
3GPP TSG-RAN WG 3 Meeting #36
Marne la Vallée, France, 19th – 23rd May 2003

TDoc R3-030838

Title: Delay Values in UTRAN for Conversational PS RAB
Response to: Task from TSG RAN Meeting #19 (see RP-030127 and Report of RAN #19)
Source: TSG RAN WG3
To: TSG RAN
Cc: -

Contact Person:

Name: Walter Kunz
Tel. Number: +43 5 1707 21157
E-mail Address: Walter.Kunz@siemens.com

Attachments: -

1. Overall Description:

At TSG RAN Meeting #19, TSG SA4 informed TSG RAN in TDoc RP-030127 on a proposal to set up a conversational test on PS conversational services. SA4 indicated that a conversation test methodology has been proposed, but still some test parameters (delay, packet loss, radio condition) are unsure. To resolve this, SA 4 asked the group to answer a number of questions.

Discussion at TSG RAN level immediately resolved some of the questions raised by SA4, namely those questions in bullet 1 and bullet 2 of RP-030127. It was decided that RAN WG3 shall examine the delay values used by SA WG4. This document summarises the assessment of RAN WG3 on these delay values used by SA WG4, i.e. the aim is to give answers on questions listed in bullets 3 and 4 of RP-030127.

2. Answers to the Questions in RP-030127

Question from SA4, bullet 3:

Are the 100 ms transfer delay defined in the QoS (26.236 Use case 1) feasible on an UTRAN bearer (between the GGSN and the terminal)?

Assessment by RAN3:

As documented in TR25.853, the guideline figure for the delay in the Access Stratum (i.e. transfer delay between CN and UE, including the Access Stratum processing in the CN and in the UE) is 71.8 ms in DL direction and 84.8 ms in UL direction for the case of ATM/AAL2-based transport network in UTRAN (see T2_max_delay for AMR (12.2k) in Table 5 of TR25.853).

It is expected that there is not any significant increase in the figure for the Access Stratum delay that is achievable in case of IP-based Transport in UTRAN.

For the requested transfer delay between the GGSN and the terminal, the media delay on the Gn interface (800us according to Annex A.1.2 of TR25.853) has to be added, as well as the delay due to SGSN and GGSN processing.

It should be noted that the guideline figures from TR25.853 represent typical values for a well designed and configured transport network in normal operation. However, it may happen (e.g. in case of overloaded network) that the delay figures become significantly higher. In such cases, even multiples of the typical values could occur.

Question from SA4, bullet 4:

Is it the understanding of RAN that the end to end delay is the sum of the 2 transfer delays plus the CN delay? Are there more delays to be taken into account?

Assessment by RAN3:

The end to end delay experienced by the user for a mobile-to-mobile call is the sum of the 2 Access Stratum delays (i.e. 71.8ms + 84.8ms = 156.6ms) plus the CN-incurred delays (including the IM Subsystem) plus the Non Access Stratum delays in the UE (e.g. 25ms for gathering of PCM samples for PCM-to-AMR transcoding, up to 8ms for transcoding processing, plus some further delays due to de-jitter buffering, A/D conversion and echo cancellation in the UE).

2. Date of Next TSG-RAN WG3 Meetings:

TSG-RAN WG3 Meeting #37	25 th – 29 th August 2003	Budapest, Hungary
TSG-RAN WG3 Meeting #38	6 th – 10 th October 2003	Sophia Antipolis, France