Source: **SA1**

Title: **CRs to 22.952 on Priority Service Guide (Rel-6)**

Document for: **Approval**

Agenda Item: **7.1.3**

Meeting	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SA1 Doc
SP-24	SP-040297	22.952	001	-	Rel-6	F	TR 22.952 - Correction to Figure 5.7: Priority Service Mobile Originated – Queue Time-Out	6.0.0	6.1.0	S1-040522
SP-24	SP-040297	22.952	002	-	Rel-6	F	TR 22.952 - Correction to Figure 5.8: Priority Service Call Termination – Radio Resources Unavailable and Queue Time-Out	6.0.0	6.1.0	S1-040523
SP-24	SP-040297	22.952	003	-	Rel-6	F	Change of TS 08.08 reference to 48.008	6.0.0	6.1.0	S1-040524

3GPP TSG-SA1#24
Shenzhen, China, 10-14 May, 2004

Tdoc ⌘S1-040522
Agenda Item: Priority Service

CR-Form-v7

CHANGE REQUEST

⌘ **22.952** **CR** **001** ⌘**rev** **-** ⌘ Current version: **6.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	TR 22.952 - Correction to Figure 5.7: Priority Service Mobile Originated – Queue Time-Out
Source:	⌘	SA1 (Nortel Networks, Telcordia Technologies)
Work item code:	⌘	PRIOR
Date:	⌘	11/05/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Incorrect disconnect procedure illustrated in Figure 5.7: "Priority Service Mobile Originated – Queue Time-Out". In step K, on receiving the Clear Request message with cause "No Radio Resource Avaialble", the MSC/VLR does not need to send the Disconnect message as no channel has yet been assigned to MS.
Summary of change:	⌘	Correction to disconnect procedures. In step K, on receiving the Clear Request message with cause "No Radio Resource Available", the MSC/VLR should send a Clear Command message to the BSS with cause "No Radio Resource Available" indicating that the radio resources should be released. Additionally, steps L (Release) and M (Release Complete) are deleted from the original flow.
Consequences if not approved:	⌘	Incorrect document (incorrect implementation of disconnect procedures for Priority Service mobile originated calls when queue time-out).

Clauses affected:	⌘	5.7			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	

	X	O&M Specifications

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.7 Priority service call origination – radio resources unavailable and queue timeout

This clause illustrates a MO Priority Service call setup with early assignment for Service User. In this scenario, radio traffic channels are not available when the Priority Service call is attempted, and the Priority Service request has been queued but the queuing timer has timed-out.

