

Source: TSG S1
Title: CRs to 22.105
Document for: Approval
Agenda Item: 5.1.3

TSG-SA Working Group 1 (Services) meeting #5
 Bernried, Starnberger, Germany 27th Sept – 1st Oct 1999

TSG S1 (99)763
 Agenda Item: 6.3.3

CHANGE REQUEST No :		016	<i>Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.</i>	
Technical Specification / Report UMTS		22.105	Version: 3.5.0	
Submitted to <input type="text" value="TSG_SA"/>		for approval <input type="checkbox"/>	without presentation ("non-strategic") <input checked="" type="checkbox"/>	
<i>list TSG plenary meeting no. here ↑</i>		for information <input type="checkbox"/>	with presentation ("strategic") <input type="checkbox"/>	
PT SMG CR cover form is available from: http://docbox.etsi.org/tech-org/smg/Document/smg/tools/CR_form/crf28_1.zip				

Proposed change affects: USIM TE Network
(at least one should be marked with an X)

Work item: UMTS Quality of Service

Source: BT **Date:** 28/09/1999

Subject: Removal of material not in release 99

Category:	F Correction <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/>
<i>(one category and one release Only shall be Marked with an X)</i>	A Corresponds to a correction in an earlier release <input type="checkbox"/>		Release 96 <input type="checkbox"/>
	B Addition of feature <input type="checkbox"/>		Release 97 <input type="checkbox"/>
	C Functional modification of feature <input type="checkbox"/>		Release 98 <input type="checkbox"/>
	D Editorial modification <input checked="" type="checkbox"/>		UMTS 99 <input checked="" type="checkbox"/>

Reason for change: Removal of material not in release 99

Clauses affected: 6.4.1

Other specs Affected:	Other releases of same spec <input type="checkbox"/>	→ List of CRs:	<input type="text"/>
	Other core specifications <input type="checkbox"/>	→ List of CRs:	<input type="text"/>
	MS test specifications / TBRs <input type="checkbox"/>	→ List of CRs:	<input type="text"/>
	BSS test specifications <input type="checkbox"/>	→ List of CRs:	<input type="text"/>
	O&M specifications <input type="checkbox"/>	→ List of CRs:	<input type="text"/>

Other comments:



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6.4.1 Speech

The speech service as defined in international standards should be supported by UMTS. The international reference for the speech is ITU E.105 recommendation. UMTS networks should contain interworking units which allow calls to be received from or destined to users of existing networks like PSTN, ISDN, GSM. This will include interworking units for generation of DTMF or other tones (the entire DTMF tone set would at minimum be available) and detection of DTMF tones.

~~Speech (7kHz) communications via bi-directional and symmetric channels between UMTS users or with fixed wireline or GSM users with equivalent or better quality than the audio quality of G.722 shall be supported in Phase 1, but not in Release 99.~~

A default speech codec shall be specified to provide speech service across the UTRAN. The selected speech codec shall be capable of operating with minimum discernible loss of speech on handover between the GSM access network and UTRAN.

CHANGE REQUEST No :		017	<i>Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.</i>	
Technical Specification / Report UMTS		22.105	Version: 3.5.0	
Submitted to		for approval		without presentation ("non-strategic")
TSG_SA				<input checked="" type="checkbox"/>
<small>list TSG plenary meeting no. here ↑</small>		for information		with presentation ("strategic")
				<input type="checkbox"/>

PT SMG CR cover form is available from: http://docbox.etsi.org/tech-org/smg/Document/smg/tools/CR_form/crf28_1.zip

Proposed change affects: USIM TE Network
(at least one should be marked with an X)

Work item: UMTS Quality of Service

Source: Nortel Networks **Date:** 08.07.99

Subject: Dynamically variable rate QoS requirements

Category:	F Correction	<input checked="" type="checkbox"/>	Release:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
<small>(one category and one release Only shall be Marked with an X)</small>	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		UMTS 99	<input checked="" type="checkbox"/>

Reason for change: There is a need for the QoS mechanism in UMTS to accommodate applications that require dynamically variable bit rates between a minimum guaranteed bit rate and a maximum bit rate for some real time applications. Hence this is made a requirement of the bearer service.

Text is introduced which clarifies that the tables in sections 5.5 define specifically end to end quality of service requirements.

Clauses affected: 5.2.1, 5.5

Other specs Affected:	Other releases of same spec	<input type="checkbox"/>	→ List of CRs:	
	Other core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications / TBRs	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:



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1st Change

5.2.1 Information transfer

Connection oriented / connectionless services

Both Connection oriented and connectionless services shall be supported.

