber from requesting Packet Oriented Services from access points that are neither in the HPLMN nor the roamed to VPLMN.