Technical Specification Group Radio Access Network
Marco Island, USA 4 - 7 June 2002

RP#16(02) 0422

TSG_Doc_Num	Specification	CR_Num	Revision_Num	3G_Release	CR_Subject	CR_Category	Cur_Ver_Num	New_Ver_Num	Tdoc_Num	WorkItem
RP-020422	25.401	047		Rel-5	HSDPA-related changes	F	5.2.0	5.3.0	R3-021159	HSDPA-Iublur
RP-020422	25.423	619		Rel-5	HS_DSCH Support Indicator in FDD Cell Capability Container	F	5.0.0	5.1.0	R3-021253	HSDPA-Iublur
RP-020422	25.423	662	2	Rel-5	HS-DSCH Initial credits	F	5.0.0	5.1.0	R3-021663	HSDPA-Iublur
RP-020422	25.425	050	1	Rel-5	HS-DSCH Initial credits	F	5.0.0	5.1.0	R3-021614	HSDPA-Iublur
RP-020422	25.433	658	1	Rel-5	Interaction between HSDPA and Bearer Re-arrangement	F	5.0.0	5.1.0	R3-021609	HSDPA-Iublur
RP-020422	25.433	693	2	Rel-5	HS-DSCH Initial credits	F	5.0.0	5.1.0	R3-021664	HSDPA-Iublur
RP-020422	25.435	080		Rel-5	HSDPA Correction	F	5.0.0	5.1.0	R3-021254	HSDPA-Iublur
RP-020422	25.435	082	1	Rel-5	HS-DSCH Initial credits	F	5.0.0	5.1.0	R3-021615	HSDPA-Iublur
RP-020422	25.877	001		Rel-5	Alignment of email approved CRs after RAN3#27 with TR 25.877	F	5.0.0	5.1.0	R3-021281	HSDPA-Iublur
RP-020422	25.931	018	1	Rel-5	HSDPA Additions for Example Procedures	F	5.0.0	5.1.0	R3-021520	HSDPA-Iublur
RP-020422	25.425	051	1	Rel-5	Maximum number of credits	F	5.0.0	5.1.0	R3-021602	HSDPA-Iublur
RP-020422	25.435	083	1	Rel-5	Maximum number of credits	F	5.0.0	5.1.0	R3-021603	HSDPA-Iublur
RP-020422	25.423	621		Rel-5	Interaction between HSDPA and IP transport in UTRAN	F	5.0.0	5.1.0	R3-021257	HSDPA-Iublur
RP-020422	25.433	656		Rel-5	Interaction between HSDPA and IP transport in UTRAN	F	5.0.0	5.1.0	R3-021258	HSDPA-Iublur

3GPP TSG-RAN3 #29 Meeting
GyeongJu, Korea, May 13th – 17th 2002

Tdoc R3-021159

CR-Form-v3

CHANGE REQUEST

⌘ **25.401** **CR** **047** ⌘ rev ⌘ Current version: **5.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	HSDPA-related changes
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change: ⌘ HSDPA-related protocol stacks were introduced in 25.401 during the RAN3#27 meeting. The approved HS-DSCH figures depict IP- and ATM-based transport cases separately.
In parallel during the same meeting, the protocol stacks for all channels other than HS-DSCH have been modified to capture both ATM- and IP-based transport within a single figure.

This CR proposes the same kind of modifications for the HS-DSCH protocol stack figures.

Summary of change: ⌘ HS-DSCH figures: 23, 23a, 24, 24a, 25 and 25a in section 11.2.7 have been replaced by new figures: 23, 24 and 25.

Consequences if not approved: ⌘ No consequences. The purpose of this CR is only harmonisation of the presentation.

Impact Analysis:

No impact to previous version of the same release.
No impact to previous releases.

Clauses affected: ⌘ 11.2.7

Other specs affected: ⌘

X	Other core specifications	⌘
☐	Test specifications	
☐	O&M Specifications	

Other comments: ⌘

How to create CRs using this form:

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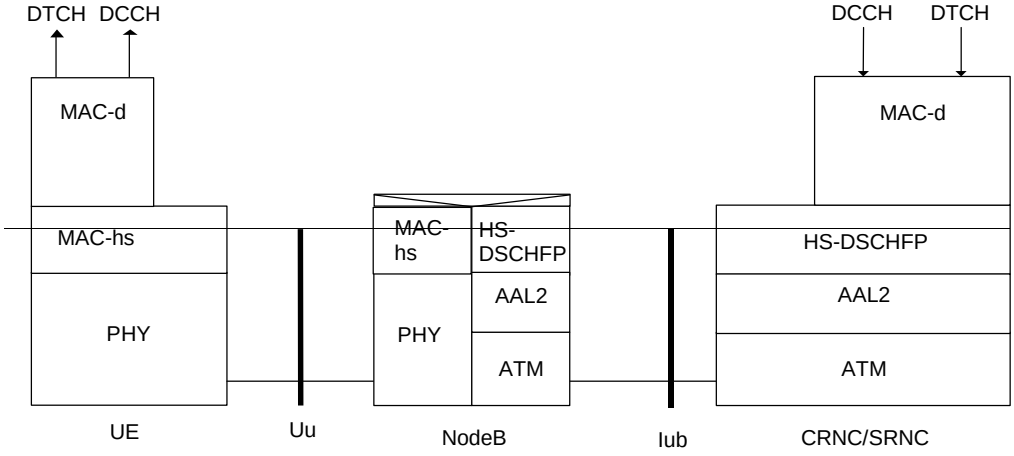
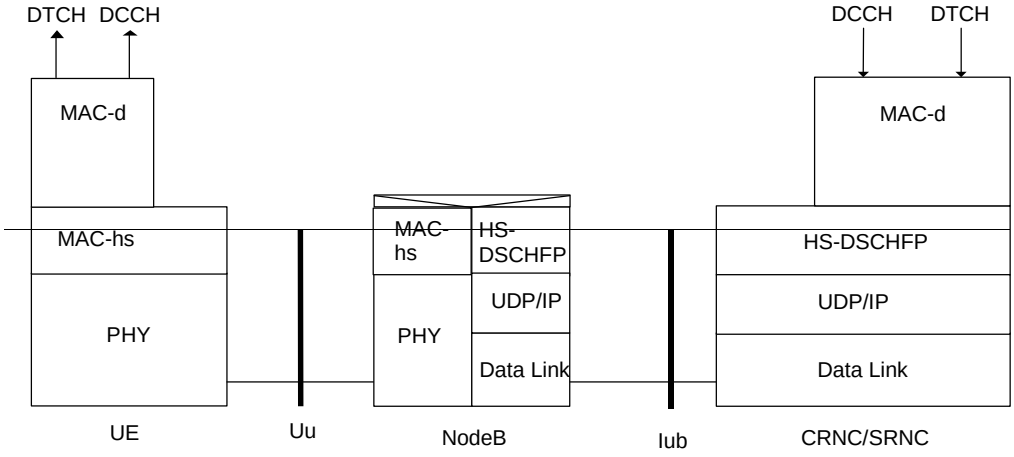
1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.2.7 HS-DSCH Transport Channel

Figure 23 shows the protocol model for the HS-DSCH transport channel when the Controlling and Serving RNC are co-incident.



~~Figure 23: HS-DSCH Co-incident Controlling and Serving RNC~~



~~Figure 23a: HS-DSCH Co-incident Controlling and Serving RNC~~

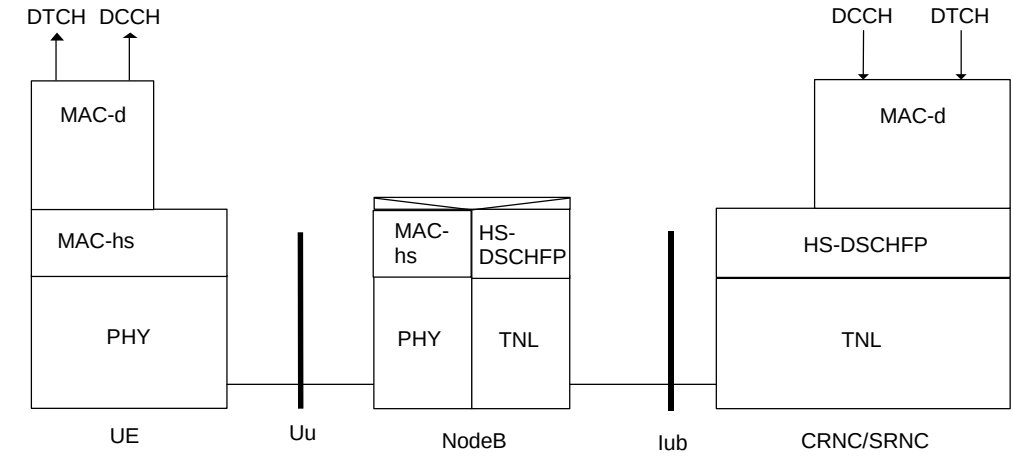
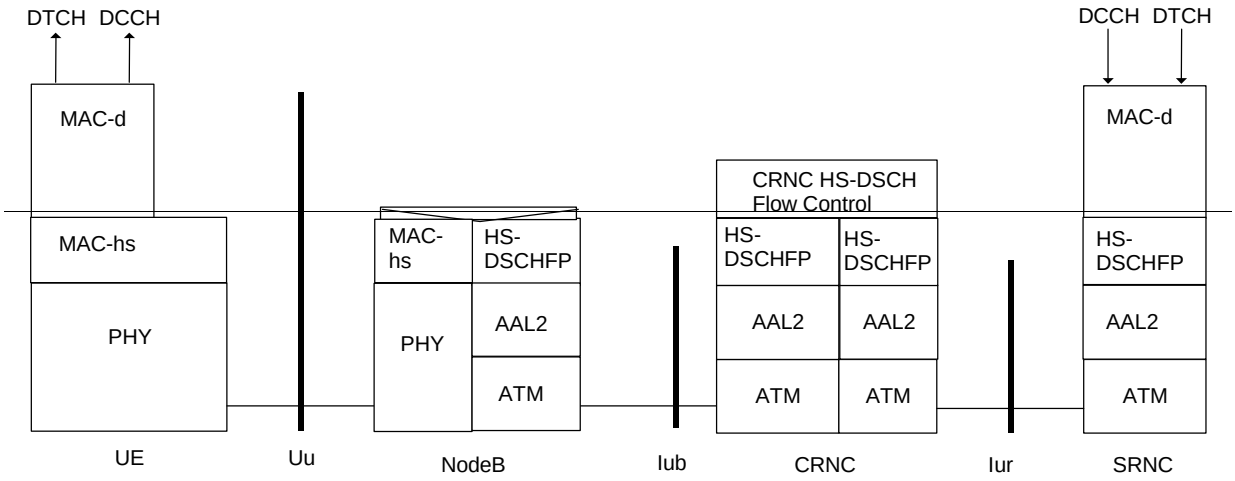


Figure 23: HS-DSCH Co-incident Controlling and Serving RNC

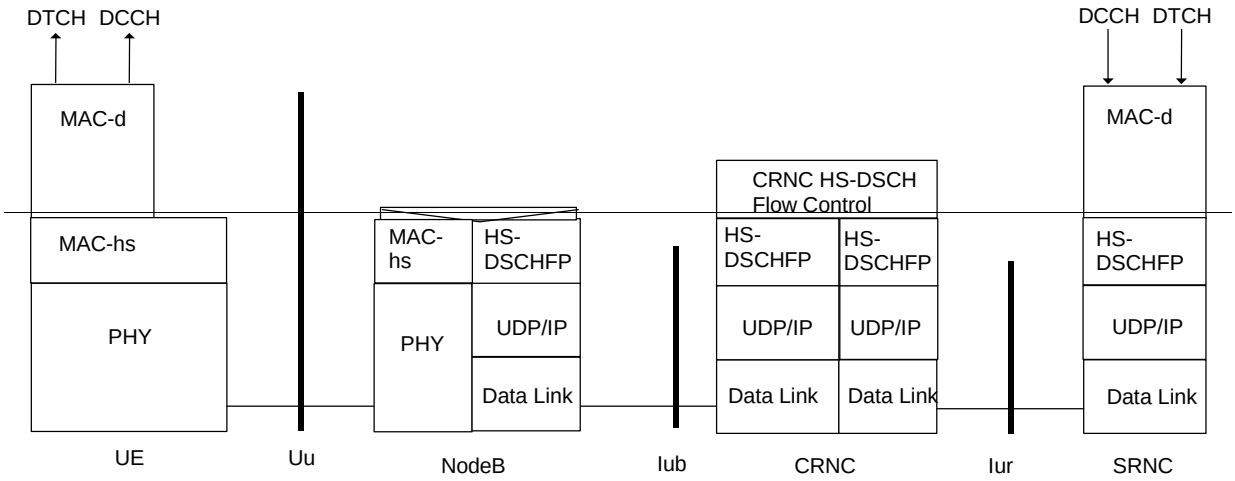
The High Speed MAC (MAC-hs) entity in the Node B transfers MAC-hs PDU to the peer MAC-hs entity in the UE over the Uu interface. The Dedicated MAC (MAC-d) entity in the RNC transfers MAC-d PDUs to the MAC-hs in the Node B using the services of the HS-DSCH Frame Protocol (HS-DSCH FP) entity. The HS-DSCH FP entity adds header information to form a HS-DSCH FP PDU that is transported to the Node B over a transport bearer.

A Relaying Function in the Node B relays the HS-DSCH frame received by HS-DSCH FP entity to the MAC-hs entity. HS-DSCH scheduling is performed by MAC-hs in the Node B.

Figure 24 shows the protocol model for the HS-DSCH transport channel with separate Controlling and Serving RNC. In this case, Iur HS-DSCH Frame Protocol is used to interwork the Flow Control function at the Controlling RNC with the MAC-d at the Serving RNC. Also in this case, Iub HS-DSCH Frame Protocol is used to interwork the MAC-hs at the Node B with the Flow Control function at the Controlling RNC.



