Technical Specification Group Services and System Aspects *TSGS#14(01)0709*

Meeting #14, Kyoto, Japan, 17-20 December 2001

Source: TSG SA WG2
Title: CRs on 23.107
Agenda Item: 7.2.3

The following Change Requests (CRs) have been approved by TSG SA WG2 and are requested to be approved by TSG SA plenary #14.
Note: the source of all these CRs is now S2, even if the name of the originating company(ies) is still reflected on the cover page of all the attached CRs.

CRs on 23.107 rel99 (v.3.6.0), Rel-4 (v. 4.2.0), and Rel-5 (v. 5.2.0)

Tdoc #	Source	Title	Spec	CR #	c a t	Rel	WI	Conclusion
S2-013574	Siemens	Clarification of the QoS mapping on the MS	23.107	070r1	F	R99	TEI	Approved.
S2-013603	Siemens	Clarification of the QoS mapping on the MS	23.107	071r2	A	Rel-4	TEI	Approved.
S2-013604	Siemens	Clarification of the QoS mapping on the MS	23.107	072r1	A	Rel-5	TEI	Approved.
S2-013418	Siemens	Deletion of QoS Requirement for Inter-SGSN RA Update	23.107	073	F	R99	TEI	Approved.
S2-013419	Siemens	Deletion of QoS Requirement for Inter-SGSN RA Update	23.107	074	A	Rel-4	TEI	Approved.
S2-013420	Siemens	Deletion of QoS Requirement for Inter-SGSN RA Update	23.107	075	A	Rel-5	TEI	Approved.
S2-013557	Siemens	Clarification of Bearer Service Attributes Maximum and Guaranteed bitrate	23.107	079r2	F	R99	TEI5	Approved.
S2-013558	Siemens	Clarification of Bearer Service attributes Maximum and Guaranteed Bitrate	23.107	080r2	A	Rel-4	TEI	Approved.
S2-013559	Siemens	Clarification of Bearer Service attributes Maximum and Guaranteed Bitrate	23.107	081r2	A	Rel-5	TEI	Approved.

CR-Form-v4

CHANGE REQUEST

| ⌘ | **23.107** CR **70** | ⌘ | ev | **1** | ⌘ | Current version: | **3.6.0** | ⌘ |

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE **X**   Radio Access Network ☐   Core Network **X**

Title:	⌘	Clarification of the QoS mapping on the MS
Source:	⌘	Siemens AG
Work item code: ⌘	TEI	**Date:** ⌘ 2001-11-14

Category: ⌘ **F**	**Release:** ⌘ R99

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)

Reason for change:	⌘	At the moment it is not specified that the mapping between R99 - R97/98 QoS attributes applies also for the MS. Furthermore, it is open which precedence class value the MS shall assume for the R97/98 attributes if it gets only the R99 QoS attributes from the application.
Summary of change:	⌘	It is proposed to define, that in the above mentioned case the MS shall set the precedence value to subscribed.
Consequences if not approved:	⌘	Different MS implementations.

Clauses affected:	⌘	2, 9.1.2.2; 9.1.2.3

Other specs affected:	⌘	☐ Other core specifications	⌘	
		☐ Test specifications		
		☐ 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.

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[1]   3GPP TS 23.110: "UMTS Access Stratum - Services and Functions".

[2]   3GPP TS 22.100: "Service aspects, Service principles".

[3]   3GPP TS 23.121: "Evolution of the GSM platform towards UMTS".

[4]   (Void)

[5]   3GPP TS 22.105: "Services & Service capabilities".

[6]   3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network Protocols – Stage 3"

6.4.3 UMTS Bearer Service Attributes

6.4.3.1 List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')
Definition: type of application for which the UMTS bearer service is optimised
[Purpose: By including the traffic class itself as an attribute, UMTS can make assumptions about the traffic source and optimise the transport for that traffic type.]

....

Allocation/Retention Priority
Definition: specifies the relative importance compared to other UMTS bearers for allocation and retention of the UMTS bearer. The Allocation/Retention Priority attribute is a subscription attribute which is not negotiated from the mobile terminal.

> NOTE 4: The addition of a user-controlled Allocation/Retention Priority attribute is for further study in future releases.

[Purpose: Priority is used for differentiating between bearers when performing allocation and retention of a bearer. In situations where resources are scarce, the relevant network elements can use the Allocation/Retention Priority to prioritize bearers with a high Allocation/Retention Priority over bearers with a low Allocation/Retention Priority when performing admission control.]

6.4.4 Radio Access Bearer Service Attributes

Radio Access Bearer Service Attributes shall be applied to both CS and PS domains.

6.4.4.1 List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')
Definition: type of application for which the Radio Access Bearer service is optimised.
[Purpose: By including the traffic class itself as an attribute, UTRAN can make assumptions about the traffic source and optimise the transport for that traffic type. In particular, buffer allocation may be based on traffic class.]

....

