TSG-RAN Working Group 3 meeting #6
Sophia Antipolis, France, August 23-27, 1999

TSGR3#6(99)854

Agenda Item: **15**

Source: **Alcatel**

Title: **Synchronised RL Reconfiguration procedure for DSCH**

Document for: **Approval**

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1 Introduction

At last RAN3 meeting at Helsinki, it has been agreed as a working assumption that not only the unsynchronised reconfiguration (refer to R3-99652 [1]) but also the synchronised reconfiguration procedure can be used for a DSCH.

It is proposed to modify TS 25.423 [2] and TS 25.433 [3] according to the above working assumption.
Furthermore, over the Iur, in TS 25.423, it is proposed to use the MAC-d/MAC-sh DL Transport Format Set information instead of the DSCH Transport Format Set information, because the radio link is related to the UE and the Serving RNC should not be aware of the DSCH TFS.

2 Proposal

2.1 Proposal 1

It is proposed to modify section 8.2.4 of TS 25.423 [2] as follows:

8.2.4 Radio Link Reconfiguration (synchronised)

~~[Editor's note:~~

~~It is agreed as a working assumption that not only the unsynchronised reconfiguration (chapter 8.2.5 below) but also the synchronised reconfiguration procedure can be used for a DSCH. However, the text below does not reflect this decision, due to lack of contributions. Contributions are invited.]~~

RL Reconfiguration procedure is used to reconfigure radio links related to one UE-UTRAN connection within one DRNS. The procedure can be used to add, delete or modify a DCH, to put or remove an UE on a DSCH, to modify the usage the UE is making of a DSCH, or to perform physical channel reconfiguration.
The RL Reconfiguration procedure is initiated by the serving RNC by sending the RNSAP message RL RECONFIGURATION PREPARE to the DRNC. The message is sent using the relevant signalling connection.
The message includes essentially the desired radio link parameters for the radio links after completion of this procedure. The following parameters can be specified (the list is to be considered as an incomplete example):
Possible parameters related to all radio links after completion of the procedure:

- DL channelisation code type(s)
- New UL channelisation type
- New TFCS
- IDs of the DCHs to be added / deleted or modified
- Priority of the added/modified DCH

- TFS of the added/modified DCH
- DSCH Related Information (DSCH Identifier, RL Identifier, MAC-d/MAC-sh DL Transport Format Set)

If the proposed modifications are allowed by the DRNS resource management algorithms, and the DRNC has successfully reserved the required resources it responds to the SRNC with RL RECONFIGURATION READY message.
When setting up coordinated DCHs, if the receiver is not able to setup one of the DCHs, the setup of the other DCHs requested with the same DCH Combination Indicator value shall be rejected.
In case of deleting one or more coordinated DCHs, the deletion of all DCHs established together with the same value for the DCH Combination Indicator, shall be requested with one message. If deletion of only a subset of the coordinated DCHs is requested, the complete deletion shall be rejected
If the requested reconfiguration fails for one or more RLs the DRNC sends the RNSAP message RL RECONFIGURATION FAILURE to the SRNC, indicating among other things the reason for failure.
The RL RECONFIGURATION READY message contains the downlink channelisation codes for each radio link (if changed), a Binding Identifier (BID) and transmission address (e.g. AAL2 address) for each new Iur transport bearer (if any). The message may furthermore contain the DSCH TFS and its related Binding ID.

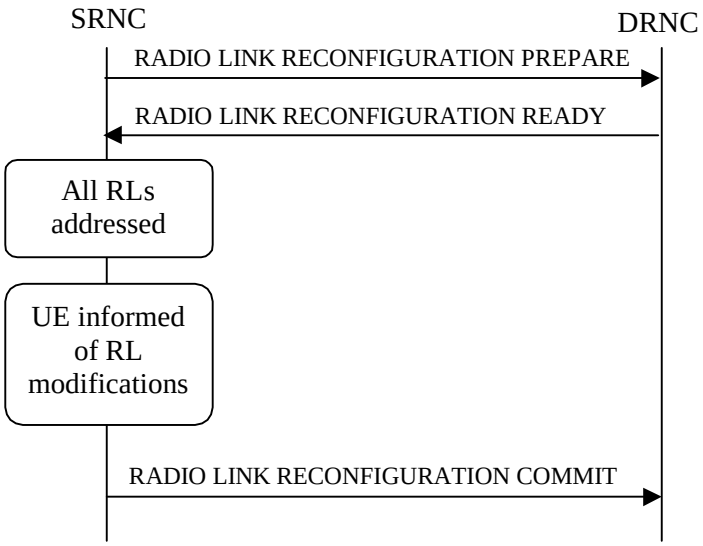
SRNC informs the UE about the changes in radio links (RL) with the relevant RRC message(s) and sends the RL RECONFIGURATION COMMIT message to DRNCs.
SRNC is responsible for releasing unnecessary Iur transport bearers (if any).
Note. A mechanism for synchronising the switch from the old to the new configuration in the UE and the DRNS in needed and FFS.