~~Figure 24: HS-DSCH: Separate Controlling and Serving RNC (configuration with CRNC flow control)~~



~~Figure 24a: HS-DSCH: Separate Controlling and Serving RNC (configuration with CRNC flow control)~~

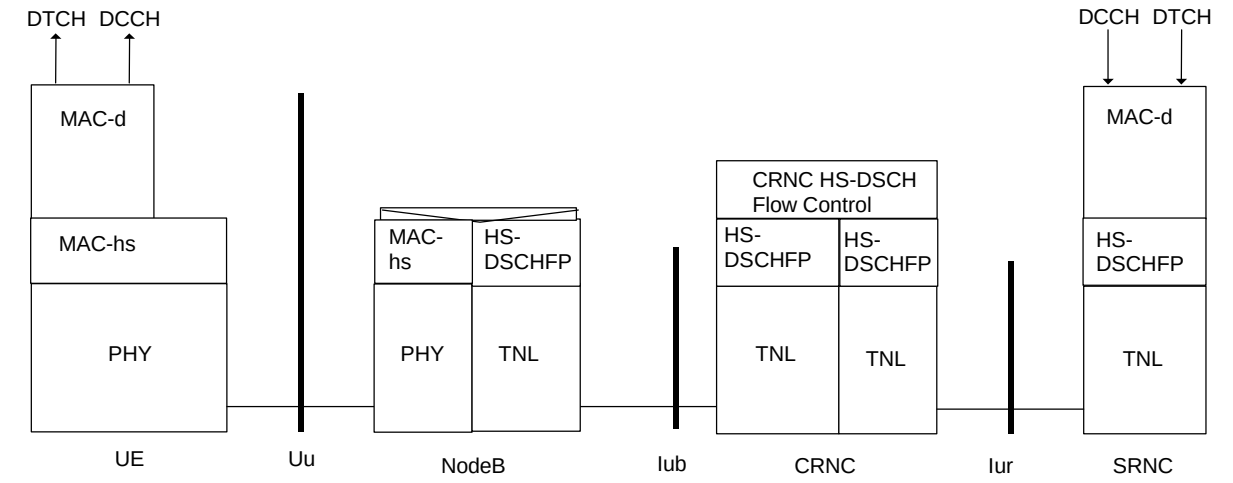
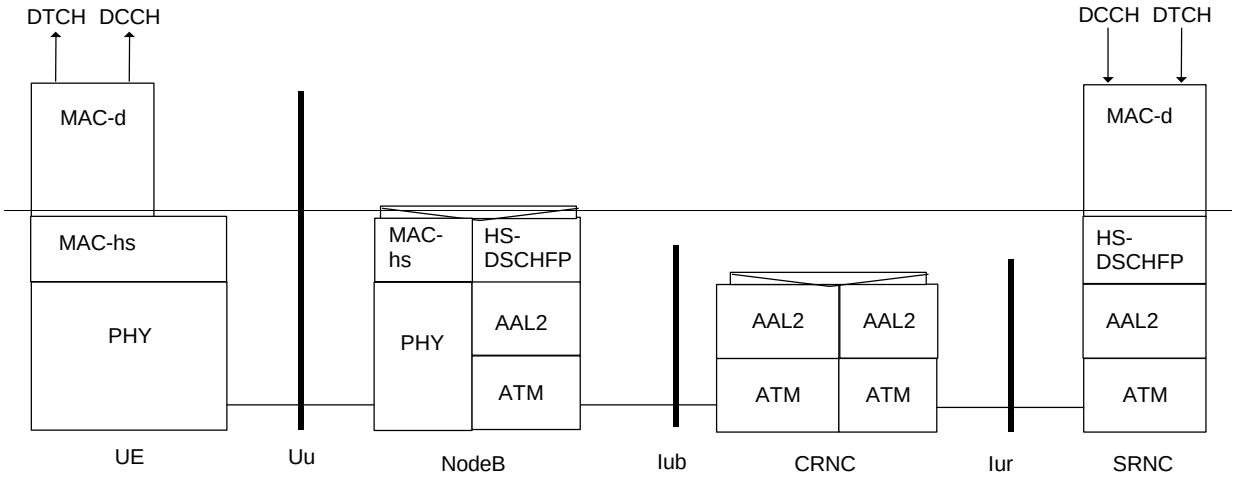
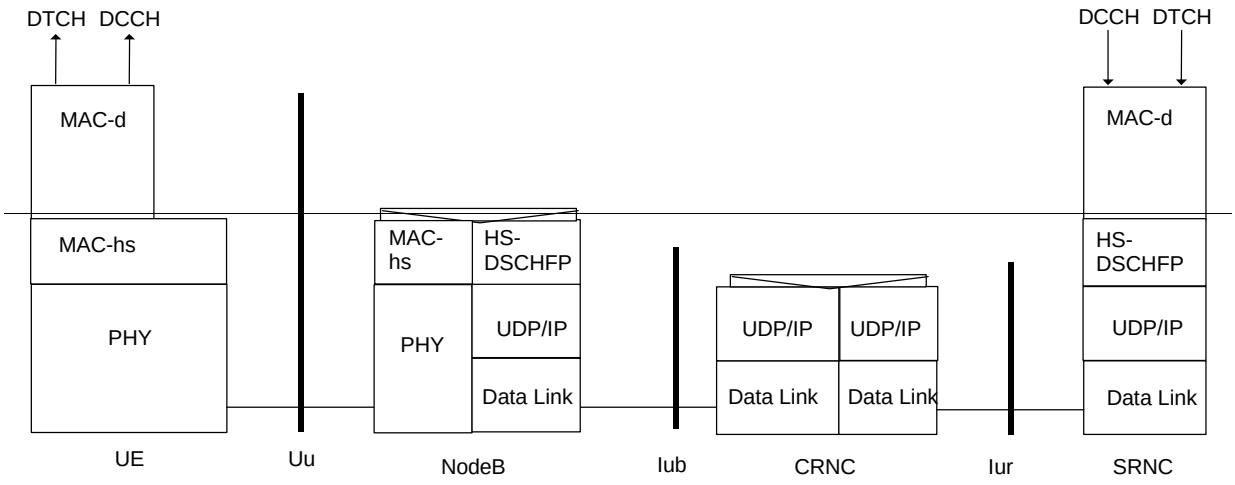


Figure 24: HS-DSCH: Separate Controlling and Serving RNC (configuration with CRNC flow control)

Figure 25 shows the protocol model for the HS-DSCH transport channel with the Drift RNC being bypassed. In this case, the CRNC does not have any user plane function for the HS-DSCH. MAC-d in SRNC is located directly above MAC-hs in Node B, i.e. in the HS-DSCH user plane the SRNC is directly connected to the Node B, thus bypassing the CRNC.



~~Figure 25: HS-DSCH: Serving RNC with bypassed Controlling RNC (configuration without CRNC flow control)~~



~~Figure 25a: HS-DSCH: Serving RNC with bypassed Controlling RNC (configuration without CRNC flow control)~~

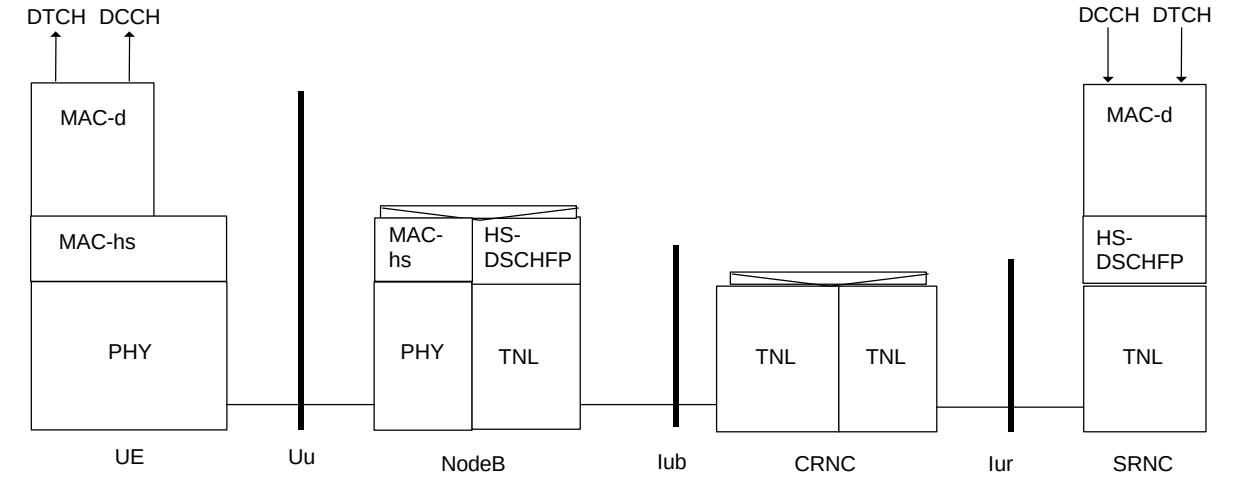


Figure 25: HS-DSCH: Serving RNC with bypassed Controlling RNC (configuration without CRNC flow control)

3GPP TSG-RAN Working Group 3 Meeting #29 ***Tdoc R3-021253***
GyeongJu, Korea, 13th – 17th May 2002

CR-Form-v5

CHANGE REQUEST

⌘ **25.423** **CR** **619** ⌘ ev **-** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	HS_DSCH Support Indicator in FDD & TDD Cell Capability Container
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	Currently in Release 5, the SRNC does not know if HS-DSCH is supported on cells in a DRNC. This CR adds an HS-DSCH support indicator into the Cell Capability container in RL Set-up Response and UL Signalling Transfer messages, so that the SRNC is aware that a cell supports HS-DSCH, and can control the UE connection accordingly. This change is needed for HS-DSCH because of the system gains that can be achieved by using the HS-DSCH resources instead of dedicated channel resources. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release) because it only affects one function, namely HSDPA.
Summary of change:	⌘	The HS-DSCH support indicator is added to the *Cell Capability Container FDD* IE, *Cell Capability Container TDD* IE and *Cell Capability Container TDD LCR* IE
Consequences if not approved:	⌘	The SRNC will not be able to control the UE connection in a system-efficient way.

Clauses affected:	⌘	9.2.2D; 9.2.3.1a; 9.2.3.1b; 9.3.3
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	This CR is a merge of R3-021057 and R3-0201129

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.2.2.D Cell Capability Container FDD

The Cell Capability Container FDD indicates which functionalities a cell supports.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Capability Container FDD			BIT STRTING (32)	Each bit indicates whether a cell supports a particular functionality or not. The value 1 of a bit indicates that the corresponding functionality is supported in a cell and value 0 indicates that the corresponding functionality is not supported in a cell. Each bit is defined as follows. The first bit: Flexible Hard Split Support Indicator The second bit: Delayed Activation Support Indicator The third bit: HS-DSCH Support Indicator Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the transmitter and shall be ignored by the receiver.

/*Partly omitted*/

9.2.3.1a Cell Capability Container TDD

The Cell Capability Container TDD indicates which functionalities a cell supports.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Capability Container TDD			BIT STRTING (32)	Each bit indicates whether a cell supports a particular functionality or not. The value 1 of a bit indicates that the corresponding functionality is supported in a cell and value 0 indicates that the corresponding functionality is not supported in a cell. Each bit is defined as follows. The first bit: Delayed Activation Support Indicator The second bit: HS-DSCH Support Indicator Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the transmitter and shall be ignored by the receiver.

9.2.3.1b Cell Capability Container TDD LCR

The Cell Capability Container TDD LCR indicates which functionalities a cell supports.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Cell Capability Container TDD LCR			BIT STRTING (32)	Each bit indicates whether a cell supports a particular functionality or not. The value 1 of a bit indicates that the corresponding functionality is supported in a cell and value 0 indicates that the corresponding functionality is not supported in a cell. Each bit is defined as follows. The first bit: Delayed Activation Support Indicator The second bit: HS-DSCH Support Indicator Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the transmitter and shall be ignored by the receiver.

9.3.3 PDU Definitions

<<UNAFFECTED PARTS OMITTED>>

```
-- C

Cause ::= CHOICE {
    radioNetwork        CauseRadioNetwork,
    transport           CauseTransport,
    protocol            CauseProtocol,
    misc                CauseMisc,
    ...
}

CauseMisc ::= ENUMERATED {
    control-processing-overload,
    hardware-failure,
    om-intervention,
    not-enough-user-plane-processing-resources,
    unspecified,
    ...
}

CauseProtocol ::= ENUMERATED {
    transfer-syntax-error,
    abstract-syntax-error-reject,
    abstract-syntax-error-ignore-and-notify,
    message-not-compatible-with-receiver-state,
    semantic-error,
    unspecified,
    abstract-syntax-error-falsely-constructed-message,
    ...
}

CauseRadioNetwork ::= ENUMERATED {
    unknown-C-ID,
    cell-not-available,
    power-level-not-supported,
    ul-scrambling-code-already-in-use,
    dl-radio-resources-not-available,
    ul-radio-resources-not-available,
    measurement-not-supported-for-the-object,
    combining-resources-not-available,
    combining-not-supported,
    reconfiguration-not-allowed,
    requested-configuration-not-supported,
    synchronisation-failure,
    requested-tx-diversity-mode-not-supported,
    measurement-temporaily-not-available,
    unspecified,
    invalid-CM-settings,
    reconfiguration-CFN-not-elapsed,
    number-of-DL-codes-not-supported,
    dedicated-transport-channel-type-not-supported,
    dl-shared-channel-type-not-supported,
    ul-shared-channel-type-not-supported,
    common-transport-channel-type-not-supported,
    ul-spreading-factor-not-supported,
    dl-spreading-factor-not-supported,
    cm-not-supported,
    transaction-not-supported-by-destination-node-b,
    rl-already-activated-or-alocated,
    ...,
    number-of-UL-codes-not-supported,
    cell-reserved-for-operator-use,
    dpc-mode-change-not-supported,
    information-temporarily-not-available,
    information-provision-not-supported-for-the-object,
    power-balancing-status-not-compatible,
    delayed-activation-not-supported,
    rl-timing-adjustment-not-supported
}

CauseTransport ::= ENUMERATED {
    transport-resource-unavailable,
```

```
    unspecified,
    ...
}

CellCapabilityContainer-FDD ::= BIT STRING (SIZE (32))
-- First bit: Flexible Hard Split Support Indicator
-- Second bit: Delayed Activation Support Indicator
-- Third bit: HS-DSCH Support Indicator
-- Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the
transmitter and shall be ignored by the receiver.

CellCapabilityContainer-TDD ::= BIT STRING (SIZE (32))
-- First bit: Delayed Activation Support Indicator
-- Second bit: HS-DSCH Support Indicator
-- Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the
transmitter and shall be ignored by the receiver.

CellCapabilityContainer-TDD-LCR ::= BIT STRING (SIZE (32))
-- First bit: Delayed Activation Support Indicator
-- Second bit: HS-DSCH Support Indicator
-- Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the
transmitter and shall be ignored by the receiver.
```

3GPP TSG-RAN3 #29 Meeting
Gyeongju, Korea, 13 – 17 May 2002

Tdoc R3-021257

CR-Form-v3

CHANGE REQUEST

⌘ **25.423** **CR** **621** ⌘ rev **-** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Interaction between HSDPA and IP transport in UTRAN
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May 2002
Category:	⌘	**F**
Release:	⌘	REL-5

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R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The introduction of HSDPA and IP transport in UTRAN features in Release 5 specifications have not taken into account the interaction between those 2 features, namely the possibility to provide in the request messages the *Binding ID* IE and the *Transport Layer Address* IE.
Summary of change:	⌘	The *Binding ID* IE and the *Transport Layer Address* IE are included in the new *HS-DSCH Information To Modify* IE, *HS-DSCH FDD Information* IE and *HS-DSCH TDD Information* IE. Relevant procedure text has been added to handle these new optional IEs in the Radio Link Setup and Synchronised Radio Link Reconfiguration Preparation procedures. Furthermore, the procedure text handling the transport bearer aspects has been updated to take into account the HS-DSCH MAC-d Flow as they cannot be considered as transport channels (highlighted in yellow). Impact Analysis: Impact assessment towards the previous version of the specification (same release): this CR does not have an isolated impact on the previous version of the specification (same release). This CR has an impact under the protocol and functional point of view. The impact cannot be considered isolated because the change affects more than one system function, namely HSDPA and IP Transport in UTRAN. There is no impact on the Rel-4 version of the specifications as the IEs on which the changes have been done do not exist in Rel-4.
Consequences if not approved:	⌘	If this CR is not approved, then the interaction between the introduction of the IP transport in UTRAN and the introduction of HSDPA will not be handled.

Clauses affected:	⌘	8.3.1.2, 8.3.4.2, 8.3.4.4, 9.2.1.30Q, 9.2.2.19a, 9.2.3.3aa, 9.3.4

Other specs affected:	⌘	X	Other core specifications	⌘	TS 25.433 CR 656
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:
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8.3.1 Radio Link Setup

8.3.1.1 General

This procedure is used for establishing the necessary resources in the DRNS for one or more radio links.

The connection-oriented service of the signalling bearer shall be established in conjunction with this procedure.