Allocation/Retention Priority
Definition: specifies the relative importance compared to other Radio access bearers for allocation and retention of the Radio access bearer. The Allocation/Retention Priority attribute is a subscription parameter which is not negotiated from the mobile terminal.

> NOTE 4: The addition of a user-controlled Allocation/Retention Priority attribute is for further study in future releases.

[Purpose: Priority is used for differentiating between bearers when performing allocation and retention of a bearer. In situations where resources are scarce, the relevant network elements can use the Allocation/Retention Priority to prioritize bearers with a high Allocation/Retention Priority over bearers with a low Allocation/Retention Priority when performing admission control.]
Source statistics descriptor ('speech'/'unknown')
Definition: specifies characteristics of the source of submitted SDUs.
[Purpose: Conversational speech has a well-known statistical behaviour (or the discontinuous transmission (DTX) factor). By being informed that the SDUs for a RAB are generated by a speech source, UTRAN may, based on experience, calculate a statistical multiplex gain for use in admission control on the radio and Iu interfaces.]

9.1.2.2 Determining R99 attributes from R97/98 attributes

This mapping is applicable in the following cases:
- hand over of PDP Context from GPRS R97/98 SGSN to GPRS R99 or UMTS SGSN;

- PDP Context Activation in a serving R99 SGSN with a R97/98 GGSN. When GGSN respond to the PDP Context Activation, mapping of the changed R97/98 QoS attributes received from the GGSN to R99 QoS attributes is performed in the serving SGSN;.

This mapping is also applicable if a R99 MS allows an application to ~~receives a~~ request ~~for~~ a PDP Context Activation with R97/98 QoS attributes, e.g. via AT command.

Table 6: Rules for determining R99 attributes from R97/98 attributes

Resulting R99 Attribute		Derived from R97/98 Attribute	
Name	Value	Value	Name
Traffic class	Interactive	1, 2, 3	Delay class
	Background	4	
Traffic handling priority	1	1	Delay class
	2	2	
	3	3	
SDU error ratio	10^{-6}	1, 2	Reliability class
	10^{-4}	3	
	10^{-3}	4, 5	
Residual bit error ratio	10^{-5}	1, 2, 3, 4	Reliability class
	$4*10^{-3}$	5	
Delivery of erroneous SDUs	'no'	1, 2, 3, 4	Reliability class
	'yes'	5	
Maximum bitrate [kbps]	8	1	Peak throughput class
	16	2	
	32	3	
	64	4	
	128	5	
	256	6	
	512	7	
	1024	8	
	2048	9	
Allocation/Retention priority	1	1	Precedence class
	2	2	
	3	3	
Delivery order	yes'	yes'	Reordering Required (Information in the SGSN and the GGSN PDP Contexts)
	'no'	'no'	
Maximum SDU size	1 500 octets	(Fixed value)	

Note: As the allocation/retention priority attribute is not available in the MS(see 6.4.4.1) the mapping of the allocation/retention priority attribute is not relevant for the MS.

9.1.2.3 Determining R97/98 attributes from R99 attributes

This mapping is applicable in the following cases:
- PDP Context is handed over from GPRS R99 or UMTS to GPRS R97/98;

- when a R99 MS perform a PDP Context Activation in a serving R99 SGSN while the GGSN is of R97/98. In this case the SGSN shall perform mapping of the R99 QoS attributes to the R97/98 QoS attributes;

- a R99 HLR may need to map the stored subscribed QoS attributes in the HLR subscriber data to R97/98 QoS attributes that are going to be sent in the Insert Subscriber Data message from the R99 HLR to the R97/98 and R99 SGSN. It is an implementation issue if the R97/98 QoS attributes are stored in the HLR in addition to the R99 QoS attributes;.

- a R99 MS (except UMTS only MS) receives a request for a PDP Context Activation with R99 QoS attributes, e.g. via AT command.

Table 7: Rules for determining R97/98 attributes from R99 attributes

Resulting R97/98 Attribute		Derived from R99 Attribute	
Name	**Value**	**Value**	**Name**
Delay class	1	Conversational	Traffic class
	1	Streaming	Traffic class
	1	Interactive	Traffic class
		1	Traffic handling priority
	2	Interactive	Traffic class
		2	Traffic handling priority
	3	Interactive	Traffic class
		3	Traffic handling priority
	4	Background	Traffic class
Reliability class	2	$<= 10^{-5}$	SDU error ratio
	3	$10^{-5} < x <= 5*10^{-4}$	SDU error ratio
	4	$> 5*10^{-4}$	SDU error ratio
		$<= 2*10^{-4}$	Residual bit error ratio
	5	$> 5*10^{-4}$	SDU error ratio
		$> 2*10^{-4}$	Residual bit error ratio
Peak throughput class	1	< 16	Maximum bitrate [kbps]
	2	16 <= x < 32	
	3	32 <= x < 64	
	4	64 <= x < 128	
	5	128 <= x < 25	
	6	256 <= x < 512	
	7	512 <= x < 1024	
	8	1024 <= x < 2048	
	9	>= 2048	
Precedence class	1	1	Allocation/retention priority
	2	2	
	3	3	
Mean throughput class	Always set to 31	-	
Reordering Required (Information in the SGSN and the GGSN PDP Contexts)	yes'	yes'	Delivery order
	'no'	'no'	

As the allocation/retention priority attribute is not available in the MS(see 6.4.4.1) the MS shall set the R97/98 precedence class attribute to the value "subscribed" (see 3GPP TS 24.008).