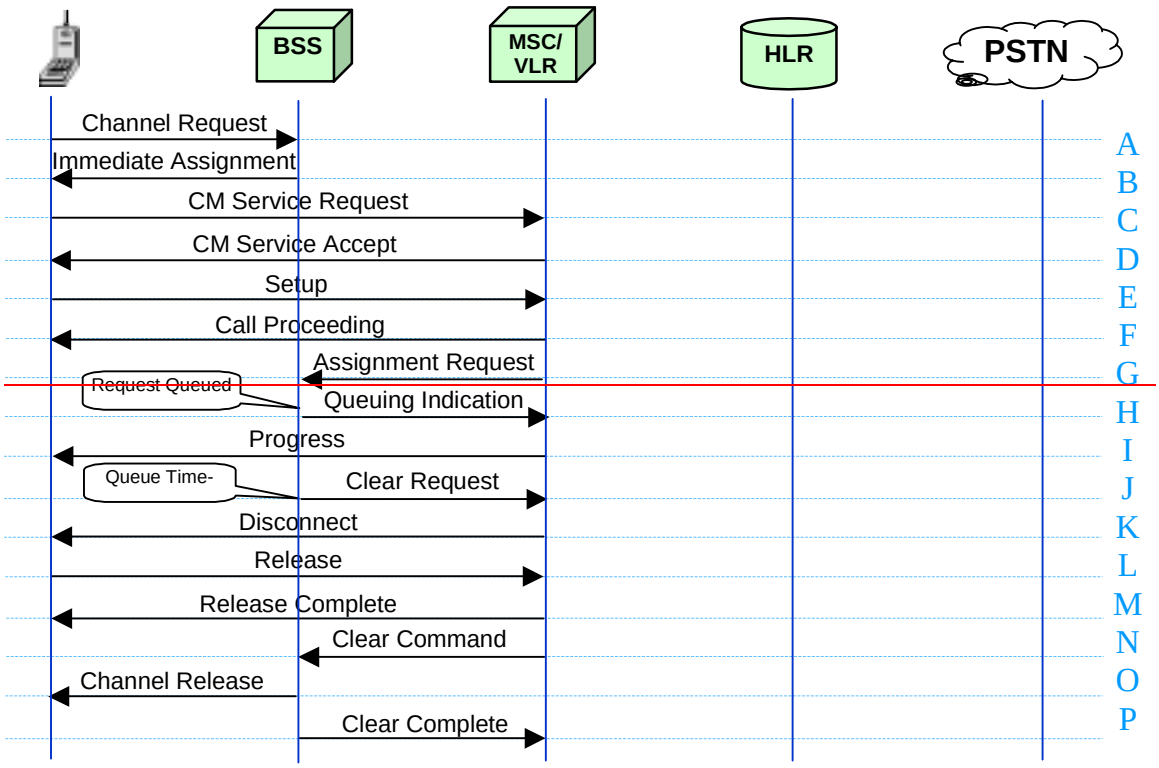

Figure 5.7: Priority Service Mobile Originated – Queue Time-Out

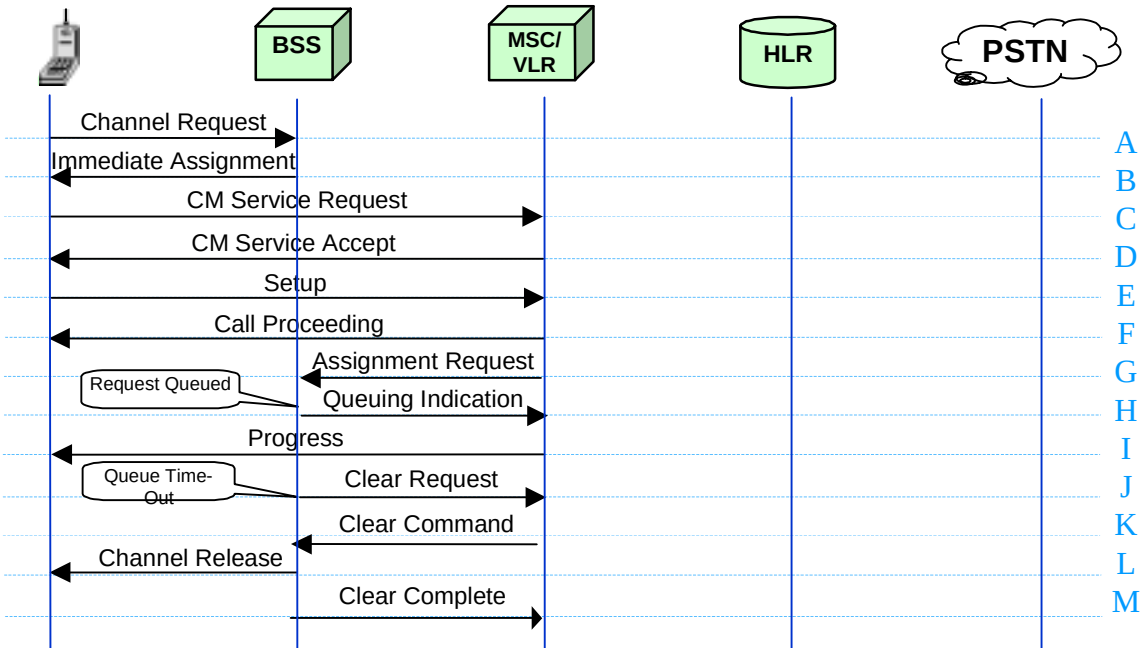

Figure 5.7: Priority Service Mobile Originated – Queue Time-Out

A-I. Same as described in steps A-I of Clause 5.3.

J If timer T11 expires before an idle radio traffic channel becomes available, the *Assignment Request* message is removed from the queue and a *Clear Request* message is sent to the MSC/VLR with cause "No Radio Resource Available".

K The MSC/VLR indicates that the radio resource(s) should be released by sending a *Clear Command* message to the BSS with cause "No Radio Resource Available".

~~K-P. Same as described in steps I-N of Clause 5.5.~~

L-M. Same as described in steps M-N of Clause 5.5.