8.3.1.2 Successful Operation

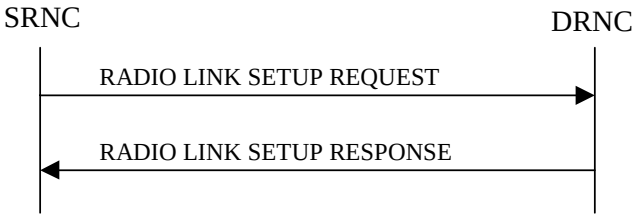

Figure 5: Radio Link Setup procedure: Successful Operation

When the SRNC makes an algorithmic decision to add the first cell or set of cells from a DRNS to the active set of a specific UE-UTRAN connection, the RADIO LINK SETUP REQUEST message is sent to the corresponding DRNC to request establishment of the radio link(s).

The DRNS shall prioritise resource allocation for the RL(s) to be established according to Annex A.

If the RADIO LINK SETUP REQUEST message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall assign a new D-RNTI for this UE.

Transport Channels Handling:

DCH(s):

[TDD - If the *DCH Information* IE is present in RADIO LINK SETUP REQUEST message, the DRNS shall configure the new DCHs according to the parameters given in the message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCH Information* IE as a set of co-ordinated DCHs.

[FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the QE-Selector is set to "non-selected ", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]

For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [4].]

The DRNS shall use the included *UL DCH FP Mode* IE for a DCH or a set of co-ordinated DCHs as the DCH FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs.

The *Frame Handling Priority* IE defines the priority level that should be used by the DRNS to prioritise between different frames of the data frames of the DCHs in the downlink on the radio interface in congestion situations once the new RL(s) have been activated.

The *Traffic Class* IE should be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs.

If the *DCH Specific Info* IE in the *DCH Information* IE includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:

- If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS may decide to request the SRNC to limit the user rate of the uplink of the DCH at any point in time. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed UL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.

- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS may decide to request the SRNC to limit the user rate of the downlink of the DCH at any point in time. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed DL Rate* IE, the DRNS shall not limit the user rate of the downlink of the DCH.

DSCH(s):

If the *DSCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNC shall establish the requested DSCHs [FDD - on the RL indicated by the PDSCH RL ID IE]. If the *Transport Layer Address* IE and *Binding ID* IE are included in the *DSCH Information* IE the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DSCH. In addition, the DRNC shall send a valid set of *DSCH Scheduling Priority* IE and *MAC-c/sh SDU Length* IE parameters to the SRNC in the message RADIO LINK SETUP RESPONSE message. If the *PDSCH RL ID* IE indicates a radio link in the DRNS, then the DRNC shall allocate a DSCH-RNTI to the UE Context and include the *DSCH-RNTI* IE in the RADIO LINK SETUP RESPONSE message.

If the *DSCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.

[TDD - USCH(s)]:

[TDD – The DRNS shall use the list of RB Identities in the *RB Info* IE in the *USCH information* IE to map each *RB Identity* IE to the corresponding USCH. If the *Transport Layer Address* IE and *Binding ID* IE are included in the *USCH Information* IE the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the USCH.]

[TDD – If the *USCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.]

HS-DSCH(s):

If the *HS-DSCH Information* IE is present, the DRNS shall establish the requested HS-DSCH resources on the RL indicated by the *HS-PDSCH RL ID* IE.

In addition, if the *HS-PDSCH RL ID* IE indicates a radio link in the DRNS, then the DRNC shall allocate an HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK SETUP RESPONSE message.

The DRNS shall also include the *Binding ID* IE and *Transport Layer Address* IE for establishment of transport bearer(s) for the HS-DSCH MAC-d flows on this radio link.

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *HS-DSCH Information* IE for an HS-DSCH MAC-d flow, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the concerned HS-DSCH MAC-d flow.

[FDD – The DRNS shall set the Measurement Feedback Reporting Cycle to a default value equal to the largest of the k1 and k2 values.]

Physical Channels Handling:

[FDD - Compressed Mode]:

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, the DRNS shall store the information about the Transmission Gap Pattern Sequences to be used in the Compressed Mode Configuration. This Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE and the *Active Pattern Sequence Information* IE, the DRNS shall use the information to activate the indicated Transmission Gap Pattern Sequences(s) in the new RL. The received *CM Configuration Change CFN* IE refers to latest passed CFN with that value. The DRNS shall treat the received *TGCFN* IEs as follows:]

- [FDD - If any received *TGCFN* IE has the same value as the received *CM Configuration Change CFN* IE, the DRNS shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - If any received *TGCFN* IE does not have the same value as the received *CM Configuration Change CFN* IE but the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE has already passed, the DRNS shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - For all other Transmission Gap Pattern Sequences included in the *Active Pattern Sequence Information* IE, the DRNS shall activate each Transmission Gap Pattern Sequence at the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE for the Transmission Gap Pattern Sequence.]

[FDD- If the *Downlink Compressed Mode Method* IE in one or more Transmission Gap Pattern Sequence is set to 'SF/2' in the RADIO LINK SETUP REQUEST message, the DRNS shall include the *Transmission Gap Pattern Sequence Scrambling Code Information* IE in the RADIO LINK SETUP RESPONSE message indicating for each DL Channelisation Code whether the alternative scrambling code shall be used or not.]

[FDD - DL Code Information]:

[FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2"*, and so on until the *p*th to "*PhCH number p*".]

General:

[FDD - If the *Propagation Delay* IE is included, the DRNS may use this information to speed up the detection of UL synchronisation on the Uu interface.]

[FDD – If the received *Limited Power Increase* IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control.]

[FDD – If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the DRNS shall assume the length of the TFCI (field 2) is 5 bits.]

[FDD – If the RADIO LINK SETUP REQUEST message includes *Split Type* IE, then the DRNS shall apply this information to the new configuration of TFCI.]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Length of TFCI2* IE, the DRNS shall apply this information to the length of TFCI(field 2).]

Radio Link Handling:

Diversity Combination Control:

[FDD - The *Diversity Control Field* IE indicates for each RL except for the first RL whether the DRNS shall combine the RL with any of the other RLs or not on the Iur. If the *Diversity Control Field* IE is set to "May" (be combined with another RL), then the DRNS shall decide for any of the alternatives. If the *Diversity Control Field* IE is set to "Must", the DRNS shall combine the RL with one of the other RL. When an RL is to be combined, the DRNS shall choose which RL(s) to combine it with. If the *Diversity Control Field* IE is set to “Must not”, the DRNS shall not combine the RL with any other existing RL.]

[FDD - In the case of combining one or more RLs the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message with the *Diversity Indication* IE that the RL is combined with another RL RL for all RLs but the first RL. In this case the Reference *RL ID* IE shall be included to indicate with which RL the combination is performed. The Reference *RL ID* IE shall not be included for the first of the combined RLs, for which the *Transport Layer Address* IE and the *Binding ID* IE shall be included.]

[FDD - In the case of not combining an RL with another RL, the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message with the *Diversity Indication* IE that no combining is performed. In this case the DRNC shall include both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH and DSCH of the RL in the RADIO LINK SETUP RESPONSE message.]

[TDD - The DRNC shall always include in the RADIO LINK SETUP RESPONSE message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH, DSCH and USCH of the RL.]

In case of a set of co-ordinated DCHs requiring a new transport bearer on Iur the *Binding ID* IE and the *Transport Layer Address* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

[FDD-Transmit Diversity]:

[FDD – If the cell in which the RL is being set up is capable to provide Close loop Tx diversity, the DRNC shall include the *Closed Loop Timing Adjustment Mode* IE in the RADIO LINK SETUP RESPONSE message indicating the configured Closed loop timing adjustment mode of the cell.]

[FDD – When *Diversity Mode* IE is "STTD", "Closed loop mode1", or "Closed loop mode2", the DRNC shall activate/deactivate the Transmit Diversity to each Radio Link in accordance with *Transmit Diversity Indicator* IE].

DL Power Control:

[FDD - If both the *Initial DL TX Power* IE and *Uplink SIR Target* IE are included in the message, the DRNS shall use the indicated DL TX Power and Uplink SIR Target as initial value. If the value of the *Initial DL TX Power* IE is outside the configured DL TX power range, the DRNS shall apply these constrains when setting the initial DL TX power. The DRNS shall also include the configured DL TX power range defined by *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK SETUP RESPONSE message. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power IE* or lower than indicated by the *Minimum DL TX Power IE* on any DL DPCH of the RL except during compressed mode, when the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.]

[FDD - If both the *Initial DL TX Power* and the *Uplink SIR Target* IEs are not included in the RADIO LINK SETUP REQUEST message, then DRNC shall determine the initial Uplink SIR Target and include it in the *Uplink SIR Target* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD – The DRNC shall use the *Uplink SIR Target CCTrCH* IEs in the RADIO LINK SETUP RESPONSE message to indicate for any UL CCTrCH an Uplink SIR Target value in case this is deviating from the value included in the *Uplink SIR Target* IE specified for the Radio Link. If in any [3.84Mcps TDD - *UL CCTrCH Information* IE] [1.28Mcps TDD - *UL CCTrCH Information LCR* IE] the *Uplink SIR Target CCTrCH* IE is not included, the value of the *Uplink SIR Target* IE shall apply to the respective UL CCTrCH.]

[FDD - If the *Primary CPICH Ec/No* IE is present, the DRNC should use the indicated value when deciding the Initial DL TX Power. If the *Enhanced Primary CPICH Ec/No* IE is present, the DRNC should use the indicated value when deciding the Initial DL Tx Power.]

[TDD - If the *Primary CCPCH RSCP* IE and/or the [3.84Mcps TDD - *DL Time Slot ISCP Info* IE] and/or the [1.28Mcps TDD - *DL Time Slot ISCP Info LCR* IE] are present, the DRNC should use the indicated values when deciding the Initial DL TX Power.]

[FDD – The DRNS shall start any DL transmission using the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL until UL synchronisation is achieved on the Uu interface for the concerning RLS or Power Balancing is activated. No inner loop power control or power balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10] subclause 5.2.1.2) and the power control procedure (see 8.3.15).]

[TDD – The DRNS shall start any DL transmission using the decided DL TX power level on each DL channelisation code and on each Time Slot of a RL until UL synchronisation is achieved on the Uu interface for the concerning RL. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref. [22] subclause 4.2.3.3).]

[FDD – If the received *Inner Loop DL PC Status* IE is set to “Active”, the DRNS shall activate the inner loop DL power control for all RLs. If *Inner Loop DL PC Status* IE is set to “Inactive”, the DRNS shall deactivate the inner loop DL power control for all RLs according to ref. [10].

[FDD - If the *DPC Mode* IE is present in the RADIO LINK SETUP REQUEST message, the DRNC shall apply the DPC mode indicated in the message, and be prepared that the DPC mode may be changed during the life time of the RL. If the *DPC Mode* IE is not present in the RADIO LINK SETUP REQUEST message, DPC mode 0 shall be applied (see ref. [10]).]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *DL Power Balancing Information* IE and the *Power Adjustment Type* IE is set to "Common" or "Individual", the DRNS shall activate the power balancing, if activation of power balancing by the RADIO LINK SETUP REQUEST message is supported, according to subclause 8.3.15, using the *DL Power Balancing Information* IE. If the DRNS starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing shall be set to the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL.]

[FDD – If activation of power balancing by the RADIO LINK SETUP REQUEST message is supported by the DRNS, the DRNC shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

Neighbouring Cell Handling:

If there are UMTS neighbouring cell(s) to the cell in which a Radio Link was established then:

- The DRNC shall include the *Neighbouring FDD Cell Information* IE and/or *Neighbouring TDD Cell Information* IE in the *Neighbouring UMTS Cell Information* IE for each neighbouring FDD cell and/or TDD cell respectively. In addition, if the information is available, the DRNC shall include the *Frame Offset* IE, *Primary CPICH Power* IE, *Cell Individual Offset* IE, *STTD Support Indicator* IE, *Closed Loop Mode1 Support Indicator* IE, *Closed Loop Mode2 Support Indicator* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring FDD Cell Information* IE, and the *Frame Offset* IE, *Cell Individual Offset* IE, *DPCH Constant Value* IE, the *PCCPCH Power* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring TDD Cell Information* IE.

- If a UMTS neighbouring cell is not controlled by the same DRNC, the DRNC shall also include the *CN PS Domain Identifier* IE and/or *CN CS Domain Identifier* IE which are the identifiers of the CN nodes connected to the RNC controlling the UMTS neighbouring cell.

- [FDD - The DRNC shall include the *DPC Mode Change Support Indicator* IE if the DRNC is aware that the neighbouring cell supports DPC mode change.]

- [FDD- The DRNC shall include the *Flexible Hard Split Support Indicator* IE if the DRNC is aware that the neighbouring cell supports *Flexible Hard Split* mode.]

- The DRNC shall include the *Cell Capability Container FDD* IE, the *Cell Capability Container TDD* IE and/or the *Cell Capability Container TDD LCR* IE if the DRNC is aware that the neighbouring cell supports any functionalities listed in 9.2.2.D, 9.2.3.1a and 9.2.3.1b.

For the UMTS neighbouring cells which are controlled by the DRNC, the DRNC shall report in the RADIO LINK SETUP RESPONSE message the restriction state of those cells, otherwise *Restriction state indicator* IE may be absent. The DRNC shall include the *Restriction state indicator* IE for the neighbouring cells which are controlled by the DRNC in the *Neighbouring FDD Cell Information* IE, the *Neighbouring TDD Cell Information* IE and the *Neighbouring TDD Cell Information LCR* IE.

If there are GSM neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include the *Neighbouring GSM Cell Information* IE in the RADIO LINK SETUP RESPONSE message for each of the GSM neighbouring cells. If available the DRNC shall include the *Cell Individual Offset* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring GSM Cell Information* IE.

General:

If the RADIO LINK SETUP REQUEST message includes the *RL Specific DCH Information* IE, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity* IE and the *S-Field Length* IE, the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity* IE and *SSDT Cell Identity Length* IE.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity for EDSCHPC* IE, the DRNS shall activate enhanced DSCH power control, if supported, using the *SSDT Cell Identity for EDSCHPC* IE and *SSDT Cell Identity Length* IE as well as *Enhanced DSCH PC* IE in accordance with ref. [10] subclause 5.2.2. If the RADIO LINK SETUP REQUEST message includes both *SSDT Cell Identity* IE and *SSDT Cell Identity for EDSCHPC* IE, then the DRNS shall ignore the *SSDT Cell Identity for EDSCHPC* IE.]

[FDD - If the *DRAC Control* IE is set to "requested" in the RADIO LINK SETUP REQUEST message for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message the *Secondary CCPCH Info* IE for the FACH where the DRAC information is sent, for each Radio Link established in a cell where DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK SETUP RESPONSE message.]

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall include the node identifications of the CN Domain nodes that the RNC is connected to (using LAC and RAC of the current cell), and the *D-RNTI* IE in the RADIO LINK SETUP RESPONSE message.

[FDD - If the *D-RNTI* IE was included the RADIO LINK SETUP REQUEST message the DRNC shall include the *Primary Scrambling Code* IE, the *UL UARFCN* IE and the *DL UARFCN* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD – If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include the *UARFCN* IE, the *Cell Parameter ID* IE,[3.84Mcps TDD - the *Sync Case* IE, the *SCH Time Slot* IE,] the *SCTD Indicator* IE, and the *PCCPCH Power* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the [3.84Mcps TDD - *Secondary CCPCH Info TDD* IE] [1.28Mcps TDD – *Secondary CCPCH Info TDD LCR* IE] in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

For each Radio Link established in a cell where at least one URA Identity is being broadcast, the DRNC shall include a URA Identity for this cell in the *URA ID* IE, the *Multiple URAs Indicator* IE indicating whether or not multiple URA Identities are being broadcast in the cell, and the RNC Identity of all other RNCs that are having at least one cell within the URA in the cell in the *URA Information* IE in the RADIO LINK SETUP RESPONSE message.