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CHANGE REQUEST

⌘	**23.107** CR **71**	⌘ ev	**1**	⌘ Current version:	**4.2.0**	⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network ☐ Core Network **X**

Title:	⌘	Clarification of the QoS mapping on the MS
Source:	⌘	Siemens AG
Work item code: ⌘	TEI	**Date:** ⌘ 2001-11-14

Category:	⌘ **A**	**Release:** ⌘ Rel 4

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)

Reason for change:	⌘	At the moment it is not specified that the mapping between R99 - R97/98 QoS attributes applies also for the MS. Furthermore, it is open which precedence class value the MS shall assume for the R97/98 attributes if it gets only the R99 QoS attributes from the application.
Summary of change:	⌘	It is proposed to define, that in the above mentioned case the MS shall set the precedence value to subscribed.
Consequences if not approved:	⌘	Different MS implementations.

Clauses affected:	⌘	2, 9.1.2.2; 9.1.2.3

Other specs affected:	⌘	☐ Other core specifications	⌘
		☐ Test specifications	
		☐ O&M Specifications	

Other comments:	⌘	

2 References

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

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[4]   (Void)

[5]   3GPP TS 22.105: "Services & Service capabilities".

[6]   3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network Protocols – Stage 3"

9.1.2.2 Determining R99 attributes from R97/98 attributes

This mapping is applicable in the following cases:
- hand over of PDP Context from GPRS R97/98 SGSN to GPRS R99 or UMTS SGSN;

- PDP Context Activation in a serving R99 SGSN with a R97/98 GGSN. When GGSN respond to the PDP Context Activation, mapping of the changed R97/98 QoS attributes received from the GGSN to R99 QoS attributes is performed in the serving SGSN;.

This mapping is also applicable if a R99 MS allows an application to request a PDP Context Activation with R97/98 QoS attributes, e.g. via AT command.a R99 MS receives a request for a PDP Context Activation with R97/98 QoS attributes, e.g. via AT command.

Table 6: Rules for determining R99 attributes from R97/98 attributes

Resulting R99 Attribute		Derived from R97/98 Attribute	
Name	Value	Value	Name
Traffic class	Interactive	1, 2, 3	Delay class
	Background	4	
Traffic handling priority	1	1	Delay class
	2	2	
	3	3	
SDU error ratio	10^{-6}	1, 2	Reliability class
	10^{-4}	3	
	10^{-3}	4, 5	
Residual bit error ratio	10^{-5}	1, 2, 3, 4	Reliability class
	$4*10^{-3}$	5	
Delivery of erroneous SDUs	'no'	1, 2, 3, 4	Reliability class
	'yes'	5	
Maximum bitrate [kbps]	8	1	Peak throughput class
	16	2	
	32	3	
	64	4	
	128	5	
	256	6	
	512	7	
	1024	8	
	2048	9	
Allocation/Retention priority	1	1	Precedence class
	2	2	
	3	3	
Delivery order	yes'	yes'	Reordering Required (Information in the SGSN and the GGSN PDP Contexts)
	'no'	'no'	
Maximum SDU size	1 500 octets	(Fixed value)	

Note: As the allocation/retention priority attribute is not available in the MS(see 6.4.4.1) the mapping of the allocation/retention priority attribute is not relevant for the MS.

9.1.2.3 Determining R97/98 attributes from R99 attributes

This mapping is applicable in the following cases:
- PDP Context is handed over from GPRS R99 or UMTS to GPRS R97/98;

- when a R99 MS perform a PDP Context Activation in a serving R99 SGSN while the GGSN is of R97/98. In this case the SGSN shall perform mapping of the R99 QoS attributes to the R97/98 QoS attributes;

- a R99 HLR may need to map the stored subscribed QoS attributes in the HLR subscriber data to R97/98 QoS attributes that are going to be sent in the Insert Subscriber Data message from the R99 HLR to the R97/98 and R99 SGSN. It is an implementation issue if the R97/98 QoS attributes are stored in the HLR in addition to the R99 QoS attributes;.

- a R99 MS (except UMTS only MS) receives a request for a PDP Context Activation with R99 QoS attributes, e.g. via AT command.

