

4th -7th of June 2002, Marco Island, Florida, USA

Agenda Item: 8.8
Source: Nokia
Title: RAB scenarios
Document for: Discussion and decision

1. Background

Currently, in 3GPP there is one document, TS 34.108, presenting reference RABs and their combinations (in chapters 6.10 and 6.11). However, this document is a test specification, and hence, not intended primarily for RAN level reference configurations. This is further underlined in the LS from T1 to RAN1 and RAN2 [1].

Due to introduction of IMS, and due to new schemes affecting RAN (e.g., HSDPA in Rel 5), multiple new reference configurations are needed, when communicating the possible parameter combinations and their impacts between RAN WGs and between RAN and other TSGs.

Items that need specific attention in IMS, and should be addressed in reference RAB documents are, for example, bearer for SIP, possible multiplexing of SIP, or bearers for RTP possibly combined with RTCP, and, e.g., their allocation on combinations of HS-DSCH, DCH, and DSCH channels.

If TS 34.108 is used as the reference bearer document in Rel 5, the following problems are encountered:

1. TS 34.108 bearer definitions do not include PDCP layer. Especially for IMS, the applied header compression affects significantly the bearer rates on RLC and below.
2. Some important parameter values impacting the quality of service, e.g., timer based discard values on RLC, are not included in 34.108 parameters.
3. TS 34.108 can contain only RAB combinations based on stable core specifications. Possible scenarios for future new RAB combinations (e.g., Rel 6) cannot be included there.
4. There may be need to have more reference bearers than only those used in tests of TS 34.123. All RAB combinations introduced into TS 34.108 must have the prose test case specification and the TTCN in TS 34.123 in the time limits set by T1 [1].
 - a. If the RAB combination is not necessary from testing point of view (that is, the differences to existing RAB combinations are linear), unnecessary work in T1 is required.
 - b. In order to keep the complexity of conformance testing and test specifications low, several RAB combinations may be left out from TS 34.108. However, they may be important configurations to be referenced, e.g., in the 3GPP discussions.
5. The justification and background information on the bearers and combinations (e.g., which bearer is used for SIP, RTP and/or RTCP, etc.), is not relevant for testing and T1, and should be kept rather in RAN documents than in T1 documents.
6. There will probably be a large amount of reference RAB combinations to be included in TS 34.108. However, the capability of T1 to process Rel 5 CRs, may be affected by more urgent Rel -99 and Rel 4 open issues (e.g., processing of the lacking test case and TTCN definitions for TS 34.123). The RAB combinations for TS 34.108 could be agreed by RAN1 and RAN2 first in a RAN internal document, and transferred from the RAN document to TS 34.108 later, when appropriate.

2. Discussion

One solution to overcome the listed problems is to have a report, which includes the reference RABs with their combinations, and the background for them (RAN level scenarios), with all the relevant L2 and L1 parameters. The document is called in this contribution as RAB Scenarios document. The document could be under RAN2 control.

Even though the document presents reference RABs for IMS, the document should not be restricted to IMS only. One of the reasons is that UTRAN and UEs must be able to support combinations of IMS and non-IMS RABs, too. Therefore, the whole Rel 5 and further releases of RAN should be taken into account. Because most of the previously mentioned problems are not relevant to Rel 4 or Rel -99, it is felt unnecessary to include these earlier releases in the document.

It should be noted that the basic procedure for approving the bearers in TS 34.108 is not proposed to be changed, i.e., RAN1 and RAN2 approve the L1 and L2 parameters, and the CRs to TS 34.108 are made by T1. The reviewed and approved detailed RAB combinations in RAB Scenarios can be used as input to TS 34.108. The L1 parameters are to be checked by RAN1 (LS sent to RAN1). Note that not all RAB combinations need to be presented on detailed level. This is valid especially for the (tentative) scenarios of future RAN releases.

The format of the RAB descriptions in the document could be similar to those in TS 34.108 chapters 6.10 and 6.11, with relevant additions (e.g., PDCP layer information). The similar format would facilitate comparison and mapping between the existing RABs and those introduced in RAB Scenarios.

It is emphasized, that the proposed TR is restricted to RAN items only. The requirements to the services and architecture agreed in TSG SA are taken as the basis for the document. For example, end-to-end scenarios are not covered by the TR. Therefore, we feel that it is not necessary to agree on the contents of the document with other TSGs.

3. Proposal

It is proposed to:

1. Allocate TR number to the new RAB Scenarios document.
2. To approve RAN plenary the procedure for the approval of RAB Scenarios: The main content of RAB Scenarios and the new RABs (and their combinations) are introduced and approved by RAN2, but the final approval requires that possible L1 parameters are reviewed by RAN1.

Nokia offers to provide the editor for the document.

4. Time schedule

Decision on the TR in the RAN plenary on June 4th – 7th, 2002.

The skeleton of the document with some example scenarios could be submitted for information in the RAN2 meeting on June 24th – 28th, 2002.

5. References

- [1] T1-020185, LS to RAN1 and RAN2 in response to T1-020025, LS on 34.108 Updates, 3GPP TSG-T1 Meeting #14 (also in R2-020712 of 3GPP TSG-RAN2 Meeting #28)