Depending on local configuration in the DRNS, it may include the geographical co-ordinates of the cell, represented either by the *Cell GAI* IE or by the *Cell GA Additional Shapes* IE and the UTRAN access point position for each of the established RLs in the RADIO LINK SETUP RESPONSE message.

If the DRNS need to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) already when starting to utilise a new Radio Link, the DRNC shall include the *Allowed UL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK SETUP RESPONSE message for this Radio Link.

If the DRNS need to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) already when starting to utilise a new Radio Link, the DRNC shall include the *Allowed DL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK SETUP RESPONSE message for this Radio Link.

If the *Permanent NAS UE Identity* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall store the information for the considered UE Context for the life-time of the UE Context.

If the RADIO LINK SETUP REQUEST message includes the *Permanent NAS UE Identity* IE and a *C-ID* IE corresponding to a cell reserved for operator use, the DRNC shall use this information to determine whether it can set up a Radio Link on this cell or not for the considered UE Context.

If the HCS priority information is available in the DRNS, it shall include the *HCS Prio* IE for each of the established RLs in the RADIO LINK SETUP RESPONSE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK SETUP RESPONSE message.]

[FDD - Radio Link Set Handling]:

[FDD - The *First RLS Indicator* IE indicates if the concerning RL shall be considered part of the first RLS established towards this UE. The *First RLS Indicator* IE shall be used by the DRNS to determine the initial TPC pattern in the DL of the concerning RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.

[FDD – For each RL not having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message a value that uniquely identifies the RL Set within the UE Context.]

[FDD – For all RLs having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message the same value. This value shall uniquely identify the RL Set within the UE context.]

[FDD –The UL Uu synchronisation detection algorithm defined in ref. [10] subclause 4.3 shall for each of the established RL Set(s) use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE, and the minimum value of the parameters N_INSYNC_IND, that are configured in the cells supporting the radio links of the RL Set].

Response Message:

At the reception of the RADIO LINK SETUP REQUEST message, DRNS allocates requested type of channelisation codes and other physical channel resources for each RL and assigns a binding identifier and a transport layer address for each DCH or set of co-ordinated DCHs and for each DSCH [TDD – and USCH]. This information shall be sent to the SRNC in the message RADIO LINK SETUP RESPONSE when all the RLs have been successfully established.

After sending of the RADIO LINK SETUP RESPONSE message the DRNS shall continuously attempt to obtain UL synchronisation on the Uu interface and start reception on the new RL.

For each RL for which the *Delayed Activation* IE is not included in the RADIO LINK SETUP REQUEST message the DRNS shall:

- [FDD -start DL transmission on the new RL after synchronisation is achieved in the DL user plane as specified in ref. [4].]
- [TDD – start transmission on the new RL immediately as specified in ref. [4].]

For each RL for which the *Delayed Activation* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall:

- if the *Delayed Activation* IE indicates "Separate Indication":
  - not start any DL transmission for the concerning RL on the Uu interface;
- if the *Delayed Activation* IE indicates "CFN":
  - [FDD – start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in ref. [4], however never before the CFN indicated in the *Activation CFN* IE.]
  - [TDD – start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in ref. [4].]

8.3.1.3 Unsuccessful Operation

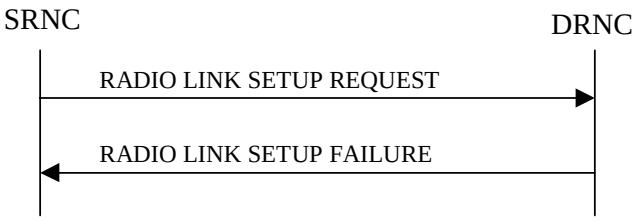

Figure 6: Radio Link Setup procedure: Unsuccessful Operation

In unsuccessful case (i.e. one or more RLs can not be established) the RADIO LINK SETUP FAILURE message shall be sent to the SRNC, indicating the reason for failure. If some radio links were established successfully, the DRNC shall indicate this in the RADIO LINK SETUP FAILURE message in the same way as in the RADIO LINK SETUP RESPONSE message.

If the RADIO LINK SETUP REQUEST message includes a *C-ID* IE corresponding to a cell reserved for operator use and the *Permanent NAS UE Identity* IE is not present, the DRNC shall consider the procedure as failed and send the RADIO LINK SETUP FAILURE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK SETUP FAILURE message.]

Typical cause values are:

Radio Network Layer Causes:

- [FDD - UL Scrambling Code Already in Use];
- DL Radio Resources not Available;
- UL Radio Resources not Available;
- [FDD - Combining Resources not available];
- Combining not Supported
- Requested Configuration not Supported;
- Cell not Available;
- [FDD - Requested Tx Diversity Mode not Supported];
- Power Level not Supported;
- Number of DL codes not supported;
- Number of UL codes not supported;
- Dedicated Transport Channel Type not Supported;
- DL Shared Channel Type not Supported;

- [TDD - UL Shared Channel Type not Supported];
- [FDD - UL Spreading Factor not Supported];
- [FDD - DL Spreading Factor not Supported];
- CM not Supported;
- [FDD – DPC mode change not Supported];
- Cell reserved for operator use;
- Delayed Activation not supported.

Transport Layer Causes:

- Transport Resource Unavailable.

Miscellaneous Causes:

- Control Processing Overload;
- HW Failure;
- Not enough User Plane Processing Resources.

8.3.1.4 Abnormal Conditions

If the DRNC receives either an S-RNTI or a D-RNTI which already has RL(s) established the DRNC shall send the RADIO LINK SETUP FAILURE message to the SRNC, indicating the reason for failure.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Active Pattern Sequence Information* IE, but the *Transmission Gap Pattern Sequence Information* IE is not present, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD – If the RADIO LINK SETUP REQUEST message includes both the *Initial DL TX Power* IE and the *Primary CPICH Ec/No* IE or does not include either of these IEs, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to “selected”] the DRNS shall regard the Radio Link Setup procedure as failed and shall respond with a RADIO LINK SETUP FAILURE message.

[FDD - If only the *Initial DL TX Power* IE or the *Uplink SIR Target* IE is included in the RADIO LINK SETUP REQUEST message, then DRNC shall regard the Radio Link Setup procedure as failed and shall respond with the RADIO LINK SETUP FAILURE message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCH Information* IE do not have the same *Transmission Time Interval* IE in the *Semi-static Transport Format Information* IE, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Enhanced Primary CPICH Ec/No* IE, but not the *Primary CPICH Ec/No* IE, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Split Type* IE but includes *TFCI Signalling Mode* IE set to “Split”, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD – If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE but the *Split type* IE is set to “Logical”, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Split Type* IE set to the value "Hard" and the *Length of TFCI2* IE set to the value "5", then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Split Type* IE but includes the *Length of TFCI2* IE, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE included in the *RL Information* IE for a specific RL and the *Diversity Control Field* IE is set to "Must", the DRNC shall regard the Radio Link Setup procedure as failed and the DRNC shall respond with the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport bearer intended to be established, the DRNC shall regard the Radio Link Setup procedure as failed and the DRNC shall respond with the RADIO LINK SETUP FAILURE message.

8.3.4 Synchronised Radio Link Reconfiguration Preparation

8.3.4.1 General

The Synchronised Radio Link Reconfiguration Preparation procedure is used to prepare a new configuration of Radio Link(s) related to one UE-UTRAN connection within a DRNS.

This procedure shall use the signalling bearer connection for the relevant UE context.

The Synchronised Radio Link Reconfiguration Preparation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.4.2 Successful Operation

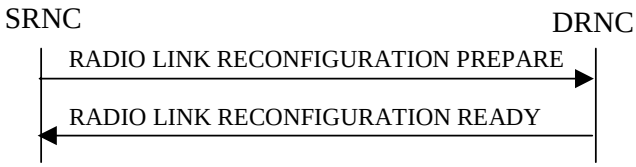

Figure 10: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the SRNC by sending the RADIO LINK RECONFIGURATION PREPARE message to the DRNC.

Upon reception, the DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

The DRNS shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

DCH Modification:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Modify* IEs then the DRNS shall treat them each as follows:

- If the *DCHs to Modify IE* includes multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Modify* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- If the *DCHs to Modify IE* includes the *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify IE* includes the *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify IE* includes the *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCH Specific Info* IE includes the *Frame Handling Priority* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.

- If the *DCH Specific Info* IE includes the *Traffic Class* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The *Traffic Class* IE should be used to determine the

transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs.

- If the *DCH Specific Info* IE includes the *Transport Format Set* IE for the UL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.

- If the *DCH Specific Info* IE includes the *Transport Format Set* IE for the DL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.

- [FDD - If, in the *DCH Specific Info* IE, the *DRAC Control* IE is present and set to "requested" for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE for the FACH where the DRAC information is sent, for each Radio Link established in a cell where DRAC is active. If the DRNS does not support DRAC, DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]

- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the UL, the DRNS shall map the DCH onto the referenced UL CCTrCH.]

- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the DL, the DRNS shall map the DCH onto the referenced DL CCTrCH.]

- If the *DCH Specific Info* IE includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:

  - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the uplink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate in the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.

- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate in the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.

DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Add* IEs then the DRNS shall treat them each as follows:

- The DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCH in the new configuration.

- If the *DCHs to Add* IE includes a *DCHs to Add* IE with multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Add* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- [FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the QE-Selector is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]

- [FDD - For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [4].]

- The DRNS should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames

in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.

- The DRNS should store the *Traffic Class* IE received for a DCH to be added in the new configuration. The *Traffic Class* IE should be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs.

- The DRNS shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- [TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if at least one DSCH or USCH exists in the new configuration.]

- [FDD - If the *DRAC Control* IE is set to "requested" in the *DCH Specific Info* IE for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE for the FACH where the DRAC information is sent, for each Radio Link supported by a cell where DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]

- If the *DCH Specific Info* IE includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:

  - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the uplink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate of the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed UL Rate* IE, the DRNS shall not limit the user rate of the downlink of the DCH.

- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate of the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed DL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.

DCH Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCH to Delete*, the DRNS shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the DRNS shall not include this set of co-ordinated DCHs in the new configuration.

Physical Channel Modification:

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information* IE includes the *Uplink Scrambling Code* IE, the DRNS shall apply this Uplink Scrambling Code to the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *Min UL Channelisation Code Length* IE, the DRNS shall apply the new Min UL Channelisation Code Length in the new configuration. The DRNS shall apply the contents of the *Max Number of UL DPDCHs* IE (if it is included) in the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *TFCS* IE, the DRNS shall use the *TFCS* IE for the UL when reserving resources for the uplink of the new configuration. The DRNS shall apply the new TFCS in the Uplink of the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *UL DPCCH Slot Format* IE, the DRNS shall apply the new Uplink DPCCH *Slot Format* to the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *UL SIR Target* IE, the DRNS shall set the UL inner loop power control to the UL SIR target when the new configuration is being used.]

- [FDD – If the *UL DPCH Information* IE includes the *Puncture Limit* IE, the DRNS shall apply the value in the uplink of the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *Diversity Mode* IE, the DRNS shall apply diversity according to the given value.]

- [FDD – If the *UL DPCH Information* IE includes an *SSDT Cell Identity Length* IE and/or an *S-Field Length* IE, the DRNS shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information* IE then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *DL DPCH Information* IE includes *Number of DL Channelisation Codes IE,* the DRNS shall allocate given number of Downlink Channelisation Codes per Radio Link and apply the new Downlink Channelisation Code(s) to the new configuration. Each Downlink Channelisation Code allocated for the new configuration shall be included as a FDD DL Channelisation Code Number IE in the RADIO LINK RECONFIGURATION READY message when sent to the SRNC. If some Transmission Gap Pattern sequences using 'SF/2' method are already initialised in the DRNS, DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK RECONFIGURATION READY message in case the DRNS selects to change the Scrambling code change method for one or more DL Channelisation Code.]

- [FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2"*, and so on until the *p*th to "*PhCH number p*".]

- [FDD - If the *DL DPCH Information* IE includes the *TFCS* IE, the DRNS shall use the *TFCS* IE for the DL when reserving resources for the downlink of the new configuration. The DRNS shall apply the new TFCS in the Downlink of the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *DL DPCH Slot Format* IE, the DRNS shall apply the new slot format used in DPCH in DL.]

- [FDD – If the *DL DPCH Information* IE includes the *TFCI Signalling Mode* IE, the DRNS shall apply the new signalling mode of the TFCI.]

- [FDD – If the *DL DPCH Information* IE includes the *Multiplexing Position* IE, the DRNS shall apply the new parameter to define whether fixed or flexible positions of transport channels shall be used in the physical channel.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Not Used', the DRNS shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

    - [FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the DRNS shall assume the length of the TFCI (field 2) is 5 bits.]

- [FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes *Split Type* IE, then the DRNS shall apply this information to the new configuration of TFCI.]

- [FDD – If the *DL DPCH Information* IE includes the *Length of TFCI2* IE, the DRNS shall apply this information to the length of TFCI(field 2) in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information* IE, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration. This new Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information* IE and the *Downlink Compressed Mode Method* IE in one or more Transmission Gap Pattern Sequence within the *Transmission Gap Pattern Sequence Information* IE is set to 'SF/2', the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information* IE to the RADIO LINK RECONFIGURATION READY message indicating for each Channelisation Code whether the alternative scrambling code shall be used or not].

[TDD - UL/DL CCTrCH Modification]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs, then the DRNS shall treat them each as follows:]

[TDD - If any of the *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs includes any of *TFCS* IE, *TFCI coding* IE, *Puncture limit* IE, or *TPC CCTrCH ID* IEs the DRNS shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]

- [TDD – The DRNC shall include in the RADIO LINK RECONFIGURATION READY message DPCH information to be modified and the IEs modified if any of *Repetition Period* IE, *Repetition Length* IE, *TDD DPCH Offset* IE or timeslot information was modified. The DRNC shall include timeslot information and the IEs modified if any of *[3.84Mcps TDD - Midamble Shift and Burst Type* IE, *Time Slot* IE], [1.28Mcps TDD - *Midamble Shift LCR* IE, *Time Slot LCR* IE], *TFCI Presence* IE or Code information was modified. The DRNC shall include code information if [3.84Mcps TDD - *TDD Channelisation Code* IE] and/or [1.28Mcps TDD - *TDD Channelisation Code LCR* IE] was modified.]

- [1.28Mcps TDD – If the *UL CCTrCH to Modify* IE includes the *UL SIR Target* IE, the DRNS shall use the value for the UL inner loop power control according [12] and [22] when the new configuration is being used.]

[TDD – UL/DL CCTrCH Addition]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Add* IEs or *DL CCTrCH to Add* IEs, the DRNS shall include this CCTrCH in the new configuration.]

[TDD – If the DRNS has reserved the required resources for any requested DPCHs, the DRNC shall include the DPCH information within DPCH to be added in the RADIO LINK RECONFIGURATION READY message. [3.84Mcps TDD - If no DPCH was active before the reconfiguration, and if a valid Rx Timing Deviation measurement is known in DRNC, then the DRNC shall include the *Rx Timing Deviation* IE in the RADIO LINK RECONFIGURATION READY message.]]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL CCTrCH to Add* IE, the DRNS shall set the TPC step size of that CCTrCH to the same value as the lowest numbered DL CCTrCH in the current configuration.]

[1.28Mcps TDD – The DRNS shall use the *UL SIR Target* IE in the *UL CCTrCH to Add* IE as the UL SIR value for the inner loop power control for this CCTrCH according [12] and [22] in the new configuration.]