Table 7: Rules for determining R97/98 attributes from R99 attributes

Resulting R97/98 Attribute		Derived from R99 Attribute	
Name	**Value**	**Value**	**Name**
Delay class	1	conversational	Traffic class
	1	streaming	Traffic class
	1	Interactive	Traffic class
		1	Traffic handling priority
	2	Interactive	Traffic class
		2	Traffic handling priority
	3	Interactive	Traffic class
		3	Traffic handling priority
	4	Background	Traffic class
Reliability class	2	$<= 10^{-5}$	SDU error ratio
	3	$10^{-5} < x <= 5*10^{-4}$	SDU error ratio
	4	$> 5*10^{-4}$	SDU error ratio
		$<= 2*10^{-4}$	Residual bit error ratio
	5	$> 5*10^{-4}$	SDU error ratio
		$> 2*10^{-4}$	Residual bit error ratio
Peak throughput class	1	< 16	Maximum bitrate [kbps]
	2	16 <= x < 32	
	3	32 <= x < 64	
	4	64 <= x < 128	
	5	128 <= x < 25	
	6	256 <= x < 512	
	7	512 <= x < 1024	
	8	1024 <= x < 2048	
	9	>= 2048	
Precedence class	1	1	Allocation/retention priority
	2	2	
	3	3	
Mean throughput class	Always set to 31	-	
Reordering Required (Information in the SGSN and the GGSN PDP Contexts)	yes'	yes'	Delivery order
	'no'	'no'	

As the allocation/retention priority attribute is not available in the MS(see 6.4.4.1) the MS shall set the R97/98 precedence class attribute to the value "subscribed" (see 3GPP TS 24.008).

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CHANGE REQUEST

| ⌘ | **23.107** CR **72** | ⌘ | ev | **1** | ⌘ | Current version: | **5.2.0** | ⌘ |

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE **X**   Radio Access Network ☐   Core Network **X**

Title: ⌘	Clarification of the QoS mapping on the MS	
Source: ⌘	Siemens AG	
Work item code: ⌘	TEI	**Date:** ⌘ 2001-11-14
Category: ⌘ **A**		**Release:** ⌘ Rel 5

Use <u>one</u> 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 <u>one</u> 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)

Reason for change: ⌘	At the moment it is not specified that the mapping between R99 - R97/98 QoS attributes applies also for the MS. Furthermore, it is open which precedence class value the MS shall assume for the R97/98 attributes if it gets only the R99 QoS attributes from the application.
Summary of change: ⌘	It is proposed to define, that in the above mentioned case the MS shall set the precedence value to subscribed.
Consequences if not approved: ⌘	Different MS implementations.

Clauses affected: ⌘	2, 9.1.2.2; 9.1.2.3			
Other specs affected: ⌘	☐ Other core specifications	⌘		
	☐ Test specifications			
	☐ O&M Specifications			
Other comments: ⌘				

2 References

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

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[4]   (Void)

[5]   3GPP TS 22.105: "Services & Service capabilities".

[6]   3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network Protocols – Stage 3"

9.1.2.2 Determining R99 attributes from R97/98 attributes

This mapping is applicable in the following cases:
- hand over of PDP Context from GPRS R97/98 SGSN to GPRS R99 or UMTS SGSN;

- PDP Context Activation in a serving R99 SGSN with a R97/98 GGSN. When GGSN respond to the PDP Context Activation, mapping of the changed R97/98 QoS attributes received from the GGSN to R99 QoS attributes is performed in the serving SGSN;.

This mapping is also applicable if a R99 MS allows an application to request a PDP Context Activation with R97/98 QoS attributes, e.g. via AT command.a R99 MS receives a request for a PDP Context Activation with R97/98 QoS attributes, e.g. via AT command.

Table 6: Rules for determining R99 attributes from R97/98 attributes

Resulting R99 Attribute		Derived from R97/98 Attribute	
Name	Value	Value	Name
Traffic class	Interactive	1, 2, 3	Delay class
	Background	4	
Traffic handling priority	1	1	Delay class
	2	2	
	3	3	
SDU error ratio	10^{-6}	1, 2	Reliability class
	10^{-4}	3	
	10^{-3}	4, 5	
Residual bit error ratio	10^{-5}	1, 2, 3, 4	Reliability class
	$4*10^{-3}$	5	
Delivery of erroneous SDUs	'no'	1, 2, 3, 4	Reliability class
	'yes'	5	
Maximum bitrate [kbps]	8	1	Peak throughput class
	16	2	
	32	3	
	64	4	
	128	5	
	256	6	
	512	7	
	1024	8	
	2048	9	
Allocation/Retention priority	1	1	Precedence class
	2	2	
	3	3	
Delivery order	yes'	yes'	Reordering Required (Information in the SGSN and the GGSN PDP Contexts)
	'no'	'no'	
Maximum SDU size	1 500 octets	(Fixed value)	

Note: As the allocation/retention priority attribute is not available in the MS(see 6.4.4.1) the mapping of the allocation/retention priority attribute is not relevant for the MS.