Traffic type- It is required that the bearer service provides one of the following:

- guaranteed/constant bit rate, ~~and a~~
- non-guaranteed/dynamically variable bit rate and
- real time dynamically variable bit rate with a minimum guaranteed bit rate.

Real time and non real time applications shall be supported.

- Real time video, audio and speech must be supported. This implies the:
 - ability to provide a real time stream of guaranteed bit rate, end to end delay and delay variation.
 - ability to provide a real time conversational service of guaranteed bit rate, end to end delay and delay variation.
- Non real time interactive and file transfer service must be supported. This implies the:
 - ability to support message transport with differentiation as regards QoS between different users.
- Multimedia applications shall be supported. This implies the:
 - ability to support several user flows to/from one user having different traffic types (e.g. real time, non real time)

Traffic characteristics

It shall be possible for an application to specify its traffic requirements to the network by requesting a bearer service with one of the following configurations

- 1) Point-to-Point
 - Uni-Directional
 - Bi-Directional
 - Symmetric
 - Asymmetric
- 2) Uni-Directional Point-to-Multipoint
 - Multicast
 - Broadcast

A multicast topology is one in which sink parties are specified before the connection is established, or by subsequent operations to add or remove parties from the connection. The source of the connection will always be aware of all parties to which the connection travels.

A broadcast topology is one in which the sink parties are not always known to the source. The connection to individual sink parties is not under the control of the source, but is by request of each sink party.

In the case of a mobile termination with several active bearer services simultaneously, it shall be possible for each bearer service to have independent configurations and source/sink parties.5.2.2 Information quality

2nd Change

5.5 Supported End User QoS

This section outlines the QoS that shall be provided to the end user / applications. [This section defines QoS requirements from end to end. The values in the tables are end to end, including mobile to mobile calls and satellite components.](#) Figure 2 below summarises the major groups of application in terms of QoS requirements. Applications and new applications may be applicable to one more groups.

Error tolerant	Conversational voice and video	Voice messaging	Streaming audio and video	Fax
Error intolerant	Telnet, interactive games	E-commerce, WWW browsing,	FTP, still image, paging	E-mail arrival notification
	Conversational (delay <<1 sec)	Interactive (delay approx 1 sec)	Streaming (delay <10 sec)	Background (delay >10 sec)

The following tables further elaborate UMTS end user / application QoS requirements.

Table 1: End-user Performance Expectations - Conversational / Real-time Services

Medium	Application	Degree of symmetry	Data rate	Key performance parameters and target values		
				One-way Delay	Delay Variation	Information loss

Audio	Conversational voice	Two-way	4-25 kb/s	<150 msec preferred <400 msec limit	< 1 msec	< 3% FER
Video	Videophone	Two-way	32-384 kb/s	< 150 msec preferred <400 msec limit Lip-synch : < 100 msec		< 1% FER
Data	Telemetry - two-way control	Two-way	<28.8 kb/s	< 250 msec	N.A	Zero
Data	Interactive games	Two-way	< 1 KB	< 250 msec	N.A	Zero
Data	Telnet	Two-way (asymmetric)	< 1 KB	< 250 msec	N.A	Zero

[Note: The values provided in table 1 need to be further reviewed and may be revised in the next version of this specification]

Table 2: End-user Performance Expectations - Interactive Services

Medium	Application	Degree of symmetry	Data rate	Key performance parameters and target values		
				One-way Delay	Delay Variation	Information loss
Audio	Voice messaging	Primarily one-way	4-13 kb/s	< 1 sec for playback < 2 sec for record	< 1 msec	< 3% FER
Data	Web-browsing - HTML	Primarily one-way		< 4 sec /page	N.A	Zero
Data	Transaction services – high priority e.g. e-commerce, ATM	Two-way		< 4 sec	N.A	Zero
Data	E-mail (server access)	Primarily One-way		< 4 sec	N.A	Zero

[Note: The values provided in table 2 need to be further reviewed and may be revised in the next version of this specification]

Table 3: End-user Performance Expectations - Streaming Services

Medium	Application	Degree of symmetry	Data rate	Key performance parameters and target values		
				One-way Delay	Delay Variation	Information loss

Audio	High quality streaming audio	Primarily one-way	32-128 kb/s	< 10 sec	< 1 msec	< 1% FER
Video	One-way	One-way	32-384 kb/s	< 10 sec		< 1% FER
Data	Bulk data transfer/retrieval	Primarily one-way		< 10 sec	N.A	Zero
Data	Still image	One-way		< 10 sec	N.A	Zero
Data	Telemetry - monitoring	One-way	<28.8 kb/s	< 10 sec	N.A	Zero

[Note: The values provided in table 3 need to be further reviewed and may be revised in the next version of this specification]