3GPP TSG-SA1#24
Shenzhen, China, 10-14 May, 2004

Tdoc ⌘S1-040523
Agenda Item: Priority Service

CR-Form-v7

CHANGE REQUEST

⌘ **22.952** **CR** **002** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	TR 22.952 - Correction to Figure 5.8: Priority Service Call Termination – Radio Resources Unavailable and Queue Time-Out
Source:	⌘	SA1 (Nortel Networks, Telcordia Technologies)
Work item code:	⌘	PRIOR
Date:	⌘	11/05/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	Incorrect disconnect procedure illustrated in Figure 5.8: "Priority Service Call Termination – Radio Resources Unavaiable and Queue Time-Out". In step O, on receiving the Clear Request message with cause "No Radio Resource Availalble", the terminating MSC/VLR does not need to send the Disconnect message as no channel has yet been assigned to the terminating MS. Also, there is typo in the heading of section 5.12
Summary of change:	⌘	Correction to disconnect procedures. In step O, on receiving the Clear Request message with cause "No Radio Resource Avaialble", the terminating MSC/VLR should send an ISUP Release (REL) message to the originating MSC/VLR to release the resources. Additionally steps P – S are now explicitly shown on the new Figure 5.8. Fix the typo in the heading of section 5.12, i.e, change "sutgoing" to "outgoing"
Consequences if not approved:	⌘	Incorrect document (incorrect implementation of disconnect procedures for Priority Service mobile terminated calls when queue time-out).

Clauses affected:	⌘	5.8, 5.12			
Other specs	⌘	**Y** ☐	**N** **X**	Other core specifications	⌘

affected:	X Test specifications X O&M Specifications	
Other comments: ⌘		

How to create CRs using this form:

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.8 Priority service call termination – radio resources unavailable and queue timeout

This clause illustrates a MT Priority Service call setup with early assignment when the incoming Priority Service call to a wireless called party is received at a terminating MSC. In this scenario, radio traffic channels are not available when the incoming Priority Service call is attempted, and the Priority Service request has been queued but the queuing timer has timed-out.