9.1.2.3 Determining R97/98 attributes from R99 attributes

This mapping is applicable in the following cases:
- PDP Context is handed over from GPRS R99 or UMTS to GPRS R97/98;

- when a R99 MS perform a PDP Context Activation in a serving R99 SGSN while the GGSN is of R97/98. In this case the SGSN shall perform mapping of the R99 QoS attributes to the R97/98 QoS attributes;

- a R99 HLR may need to map the stored subscribed QoS attributes in the HLR subscriber data to R97/98 QoS attributes that are going to be sent in the Insert Subscriber Data message from the R99 HLR to the R97/98 and R99 SGSN. It is an implementation issue if the R97/98 QoS attributes are stored in the HLR in addition to the R99 QoS attributes;.

- a R99 MS (except UMTS only MS) receives a request for a PDP Context Activation with R99 QoS attributes, e.g. via AT command.

Table 7: Rules for determining R97/98 attributes from R99 attributes

Resulting R97/98 Attribute		Derived from R99 Attribute	
Name	**Value**	**Value**	**Name**
Delay class	1	conversational	Traffic class
	1	streaming	Traffic class
	1	Interactive	Traffic class
		1	Traffic handling priority
	2	Interactive	Traffic class
		2	Traffic handling priority
	3	Interactive	Traffic class
		3	Traffic handling priority
	4	Background	Traffic class
Reliability class	2	$<= 10^{-5}$	SDU error ratio
	3	$10^{-5} < x <= 5*10^{-4}$	SDU error ratio
	4	$> 5*10^{-4}$	SDU error ratio
		$<= 2*10^{-4}$	Residual bit error ratio
	5	$> 5*10^{-4}$	SDU error ratio
		$> 2*10^{-4}$	Residual bit error ratio
Peak throughput class	1	< 16	Maximum bitrate [kbps]
	2	$16 <= x < 32$	
	3	$32 <= x < 64$	
	4	$64 <= x < 128$	
	5	$128 <= x < 25$	
	6	$256 <= x < 512$	
	7	$512 <= x < 1024$	
	8	$1024 <= x < 2048$	
	9	$>= 2048$	
Precedence class	1	1	Allocation/retention priority
	2	2	
	3	3	
Mean throughput class	Always set to 31	-	
Reordering Required (Information in the SGSN and the GGSN PDP Contexts)	yes'	yes'	Delivery order
	'no'	'no'	

As the allocation/retention priority attribute is not available in the MS(see 6.4.4.1) the MS shall set the R97/98 precedence class attribute to the value "subscribed" (see 3GPP TS 24.008).

CR-Form-v4

CHANGE REQUEST

⌘ **23.107 CR 73** ⌘ ev **-** ⌘ Current version: **3.6.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network **X**

Title: ⌘	Deletion of QoS Requirement for Inter-SGSN RA Update	
Source: ⌘	Siemens AG	
Work item code: ⌘	TEI	**Date:** ⌘ 2001-11-14
Category: ⌘ **F**		**Release:** ⌘ R99

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)

Reason for change: ⌘	Chapter 7 describes some requirements which are obviously for the relocation/handover in the PS domain. These statements are outdated and also no longer needed as the relocation/handover mechanisms are specified. It is proposed to delete the confusing statements.
Summary of change: ⌘	Deletion of confusing statements about realtime RA update.
Consequences if not approved: ⌘	Confusion about realtime RA update mechanisms.

Clauses affected: ⌘	7

Other specs affected: ⌘	☐ Other core specifications	⌘	
	☐ Test specifications		
	☐ O&M Specifications		

Other comments: ⌘	

7 void~~Support of QoS Requirement During Inter-SGSN RA Update~~

~~Support of QoS within the GSM/GPRS R99 network will require enhancements to the standard to enable QoS requirements to be maintained when mobility of the UE requires a change of serving elements within the network (e.g. change of BTS/BSC or nodeB/RNS and SGSN). These are currently not supported in GSM/GPRS R99 and therefore the next release shall support these enhancements.~~

~~QoS requirements (especially those for traffic classes such as Conversational and Streaming) shall be maintained during inter SGSN RA Update within the UMTS network (note: Pre R99 inter SGSN RA update mechanisms involving C7 signalling to the HLR, GGSN would need enhancement to satisfy some QoS classes identified).~~

CR-Form-v4

CHANGE REQUEST

| ⌘ | **23.107** CR 74 | ⌘ ev **-** ⌘ | Current version: | **4.2.0** | ⌘ |

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network **X**

Title:	⌘	Deletion of QoS Requirement for Inter-SGSN RA Update
Source:	⌘	Siemens AG
Work item code: ⌘	TEI	**Date:** ⌘ 2001-11-14
Category:	⌘ **A**	**Release:** ⌘ Rel4

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)

Reason for change:	⌘	Chapter 7 describes some requirements which are obviously for the relocation/handover in the PS domain. These statements are outdated and also no longer needed as the relocation/handover mechanisms are specified. It is proposed to delete the confusing statements.
Summary of change:	⌘	Deletion of confusing statements about realtime RA update.
Consequences if not approved:	⌘	Confusion about realtime RA update mechanisms.

