

**3GPP TSG CN Plenary  
Meeting #10, Bangkok, Thailand  
6<sup>th</sup> – 8<sup>th</sup> December 2000**

**Tdoc NP-000649**

**Source:** TSG\_CN WG 4  
**Title:** CRs to Rel-4 Work Item ASCI  
**Agenda item:** 8.19  
**Document for:** APPROVAL

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**Introduction:**

This document contains 3 CR on Rel-4 Work Item ASCI, that have been agreed by TSG\_CN WG4, and is forwarded to TSG\_CN Plenary meeting #10 for approval.

SMG#	TDoc	SPEC	CR	RE	PHAS	VERS	SUBJECT	CAT
CN10	N4-000934	23.067	003		Rel-4	3.1.0	Correction of abbreviations	D
CN10	N4-001107	23.067	005	1	Rel-4	3.1.0	MS strategy in case of discrepancy of priority in MT	C
CN10	N4-001108	23.067	006	1	Rel-4	3.1.0	Automatic answering	C

<b>CHANGE REQUEST</b>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
<b>23.067</b>	<b>CR</b>	<b>003</b>
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team
For submission to: <b>TSGN#10</b> <small>list expected approval meeting # here</small>		Current Version: <b>3.1.0</b>
	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input type="checkbox"/> <small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
(at least one should be marked with an X)

**Source:** CN4 **Date:** 29/08/2000

**Subject:** Correction of abbreviations

**Work item:** ASCI

<p><b>Category:</b></p> <p><small>(only one category shall be marked with an X)</small></p>	<p>F Correction <input type="checkbox"/></p> <p>A Corresponds to a correction in an earlier release <input type="checkbox"/></p> <p>B Addition of feature <input type="checkbox"/></p> <p>C Functional modification of feature <input type="checkbox"/></p> <p>D Editorial modification <input checked="" type="checkbox"/></p>	<p><b>Release:</b></p> <p>Phase 2 <input type="checkbox"/></p> <p>Release 96 <input type="checkbox"/></p> <p>Release 97 <input type="checkbox"/></p> <p>Release 98 <input type="checkbox"/></p> <p>Release 99 <input type="checkbox"/></p> <p>Release 4 <input checked="" type="checkbox"/></p> <p>Release 5 <input type="checkbox"/></p>
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**Reason for change:** VGCS, VBS and eMLPP are not specific for the document. Those abbreviations are already described in 21.905.

**Clauses affected:** 3.2

<p><b>Other specs affected:</b></p>	<p>Other 3G core specifications <input type="checkbox"/></p> <p>Other GSM core specifications <input type="checkbox"/></p> <p>MS test specifications <input type="checkbox"/></p> <p>BSS test specifications <input type="checkbox"/></p> <p>O&amp;M specifications <input type="checkbox"/></p>	<p>→ List of CRs:</p> <p>→ List of CRs:</p> <p>→ List of CRs:</p> <p>→ List of CRs:</p> <p>→ List of CRs:</p>
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**Other comments:**



<----- double-click here for help and instructions on how to create a CR.

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3G TR 21.905 ~~and the following~~ apply:

~~eMLPP — enhanced Multi Level Precedence and Pre-emption~~

~~VBS — Voice Broadcast Service~~

~~VGCS — Voice Group Call Service~~

# CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**23.067 CR 005r1**

Current Version: **3.1.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#10**  
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↑

for approval   
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strategic   
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Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

**Proposed change affects:**  
(at least one should be marked with an X)

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:** CN4 **Date:** 17/11/2000

**Subject:** MS strategy in case of discrepancy of priority in MT

**Work item:** ASCI, eMLPP

**Category:**  
(only one category shall be marked with an X)  
F Correction   
A Corresponds to a correction in an earlier release   
B Addition of feature   
C Functional modification of feature   
D Editorial modification

**Release:**  
Phase 2   
Release 96   
Release 97   
Release 98   
Release 99   
Release 4   
Release 5

**Reason for change:** The priority in the paging message and in the SETUP message could be different. This CR describes the handling of this case for mobiles in group receive mode.

**Clauses affected:** 11.3.2.4

**Other specs affected:**  
Other 3G core specifications  → List of CRs:   
Other GSM 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:**



<----- double-click here for help and instructions on how to create a CR.

#### 11.3.2.4 Termination with called subscriber in idle mode or group receive mode

In this case the Mobile Station shall be paged in the normal manner, but with the paging messages also containing the priority level of the call. In addition, the priority level will be provided with the SETUP message.