[TDD – UL/DL CCTrCH Deletion]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Delete* IEs *or DL CCTrCH to Delete* IEs, the DRNS shall remove this CCTrCH in the new configuration.]

SSDT Activation/Deactivation:

- [FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE", the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity* IE in *RL Information* IE, and the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, in the new configuration.

- [FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT not Active in the UE", the DRNS shall deactivate SSDT in the new configuration.]

DL Power Control:

- [FDD - If the *RL Information* IE includes the *DL Reference Power* IEs and power balancing is active, DRNS shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported, at the CFN in the RADIO LINK RECONFIGURATION COMMIT message, according to subclause 8.3.15, using the *DL Reference Power* IE. If the CFN modulo the value of the *Adjustment Period* IE is not equal to 0, the power balancing continues with the old reference power until the end of the current adjustment period, and the updated reference power shall be used from the next adjustment period.

[FDD - If updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported by the DRNS, the DRNC shall include the *DL Power Balancing Updated Indicator* IE in the *RL Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to modify*, *DSCH to add* or *DSCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Add* IE, then the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to add* IE, then the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.

[FDD - If the *DSCHs to Add* IE includes the *Enhanced DSCH PC* IE, the DRNS shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]

- [FDD - the *SSDT Cell Identity for EDSCHPC* IE in the *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

- [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* are included in the *RL Information* IE.]

[FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Modify* IE, then the DRNS shall treat them each as follows:

- [FDD – If the *DSCH to Modify* IE includes any *DSCH Info* IEs, then the DRNS shall treat them each as follows:]

  - [FDD – If the *DSCH Info* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DNRS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]

  - [FDD – If the *DSCH Info* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]

  - [FDD – If the DSCH Info IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.]

- [FDD – If the *DSCH to Modify* IE includes the *PDSCH RL ID* IE, then the DRNS shall use it as the new DSCH RL identifier.]

- [FDD - If the indicated PDSCH RL ID is in the DRNS and there was no DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a DSCH-RNTI to the UE Context and include the *DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.]

- [FDD - If the indicated PDSCH RL ID is in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a new DSCH-RNTI to the UE Context, release the old DSCH-RNTI and include the *DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.]

- [FDD - If the indicated PDSCH RL ID is not in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall release this DSCH-RNTI.]

- [FDD – If the *DSCH to Modify* IE includes the *Transport Format Combination Set* IE, then the DRNS shall use it as the new Transport Format Combination Set associated with the DSCH.]

- [TDD – If the *DSCHs to Modify* IE includes the *CCTrCH Id* IE, then the DRNS shall map the DSCH onto the referenced DL CCTrCH.]

- [TDD – If the *DSCHs to Modify* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DNRS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]

- [TDD – If the *DSCHs to Modify* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]

- [TDD – If the *DSCHs to Modify* IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.]

- [TDD – The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if a DSCH is added and at least one DCH exists in the new configuration. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

- [FDD - If the *DSCHs to Modify* IE includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC Active in the UE ", the DRNS shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]

  - [FDD - the *SSDT Cell Identity for EDSCHPC* IE in *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

  - [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* are included in the *RL Information* IE.]

  [FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

- [FDD - If the *DSCHs to Modify* IE includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", the DRNS shall deactivate enhanced DSCH power control in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes a *DSCHs to Delete* IE requesting the deletion of all DSCH resources for the UE Context, then the DRNC shall release the DSCH-RNTI allocated to the UE Context, if there was one.]

If the requested modifications are allowed by the DRNS and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

[TDD] USCH Addition/Modification/Deletion

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to modify*, *USCH to add* or *USCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Add* IE, then, the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of USCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to add* IE, then the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Modify* IE, then the DRNS shall treat them each as follows:

- If the USCH to Modify IE includes any of the Allocation/Retention Priority IE , Scheduling Priority Indicator IE or TrCH Source Statistics Descriptor IE, the DNRS shall use them to update the set of USCH Priority classes.

- If the USCH to Modify IE includes any of the CCTrCH Id IE, Transport Format Set IE, BLER IE or RB Info IE, the DRNS shall apply the parameters to the new configuration.

- If the *USCHs to Modify* IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.

- [TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if a USCH is added and at least one DCH exists in the new configuration. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

If the requested modifications are allowed by the DRNC and the DRNC has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

RL Information:

[FDD- If the *RL Information* IE includes the *DL DPCH Timing Adjustment* IE, the DRNS shall adjust the timing of the radio link accordingly in the new configuration.]

HS-DSCH Information Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *HS-DSCH Information to modify*, *HS-DSCH Information to Add* or *HS-DSCH Information to Delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated HS-DSCH resources to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-PDSCH RL ID* IE, then:

- If the indicated HS-PDSCH RL ID is in the DRNS and there was no HS-DSCH-RNTI allocated to the UE Context, the DRNC shall allocate an HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.

- If the indicated HS-PDSCH RL ID is in the DRNS and there was an HS-DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a new HS-DSCH-RNTI to the UE Context, release the old HS-DSCH-RNTI and include the *HS-DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.

- If the indicated HS-PDSCH RL ID is not in the DRNS and there was an HS-DSCH-RNTI allocated to the UE Context, the DRNC shall release this HS-DSCH-RNTI.

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Measurement Reporting Cycle* IE in the *HS-DSCH Information To Modify* IE, then the DRNS shall use the indicated Measurement Feedback Reporting Cycle value in the new configuration.]

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-DSCH Information to Delete* IE requesting the deletion of all HS-DSCH resources for the UE Context, then the DRNC shall release the HS-DSCH-RNTI allocated to the UE Context, if there was one.

General

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transport Layer Address* IE and *Binding ID* IE in the *DSCHs to Modify* , *DSCHs to Add*, [TDD - *USCHs to Modify* , *USCHs to Add*], *HS-DSCH To Modify*, *HS-DSCH To Add* or in the *RL Specific DCH Information* IEs, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for any Transport Channel or HS-

DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

The DRNS shall include in the RADIO LINK RECONFIGURATION READY message the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE. In case of a set of co-ordinated DCHs requiring a new transport bearer on Iur, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

In case of a Radio Link being combined with another Radio Link within the DRNS, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the combined Radio Links.

Any allowed rate for the uplink of a DCH provided for the old configuration will not be valid for the new configuration. If the DRNS need to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include the *Allowed UL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK RECONFIGURATION READY message for this Radio Link.

Any allowed rate for the downlink of a DCH provided for the old configuration will not be valid for the new configuration. If the DRNS need to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include the *Allowed DL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK RECONFIGURATION READY message for this Radio Link.

If the requested modifications are allowed by the DRNS, and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s) it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exist a Prepared Reconfiguration, as defined in subclause 3.1.

The DRNS decides the maximum and minimum SIR for the uplink of the Radio Link(s) and shall return this in the *Maximum Uplink SIR* IE and *Minimum Uplink SIR* IE for each Radio Link in the RADIO LINK RECONFIGURATION READY message.

If the DL TX power upper or lower limit has been re-configured the DRNC shall return this in the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE respectively in the RADIO LINK RECONFIGURATION READY message. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power IE* or lower than indicated by the *Minimum DL TX Power IE* on any DL DPCH of the RL [FDD – except during compressed mode, when the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.]

[TDD - If the *Primary CCPCH RSCP* IE and/or the [3.84Mcps TDD - *DL Time Slot ISCP Info* IE][1.28Mcps TDD - *DL Time Slot ISCP Info LCR* IE] are present, the DRNC should use the indicated values when deciding the Initial DL TX Power.]

8.3.4.3 Unsuccessful Operation

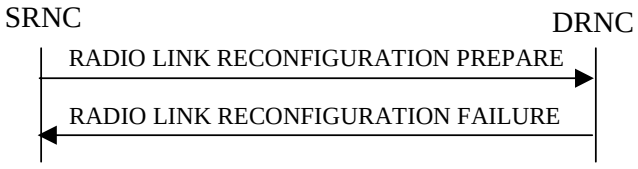

Figure 11: Synchronised Radio Link Reconfiguration Preparation procedure, Unsuccessful Operation

If the DRNS cannot reserve the necessary resources for all the new DCHs of a set of co-ordinated DCHs requested to be added, it shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed.

If the requested Synchronised Radio Link Reconfiguration Preparation procedure fails for one or more RLs the DRNC shall send the RADIO LINK RECONFIGURATION FAILURE message to the SRNC, indicating the reason for failure.

Typical cause values are:

Radio Network Layer Causes:

- UL Scrambling Code Already in Use;
- DL Radio Resources not Available;
- UL Radio Resources not Available;
- Requested Configuration not Supported;
- Number of DL Codes not Supported;
- Number of UL Codes not Supported;
- Dedicated Transport Channel Type not Supported;
- DL Shared Channel Type not Supported;
- [TDD - UL Shared Channel Type not Supported];
- [FDD - UL Spreading Factor not Supported];
- [FDD - DL Spreading Factor not Supported];
- CM not Supported;
- RL Timing Adjustment not Supported.

Miscellaneous Causes:

- Control Processing Overload;
- Not enough User Plane Processing Resources.

8.3.4.4 Abnormal Conditions

If only a subset of all the DCHs belonging to a set of co-ordinated DCHs is requested to be deleted, the DRNS shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the DRNC shall send the RADIO LINK RECONFIGURATION FAILURE message to the SRNC.

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to “selected”] the DRNS shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as failed and the DRNC shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *DSCHs to Add* IE includes *Enhanced DSCH PC* IE and *DSCH to Modify* IE include the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", then the DRNS shall deactivate enhanced DSCH power control in the new configuration.]

[FDD - If both the *DSCHs to Add* IE and the *DSCH to Modify* IE include *Enhanced DSCH PC* IE, then the DRNS shall ignore the *Enhanced DSCH PC* IE in the *DSCH to Add* IE.]

If the RADIO LINK RECONFIGURATION PREPARE message includes a *DCHs to Modify* IE or *DCHs to Add* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCHs to Modify* IE or *DCHs to Add* IE do not have the same *Transmission Time Interval* IE in the *Semi-static Transport Format Information* IE, then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *RL Information* IE includes the *DL Reference Power* IEs, but the power balancing is not active in the indicated RL(s), the DRNS shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the DRNC shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the UE Context set to “Common” in the existing RL(s) but the *RL Information* IE includes more than one *DL Reference Power* IEs, the DRNS shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the DRNC shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the RADIO LINK RECONFIGURATIO PREPARE message does not include the *Split Type* IE but includes *TFCI Signalling Mode* IE set to “Split”, then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2* IE but the *Split type* IE is set to “Logical”, then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Split Type* IE set to the value "Hard" and the *Length of TFCI2* IE set to the value "5", then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Split Type* IE but includes the *Length of TFCI2* IE, then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message contains the *Transport Layer Address* IE or the *Binding ID* IE when establishing a transport bearer for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE., and not both are present for a transport bearer intended to be established, the DRNC shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as failed and the DRNC shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

9.2.1.30Q HS-DSCH Information To Modify

The *HS-DSCH Information To Modify* IE provides information for HS-DSCH to be modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information		*0..<maxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O		–	
>BLER	O		9.2.1.4		–	
>Allocation/Retention Priority	O		9.2.1.1A		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	–	
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	–	
>Priority Queue Information		*0..<maxnoofPrioQueues>*			–	
>>Priority Queue ID	M		9.2.1.45A		–	
>>Scheduling Priority Indicator	O		9.2.1.51A		–	
>>MAC-d PDU Size Index		*0..<maxnoofMACdPDUindexes>*			–	
>>>SID	M		9.2.1.52D		–	
>>>MAC-d PDU Size	O		9.2.1.34A		–	
~~>Transport Bearer Request Indicator~~	~~M~~		~~9.2.1.62A~~		~~–~~	
Measurement Reporting Cycle	O		ENUMERATED(k1,k2)	For FDD only	–	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of MAC-d flows.
MaxnoofPrioQueues	Maximum number of Priority Queues.
MaxnoofMACdPDUindexes	Maximum number of MAC-d PDU Size Indexes (SIDs).

9.2.2.19a HS-DSCH FDD Information

The *HS-DSCH FDD Information* IE provides information for HS-DSCH MAC-d flows to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information		*1..<maxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O		–	
>BLER	M		9.2.1.4		–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	–	
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	–	
>Priority Queue Information		*1..<maxnoofPrioQueues>*				
>>Priority Queue ID	M		9.2.1.45A			
>>Scheduling Priority Indicator	M		9.2.1.51A			
>>MAC-d PDU Size Index		*1..<maxnoofMACdPDUindexes>*				
>>>SID	M		9.2.1.52D			
>>>MAC-d PDU Size	M		9.2.1.34A			
UE Capabilities information		*1*				
>HS-DSCH TrCh Bits per HS-DSCH TTI	M		ENUMERATED (7300, 14600, 20456, 28800,…)			
>HS-DSCH multi-code capability	M		ENUMERATED (5, 10, 15,…)			
>Min Inter-TTI Interval	M		INTEGER (1..3,…)			
>MAC-hs reordering buffer size	M		INTEGER (1..300,…)	The total buffer size defined in UE capability minus the RLC AM buffer		
HARQ Information		*1..<maxnoofHARQprocesses>*			–	
>Process memory size	M		INTEGER (1..172800, …)	Number of soft channel bits per process.		
Measurement feedback offset	M		INTEGER (0..79,…)			

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of MAC-d flows.
MaxnoofPrioQueues	Maximum number of Priority Queues.
MaxnoofMACdPDUindexes	Maximum number of MAC-d PDU Size Indexes (SIDs).
MaxnoofHARQprocesses	Maximum number of HARQ processes.

9.2.3.3aa HS-DSCH TDD Information

The *HS-DSCH TDD Information* IE provides information for HS-DSCH to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information		*1..<maxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O		–	
>BLER	M		9.2.1.4		–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	–	
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	–	
>Priority Queue Information		*1..<maxnoofPrioQueues>*			-	
>>Priority Queue ID	M		9.2.1.45A		-	
>>Scheduling Priority Indicator	M		9.2.1.51A			
>>MAC-d PDU Size Index		*1..<maxnoofMACdPDUindexes>*				
>>>SID	M		9.2.1.52D		-	
>>>MAC-d PDU Size	M		9.2.1.34A		-	
UE Capabilities information		*1*			-	
>HS-DSCH TrCh Bits per HS-DSCH TTI	M		ENUMERATED (7040, 10228, 14080,…)		-	
>HS-DSCH multi-code capability	M		ENUMERATED (8, 12, 16,…)		-	
>MAC-hs reordering buffer size	M		INTEGER (1..300,…)	The total buffer size defined in UE capability minus the RLC AM buffer		
HARQ Information		*1..<maxnoofHARQprocesses>*			–	
>Process memory size	M		INTEGER (1..168960, …)	Number of soft channel bits per process.	-	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of MAC-d flows.
MaxnoofPrioQueues	Maximum number of Priority Queues.
MaxnoofMACdPDUindexes	Maximum number of MAC-d PDU Size Indexes (SIDs).
MaxnoofHARQprocesses	Maximum number of HARQ processes.