Editor's note:

The above information related to the DSCH is agreed as a working assumption.]

[Editor's note:

The restrictions on addition and deletion of a DSCH are FFS.]



(Successful case)

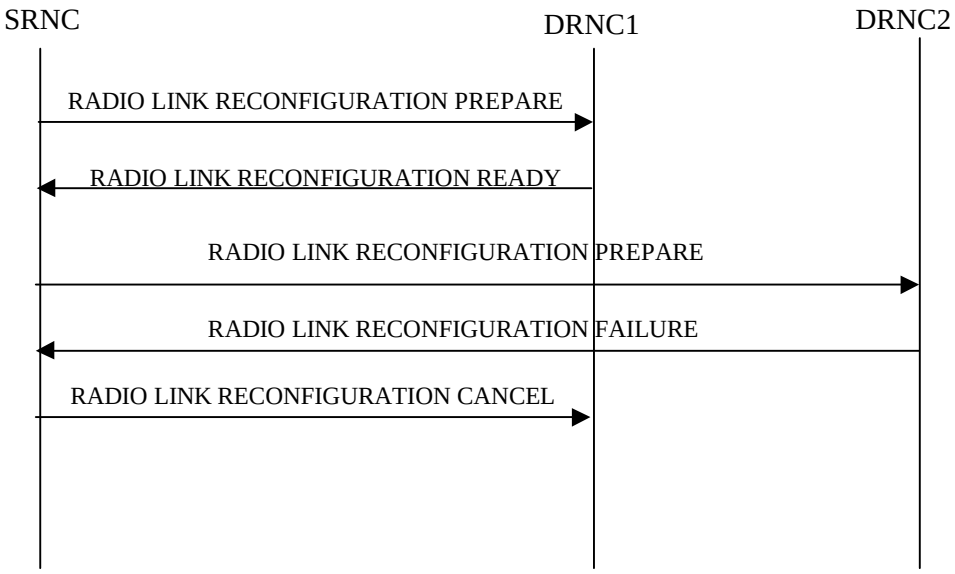


Figure 9-4. RL Reconfiguration procedure (synchronised)

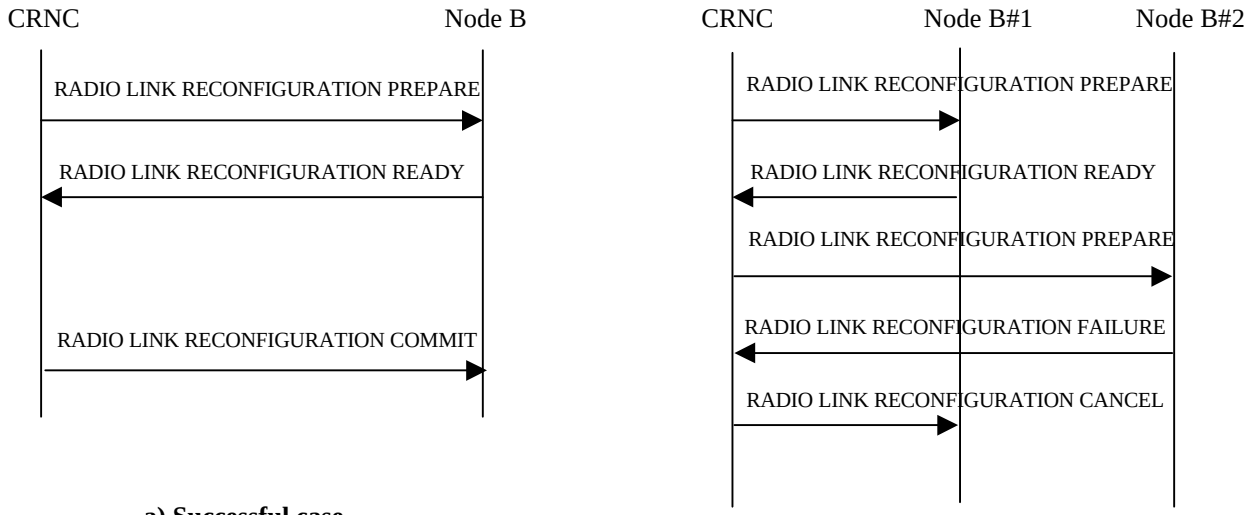
2.2 Proposal 2

It is proposed to modify section 8.2.2 of TS 25.433 [3] as follows:

8.2.2 Radio Link Reconfiguration (Synchronized)

The Radio Link Reconfiguration (Synchronized) procedure is used to reconfigure radio links related to one UE-UTRAN connection within Node B. The procedure can be used to add, delete or reconfigure a DCH. It can also be used to put, remove a UE on a DSCH and modify the usage the UE is making of the DSCH.