The Mobile Station in group receive mode shall consult the internal service configuration list stored on the SIM to ~~establish-check~~ whether it should automatically respond to the paging request. ~~If it does so~~ respond to the paging request and if a following Call Control SETUP message (received as a response to paging response) specifies a priority different from the one specified in the paging request, this fact is not a reason for the mobile station to ~~abandon~~reject the (point-to-point) call for which the SETUP message was received ~~ongoing (point to point) call.~~

The Mobile Station in idle mode does not need to analyse the priority level from the paging request message but can derive it from the SETUP message and then decide on automatic acceptance of the call.

In the case where the called subscriber is using a non compatible Mobile Station, automatic answering is not possible.

## CHANGE REQUEST

*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*

**23.067 CR 006r1**

Current Version: **3.1.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#10**  
*list expected approval meeting # here ↑*

for approval

strategic  (for SMG use only)  
 non-strategic

Form: CR cover sheet, version 2 for 3GPP and SMG    The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**

*(at least one should be marked with an X)*

(U)SIM     ME     UTRAN / Radio     Core Network

**Source:** CN4

**Date:** 06/09/2000

**Subject:** Automatic answering

**Work item:** ASCI, eMLPP

**Category:**

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

- F Correction
- A Corresponds to a correction in an earlier release
- B Addition of feature
- C Functional modification of feature
- D Editorial modification

- Release:**
- Phase 2
  - Release 96
  - Release 97
  - Release 98
  - Release 99
  - Release 4
  - Release 5

**Reason for change:**

Rewording of the automatic answering to avoid any misunderstanding, and underline that automatic answering applies in idle mode or in case of called party preemption

**Clauses affected:** 4

**Other specs affected:**

- Other 3G core specifications  → List of CRs:
- Other GSM 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:**



help.doc

<----- double-click here for help and instructions on how to create a CR.

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## 4 Main concepts

The enhanced Multi-Level Precedence and Pre-emption service (eMLPP) provides different levels of precedence for call set-up and for call continuity in case of handover.

There are seven priority levels which are defined in 3G TS 22.067. The two highest levels are reserved for network internal use. These two levels can only be used locally, i.e. in the domain of one MSC. The other five priority levels are offered for subscription and can be applied globally, e.g. on inter switch trunks, if supported by all related network elements, and also for interworking with ISDN networks providing the MLPP service.

The seven priority levels are defined as follows:

- A (highest, for network internal use)
- B (for network internal use)
- 0 (for subscription)
- 1 (for subscription)
- 2 (for subscription)
- 3 (for subscription)
- 4 (lowest, for subscription).

Levels A and B shall be mapped to level 0 for priority treatment outside of the MSC area in which they are applied.

As a network specific configuration, the ability to pre-empt other calls of lower priority and the application of fast call set-up procedures can be assigned to each priority level. An example for an eMLPP configuration is given in 3G TS 22.067.

NOTE 1: The present specification defines the concepts for handling of priorities in the network including the indication whether pre-emption or fast call set-up procedures are to be applied. Note that the call set-up procedures themselves are specified in the corresponding stage 2 descriptions of the services where they are to be used. There is presently only a requirement for VBS and VGCS (GSM 03.69 and GSM 03.68, respectively).

NOTE 2: The network operator has to assure that the particular eMLPP configuration he applies and the subscriptions he issues are co-ordinated with the network planning (especially for blocking) and the implementation options applied (e.g. the use of OACSU) in order to guarantee the service performance for the subscriber.

Considering aspects of priority handling, the following issues can be considered for each call:

- a) contention during the initial random access (no specific definitions apply for eMLPP. Delays due to access collision have to be managed by a corresponding planning of the network resources);
- b) contention in gaining radio resources during the call set-up phase and during handover (this item relates to the assignment of SDCCH and TCH for which queuing and pre-emption mechanisms are applied for eMLPP);  
  
A pre-emption might already be performed as a network option on the basis of the establishment cause if a network specific eMLPP configuration assigns a certain priority level to a particular establishment cause.
- c) contention in gaining terrestrial resources inside the GSM network (this item relates to the assignment of terrestrial channels between the GSM network nodes. Priority actions shall be performed on basis of the MLPP service implementations. The eMLPP priority levels A and B shall be mapped to the MLPP priority level 0. No further specific definitions apply for eMLPP);
- d) contention in gaining terrestrial resources in external networks (this item relates to interworking with external networks which shall be performed on basis of the MLPP service if provided in the related external networks.);
- e) application of different call set-up procedures in relation to the priority levels and the network specific configuration (three classes of set-up performance are defined in 3G TS 22.067, one very fast class for VBS or VGCS emergency call services, one class for fast but normal set-up times and one class allowing some delay in

the set-up. The application of the corresponding procedures shall be decided by the network on the basis of the requested priority level);

- f) automatic answering of calls if the incoming call ~~is of or~~ exceeds a defined priority level (if the MS is in idle mode) respectively, or called party pre-emption (if the called ~~GSM~~ subscriber is engaged in communication of a lower priority);
- g) the means by which the called user is informed of priority issues and is able to make appropriate decisions if no called party pre-emption applies;
- h) the accommodation of non-compatible Mobile Stations.

