TSG-RAN Meeting #10   *RP-000533*
Bangkok, Thailand, 6th – 8th December 2000

Agenda Item: 4.2

Source: **Japan Telecom**

Title: **LS (ITU-T) on Interpretation of Link characteristics parameter**

Document for: **LS in**

Attached document is a liaison back from ITU-T (called as "communication" there) generated at its SG13 20th – 24th November 2000 meeting as a respond to RP-000501 "LS (to ITU-T) on Interpretation of Link characteristics parameter" (original Source TSG RAN WG3) approved at TSG RAN#9 meeting.

This TD is to inform TSG RAN (real Source to ITU-T) the kind response by ITU-T and to ask MCC to input the attached response document to TSG RAN WG3#18 meeting, 15th – 19th January 2001 where the substantial study on the response may be made.

-------- Start of extract from TSG RAN#9 meeting report --------

RP-000445 Proposed LS (to ITU-T) on Interpretation of Link characteristics parameter (TSG-RAN WG3)

Francois Courau (Vice-Chairman) presented this LS.

Discussion: There was not yet a possibility to liaise directly with ITU-T, although discussions between the SDOs and ITU-T were going on. The LS could not be sent with source TSG-RAN and would have to be sent by an ITU member company. A footnote could be added to show that the 'real' source was TSG-RAN.

Decision: The LS was endorsed. Ericsson would revise the LS. Ericsson would send it to ITU-T, with properly modified source and added footnote.

RP-000501 Draft LS (to ITU-T) on Interpretation of Link characteristics parameter (Ericsson)

Per Beming (Ericsson) presented this LS.

Decision: The LS was endorsed. Instead of Ericsson, Japan Telecom would present it to ITU-T.

-------- End of extract from TSG RAN#9 meeting report --------

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QUESTIONS: 13, 20/11(old); 2,4/13, 3GPP TSG RAN

SOURCE: ITU-T SG 13 (Geneva 20 – 24 November 2000)

TITLE: LIAISON FOR AAL TYPE 2 SIGNALLING PROTOCOL

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LIAISON STATEMENT to SG 11 and COMMUNICATION TO 3GPP TSG RAN

TO: ITU-T SG 11 and 3GPP TSG RAN
APPROVAL: ITU-T SG 13 (Geneva 20 – 24 November 2000)
FOR: Information
DEADLINE: none

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We thank 3GPP TSG RAN for your close communication on AAL type 2 activity. Regarding the two questions on the interpretation of AAL type 2 Link Characteristics (ALC), the meeting reached the following results:

Q.1: Is the traffic pattern given in the link characteristics definition a mandatory scheduling for AAL type 2 sources or is it just a source traffic model or even less?

A.1: The ALC parameter does not imply how scheduling for AAL type 2 sources is done exactly. However:

- The traffic pattern given in the ALC definition indicates the source traffic model on the CPS-SDU level for an AAL type 2 connection. It is used for CAC at the AAL type 2 level.

- The outcome of the traffic pattern at the AAL type 2 path should be close to source traffic model of the AAL type 2 connection.

- How to map the source traffic model at an AAL type 2 path is node implementation matter. CPS layer multiplexing does not guarantee the same outcome at an AAL type 2 path, e.g. also after AAL type 2 switching.

- Enforcement of the ALC values for AAL type 2 connection is for further study.

Table 1 and Figure 1 show an ALC and the corresponding source traffic model.
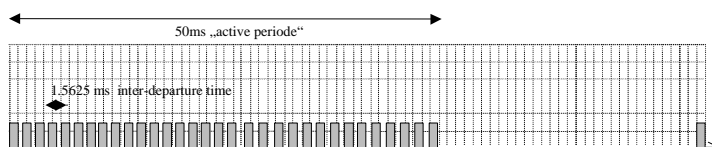
Source traffic model for an AAL type 2 connection
      For a data connection which has to transmit 1440 octet periodically every 80ms with a transmission time of 50ms the values of the ALC would be:

Table 1. AAL type 2 Link Characteristics parameters

Max. CPS-SDU bit rate	Avg. CPS-SDU bit rate	Max. CPS-SDU size	Avg. CPS-SDU size
230,400 bps	144,000 bps	45 octet	45 octet

These parameter values lead the following source traffic model in Figure 1.

1440 octet segmented (in 45 octet packets) with 1.5625 ms inter-departure time for an "allowed transmission time" of 50 ms
=> maximum CPS-SDU rate is 230,400 bps, average CPS-SDU rate is 144,000 bps

Figure 1 Source traffic model for an AAL type 2 connection

Q.2: In case that the traffic pattern given in the link characteristics definition is only a source traffic model (or even less): Could ITU-T AAL type 2 the addressed groups explain, how it is possible to provide CAC with the link characteristics if the incoming traffic has a traffic pattern worse (e.g. more bursty) than the network element expects from the link characteristics definition and no overload prevention (e.g. policing at AAL2 layer) is available.

A.2: In some environment where a source is reliable (ALC parameter values match the source behavior) and CPS-SDU delay variation caused by the multiplexing at CPS and/or lower layer is limited, ALC will work for CAC without policing at an AAL type 2 layer. However, we understand that the current definition of the ALC parameter is not well suited for bursty traffic (data). The meeting agreed to start the study on enhancements to the ALC parameter in SG13. The outcome of this work is expected to be included in a future version of the AAL type 2 signalling protocol (beyond CS2).

- For better resource allocation, it is desirable that for non-speech connection the burst above the average CPS-SDU bit rate is as small as possible.

- Accurate CAC based on the source traffic model is possible only if the source and related nodes have the same understanding of the link characteristics.

The answers in this Liaison Statement are based on traffic models with respect to Link Characteristics and does not consider traffic model with SSCS information.