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TSG-RAN Working Group 2 (Radio L2 and Radio L3)
Sophia Antipolis, France, 19 - 23 February 2001

R2-010756

Source: **TSG-RAN WG2**

To: **TSG-SA WG4**

Cc: **TSG-RAN WG1**

Title: **Response to LS (S4-000652) on RAN handling of bit erroneous SDUs within packet switched domain radio bearers**

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RAN WG2 has reviewed the questions from SA WG4 and has the following answers:

The assumption for IP packet handling at network and link layer has been that these protocol layers (such as PDCP, RLC & MAC) are specified to discard SDUs in which bit errors have been detected. This, respectively, will result in packet loss at the IP layer. As a result, the 3G terminal applications using PS bearers are assumed not to receive RTP payloads that include any detected bit errors.

RAN WG2 can confirm that the assumption of SA WG4 is correct when using unacknowledged and acknowledged mode RLC. There is an option to send erroneous SDUs to higher layers, which is feasible only when using transparent mode RLC.

Furthermore, in case the assumption said above does apply SA4 would kindly request more information on the applicable residual (undetected) bit error ratios for radio bearers that should carry RTP/UDP/IP packets compressed with ROHC (Taken into account the maximum residual BERs that can be handled by the header compression algorithm.).

All CRC sizes (0, 8, 12, 16, 24) can be used on PS domain radio bearers.

What implications a short CRC length (e.g., length 0 or length 8) has for the RAN behaviour and bandwidth efficiency. Specifically, does using a very short CRC bring significant radio capacity benefits for real-time packet switched services?

Short CRC reduces overhead but there is always a tradeoff between short CRC and high residual bit error rate. RAN WG1 might have a more detailed view on this issue.

CN WG1 and RAN WG3 can probably provide more guidance on how to configure RABs for real-time services in PS domain.