The Radio Link Reconfiguration procedure is initiated by the Controlling RNC by sending the message RADIO LINK RECONFIGURATION PREPARE to the Node B. The message is sent using the relevant signalling connection. It includes the desired radio link parameters for the radio links to be used continuously after completion of this procedure (no change in active set). If the proposed modifications are approved by the Node B resource management algorithms, and when the Node B has successfully reserved the required resources, it responds to the Controlling RNC with the RADIO LINK RECONFIGURATION READY message. In the unsuccessful case a NBAP message RADIO LINK RECONFIGURATION FAILURE is returned, indicating among other things the reason for failure. The Controlling RNC informs the UE about the changes in the RL with the relevant RRC message(s) after sending the RADIO LINK RECONFIGURATION COMMIT message to the Node Bs. If necessary (for example when the new L1/L2 configuration cannot coexist with the old one), the SRNC selects the most suitable CFN for the switching between the old and new configuration and includes it in the RRC message and in the RADIO LINK RECONFIGURATION COMMIT message. The Controlling RNC is responsible for releasing unnecessary Iub transport bearers (in case of DCH deletion).
This procedure is not used for adding or deleting radio links.



a) Successful case

b) Unsuccessful case

Radio Link Reconfiguration (Synchronized) Procedure

The RADIO LINK RECONFIGURATION PREPARE message contains:

- UL Radio Resources (UL Channelisation code type)
- DL Radio Resources (DL Channelisation code per RL in the DCH case) (if changed)
- Transport Format Combination Set

In case of DCH addition, this message also contains

- DCH Information (new DCH ID to add, Transmission Rate, Transport Format Set)
- Priority of DCH (How is it used?)

When setting up co-ordinated DCH's, if the receiver is not able to setup one of the DCH's, the setup of the other DCH's requested with the same DCH Combination Indicator value shall be rejected.

In case of DCH reconfiguration, this message also contains

- DCH Information (existing DCH ID to modify, Transmission Rate, Transport Format Set)
- Priority of modified DCH (How is it used?)

In case of DCH deletion, this message also contains

- DCH Information (DCH ID to delete)

In case of deleting one or more co-ordinated DCH's, the deletion of all DCH's established together with the same value for the DCH Combination Ind, shall be requested with one message. If deletion of only a subset of the co-ordinated DCH's is requested, the complete deletion shall be rejected.

In case of DSCH addition, this message also contains

- DSCH Information (DSCH Identifier to add, RL identifier, Transport Format Set)

In case of DSCH modification, this message also contains

- DSCH Information (DSCH Identifier to modify, Transport Format Set)

In case of DSCH deletion, this message also contains

- DSCH Information (DSCH Identifier to delete)

The RADIO LINK RECONFIGURATION PREPARE message may consist of a combination of

DCH addition, deletion, and reconfiguration.

The RADIO LINK RECONFIGURATION READY message contains:

- FFS

In case of DCH addition, this message also contains

- Transport layer addressing information (Transport layer address, binding ID) for added DCH

In case of DCH reconfiguration, this message also contains

- Transport layer addressing information (Transport layer address, binding ID) for modified DCH (if needed)

In case of DSCH addition, this message also contains

- Transport layer addressing information (Transport layer address, binding ID) for added DSCH

In case of DSCH reconfiguration, this message also contains

- Transport layer addressing information (Transport layer address, binding ID) for modified DSCH

The RADIO LINK RECONFIGURATION FAILURE message contains

- CAUSE

The RADIO LINK RECONFIGURATION COMMIT message contains

- Timing information (e.g. CFN) to change old resource to new resource

The RADIO LINK RECONFIGURATION CANCEL message contains

- Cancel information to reconfigure resources

Note: A mechanism for synchronising the switching from the old to the new configuration in the UE and in the Controlling RNC is needed and FFS.

3 References

[1] R3-99652 DSCH Handling over Iub and Iur, Nortel Networks
[2] TS 25.423 v1.2.1 RNSAP specification
[3] TS 25.433 v 1.2.1 NBAP specification