Clauses affected:	⌘	7

Other specs affected:	⌘ ☐	Other core specifications ⌘
	☐	Test specifications
	☐	O&M Specifications

Other comments:	⌘	

7 void~~Support of QoS Requirement During Inter-SGSN RA Update~~

~~Support of QoS within the GSM/GPRS R99 network will require enhancements to the standard to enable QoS requirements to be maintained when mobility of the UE requires a change of serving elements within the network (e.g. change of BTS/BSC or nodeB/RNS and SGSN). These are currently not supported in GSM/GPRS R99 and therefore the next release shall support these enhancements.~~

~~QoS requirements (especially those for traffic classes such as Conversational and Streaming) shall be maintained during inter SGSN RA Update within the UMTS network (note: Pre R99 inter SGSN RA update mechanisms involving C7 signalling to the HLR, GGSN would need enhancement to satisfy some QoS classes identified).~~

CR-Form-v4

CHANGE REQUEST

| ⌘ | **23.107 CR 75** | ⌘ | ev | **-** | ⌘ | Current version: | **5.2.0** | ⌘ |

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE **X**   Radio Access Network **X**   Core Network **X**

Title:	⌘	Deletion of QoS Requirement for Inter-SGSN RA Update
Source:	⌘	Siemens AG
Work item code: ⌘	TEI	**Date:** ⌘ 2001-11-14
Category:	⌘ **A**	**Release:** ⌘ Rel5

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)

Reason for change:	⌘	Chapter 7 describes some requirements which are obviously for the relocation/handover in the PS domain. These statements are outdated and also no longer needed as the relocation/handover mechanisms are specified. It is proposed to delete the confusing statements.
Summary of change:	⌘	Deletion of confusing statements about realtime RA update.
Consequences if not approved:	⌘	Confusion about realtime RA update mechanisms.

Clauses affected:	⌘	7

Other specs affected:	⌘	☐ Other core specifications	⌘
		☐ Test specifications	
		☐ O&M Specifications	

Other comments:	⌘	

7 void~~Support of QoS Requirement During Inter-SGSN RA Update~~

~~Support of QoS within the GSM/GPRS R99 network will require enhancements to the standard to enable QoS requirements to be maintained when mobility of the UE requires a change of serving elements within the network (e.g. change of BTS/BSC or nodeB/RNS and SGSN). These are currently not supported in GSM/GPRS R99 and therefore the next release shall support these enhancements.~~

~~QoS requirements (especially those for traffic classes such as Conversational and Streaming) shall be maintained during inter SGSN RA Update within the UMTS network (note: Pre R99 inter SGSN RA update mechanisms involving C7 signalling to the HLR, GGSN would need enhancement to satisfy some QoS classes identified).~~

CR-Form-v3

CHANGE REQUEST

⌘ **23.107 CR 079** ⌘ rev **2** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network **X**

Title: ⌘	Clarification of Bearer Service Attributes Maximum and Guaranteed bitrate	
Source: ⌘	Siemens	
Work item code:⌘	TEI	**Date:** ⌘ 21.11.2001
Category: ⌘ **F**		**Release:** ⌘ R99

Use one of the following categories:
   F *(essential 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)*

Reason for change: ⌘	Ambiguous definition of purpose of Maximum and Guaranteed bitrate.
Summary of change:⌘	The purpose of the bearer service attributes Maximum and Guaranteed bitrate is changed in the sense that they define a range for the requested bitrate of the bearer. That means, that under normal load conditions the quality requirements expressed by the other service attributes also apply for a bitrate larger than the Guaranteed.
Consequences if not approved: ⌘	Different interpretation possibilities for Maximum bitrate.

Clauses affected: ⌘	6.4.3, 6.4.4
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	The description of the token bucket algorithm for the Guaranteed bitrate is aligned.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

6.4.3 UMTS Bearer Service Attributes

6.4.3.1 List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')

Definition: type of application for which the UMTS bearer service is optimised

[Purpose: By including the traffic class itself as an attribute, UMTS can make assumptions about the traffic source and optimise the transport for that traffic type.]

Maximum bitrate (kbps)

Definition: maximum number of bits delivered by UMTS and to UMTS at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

The Maximum bitrate is the upper limit a user or application can accept or provide. All UMTS bearer service attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions.

[Purpose: Maximum bitrate can be used to make code reservations in the downlink of the radio interface. Its purpose is 1) to limit the delivered bitrate to applications or external networks with such limitations 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. non transparent circuit switched data applications with adapting codecs).]

Guaranteed bitrate (kbps)

Definition: guaranteed number of bits delivered by UMTS at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals $k*$Maximum SDU size. For release 1999, k=1. A value of k greater than one Maximum SDU size may be specified in future releases to capture burstiness of sources. Signalling to specify the value of k may be provided in future releases.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

UMTS bearer service attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the UMTS bearer service attributes are not guaranteed.