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************

RNSAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) rnsap (1) version1 (1) rnsap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

UNCHANGED TEXT IS REMOVED

HSDSCH-MACdFlow-Specific-InfoList ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem

HSDSCH-MACdFlow-Specific-InfoItem ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bLER                                BLER,
    allocationRetentionPriority         AllocationRetentionPriority,
    bindingID                           BindingID                                   OPTIONAL,
    transportLayerAddress               TransportLayerAddress                       OPTIONAL,
    priorityQueue-Info                  PriorityQueue-InfoList,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs } }      OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
HSDSCH-MACdFlow-Specific-InfoList-Response ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem-Response

HSDSCH-MACdFlow-Specific-InfoItem-Response ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bindingID                           BindingID                                   OPTIONAL,
    transportLayerAddress               TransportLayerAddress                       OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-Response-ExtIEs } }      OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem-to-Modify

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify ::= SEQUENCE {
```

```
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bLER                                BLER                                    OPTIONAL,
    allocationRetentionPriority         AllocationRetentionPriority             OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    bindingID                           BindingID                               OPTIONAL,
    transportLayerAddress               TransportLayerAddress                   OPTIONAL,
    priorityQueue-Info-to-Modify        PriorityQueue-InfoList-to-Modify        OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

UNCHANGED TEXT IS REMOVED

3GPP TSG-RAN3 Meeting #29
Gyeongju, KOREA, 13th – 17th May, 2002

R3-021663

CR-Form-v4

CHANGE REQUEST

⌘ **25.423** **CR** **662** ⌘ ev **2** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	HS-DSCH Initial credits
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May, 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change: ⌘

The possibility for Node B/DRNC to give initial credits to the SRNC to be used before any new credits are allocated is missing in the current specification version. Similar feature exists on Iur in FACH Flow Control. To have this opportunity for HS-DSCH channels is even more important in order to ensure fast data transport in UTRAN.

Summary of change: ⌘

R2 (highlighted in light blue):

- In ASN.1, the order of IEs in HS-DSCH Initial Capacity Allocation was aligned with tabular format.

R1 (highlighted in yellow):

- HS-DSCH FDD Information Response IE:

  The HS-DSCH Initial Capacity Allocation was made optional.

- Procedure text added to the Radio Link Setup and Synchronised Radio Link Reconfiguration Preparation procedures.
- IE/Group name corrected for the HS-DSCH Initial Capacity Allocation IE.
- HS-DSCH Initial Window Size: The range changed to INTEGER (1..2047).
- ASN.1 changes (optionality and range as above).

R0:

A new IE ' HS-DSCH Initial Capacity Allocation' has been added into the HS-DSCH FDD Information Response IE and in the HS-DSCH TDD Information Response IE. With this new IE the Node B/DRNC provides the SRNC with the initial credit information: the HS-DSCH Initial Window Size (the number of the MAC-d PDUs) and Maximum MAC-d PDU Size.

This allows the SRNC to start the HS-DSCH data transport without having to wait capacity allocation on the User Plane.

Consequences if not approved:	⌘	If this CR is not approved the start of HS-DSCH data transport is possible only when new credits have been requested by the SRNC and allocated bt the NodeB/DRNC. This causes unnecessary delay. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification. The change is limited only to the HS-DSCH functionality. Compatibility Analysis towards previous release: No impact. The HSDPA is a new functionality and does not exist in the previous release.

Clauses affected:	⌘	8.3.1.2, 8.3.4.2, 9.2.1.X, 9.2.1.51A , 9.2.2.19b, 9.2.3.3ab, 9.3.4		
Other specs affected:	⌘	**X** Other core specifications Test specifications O&M Specifications	⌘	CR693r2 (25.433 V5.0.0) CR050r1 (25.425 V5.0.0) CR082r1 (25.435 V5.0.0)
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.1 Radio Link Setup

8.3.1.1 General

This procedure is used for establishing the necessary resources in the DRNS for one or more radio links.

The connection-oriented service of the signalling bearer shall be established in conjunction with this procedure.

8.3.1.2 Successful Operation

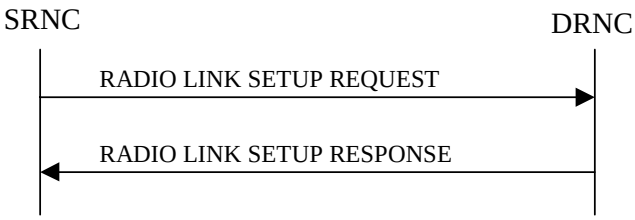

Figure 5: Radio Link Setup procedure: Successful Operation

When the SRNC makes an algorithmic decision to add the first cell or set of cells from a DRNS to the active set of a specific UE-UTRAN connection, the RADIO LINK SETUP REQUEST message is sent to the corresponding DRNC to request establishment of the radio link(s).

The DRNS shall prioritise resource allocation for the RL(s) to be established according to Annex A.

If the RADIO LINK SETUP REQUEST message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall assign a new D-RNTI for this UE.

Transport Channels Handling:

DCH(s):

[TDD - If the *DCH Information* IE is present in RADIO LINK SETUP REQUEST message, the DRNS shall configure the new DCHs according to the parameters given in the message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCH Information* IE as a set of co-ordinated DCHs.

[FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the QE-Selector is set to "non-selected ", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]

For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [4].]

The DRNS shall use the included *UL DCH FP Mode* IE for a DCH or a set of co-ordinated DCHs as the DCH FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs.

The *Frame Handling Priority* IE defines the priority level that should be used by the DRNS to prioritise between different frames of the data frames of the DCHs in the downlink on the radio interface in congestion situations once the new RL(s) have been activated.

The *Traffic Class* IE should be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs.

If the *DCH Specific Info* IE in the *DCH Information* IE includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:

- If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS may decide to request the SRNC to limit the user rate of the uplink of the DCH at any point in time. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed UL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.

- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS may decide to request the SRNC to limit the user rate of the downlink of the DCH at any point in time. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed DL Rate* IE, the DRNS shall not limit the user rate of the downlink of the DCH.

DSCH(s):

If the *DSCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNC shall establish the requested DSCHs [FDD - on the RL indicated by the PDSCH RL ID IE]. If the *Transport Layer Address* IE and *Binding ID* IE are included in the *DSCH Information* IE the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DSCH. In addition, the DRNC shall send a valid set of *DSCH Scheduling Priority* IE and *MAC-c/sh SDU Length* IE parameters to the SRNC in the message RADIO LINK SETUP RESPONSE message. If the *PDSCH RL ID* IE indicates a radio link in the DRNS, then the DRNC shall allocate a DSCH-RNTI to the UE Context and include the *DSCH-RNTI* IE in the RADIO LINK SETUP RESPONSE message.

If the *DSCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.

[TDD - USCH(s)]:

[TDD – The DRNS shall use the list of RB Identities in the *RB Info* IE in the *USCH information* IE to map each *RB Identity* IE to the corresponding USCH. If the *Transport Layer Address* IE and *Binding ID* IE are included in the *USCH Information* IE the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the USCH.]

[TDD – If the *USCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.]

HS-DSCH(s):

If the *HS-DSCH Information* IE is present, the DRNS shall establish the requested HS-DSCH resources on the RL indicated by the *HS-PDSCH RL ID* IE. In addition, if the *HS-PDSCH RL ID* IE indicates a radio link in the DRNS, then the DRNC shall allocate an HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK SETUP RESPONSE message. The DRNS shall also include the *Binding ID* IE and *Transport Layer Address* IE for establishment of transport bearer(s) for the HS-DSCH MAC-d flows on this radio link.

The DRNC shall include the *HS-DSCH Initial Capacity Allocation* IE in the RADIO LINK SETUP RESPONSE message for each MAC-d flow, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].

[FDD – The DRNS shall set the Measurement Feedback Reporting Cycle to a default value equal to the largest of the k1 and k2 values.]

Physical Channels Handling:

[FDD - Compressed Mode]:

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, the DRNS shall store the information about the Transmission Gap Pattern Sequences to be used in the Compressed Mode Configuration. This Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE and the *Active Pattern Sequence Information* IE, the DRNS shall use the information to activate the indicated Transmission Gap Pattern Sequences(s) in the new RL. The received *CM Configuration Change CFN* IE refers to latest passed CFN with that value. The DRNS shall treat the received *TGCFN* IEs as follows:]

- [FDD - If any received *TGCFN* IE has the same value as the received *CM Configuration Change CFN* IE, the DRNS shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - If any received *TGCFN* IE does not have the same value as the received *CM Configuration Change CFN* IE but the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE has already passed, the DRNS shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - For all other Transmission Gap Pattern Sequences included in the *Active Pattern Sequence Information* IE, the DRNS shall activate each Transmission Gap Pattern Sequence at the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE for the Transmission Gap Pattern Sequence.]

[FDD- If the *Downlink Compressed Mode Method* IE in one or more Transmission Gap Pattern Sequence is set to 'SF/2' in the RADIO LINK SETUP REQUEST message, the DRNS shall include the *Transmission Gap Pattern Sequence Scrambling Code Information* IE in the RADIO LINK SETUP RESPONSE message indicating for each DL Channelisation Code whether the alternative scrambling code shall be used or not.]

[FDD - DL Code Information]:

[FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the *p*th to "*PhCH number p*".]

General:

[FDD - If the *Propagation Delay* IE is included, the DRNS may use this information to speed up the detection of UL synchronisation on the Uu interface.]

[FDD – If the received *Limited Power Increase* IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control.]

[FDD – If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the DRNS shall assume the length of the TFCI (field 2) is 5 bits.]

[FDD – If the RADIO LINK SETUP REQUEST message includes *Split Type* IE, then the DRNS shall apply this information to the new configuration of TFCI.]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Length of TFCI2* IE, the DRNS shall apply this information to the length of TFCI(field 2).]

Radio Link Handling:

Diversity Combination Control:

[FDD - The *Diversity Control Field* IE indicates for each RL except for the first RL whether the DRNS shall combine the RL with any of the other RLs or not on the Iur. If the *Diversity Control Field* IE is set to "May" (be combined with another RL), then the DRNS shall decide for any of the alternatives. If the *Diversity Control Field* IE is set to "Must", the DRNS shall combine the RL with one of the other RL. When an RL is to be combined, the DRNS shall choose which RL(s) to combine it with. If the *Diversity Control Field* IE is set to “Must not”, the DRNS shall not combine the RL with any other existing RL.]

[FDD - In the case of combining one or more RLs the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message with the *Diversity Indication* IE that the RL is combined with another RL RL for all RLs but the first RL. In this case the Reference *RL ID* IE shall be included to indicate with which RL the combination is performed. The Reference *RL ID* IE shall not be included for the first of the combined RLs, for which the *Transport Layer Address* IE and the *Binding ID* IE shall be included.]

[FDD - In the case of not combining an RL with another RL, the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message with the *Diversity Indication* IE that no combining is performed. In this case the DRNC shall include both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH and DSCH of the RL in the RADIO LINK SETUP RESPONSE message.]

[TDD - The DRNC shall always include in the RADIO LINK SETUP RESPONSE message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH, DSCH and USCH of the RL.]

In case of a set of co-ordinated DCHs requiring a new transport bearer on Iur the *Binding ID* IE and the *Transport Layer Address* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

[FDD-Transmit Diversity]:

[FDD – If the cell in which the RL is being set up is capable to provide Close loop Tx diversity, the DRNC shall include the *Closed Loop Timing Adjustment Mode* IE in the RADIO LINK SETUP RESPONSE message indicating the configured Closed loop timing adjustment mode of the cell.]

[FDD – When *Diversity Mode* IE is "STTD", "Closed loop mode1", or "Closed loop mode2", the DRNC shall activate/deactivate the Transmit Diversity to each Radio Link in accordance with *Transmit Diversity Indicator* IE].

DL Power Control:

[FDD - If both the *Initial DL TX Power* IE and *Uplink SIR Target* IE are included in the message, the DRNS shall use the indicated DL TX Power and Uplink SIR Target as initial value. If the value of the *Initial DL TX Power* IE is outside the configured DL TX power range, the DRNS shall apply these constrains when setting the initial DL TX power. The DRNS shall also include the configured DL TX power range defined by *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK SETUP RESPONSE message. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power IE* or lower than indicated by the *Minimum DL TX Power IE* on any DL DPCH of the RL except during compressed mode, when the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.]

[FDD - If both the *Initial DL TX Power* and the *Uplink SIR Target* IEs are not included in the RADIO LINK SETUP REQUEST message, then DRNC shall determine the initial Uplink SIR Target and include it in the *Uplink SIR Target* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD – The DRNC shall use the *Uplink SIR Target CCTrCH* IEs in the RADIO LINK SETUP RESPONSE message to indicate for any UL CCTrCH an Uplink SIR Target value in case this is deviating from the value included in the *Uplink SIR Target* IE specified for the Radio Link. If in any [3.84Mcps TDD - *UL CCTrCH Information* IE] [1.28Mcps TDD - *UL CCTrCH Information LCR* IE] the *Uplink SIR Target CCTrCH* IE is not included, the value of the *Uplink SIR Target* IE shall apply to the respective UL CCTrCH.]

[FDD - If the *Primary CPICH Ec/No* IE is present, the DRNC should use the indicated value when deciding the Initial DL TX Power. If the *Enhanced Primary CPICH Ec/No* IE is present, the DRNC should use the indicated value when deciding the Initial DL Tx Power.]

[TDD - If the *Primary CCPCH RSCP* IE and/or the [3.84Mcps TDD - *DL Time Slot ISCP Info* IE] and/or the [1.28Mcps TDD - *DL Time Slot ISCP Info LCR* IE] are present, the DRNC should use the indicated values when deciding the Initial DL TX Power.]

[FDD – The DRNS shall start any DL transmission using the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL until UL synchronisation is achieved on the Uu interface for the concerning RLS or Power Balancing is activated. No inner loop power control or power balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10] subclause 5.2.1.2) and the power control procedure (see 8.3.15).]

[TDD – The DRNS shall start any DL transmission using the decided DL TX power level on each DL channelisation code and on each Time Slot of a RL until UL synchronisation is achieved on the Uu interface for the concerning RL. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref. [22] subclause 4.2.3.3).]

[FDD – If the received *Inner Loop DL PC Status* IE is set to “Active”, the DRNS shall activate the inner loop DL power control for all RLs. If *Inner Loop DL PC Status* IE is set to “Inactive”, the DRNS shall deactivate the inner loop DL power control for all RLs according to ref. [10].

[FDD - If the *DPC Mode* IE is present in the RADIO LINK SETUP REQUEST message, the DRNC shall apply the DPC mode indicated in the message, and be prepared that the DPC mode may be changed during the life time of the RL. If the *DPC Mode* IE is not present in the RADIO LINK SETUP REQUEST message, DPC mode 0 shall be applied (see ref. [10]).]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *DL Power Balancing Information* IE and the *Power Adjustment Type* IE is set to "Common" or "Individual", the DRNS shall activate the power balancing, if activation of power balancing by the RADIO LINK SETUP REQUEST message is supported, according to subclause 8.3.15, using the *DL Power Balancing Information* IE. If the DRNS starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing shall be set to the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL.]

[FDD – If activation of power balancing by the RADIO LINK SETUP REQUEST message is supported by the DRNS, the DRNC shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

Neighbouring Cell Handling:

If there are UMTS neighbouring cell(s) to the cell in which a Radio Link was established then:

- The DRNC shall include the *Neighbouring FDD Cell Information* IE and/or *Neighbouring TDD Cell Information* IE in the *Neighbouring UMTS Cell Information* IE for each neighbouring FDD cell and/or TDD cell respectively. In addition, if the information is available, the DRNC shall include the *Frame Offset* IE, *Primary CPICH Power* IE, *Cell Individual Offset* IE, *STTD Support Indicator* IE, *Closed Loop Mode1 Support Indicator* IE, *Closed Loop Mode2 Support Indicator* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring FDD Cell Information* IE, and the *Frame Offset* IE, *Cell Individual Offset* IE, *DPCH Constant Value* IE, the *PCCPCH Power* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring TDD Cell Information* IE.