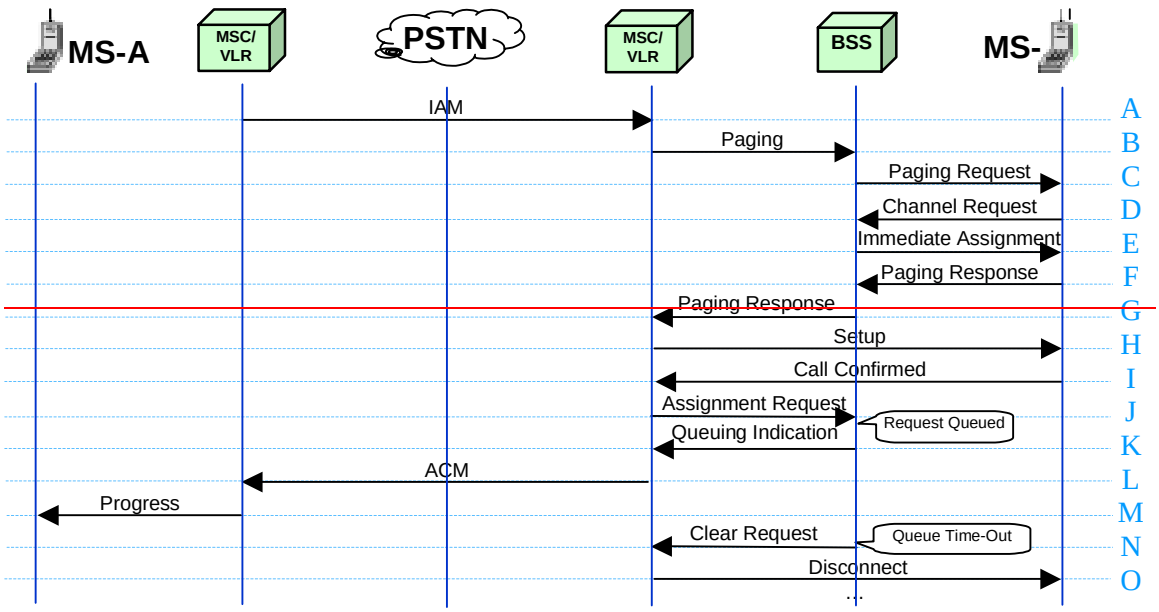

Figure 5.8: Priority Service Mobile Terminated – Queue Time-Out

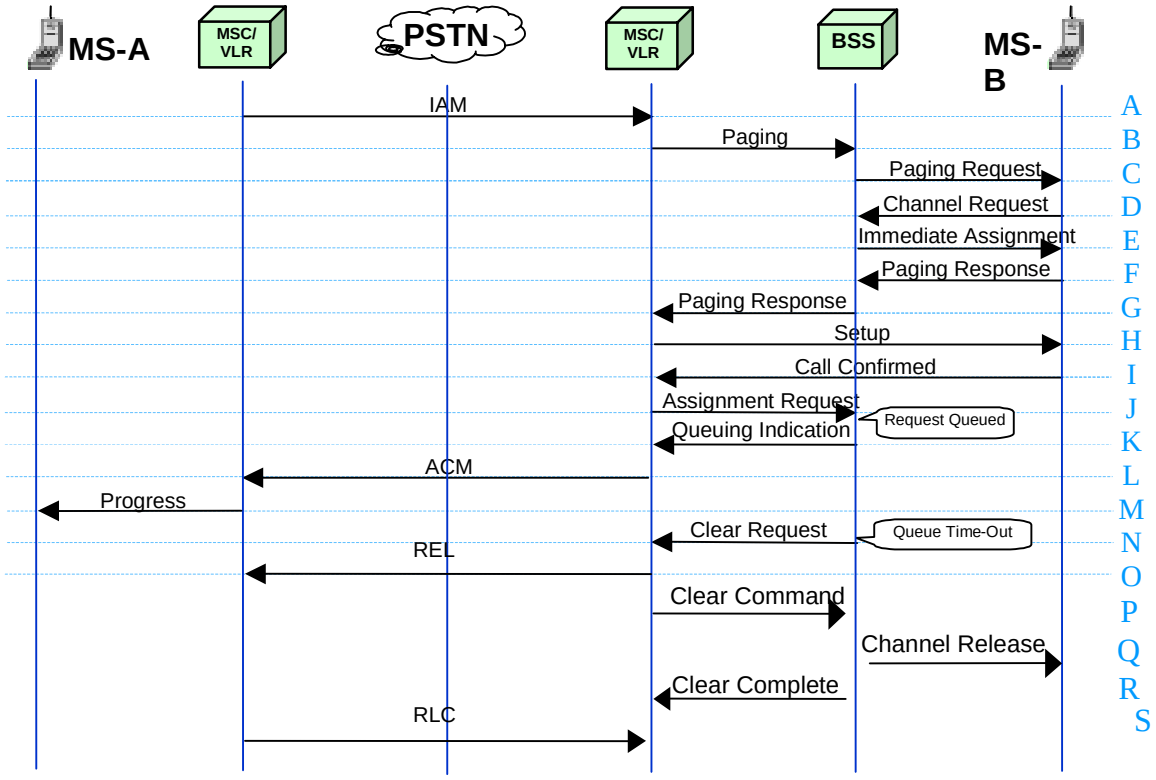

Figure 5.8: Priority Service Mobile Terminated – Queue Time-Out

A-M. Same as described in steps A-M of Clause 5.4.

N If timer T11 expires before an idle radio traffic channel becomes available, the *Assignment Request* message is removed from the queue and a *Clear Request* message is sent to the MSC/VLR with cause "No Radio Resource Available".

O. ~~The required steps that follow are the s~~Same as described in step~~s~~ M~~L S~~ of Clause 5.6.

P-S Same as described in steps P-S of Clause 5.6

******NEXT CHANGE******

5.12 Priority service call progression – MSC – ~~s~~outgoing trunk queuing – timeout

CR-Form-v7

CHANGE REQUEST

⌘ **22.952** **CR** **003** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Change of TS 08.08 reference to 48.008
Source:	⌘	SA1 (Telcordia Technologies)
Work item code:	⌘	PRIOR
Date:	⌘	10/05/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	TSG-SA#22 noted that references to TS 08.08 should be replaced by references to TS 48.008.
Summary of change:	⌘	Reference to TS 08.08 is replaced by reference to TS 48.008
Consequences if not approved:	⌘	Misleading reference to a GSM specification may lead to incorrect implementations.