[Purpose: Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. Quality requirements expressed by e.g. delay and reliability attributes only apply to incoming traffic up to the guaranteed bitrate.]

NEXT MODIFICATON

6.4.4 Radio Access Bearer Service Attributes

Radio Access Bearer Service Attributes shall be applied to both CS and PS domains.

6.4.4.1 List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')

Definition: type of application for which the Radio Access Bearer service is optimised.

[Purpose: By including the traffic class itself as an attribute, UTRAN can make assumptions about the traffic source and optimise the transport for that traffic type. In particular, buffer allocation may be based on traffic class.]

Maximum bitrate (kbps)

Definition: maximum number of bits delivered by UTRAN and to UTRAN at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with the Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

The Maximum bitrate is the upper limit a user or application can accept or provide. All RAB attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions.

[Purpose: 1) to limit the delivered bitrate to applications or external networks with such limitations, 2) to allow maximum wanted RAB bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs~~non transparent circuit switched data~~.)]

Guaranteed bitrate (kbps)

Definition: guaranteed number of bits delivered at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the Guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals ~~k~~ Maximum SDU size. ~~For Release 1999, k = 1. A value of k greater than one Maximum SDU size may be specified in future releases to capture burstiness of sources. Signalling to specify the value of k may be provided in future releases.~~

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

RAB attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the RAB attributes are not guaranteed.

[Purpose: Describes the bitrate the RAB shall guarantee to the user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UTRAN. ~~Quality requirements expressed by e.g. delay and reliability attributes only apply to incoming traffic up to the guaranteed bitrate~~. The guaranteed bitrate at the RAB level may be different from that on UMTS bearer level, for example due to header compression.]

CR-Form-v3

CHANGE REQUEST

| ⌘ | **23.107** CR **080** | ⌘ | rev | **2** | ⌘ | Current version: | **4.2.0** | ⌘ |

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

Proposed change affects: ⌘　(U)SIM ☐　ME/UE **X**　Radio Access Network **X**　Core Network **X**

Title: ⌘	Clarification of Bearer Service Attributes Maximum and Guaranteed bitrate	
Source: ⌘	Siemens	
Work item code: ⌘	TEI	**Date:** ⌘　21.11.2001
Category: ⌘ **A**		**Release:** ⌘　Rel4

Use *one* of the following categories:
F (essential 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)

Reason for change: ⌘	Ambiguous definition of purpose of Maximum and Guaranteed bitrate.
Summary of change: ⌘	The purpose of the bearer service attributes Maximum and Guaranteed bitrate is changed in the sense that they define a range for the requested bitrate of the bearer. That means, that under normal load conditions the quality requirements expressed by the other service attributes also apply for a bitrate larger than the Guaranteed.
Consequences if not approved: ⌘	Different interpretation possibilities for Maximum bitrate.

Clauses affected: ⌘	6.4.3, 6.4.4
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	The description of the token bucket algorithm for the Guaranteed bitrate is aligned.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

6.4.3　UMTS Bearer Service Attributes

6.4.3.1　List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')

Definition: type of application for which the UMTS bearer service is optimised

[Purpose: By including the traffic class itself as an attribute, UMTS can make assumptions about the traffic source and optimise the transport for that traffic type.]

Maximum bitrate (kbps)

Definition: maximum number of bits delivered by UMTS and to UMTS at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

The Maximum bitrate is the upper limit a user or application can accept or provide. All UMTS bearer service attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions.

[Purpose: Maximum bitrate can be used to make code reservations in the downlink of the radio interface. Its purpose is 1) to limit the delivered bitrate to applications or external networks with such limitations 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. non transparent circuit switched data applications with adapting codecs*).]*

Guaranteed bitrate (kbps)

Definition: guaranteed number of bits delivered by UMTS at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals $k*$Maximum SDU size. For release 1999, k=1. A value of k greater than one Maximum SDU size may be specified in future releases to capture burstiness of sources. Signalling to specify the value of k may be provided in future releases.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

UMTS bearer service attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the UMTS bearer service attributes are not guaranteed.

[Purpose: Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. Quality requirements expressed by e.g. delay and reliability attributes only apply to incoming traffic up to the guaranteed bitrate.]

NEXT MODIFICATON

6.4.4　Radio Access Bearer Service Attributes

Radio Access Bearer Service Attributes shall be applied to both CS and PS domains.

6.4.4.1　List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')

Definition: type of application for which the Radio Access Bearer service is optimised.

[Purpose: By including the traffic class itself as an attribute, UTRAN can make assumptions about the traffic source and optimise the transport for that traffic type. In particular, buffer allocation may be based on traffic class.]

Maximum bitrate (kbps)

Definition: maximum number of bits delivered by UTRAN and to UTRAN at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with the Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

The Maximum bitrate is the upper limit a user or application can accept or provide. All RAB attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions.

