



TSG-SA Working Group 1 (Services) meeting #8  
Beijing, 10 - 14 April 2000

TSG S1 000364  
Agenda Item:

## CHANGE REQUEST

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

**22.105 CR 024r1**

Current Version: **3.8.0**

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

↑ CR number as allocated by MCC support team

For submission to: **SA#8**  
list expected approval meeting # here ↑

for approval   
for information

strategic   
non-strategic  (for SMG use only)

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:** SA1 **Date:** 13/4/00

**Subject:** Clarification of requirement in TS 22.105 for Delay

**Work item:**

**Category:** F Correction  **Release:** Phase 2   
(only one category shall be marked with an X) A Corresponds to a correction in an earlier release  Release 96   
B Addition of feature  Release 97   
C Functional modification of feature  Release 98   
D Editorial modification  Release 99   
Release 00

**Reason for change:** Clarification of delay requirement requirement

**Clauses affected:** 5.5

**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:**

## 5.5 Supported End User QoS

This section outlines the QoS requirements that shall be provided to the end user / applications and describes them as requirements between communicating entities (i.e. end to end). The QoS values in the tables represent end to end performance, including mobile to mobile calls and satellite components. Delay values represent one -way delay (i.e. from originating entity to terminating entity). 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. The following tables further elaborate UMTS end user / application QoS requirements.

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

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)

Medium	Application	Degree of symmetry	Data rate	Key performance parameters and target values		
				End-end 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

**For information: changes from CR22.105-024r0 in SP-0203**

This section outlines the QoS requirements that shall be provided to the end user / applications and describes ~~them~~. ~~This section defines QoS them as requirements between communicating entities (i.e. end to end) from end to end.~~ The QoS values in the tables represent ~~are~~ end to end performance, including mobile to mobile calls and satellite components. Delay values represent one-way delay (i.e. from originating entity to terminating entity). 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. 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		
				End-end One-way Delay	Delay Variation	Information loss
Audio	Conversational voice	Two-way	4-25 kb/s	<150 msec preferred <400 msec limit Note 1	< 1 msec	< 3% FER
Video	Videophone	Two-way	32-384 kb/s	< 150 msec preferred <400 msec limit Note 1 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 1** This maximum delay applies to a mobile to mobile call. In the case of a mobile to fixed call the delay should be half this figure i.e. 200 msec.