- If a UMTS neighbouring cell is not controlled by the same DRNC, the DRNC shall also include the *CN PS Domain Identifier* IE and/or *CN CS Domain Identifier* IE which are the identifiers of the CN nodes connected to the RNC controlling the UMTS neighbouring cell.

- [FDD - The DRNC shall include the *DPC Mode Change Support Indicator* IE if the DRNC is aware that the neighbouring cell supports DPC mode change.]

- [FDD- The DRNC shall include the *Flexible Hard Split Support Indicator* IE if the DRNC is aware that the neighbouring cell supports *Flexible Hard Split* mode.]

- The DRNC shall include the *Cell Capability Container FDD* IE, the *Cell Capability Container TDD* IE and/or the *Cell Capability Container TDD LCR* IE if the DRNC is aware that the neighbouring cell supports any functionalities listed in 9.2.2.D, 9.2.3.1a and 9.2.3.1b.

For the UMTS neighbouring cells which are controlled by the DRNC, the DRNC shall report in the RADIO LINK SETUP RESPONSE message the restriction state of those cells, otherwise *Restriction state indicator* IE may be absent. The DRNC shall include the *Restriction state indicator* IE for the neighbouring cells which are controlled by the DRNC in the *Neighbouring FDD Cell Information* IE, the *Neighbouring TDD Cell Information* IE and the *Neighbouring TDD Cell Information LCR* IE.

If there are GSM neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include the *Neighbouring GSM Cell Information* IE in the RADIO LINK SETUP RESPONSE message for each of the GSM neighbouring cells. If available the DRNC shall include the *Cell Individual Offset* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring GSM Cell Information* IE.

General:

If the RADIO LINK SETUP REQUEST message includes the *RL Specific DCH Information* IE, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity* IE and the *S-Field Length* IE, the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity* IE and *SSDT Cell Identity Length* IE.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity for EDSCHPC* IE, the DRNS shall activate enhanced DSCH power control, if supported, using the *SSDT Cell Identity for EDSCHPC* IE and *SSDT Cell Identity Length* IE as well as *Enhanced DSCH PC* IE in accordance with ref. [10] subclause 5.2.2. If the RADIO LINK SETUP REQUEST message includes both *SSDT Cell Identity* IE and *SSDT Cell Identity for EDSCHPC* IE, then the DRNS shall ignore the *SSDT Cell Identity for EDSCHPC* IE.]

[FDD - If the *DRAC Control* IE is set to "requested" in the RADIO LINK SETUP REQUEST message for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK SETUP RESPONSE message the *Secondary CCPCH Info* IE for the FACH where the DRAC information is sent, for each Radio Link established in a cell where DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK SETUP RESPONSE message.]

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall include the node identifications of the CN Domain nodes that the RNC is connected to (using LAC and RAC of the current cell), and the *D-RNTI* IE in the RADIO LINK SETUP RESPONSE message.

[FDD - If the *D-RNTI* IE was included the RADIO LINK SETUP REQUEST message the DRNC shall include the *Primary Scrambling Code* IE, the *UL UARFCN* IE and the *DL UARFCN* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD – If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include the *UARFCN* IE, the *Cell Parameter ID* IE,[3.84Mcps TDD - the *Sync Case* IE, the *SCH Time Slot* IE,] the *SCTD Indicator* IE, and the *PCCPCH Power* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the [3.84Mcps TDD - *Secondary CCPCH Info TDD* IE] [1.28Mcps TDD – *Secondary CCPCH Info TDD LCR* IE] in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

For each Radio Link established in a cell where at least one URA Identity is being broadcast, the DRNC shall include a URA Identity for this cell in the *URA ID* IE, the *Multiple URAs Indicator* IE indicating whether or not multiple URA Identities are being broadcast in the cell, and the RNC Identity of all other RNCs that are having at least one cell within the URA in the cell in the *URA Information* IE in the RADIO LINK SETUP RESPONSE message.

Depending on local configuration in the DRNS, it may include the geographical co-ordinates of the cell, represented either by the *Cell GAI* IE or by the *Cell GA Additional Shapes* IE and the UTRAN access point position for each of the established RLs in the RADIO LINK SETUP RESPONSE message.

If the DRNS need to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) already when starting to utilise a new Radio Link, the DRNC shall include the *Allowed UL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK SETUP RESPONSE message for this Radio Link.

If the DRNS need to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) already when starting to utilise a new Radio Link, the

DRNC shall include the *Allowed DL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK SETUP RESPONSE message for this Radio Link.

If the *Permanent NAS UE Identity* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall store the information for the considered UE Context for the life-time of the UE Context.

If the RADIO LINK SETUP REQUEST message includes the *Permanent NAS UE Identity* IE and a *C-ID* IE corresponding to a cell reserved for operator use, the DRNC shall use this information to determine whether it can set up a Radio Link on this cell or not for the considered UE Context.

If the HCS priority information is available in the DRNS, it shall include the *HCS Prio* IE for each of the established RLs in the RADIO LINK SETUP RESPONSE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK SETUP RESPONSE message.]

[FDD - Radio Link Set Handling]:

[FDD - The *First RLS Indicator* IE indicates if the concerning RL shall be considered part of the first RLS established towards this UE. The *First RLS Indicator* IE shall be used by the DRNS to determine the initial TPC pattern in the DL of the concerning RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.

[FDD – For each RL not having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message a value that uniquely identifies the RL Set within the UE Context.]

[FDD – For all RLs having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message the same value. This value shall uniquely identify the RL Set within the UE context.]

[FDD –The UL Uu synchronisation detection algorithm defined in ref. [10] subclause 4.3 shall for each of the established RL Set(s) use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE, and the minimum value of the parameters N_INSYNC_IND, that are configured in the cells supporting the radio links of the RL Set].

Response Message:

At the reception of the RADIO LINK SETUP REQUEST message, DRNS allocates requested type of channelisation codes and other physical channel resources for each RL and assigns a binding identifier and a transport layer address for each DCH or set of co-ordinated DCHs and for each DSCH [TDD – and USCH]. This information shall be sent to the SRNC in the message RADIO LINK SETUP RESPONSE when all the RLs have been successfully established.

After sending of the RADIO LINK SETUP RESPONSE message the DRNS shall continuously attempt to obtain UL synchronisation on the Uu interface and start reception on the new RL.

For each RL for which the *Delayed Activation* IE is not included in the RADIO LINK SETUP REQUEST message the DRNS shall:

- [FDD -start DL transmission on the new RL after synchronisation is achieved in the DL user plane as specified in ref. [4].]
- [TDD – start transmission on the new RL immediately as specified in ref. [4].]

For each RL for which the *Delayed Activation* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall:

- if the *Delayed Activation* IE indicates “Separate Indication”:
  - not start any DL transmission for the concerning RL on the Uu interface;
- if the *Delayed Activation* IE indicates “CFN”:
  - [FDD – start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in ref. [4], however never before the CFN indicated in the *Activation CFN* IE.]
  - [TDD – start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in ref. [4].]

8.3.4 Synchronised Radio Link Reconfiguration Preparation

8.3.4.1 General

The Synchronised Radio Link Reconfiguration Preparation procedure is used to prepare a new configuration of Radio Link(s) related to one UE-UTRAN connection within a DRNS.

This procedure shall use the signalling bearer connection for the relevant UE context.

The Synchronised Radio Link Reconfiguration Preparation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.4.2 Successful Operation

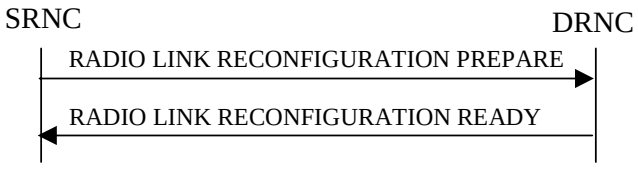

Figure 10: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the SRNC by sending the RADIO LINK RECONFIGURATION PREPARE message to the DRNC.

Upon reception, the DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

The DRNS shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

DCH Modification:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Modify* IEs then the DRNS shall treat them each as follows:

- If the *DCHs to Modify IE* includes multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Modify* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- If the *DCHs to Modify IE* includes the *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify IE* includes the *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify IE* includes the *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCH Specific Info* IE includes the *Frame Handling Priority* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.

- If the *DCH Specific Info* IE includes the *Traffic Class* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The *Traffic Class* IE should be used to determine the

transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs.

- If the *DCH Specific Info* IE includes the *Transport Format Set* IE for the UL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.

- If the *DCH Specific Info* IE includes the *Transport Format Set* IE for the DL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.

- [FDD - If, in the *DCH Specific Info* IE, the *DRAC Control* IE is present and set to "requested" for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE for the FACH where the DRAC information is sent, for each Radio Link established in a cell where DRAC is active. If the DRNS does not support DRAC, DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]

- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the UL, the DRNS shall map the DCH onto the referenced UL CCTrCH.]

- [TDD - If the *DCH Specific Info* IE includes the *CCTrCH ID* IE for the DL, the DRNS shall map the DCH onto the referenced DL CCTrCH.]

- If the *DCH Specific Info* IE includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:

  - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the uplink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate in the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.

- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate in the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.

DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Add* IEs then the DRNS shall treat them each as follows:

- The DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCH in the new configuration.

- If the *DCHs to Add* IE includes a *DCHs to Add* IE with multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs to Add* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- [FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If the QE-Selector is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [4].]

- [FDD - For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [4].]

- The DRNS should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.

- The DRNS should store the *Traffic Class* IE received for a DCH to be added in the new configuration. The *Traffic Class* IE should be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs.

- The DRNS shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- [TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if at least one DSCH or USCH exists in the new configuration.]

- [FDD - If the *DRAC Control* IE is set to "requested" in the *DCH Specific Info* IE for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE for the FACH where the DRAC information is sent, for each Radio Link supported by a cell where DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]

- If the *DCH Specific Info* IE includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:

    - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the uplink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate of the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed UL Rate* IE, the DRNS shall not limit the user rate of the downlink of the DCH.

- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate of the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed DL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.

DCH Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCH to Delete*, the DRNS shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the DRNS shall not include this set of co-ordinated DCHs in the new configuration.

Physical Channel Modification:

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information* IE includes the *Uplink Scrambling Code* IE, the DRNS shall apply this Uplink Scrambling Code to the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *Min UL Channelisation Code Length* IE, the DRNS shall apply the new Min UL Channelisation Code Length in the new configuration. The DRNS shall apply the contents of the *Max Number of UL DPDCHs* IE (if it is included) in the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *TFCS* IE, the DRNS shall use the *TFCS* IE for the UL when reserving resources for the uplink of the new configuration. The DRNS shall apply the new TFCS in the Uplink of the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *UL DPCCH Slot Format* IE, the DRNS shall apply the new Uplink DPCCH *Slot Format* to the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *UL SIR Target* IE, the DRNS shall set the UL inner loop power control to the UL SIR target when the new configuration is being used.]

- [FDD – If the *UL DPCH Information* IE includes the *Puncture Limit* IE, the DRNS shall apply the value in the uplink of the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *Diversity Mode* IE, the DRNS shall apply diversity according to the given value.]

- [FDD – If the *UL DPCH Information* IE includes an *SSDT Cell Identity Length* IE and/or an *S-Field Length* IE, the DRNS shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information* IE then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *DL DPCH Information* IE includes *Number of DL Channelisation Codes IE*, the DRNS shall allocate given number of Downlink Channelisation Codes per Radio Link and apply the new Downlink Channelisation Code(s) to the new configuration. Each Downlink Channelisation Code allocated for the new configuration shall be included as a FDD DL Channelisation Code Number IE in the RADIO LINK RECONFIGURATION READY message when sent to the SRNC. If some Transmission Gap Pattern sequences using 'SF/2' method are already initialised in the DRNS, DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK RECONFIGURATION READY message in case the DRNS selects to change the Scrambling code change method for one or more DL Channelisation Code.]

- [FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the *p*th to "*PhCH number p*".]

- [FDD - If the *DL DPCH Information* IE includes the *TFCS* IE, the DRNS shall use the *TFCS* IE for the DL when reserving resources for the downlink of the new configuration. The DRNS shall apply the new TFCS in the Downlink of the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *DL DPCH Slot Format* IE, the DRNS shall apply the new slot format used in DPCH in DL.]

- [FDD – If the *DL DPCH Information* IE includes the *TFCI Signalling Mode* IE, the DRNS shall apply the new signalling mode of the TFCI.]

- [FDD – If the *DL DPCH Information* IE includes the *Multiplexing Position* IE, the DRNS shall apply the new parameter to define whether fixed or flexible positions of transport channels shall be used in the physical channel.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Used', the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Not Used', the DRNS shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

  - [FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the DRNS shall assume the length of the TFCI (field 2) is 5 bits.]

  - [FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes *Split Type* IE, then the DRNS shall apply this information to the new configuration of TFCI.]

- [FDD – If the *DL DPCH Information* IE includes the *Length of TFCI2* IE, the DRNS shall apply this information to the length of TFCI(field 2) in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information* IE, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration. This new Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information* IE and the *Downlink Compressed Mode Method* IE in one or more Transmission Gap Pattern Sequence within the *Transmission Gap Pattern Sequence Information* IE is set to 'SF/2', the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information* IE to the RADIO LINK RECONFIGURATION READY message indicating for each Channelisation Code whether the alternative scrambling code shall be used or not].

[TDD - UL/DL CCTrCH Modification]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs, then the DRNS shall treat them each as follows:]

[TDD - If any of the *UL CCTrCH to Modify* IEs or *DL CCTrCH to Modify* IEs includes any of *TFCS* IE, *TFCI coding* IE, *Puncture limit* IE, or *TPC CCTrCH ID* IEs the DRNS shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]

- [TDD – The DRNC shall include in the RADIO LINK RECONFIGURATION READY message DPCH information to be modified and the IEs modified if any of *Repetition Period* IE, *Repetition Length* IE, *TDD DPCH Offset* IE or timeslot information was modified. The DRNC shall include timeslot information and the IEs modified if any of *[3.84Mcps TDD - Midamble Shift and Burst Type* IE, *Time Slot* IE], [1.28Mcps TDD - *Midamble Shift LCR* IE, *Time Slot LCR* IE], *TFCI Presence* IE or Code information was modified. The DRNC shall include code information if [3.84Mcps TDD - *TDD Channelisation Code* IE] and/or [1.28Mcps TDD - *TDD Channelisation Code LCR* IE] was modified.]

- [1.28Mcps TDD – If the *UL CCTrCH to Modify* IE includes the *UL SIR Target* IE, the DRNS shall use the value for the UL inner loop power control according [12] and [22] when the new configuration is being used.]

[TDD – UL/DL CCTrCH Addition]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Add* IEs or *DL CCTrCH to Add* IEs, the DRNS shall include this CCTrCH in the new configuration.]

[TDD – If the DRNS has reserved the required resources for any requested DPCHs, the DRNC shall include the DPCH information within DPCH to be added in the RADIO LINK RECONFIGURATION READY message. [3.84Mcps TDD - If no DPCH was active before the reconfiguration, and if a valid Rx Timing Deviation measurement is known in DRNC, then the DRNC shall include the *Rx Timing Deviation* IE in the RADIO LINK RECONFIGURATION READY message.]]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL CCTrCH to Add* IE, the DRNS shall set the TPC step size of that CCTrCH to the same value as the lowest numbered DL CCTrCH in the current configuration.]

[1.28Mcps TDD – The DRNS shall use the *UL SIR Target* IE in the *UL CCTrCH to Add* IE as the UL SIR value for the inner loop power control for this CCTrCH according [12] and [22] in the new configuration.]

