Technical Specification Group Services and System Aspects
Meeting #19, Birmingham, UK, 17-20 March 2003

TSGS#19(03)0018

Source: **SA1**

Title: **CR to 22.105 on Correlation between service class and traffic class (Rel-5/6)**

Document for: **Approval**

Agenda Item: **7.1.3**

SA Doc	Spec	CR	Rev	Phase	Cat	Subject	Old Vers	New Vers	SA1 Doc
SP-030018	22.105	040	-	Rel-5	F	Correlation between service class and traffic class	5.2.0	5.3.0	S1-030273
SP-030018	22.105	041	-	Rel-6	A	Correlation between service class and traffic class	6.0.0	6.1.0	S1-030274

CR-Form-v7

CHANGE REQUEST

⌘ 22.105 CR 040 ⌘rev - ⌘ 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: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Correlation between Service Class and Traffic Class
Source:	⌘	SA1 (Siemens AG)
Work item code:	⌘	TEI
Date:	⌘	24/01/2003
Category:	⌘	F
Release:	⌘	Rel-5

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:	⌘	During the last SA1 meeting an LS from SA2 (S1-021997) was discussed asking if a statement about the correlation between service classes and traffic classes should be added to TS 22.105. In the discussion it was agreed to have such statement for Release 5 onwards to prevent any misunderstanding due to the same terminology used for the service classes and traffic classes.
Summary of change:	⌘	A statement was added saying that there is no strict one-to-one mapping between the groups of application/service defined in this TS and the traffic classes defined in TS 23.107. The reference section was aligned by adding a reference to TS 23.107.
Consequences if not approved:	⌘	Due to the same names, the understanding of a direct correlation between the service class of TS 22.105 and the traffic class of TS 23.107 might occur. In other words, there is the risk of an understanding that e.g. an interactive service has to use a bearer of the interactive traffic class.
Clauses affected:	⌘	2.1, 5.5

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:

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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.

Start of 1st modified section

2.1 Normative references

[1] 3GPP TS 22.001: "Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN)".

[2] 3GPP TS 02.002: "Circuit Bearer services supported by a Public Land Mobile Network (PLMN)".

[3] 3GPP TS 22.003: "Circuit Teleservices supported by a Public Land Mobile Network (PLMN)".

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[11] 3GPP TS 22.135: "Multicall, stage 1".

[12] 3GPP TS 23.107: "QoS Concept and Architecture; Stage 2".

2.2 Informative references

[12] ITU-T Recommendation F.700: "Framework recommendation for audio-visual/multimedia services".

End of 1st modified section

Start of 2nd modified section

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). The values included in the following tables are commonly accepted values from an end-user viewpoint [12]. The delay contribution within the mobile network should be kept to minimum since there may be additional delay contributions from external networks.

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. However, there is no strict one-to-one mapping between the groups of application/service defined in this TS and the traffic classes as defined in TS 23.107 [12]. For instance, an Interactive application/service can very well use a bearer of the Conversational traffic class if the application/service or the user has tight requirements on delay.