[Purpose: 1) to limit the delivered bitrate to applications or external networks with such limitations, 2) to allow maximum wanted RAB bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs~~non transparent circuit switched data~~.)]

Guaranteed bitrate (kbps)

Definition: guaranteed number of bits delivered at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the Guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals ~~k~~ Maximum SDU size. ~~For Release 1999, k = 1. A value of k greater than one Maximum SDU size may be specified in future releases to capture burstiness of sources. Signalling to specify the value of k may be provided in future releases.~~

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

RAB attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the RAB attributes are not guaranteed.

[Purpose: Describes the bitrate the RAB shall guarantee to the user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UTRAN. ~~Quality requirements expressed by e.g. delay and reliability attributes only apply to incoming traffic up to the guaranteed bitrate~~. The guaranteed bitrate at the RAB level may be different from that on UMTS bearer level, for example due to header compression.]

CR-Form-v3

CHANGE REQUEST

| ⌘ | **23.107** CR **081** | ⌘ rev | **2** | ⌘ | Current version: | **5.2.0** | ⌘ |

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network **X**

Title: ⌘	Clarification of Bearer Service Attributes Maximum and Guaranteed bitrate	
Source: ⌘	Siemens	
Work item code: ⌘	TEI	*Date:* ⌘ 21.11.2001
Category: ⌘	**A**	*Release:* ⌘ Rel5

Use one of the following categories:
F (essential 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)

Reason for change: ⌘	Ambiguous definition of purpose of Maximum and Guaranteed bitrate.
Summary of change: ⌘	The purpose of the bearer service attributes Maximum and Guaranteed bitrate is changed in the sense that they define a range for the requested bitrate of the bearer. That means, that under normal load conditions the quality requirements expressed by the other service attributes also apply for a bitrate larger than the Guaranteed.
Consequences if not approved: ⌘	Different interpretation possibilities for Maximum bitrate.

Clauses affected: ⌘	6.4.3, 6.4.4
Other specs affected: ⌘	☐ Other core specifications ⌘
	☐ Test specifications
	☐ O&M Specifications
Other comments: ⌘	The description of the token bucket algorithm for the Guaranteed bitrate is aligned.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

6.4.3 UMTS Bearer Service Attributes

6.4.3.1 List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')

Definition: type of application for which the UMTS bearer service is optimised

[Purpose: By including the traffic class itself as an attribute, UMTS can make assumptions about the traffic source and optimise the transport for that traffic type.]

Maximum bitrate (kbps)

Definition: maximum number of bits delivered by UMTS and to UMTS at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

The Maximum bitrate is the upper limit a user or application can accept or provide. All UMTS bearer service attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions.

[Purpose: Maximum bitrate can be used to make code reservations in the downlink of the radio interface. Its purpose is 1) to limit the delivered bitrate to applications or external networks with such limitations 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. non transparent circuit switched data applications with adapting codecs).]

Guaranteed bitrate (kbps)

Definition: guaranteed number of bits delivered by UMTS at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals $k*$Maximum SDU size. For release 1999, k=1. A value of k greater than one Maximum SDU size may be specified in future releases to capture burstiness of sources. Signalling to specify the value of k may be provided in future releases.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

UMTS bearer service attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the UMTS bearer service attributes are not guaranteed.

[Purpose: Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. Quality requirements expressed by e.g. delay and reliability attributes only apply to incoming traffic up to the guaranteed bitrate.]

NEXT MODIFICATON

6.4.4 Radio Access Bearer Service Attributes

Radio Access Bearer Service Attributes shall be applied to both CS and PS domains.

6.4.4.1 List of attributes

Traffic class ('conversational', 'streaming', 'interactive', 'background')

Definition: type of application for which the Radio Access Bearer service is optimised.

[Purpose: By including the traffic class itself as an attribute, UTRAN can make assumptions about the traffic source and optimise the transport for that traffic type. In particular, buffer allocation may be based on traffic class.]

Maximum bitrate (kbps)

Definition: maximum number of bits delivered by UTRAN and to UTRAN at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with the Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size.

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

The Maximum bitrate is the upper limit a user or application can accept or provide. All RAB attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions.

[Purpose: 1) to limit the delivered bitrate to applications or external networks with such limitations, 2) to allow maximum wanted RAB bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs~~non transparent circuit switched data~~.)]

Guaranteed bitrate (kbps)

Definition: guaranteed number of bits delivered at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the Guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals ~~k~~ Maximum SDU size. ~~For Release 1999, k = 1. A value of k greater than one Maximum SDU size may be specified in future releases to capture burstiness of sources. Signalling to specify the value of k may be provided in future releases.~~

The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B.

RAB attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the RAB attributes are not guaranteed.

[Purpose: Describes the bitrate the RAB shall guarantee to the user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UTRAN. ~~Quality requirements expressed by e.g. delay and reliability attributes only apply to incoming traffic up to the guaranteed bitrate~~. The guaranteed bitrate at the RAB level may be different from that on UMTS bearer level, for example due to header compression.]