Clauses affected:	⌘	2, 4.1, 4.8.1, 6.1, A.1.3, Annex C

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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. 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] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TR 22.950: "Priority service feasibility study".

[3] 3GPP TS 22.011: "Service accessibility".

[4] 3GPP TS 22.067: "enhanced Multi-Level Precedence and Pre-emption service (eMLPP); Stage 1".

[5] 3GPP TS 23.067: "Enhanced Multi-Level Precedence and Pre-emption Service (eMLPP); Stage 2".

[6] 3GPP TS 24.067: "Enhanced Multi-Level Precedence and Pre-emption service (eMLPP); Stage 3".

[7] 3GPP TS 51.011: "Specification of the Subscriber Identity Module - Mobile Equipment (SIM-ME) interface".

[8] 3GPP TS 31.102: "Characteristics of the USIM application".

[9] 3GPP TS ~~08.08~~48.008: "Mobile-services Switching Centre - Base Station system (MSC-BSS) Interface Layer 3 Specification".

[10] Alliance for Telecommunications Industry Solutions (ATIS) T1.111-2001: Signaling System No.7, Message Transfer Part.

[11] ATIS T1.631-1993 (R1999): High Probability of Completion HPC Network Capability.

[12] ATIS T1.113-2000: Signalling System No. 7 (SS7) - Integrated Services Digital Network (ISDN) User Part (Revision of T1.113-1995; includes two Supplements: T1.113a-2000 & T1.113b-2001).

[13] Federal Communications Commission (FCC) Second Report and Order (R&O) 00-242 (WT Docket No. 96-86).

[14] ITU-T Recommendation Q.764, Signalling System No. 7 – ISDN user part signalling procedures.

4 Service description

4.1 Assumptions and limitations

Priority Service is a subscription service, based on eMLPP service, as described in the Priority Service feasibility study, 3GPP TR 22.950 [2]. There are no Stage 1, Stage 2, Stage 3 specifications for Priority Service. Only eMLPP Release 6 specifications have been updated to be compatible with Priority Service. The following primary 3GPP capabilities were identified in [2] to support Priority Service:

- Service Accessibility, as specified in 3GPP TS 22.011 [3],

- Enhanced Multi-Level Precedence and Pre-emption (eMLPP), as specified in 3GPP TS 22.067 [4], 3GPP TS 23.067 [5], and 3GPP TS 24.067 [6],
- Subscriber Identity Module (SIM), as specified in 3GPP TS 51.011 [7],
- Universal Subscriber Identity Module (USIM), as specified in 3GPP TS 31.102 [8],
- Priority Information Element, as specified in 3GPP TS ~~08.08~~48.008 [9].

The following assumptions have been made to provide for Priority Service.

For the purposes of this document, the term "Service User" is a subscriber to Priority Service and a "Service Provider" is a provider of Priority Service.

No hardware or software modifications to existing Mobile Stations (MS) have been identified as required to support Priority Service. Priority Service subscribers may use MSs supporting the Adaptive Multi Rate (AMR), Enhanced Full Rate (EFR) and basic full rate voice codecs.

The ISDN User Part (ISUP) Precedence parameter used in the Multi-Level Precedence and Pre-emption (MLPP) service may be used to transmit the priority of the calling Service User through any transit networks to the terminating network.

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4.8.1 eMLPP

As a Service Provider option, it should be possible to offer Priority Service and eMLPP within the same network, but not to the same user. See Annex B for Use Cases.

Priority Service is a subscription-based service, based on eMLPP service. If eMLPP is provisioned in the network, the lowest eMLPP priority level (4) is the default for non-Priority Service users and does not involve any priority treatment. For priority treatment, a Service User receives treatment that is compliant with eMLPP service capabilities with the following exceptions, extensions, or clarifications:

- Support for an MS that is not eMLPP compatible is required.
- Support for the eMLPP Automatic Answering capability is not required.
- Support for Voice Broadcast Calls (VBS) and Voice Group Calls (VGCS) is not required.
- Priority Service applies to the Service Provider’s entire permanent public GSM network.
- Support for Fast Call Set Up is not required.
- Support for Automatic invocation on call set up is not required.
- Service Users are able to invoke only their assigned priority level.

Priority Service call attempt overrides any eMLPP priority levels received from eMLPP capable mobile phones. That is Priority Service users are able to only invoke their assigned priority level, even if a Service User has indicated an eMLPP priority level when attempting a Priority Service call with an eMLPP capable phone.