The definitions in the present specification focus on the issues under item b), e), f), g) and h). Items c) and d) are related to the MLPP service implementation for the signalling system No. 7 according to ITU-T Recommendations Q.85 and Q.735.

For a call establishment, a subscriber shall be able to select any one of the priority levels he has subscribed to.

Priorities shall be treated in the network as defined in 3G TS 22.067. Priority treatment is different for point-to-point calls and voice broadcast calls or voice group calls, respectively:

- mobile originated point-to-point call:

The priority level depends on the calling subscriber. If the user has no eMLPP subscription, the call shall have a default priority level defined in the network. If the user has an eMLPP subscription, the call shall have the priority level selected by the user at set-up or the priority level predefined by the subscriber as default priority level by registration.

- mobile terminated point-to-point calls:

The priority level depends on the calling party. For this, interworking with the ISDN MLPP service is required. If the call is not an MLPP call, i.e. no priority level is defined, the call shall be treated in the mobile network with a default priority level. If the call is an MLPP call, the call shall be treated with the priority level provided by the interfacing network.

- mobile to mobile point-to-point calls:

The priority shall be treated for the calling subscriber as for mobile originated calls and for the called subscriber as for mobile terminated calls. However, an interworking with MLPP is not required if both the calling subscriber and the called subscriber are located in the same MSC area.

- Voice Broadcast Calls (VBS) and Voice Group Calls (VGCS):

The link on the voice broadcast call channel or voice group call channel shall have the priority level as defined in the corresponding registration for the related voice broadcast call or voice group call in the GCR. At the early stage of a voice broadcast call or voice group call establishment, before the GCR request is made and the voice broadcast call channel or voice group call channels are assigned, the procedure shall be the same as for point-to-point calls.

Queuing and resource pre-emption shall then be applied as appropriate according to the network service configuration. In addition, automatic answering or called party pre-emption shall be applied as appropriated according to the Mobile Station's internal service configuration.

The MSC shall maintain a record of the priority level of each call in progress in its area such that it can arbitrate over resources in a defined manner.

The priority level can be included in the CM\_SERVICE\_REQUEST message in the case that a user establishing a point-to-point call is using a compatible Mobile Station (see clause 6).

If the subscriber has not selected a priority level for that call or uses a non compatible Mobile Station (see clause 6), the priority level shall be assigned according to the respective VLR data.

The priority level of a call shall be determined by the MSC. Accordingly, the MSC shall request channel assignment with an indication of the priority level and the pre-emption capability of that call. For this the MSC shall use the priority message element as defined in GSM 08.08. Mapping of the priority information in this message element on the network specific eMLPP configuration shall be performed in the MSC. Queuing and resource pre-emption shall be performed accordingly if necessary.



In addition to the priority signalling, the requirement for a direct assignment of a TCH shall be included in the establishment cause of the CHAN\_REQ message in order to support a fast call set-up procedure in the BSC at the earliest possible stage of the call establishment for high priority calls if applicable.

Automatic answering or, if necessary, called-party pre-emption has to be performed by the Mobile Station as defined in the following:

- point-to-point calls:

If the user is in idle mode, the Mobile Station shall automatically connect to an incoming call of a sufficient priority level. The priority level shall be included in the paging message and in the set-up message. If the user is in dedicated mode and has a subscription to Call Waiting, a Call Waiting indication including the priority level of the call shall be given to the Mobile Station which automatically accepts the waiting call.

There is no called party pre-emption for point-to-point calls without Call Waiting.

- voice group calls and voice broadcast calls:

Notifications for other voice group calls, voice broadcast calls or information on paging for point-to-point calls shall be given to the Mobile Stations involved in on-going voice group calls or voice broadcast calls as defined in GSM 03.68 and GSM 03.69, respectively. The notifications include the related priority level of the call. In case of a notified call with higher priority where called-party pre-emption applies, the Mobile Station shall automatically leave the on-going voice group call or voice broadcast call and react according to the type of the notified call type.

For both cases, the priority level applied shall be included, either in the paging message or Call Waiting indication, or in the notification message, in order to enable the Mobile Station to decide on an automatic reaction (automatic answering or called-party pre-emption) or to indicate the incoming, non pre-empting call to the user.

The priority information of the assignment request shall also be applied for BSS internal handover. For external handover, the MSC shall include the priority information in the handover request according to the definition in GSM 08.08 in the same way as for the assignment request.