

Agenda Item:	15.3
Source:	Alcatel
Title:	Proposal for addition of DSCH parameters in the Radio Link Setup Request and Radio Link Reconfiguration messages
Document for:	Decision

1 Introduction

This document proposes some changes related to the DSCH in the parameters of the Radio Link Setup Request, Radio Link Reconfiguration Prepare, and Radio Link Reconfiguration Request messages in NBAP (TS 25.433).

2 Discussion

Each Node B of the UE active set needs to be indicated through a Radio Link Setup or Radio Link Reconfiguration procedure, the DSCH transport format (including the DSCH TTI), and the Radio Link on which the DSCH is transmitted.

It is assumed that there will be only one DSCH per UE, so that there is no need to add any DSCH ID in the NBAP messages. If the need for several DSCH per UE arises, then it would still be possible to add a DSCH ID parameter later on.

In case of soft handover, the UE is indeed receiving data from the DSCH from only one radio link.

It is assumed that the DL TFCS IE defined for the DCH will be extended to include combinations related the DSCH. To provide the necessary information, following parameters need to be added to the involved procedure messages:

- a) RL ID = The Radio Link ID of an already or simultaneously established radio link, identifying the cell and carrier on which the DSCH will be transmitted.
- b) DL Transport Format Set = DL TFS for the DSCH
- c) DSCH TFCI signalling mode, to indicate whether one code word, or two code words will be used for DSCH signalling. In case one code word is used for TFCI, the new TFCS shall be sent to all Nodes B controlling cells of the UE active set.
- d) DSCH Frame handling priority parameter, to indicate the priority for this DSCH in the Node B, as for DCH.
- e) ToWAS and ToAWE parameters for synchronisation purposes.

In the response message, the binding ID and transport layer addresses are needed, as for DCH, although the need and definition of transport layer address is still FFS (as for DCH).

3 Changes proposal in TS 25.433

Several changes are proposed in section 9 of TS 25.433, according to the discussion above :

9.1.2.1 RADIO LINK SETUP REQUEST for FDD

This message is sent from CRNC to Node B in order to start radio link setup for the UE in the Node B.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
CRNC Communication Context ID		M
Transaction ID		M
UL Scrambling Code		M
UL Channelization Code		M
Length of UL Channelization Code		M
DCH Information		M
DCH ID		M
DCH Combination Ind		O
DCH Allocation/Retention priority		O
DCH Frame Handling Priority		O
UL Transport Format Set		M
DL Transport Format Set		M
<u>DSCH Information</u>		<u>O</u>
<u>DL Transport Format Set</u>		<u>M</u>
<u>RL ID</u>		<u>M</u>
<u>DSCH Frame handling Priority</u>		<u>O</u>
<u>DSCH TFCI signalling mode</u>		<u>M</u>
<u>ToAWE</u>		<u>M</u>
<u>ToAWS</u>		<u>M</u>
UL Transport Format Combination Set		M
UL TFCI used flag		(FFS)
DL Transport Format Combination Set		M
DL TFCI used Flag		(FFS)
RL Information		M
RL ID		M
Cell ID		M
Frame Offset		M
Chip Offset		M
Propagation Delay		O
Diversity Control Field		C ¹
DL Scrambling Code		M

¹ This Information Element is present for all the radio links except the first radio link in the Node B.

DL Channelization Code		M
DL Channelization Code Number		M
(initial) DL transmission power		M
Maximum DL power		M
Minimum DL power		M
UL Eb/No Target		M
DL Reference Power		M

9.1.3.1 RADIO LINK SETUP RESPONSE for FDD

This message is sent from Node B to CRNC as response to the Radio Link Setup message when all RLS have been successfully setup.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
CRNC Communication Context ID		M
Node B Communication Context ID		M
Communication Control Port ID		M
Transaction ID		M
RL Information Response		M
RL ID		M
UL interference level		M
Diversity Indication		C ²
Reference RL ID		C ³
DCH Information Response		C⁴
DCH ID		M
Binding ID		M
Transport Layer Address		FFS
<u>DSCH Information Response</u>		<u>C⁵</u>
<u>Binding ID</u>		<u>M</u>
<u>Transport Layer Address</u>		<u>FFS</u>

² This Information Element is present for all the radio links except the first radio link in the Node B.

