

Agenda Item: 6.1, 8.1
Source: Nortel Networks
Title: Concept proposal of Coordinated RABs
Document for:

1 Introduction

This contribution proposes a simple mapping of the concepts of Coordinated NAS data streams agreed in [1] over multiple RABs as previously introduced in [2] and [3].

2 Discussion

As stated in [4], coordinated NAS data streams have the following characteristics:

- Coordinated NAS Data Streams are established and released together.
- Coordinated NAS Data Streams are co-ordinated by the Core Network: this means that the Core Network shall indicate in the control plane those NAS Data Streams that are to be established and released together.
- NAS Data Streams are transported over one Iu transmission link: this means that with the current Data bearers specified in 25.414, the NAS Data Streams that are co-ordinated together as indicated by the CN are carried over e.g. one AAL2 connection for the CS domain.

However, compared to [4], Nortel Networks considers two important differences:

1. The QoS of a RAB is much more than the part related to the transport over Iu. The most important part of the QoS specified for a RAB concerns the Radio aspects (protection level, delay constraints etc.). So although it can be considered that the coordinated NAS Data Stream have similar QoS from the Iu transport point of view, they appear as having different QoS when considered from the RAB perspective: they have different BER requirements.
2. For the previous reason, it is considered that a service using multiple coordinated NAS data streams will use multiple RABs. (these RABs will be coordinated). This is absolutely compatible with the current definition of a RAB: " The service that the access stratum provides to the non-access stratum for transfer of user data between User Equipment and CN ".

Coordinated RABs appear to be regular RABs (in particular The Channel coding to be applied to the flow at layer 1 is deduced from the RAB QoS and is as straight forward as for any other RAB) with added characteristic:

- These RABs are coordinated together
- They are established, modified and released together in the same RANAP procedure using the bearer linking parameter. Failure to establish one of these RABs leads to the establishment of none of them
- Coordinated RABs are carried over the same Iu UP transport bearer using Radio Application Protocol multiplexing
- SDUs of Coordinated RABs are submitted and delivered together at the RABs SAPs

To the notion of predefined RAB flows Combination and RFCIs, we prefer to have on the Iu a simpler approach with multiplexing in the payload in the following way :

Length SDU ₁	SDU ₁	Length SDU ₂	SDU ₂	Length SDU ₃	SDU ₃
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This definition is believed more flexible than the notion of sub-flows as described in [4] and also removes the need for an initialisation procedure as described in [5]. It also takes into account one of the functions of RLC/MAC which is SDU concatenation, padding and segmentation reassembly to map the actual bit rate of the RAB to the available Transport Format Set.

3 Proposal

It is proposed to introduce in [1] the notion of coordinated RABs and the proposed multiplexing scheme presented in section 2.

It is proposed to send a liaison to WG2 to inform them of this new concept so that then can consider the impacts on the Radio Protocol Architecture.

4 References

- [1] TS 25.415 Iu Interface CN-RAN User Plane Protocols, Source: Editor
- [2] R3-99214 A solution for the efficient support by the UMTS of the speech services, Source Nortel Networks
- [3] R3-99368 Comments to “Iu User Plane protocol towards the PSTN/ISDN Domain” of Ericsson from the multi-RAB perspective, Source Nortel Networks
- [4] R3-99460 Concept Proposal of RAB Subflow, Source Ericsson
- [5] R3-99548 Initialisation Procedure used by the Iu UP protocol layer, Source Ericsson