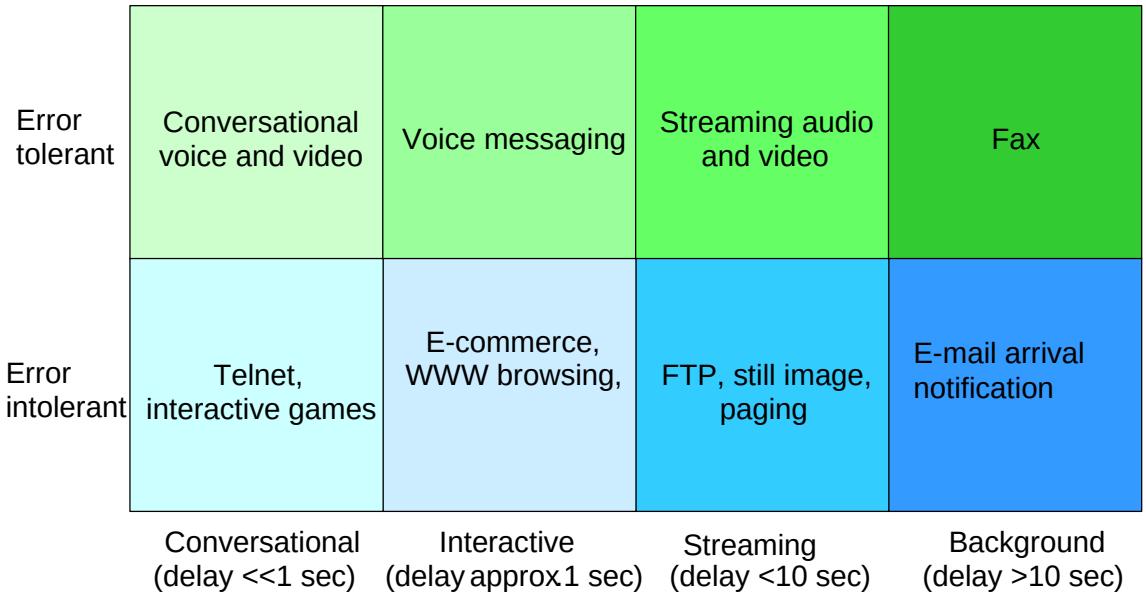

Figure 2: Summary of applications in terms of QoS requirements

The following tables further elaborate 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-to-end One-way Delay	Delay Variation within a call	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 Lip-synch : < 100 msec		< 1% FER
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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: The overall one way delay in the mobile network (from UE to PLMN border) is approximately 100msec.

Table 2: End-user Performance Expectations - Interactive Services

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

Table 3: End-user Performance Expectations - Streaming Services

Medium	Application	Degree of symmetry	Data rate	Key performance parameters and target values		
				Start-up Delay	Transport delay Variation	Packet loss at session layer
Audio	Speech, mixed speech and music, medium and high quality music	Primarily one-way	5-128 kb/s	< 10 sec	< 2sec	< 1% Packet loss ratio
Video	Movie clips, surveillance, real-time video	Primarily one-way	20-384 kb/s	< 10 sec	<2 sec	< 2% Packet loss ratio
Data	Bulk data transfer/retrieval, layout and synchronisation information	Primarily one-way	< 384 kb/s	< 10 sec	N.A	Zero
Data	Still image	Primarily one-way		< 10 sec	N.A	Zero

End of 2nd modified section

CR-Form-v7

CHANGE REQUEST

⌘ **22.105** **CR** **041** ⌘**rev** **-** ⌘ Current version: **6.0.0** ⌘

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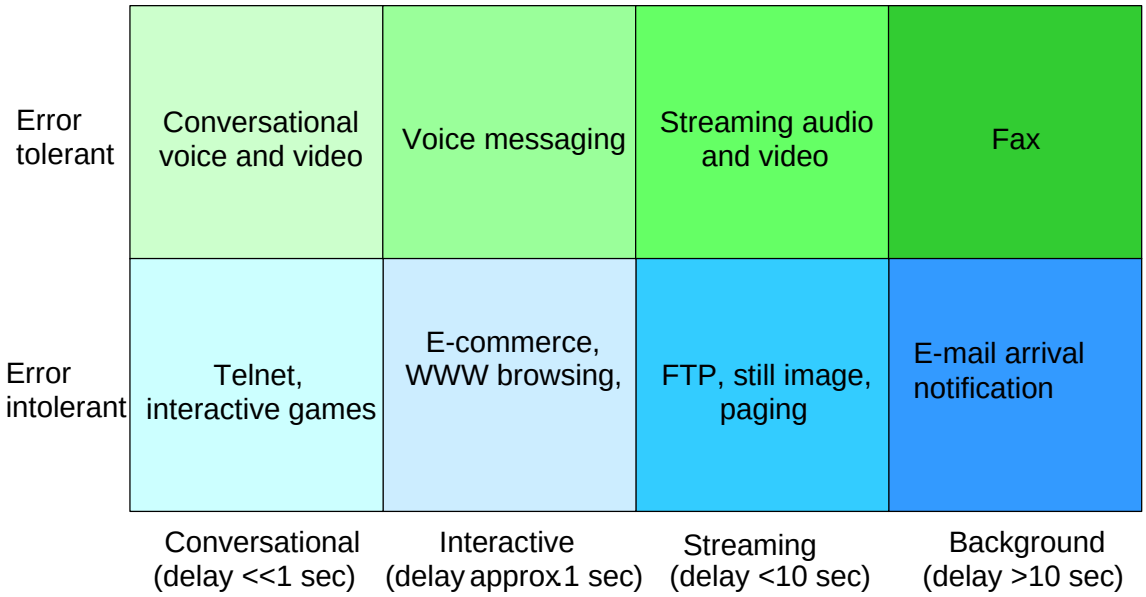

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