³ This Information Element is present when the Diversity Indication Information Element indicates combining.

⁴ This Information Element is present when the Diversity Indication Information Element indicates non-combining.

⁵ This Information Element is present when the Diversity Indication Information Element indicates non-combining.

9.1.10 RADIO LINK RECONFIGURATION PREPARE

Information element	Reference	Type
Message Discriminator		M
Message type		M
Node B Communication Context ID		M
Transaction ID		M
DCHs to modify		O
DCH ID		M
DCH Allocation/Retention Priority		O
DCH Frame Handling Priority		O
Transport format set (DL)		O
Transport format set (UL)		O
DCHs to add		O
DCH ID		M
DCH Combination Ind		O
DCH Allocation/Retention Priority		O
DCH Frame Handling Priority		O
Transport format set (DL)		M
Transport format set (UL)		M
DCHs to delete		O
DCH ID		M
<u>DSCH Information (add/modify or delete)</u>		<u>O</u>
<u>DL Transport Format Set</u>		<u>M</u>
<u>RL ID</u>		<u>M</u>
<u>DSCH Frame handling Priority</u>		<u>O</u>
<u>DSCH TFCI signalling mode</u>		<u>M</u>
<u>ToAWE</u>		<u>M</u>
<u>ToAWS</u>		<u>M</u>
TFCS (DL)		M
TFCS (UL)		M
Uplink Scrambling code		O
UL Channelisation Codes		O
Channelisation code (UL)		M
RL Information		O
RL ID		M

Information element	Reference	Type
Message Discriminator		M
DL Scrambling Code		M
DL Channelisation Code		M
Channelisation code Number (DL)		M
Max DL power		O
Min DL power		O
DL reference power		FFS

9.1.11 RADIO LINK RECONFIGURATION READY

Information element	Reference	Type
Message Discriminator		M
Message type		M
CRNC Communication Context ID		M
Transaction ID		M
RLs to be reconfigured (synch)		O
RL ID		M
DCH to be setup		O
DCH ID		M
Binding ID		M
Transport Layer Address		FFS
DCH to be modified		O
DCH ID		M
Binding ID		M
Transport Layer Address		FFS
<u>DSCH to be setup or modified</u>		<u>O</u>
<u>Binding ID</u>		<u>M</u>
<u>Transport Layer Address</u>		<u>FFS</u>

9.1.15 RADIO LINK RECONFIGURATION REQUEST

Information element	Reference	Type
Message Discriminator		M
Message type		M
Node B Communication Context ID		M
Transaction ID		M
DCHs to modify		O
DCH ID		M
DCH Allocation/Retention Priority		O
DCH Frame Handling Priority		O

Transport format set (DL)		O
Transport format set (UL)		O
DCHs to add		O
DCH ID		M
DCH Combination Ind		O
DCH Allocation/Retention Priority		O
DCH Frame Handling Priority		O
Transport format set (DL)		M
Transport format set (UL)		M
DCHs to delete		O
DCH ID		M
<u>DSCH Information (add/modify or delete)</u>		<u>O</u>
<u>DL Transport Format Set</u>		<u>M</u>
<u>RL ID</u>		<u>M</u>
<u>DSCH Frame handling Priority</u>		<u>O</u>
<u>DSCH TFCI signalling mode</u>		<u>M</u>
<u>ToAWE</u>		<u>M</u>
<u>ToAWS</u>		<u>M</u>
TFCS (DL)		O
TFCS (UL)		O
Radio Link Information		O
RL ID		M
Max DL Power		O
Min DL Power		O
DL reference power		FFS

9.1.16 RADIO LINK RECONFIGURATION RESPONSE

Information element	Reference	Type
Message Discriminator		M
Message type		M
CRNC Communication Context ID		M
Transaction ID		M
RLs to be reconfigured (unsync.)		O
RL ID		M
DCHs requiring a new transport bearer to be setup		O
DCH ID		M
Binding ID		M
Transport Layer Address		FFS
<u>DSCH to be setup or modified</u>		<u>O</u>

<u>Binding ID</u>		<u>M</u>
<u>Transport Layer Address</u>		<u>FFS</u>

4 Conclusion

It is proposed to include changes proposed in section 3 of this document into [1].

5 References

[1] UMTS 25.433 (v1.2.0.) NBAP Specifications