The TS ~~08.08~~48.008 priority levels of Priority Service users are higher than the priority levels of any other eMLPP users.

It should be noted that eMLPP also provides a priority level "A" that is intended for use internally by Service Provider technicians engaged in sustaining service availability. Priority level A is not intended for subscription and is not considered part of Priority Service. Such Service Provider technicians, when using eMLPP priority level "A", are viewed as part of Service Provider operations.

There is no impact on the functionality offered neither to eMLPP subscribers in an eMLPP only network nor to Priority Service subscribers in a Priority Service only network.

6 Operations, administration, maintenance, and provisioning

This clause specifies the network management and operational aspects of a Priority Service implementation.

6.1 Priority level assignment

A national or regional authority determines who is authorized for Priority Service and assigns Priority Service level(s), if applicable. There should be a uniform assignment of the following values within the national/regional networks.

- Service User Priority Level Assignment [1…n]
- TS 22.011 Access Class
- TS 22.067 eMLPP Priority Level
- TS ~~08.08~~48.008 queuing allowed (qa) Value
- Precedence Level in the ISUP Precedence Parameter

Annex A:
Region specific aspects

This Annex describes region specific aspects of Priority Service.

A.1 U.S.A. specific aspects

This subclause describes U.S.A region specific aspects of Priority Service.

A.1.3 Mapping of priority indicators

Within the U.S., there are five Priority Service priority levels. Table A-1 indicates the relationship among Service User Priority Assignment, TS 22.011 Access Classes, TS 22.067 eMLPP Priority Level, TS ~~08.08~~48.008 Priority Level, TS ~~08.08~~48.008 queuing allowed (qa) Value, and Precedence Level in the ISUP Precedence Parameter for Priority Service.

Table A.1: Mapping of Priority Indicators

Service User Priority Assignment	Access Class(es)	eMLPP Priority Level	~~08.08~~48.008 Priority Level	~~08.08~~48.008 qa Value	Precedence Level in ISUP Precedence Parameter
1 (highest)	14 and 13 and 12	B	2	1	0
2	14 and 13 and 12	0	3	1	1
3	13 and 12	1	4	1	2
4	13 and 12	2	5	1	3
5 (lowest)	12	3	6	1	4
	0-10	4	Implementation dependent, in the range of 7-14	Implementation Dependent	

Notes:

a Access Classes 11 and 15 may be used for network internal use.

b eMLPP Priority Level A may be used for network internal use.

c TS ~~08.08~~48.008 Priority Level 1 may be used for network internal use.

Annex C:
Distinguishing Priority Service users and eMLPP users

As a Service Provider option, it is proposed that the following mechanism be used for distinguishing Priority Service users and eMLPP users.

Networks (HLR's/MSC's/VLR's) that support the hybrid service (eMLPP and Priority Service) are enhanced to support the prioritySubscription parameter in the EMLPP-Info parameter of the Insert Subscriber Data (ISD) message. The prioritySubscription parameter must be included for Priority Service data. For eMLPP data this parameter is not needed.

eMLPP or Priority Service only networks and/or networks that do not support eMLPP or Priority Service do not need to be changed to support the new prioritySubscription parameter in the ISD message. That is, network operators that do not want to offer the hybrid service (eMLPP and Priority Service) do not have to upgrade their networks.

For outbound roamers (roamers from hybrid networks), the hybrid HLR would make the determination on whether data should be sent to the MSC/VLR. For example, if an eMLPP subscriber defined in the hybrid HLR roams to a Priority Service MSC/VLR, the HLR would not send the EMLPP-Info parameter to the MSC/VLR.

For inbound roamers (roamers to hybrid networks), the hybrid MSC/VLR would make the determination of how to treat the EMLPP-Info parameter if received in the ISD message.

When the MSC/VLR is operating in hybrid mode (i.e., supporting both services), the MSC would need to map eMLPP priorities B – 4 to ~~08.08~~48.008 priorities 8-13 respectively as shown in Table C-1.

Table C-1: eMLPP Priority Levels Mapping

eMLPP Priority Levels (in HLR)	~~08.08~~48.008 Priority Levels
A	1 (used for Service Technicians)
B	8 (used for Service Technicians)
0	9
1	10
2	11
3	12
4	13