[TDD – UL/DL CCTrCH Deletion]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Delete* IEs *or DL CCTrCH to Delete* IEs, the DRNS shall remove this CCTrCH in the new configuration.]

SSDT Activation/Deactivation:

- [FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE", the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity* IE in *RL Information* IE, and the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, in the new configuration.

- [FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT not Active in the UE", the DRNS shall deactivate SSDT in the new configuration.]

DL Power Control:

- [FDD - If the *RL Information* IE includes the *DL Reference Power* IEs and power balancing is active, DRNS shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported, at the CFN in the RADIO LINK RECONFIGURATION COMMIT message, according to subclause 8.3.15, using the *DL Reference Power* IE. If the CFN modulo the value of the *Adjustment Period* IE is not equal to 0, the power balancing continues with the old reference power until the end of the current adjustment period, and the updated reference power shall be used from the next adjustment period.

[FDD - If updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported by the DRNS, the DRNC shall include the *DL Power Balancing Updated Indicator* IE in the *RL Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to modify*, *DSCH to add* or *DSCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Add* IE, then the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to add* IE, then the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.

[FDD - If the *DSCHs to Add* IE includes the *Enhanced DSCH PC* IE, the DRNS shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]

- [FDD - the *SSDT Cell Identity for EDSCHPC* IE in the *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

- [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* are included in the *RL Information* IE.]

[FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to Modify* IE, then the DRNS shall treat them each as follows:

- [FDD – If the *DSCH to Modify* IE includes any *DSCH Info* IEs, then the DRNS shall treat them each as follows:]

  - [FDD – If the *DSCH Info* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DNRS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]

  - [FDD – If the *DSCH Info* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]

  - [FDD – If the DSCH Info IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.]

- [FDD – If the *DSCH to Modify* IE includes the *PDSCH RL ID* IE, then the DRNS shall use it as the new DSCH RL identifier.]

- [FDD - If the indicated PDSCH RL ID is in the DRNS and there was no DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a DSCH-RNTI to the UE Context and include the *DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.]

- [FDD - If the indicated PDSCH RL ID is in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a new DSCH-RNTI to the UE Context, release the old DSCH-RNTI and include the *DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.]

- [FDD - If the indicated PDSCH RL ID is not in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall release this DSCH-RNTI.]

- [FDD – If the *DSCH to Modify* IE includes the *Transport Format Combination Set* IE, then the DRNS shall use it as the new Transport Format Combination Set associated with the DSCH.]

- [TDD – If the *DSCHs to Modify* IE includes the *CCTrCH Id* IE, then the DRNS shall map the DSCH onto the referenced DL CCTrCH.]

- [TDD – If the *DSCHs to Modify* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DNRS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]

- [TDD – If the *DSCHs to Modify* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]

- [TDD – If the *DSCHs to Modify* IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.]

- [TDD – The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if a DSCH is added and at least one DCH exists in the new configuration. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

- [FDD - If the *DSCHs to Modify* IE includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC Active in the UE ", the DRNS shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]

  - [FDD - the *SSDT Cell Identity for EDSCHPC* IE in *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

  - [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* are included in the *RL Information* IE.]

  [FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

- [FDD - If the *DSCHs to Modify* IE includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", the DRNS shall deactivate enhanced DSCH power control in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes a *DSCHs to Delete* IE requesting the deletion of all DSCH resources for the UE Context, then the DRNC shall release the DSCH-RNTI allocated to the UE Context, if there was one.]

If the requested modifications are allowed by the DRNS and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

[TDD] USCH Addition/Modification/Deletion

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to modify*, *USCH to add* or *USCH to delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Add* IE, then, the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of USCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to add* IE, then the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH to Modify* IE, then the DRNS shall treat them each as follows:

- If the USCH to Modify IE includes any of the Allocation/Retention Priority IE , Scheduling Priority Indicator IE or TrCH Source Statistics Descriptor IE, the DNRS shall use them to update the set of USCH Priority classes.

- If the USCH to Modify IE includes any of the CCTrCH Id IE, Transport Format Set IE, BLER IE or RB Info IE, the DRNS shall apply the parameters to the new configuration.

- If the *USCHs to Modify* IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.

- [TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if a USCH is added and at least one DCH exists in the new configuration. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

If the requested modifications are allowed by the DRNC and the DRNC has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

RL Information:

[FDD- If the *RL Information* IE includes the *DL DPCH Timing Adjustment* IE, the DRNS shall adjust the timing of the radio link accordingly in the new configuration.]

HS-DSCH Information Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *HS-DSCH Information to modify*, *HS-DSCH Information to Add* or *HS-DSCH Information to Delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated HS-DSCH resources to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-PDSCH RL ID* IE, then:

- If the indicated HS-PDSCH RL ID is in the DRNS and there was no HS-DSCH-RNTI allocated to the UE Context, the DRNC shall allocate an HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.

- If the indicated HS-PDSCH RL ID is in the DRNS and there was an HS-DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a new HS-DSCH-RNTI to the UE Context, release the old HS-DSCH-RNTI and include the *HS-DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.

- If the indicated HS-PDSCH RL ID is not in the DRNS and there was an HS-DSCH-RNTI allocated to the UE Context, the DRNC shall release this HS-DSCH-RNTI.

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Measurement Reporting Cycle* IE in the *HS-DSCH Information To Modify* IE, then the DRNS shall use the indicated Measurement Feedback Reporting Cycle value in the new configuration.]

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-DSCH Information to Delete* IE requesting the deletion of all HS-DSCH resources for the UE Context, then the DRNC shall release the HS-DSCH-RNTI allocated to the UE Context, if there was one.

The DRNC shall include the *HS-DSCH Initial Capacity Allocation* IE in the RADIO LINK RECONFIGURATION READY message for each MAC-d flow, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].

General

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transport Layer Address* IE and *Binding ID* IE in the *DSCHs to Modify* , *DSCHs to Add*, [TDD - *USCHs to Modify* , *USCHs to Add*] or in the *RL Specific DCH Information* IEs, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for any Transport Channel being added, or any Transport Channel being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

The DRNS shall include in the RADIO LINK RECONFIGURATION READY message the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE for any Transport Channel being added, or any Transport Channel being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE. In case of a set of co-ordinated DCHs requiring a new transport bearer on Iur, the *Transport Layer*

Address IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

In case of a Radio Link being combined with another Radio Link within the DRNS, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the combined Radio Links.

Any allowed rate for the uplink of a DCH provided for the old configuration will not be valid for the new configuration. If the DRNS need to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include the *Allowed UL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK RECONFIGURATION READY message for this Radio Link.

Any allowed rate for the downlink of a DCH provided for the old configuration will not be valid for the new configuration. If the DRNS need to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include the *Allowed DL Rate* IE of the *Allowed Rate Information* IE in the *DCH Information Response* IE for this DCH in the RADIO LINK RECONFIGURATION READY message for this Radio Link.

If the requested modifications are allowed by the DRNS, and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s) it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exist a Prepared Reconfiguration, as defined in subclause 3.1.

The DRNS decides the maximum and minimum SIR for the uplink of the Radio Link(s) and shall return this in the *Maximum Uplink SIR* IE and *Minimum Uplink SIR* IE for each Radio Link in the RADIO LINK RECONFIGURATION READY message.

If the DL TX power upper or lower limit has been re-configured the DRNC shall return this in the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE respectively in the RADIO LINK RECONFIGURATION READY message. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power IE* or lower than indicated by the *Minimum DL TX Power IE* on any DL DPCH of the RL [FDD – except during compressed mode, when the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.]

[TDD - If the *Primary CCPCH RSCP* IE and/or the [3.84Mcps TDD - *DL Time Slot ISCP Info* IE][1.28Mcps TDD - *DL Time Slot ISCP Info LCR* IE] are present, the DRNC should use the indicated values when deciding the Initial DL TX Power.]

9.2.1.X HS-DSCH Initial Capacity Allocation

The *HS-DSCH Initial Capacity Allocation* IE provides flow control information for each scheduling priority class for the HS-DSCH FP over Iur.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH Initial Capacity Allocation		*1..16*			–	
>Scheduling Priority Indicator	M		9.2.1.51A		–	
>Maximum MAC-d PDU Size	M		MAC-d PDU Size 9.2.1.34A		–	
>HS-DSCH Initial Window Size	M		9.2.1.X		–	

9.2.1.X HS-DSCH Initial Window Size

Indicates the initial number of MAC-d PDUs that may be transmitted before new credits are received from the DRNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
HS-DSCH Initial Window Size			INTEGER (1..2047)	Number of MAC-d PDUs: 2047 = Unlimited number of MAC-d PDUs.

9.2.1.51A Scheduling Priority Indicator

Indicates the relative priority of the FACH, DSCH, ~~or~~ USCH or HS-DSCH data frame. Used by the DRNC when scheduling FACH, DSCH, ~~or~~ USCH or HS-DSCH traffic.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Scheduling Priority Indicator			INTEGER (0..15)	Relative priority of the FACH, DSCH, ~~or~~ USCH or HS-DSCH data frame: 0=Lowest Priority … 15=Highest Priority

9.2.2.19b HS-DSCH FDD Information Response

The *HS-DSCH FDD Information Response* IE provides information for HS-DSCH MAC-d flows that have been established or modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information Response		*1..<maxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O		–	
>Binding ID	O		9.2.1.4		–	
>Transport Layer Address	O		9.2.1.63		–	
>HS-DSCH Initial Capacity Allocation	O		9.2.1.x		–	
HS-SCCH Specific Information Response		*1..<maxnoofHSSCCHcodes>*				
>Code Number	M		INTEGER (0..127)			
Measurement feedback reporting cycle k1	M		Measurement Feedback Reporting Cycle 9.2.2.24a	used by the UE when not in soft handover		
Measurement feedback reporting cycle k2	M		Measurement Feedback Reporting Cycle 9.2.2.24a	used by the UE when in soft handover		

9.2.3.3ab HS-DSCH TDD Information Response

The *HS-DSCH TDD Information Response* IE provides information for HS-DSCH that have been established or modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information Response		*1..<maxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O		–	
>Binding ID	O		9.2.1.4		–	
>Transport Layer Address	O		9.2.1.63		–	
> HS-DSCH Initial Capacity Allocation	O		9.2.1.x		–	
HS-SCCH Specific Information Response		*0..<maxnoofHSSCCHcodes>*		Mandatory for 3.84Mcps TDD	GLOBAL	reject
>Time Slot	M		9.2.3.23			
>Midamble Shift and Burst Type	M		9.2.3.7			
>TDD Channelisation Code	M		9.2.3.19			
>HS-SICH Information		*1*				
>>Time Slot	M		9.2.3.23			
>>Midamble Shift and Burst Type	M		9.2.3.7			
>>TDD Channelisation Code	M		9.2.3.19			
HS-SCCH Specific Information Response LCR		*0..<maxnoofHSSCCHcodes>*		Mandatory for 1.28Mcps TDD only	GLOBAL	reject
>Time Slot LCR	M		9.2.3.24a			
>Midamble shift LCR	M		9.2.3.7A			
>TDD Channelisation Code LCR	M		9.2.3.19a			
>HS-SICH Information LCR		*1*				
>>Time Slot LCR	M		9.2.3.24a			
>>Midamble shift LCR	M		9.2.3.7A			
>>TDD Channelisation Code LCR	M		9.2.3.19a			

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of MAC-d flows.
MaxnoofHSSCCHcodes	Maximum number of HS-SCCH codes.

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************



***********    UNAFFECTED PARTS OMITTED     ************************



-- H

HARQ-FDD-InfoList ::= SEQUENCE (SIZE (1..maxNrOfHARQProc)) OF HARQ-FDD-InfoItem

HARQ-FDD-InfoItem ::= SEQUENCE {
    process-Memory-Size                 INTEGER (1..172800,...),
    iE-Extensions                       ProtocolExtensionContainer { { HARQ-FDD-InfoItem-ExtIEs } }       OPTIONAL,
    ...
}

HARQ-FDD-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HARQ-TDD-InfoList ::= SEQUENCE (SIZE (1..maxNrOfHARQProc)) OF HARQ-TDD-InfoItem

HARQ-TDD-InfoItem ::= SEQUENCE {
    process-Memory-Size                 INTEGER (1..168960,...),
    iE-Extensions                       ProtocolExtensionContainer { { HARQ-TDD-InfoItem-ExtIEs } }       OPTIONAL,
    ...
}

HARQ-TDD-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HCS-Prio    ::= INTEGER (0..7)
-- 0 = lowest priority, ...7 = highest priority

HSDSCH-FDD-Information ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-Info           HSDSCH-MACdFlow-Specific-InfoList,
    uE-Capabilities-InfoFDD                 UE-Capabilities-InfoFDD,
    hARQ-FDD-Info                           HARQ-FDD-InfoList,
```

```
    measurement-Feedback-Offset             Measurement-Feedback-Offset,
    iE-Extensions                           ProtocolExtensionContainer { { HSDSCH-FDD-Information-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-FDD-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-FDD-Information-Response ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-InfoList-Response      HSDSCH-MACdFlow-Specific-InfoList-Response,
    hSSCCH-Specific-InfoList-Response               HSSCCH-FDD-Specific-InfoList-Response,
    measurement-Feedback-Reporting-Cycle-k1         Measurement-Feedback-Reporting-Cycle,
    measurement-Feedback-Reporting-Cycle-k2         Measurement-Feedback-Reporting-Cycle,
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-FDD-Information-Response-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-FDD-Information-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-Information-to-Modify ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-InfoList-to-Modify     HSDSCH-MACdFlow-Specific-InfoList-to-Modify          OPTIONAL,
    measurement-Reporting-Cycle                     ENUMERATED {k1, k2}                                  OPTIONAL,
    -- Only for FDD
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-Information-to-Modify-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-Information-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-ID ::= INTEGER (0..maxNrOfMACdFlows-1)

HSDSCH-MACdFlow-Specific-InfoList ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem

HSDSCH-MACdFlow-Specific-InfoItem ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bLER                                BLER,
    allocationRetentionPriority         AllocationRetentionPriority,
    priorityQueue-Info                  PriorityQueue-InfoList,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs } }      OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList-Response ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem-Response
```

```
HSDSCH-MACdFlow-Specific-InfoItem-Response ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bindingID                           BindingID                                   OPTIONAL,
    transportLayerAddress               TransportLayerAddress                       OPTIONAL,
    hSDSCH-Initial-Capacity-Allocation  HSDSCH-Initial-Capacity-Allocation          OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-Response-ExtIEs } }      OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem-to-Modify

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify ::= SEQUENCE {
    hSDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bLER                                BLER                                        OPTIONAL,
    allocationRetentionPriority         AllocationRetentionPriority                 OPTIONAL,
    priorityQueue-Info-to-Modify        PriorityQueue-InfoList-to-Modify            OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-Initial-Capacity-Allocation:= SEQUENCE (SIZE (1..16)) OF HSDSCH-Initial-Capacity-AllocationItem

HSDSCH-Initial-Capacity-AllocationItem ::= SEQUENCE {
    schedulingPriorityIndicator     SchedulingPriorityIndicator,
    maximum-MACdPDU-Size            MACdPDU-Size,
    hSDSCH-InitialWindowSize        HSDSCH-InitialWindowSize,
    iE-Extensions                   ProtocolExtensionContainer { {HSDSCH-Initial-Capacity-AllocationItem-ExtIEs} } OPTIONAL,
    ...
}

HSDSCH-Initial-Capacity-AllocationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


HSDSCH-InitialWindowSize            ::= INTEGER (1..2047)
-- Number of MAC-d PDUs.
-- 2047 = Unlimited number of MAC-d PDUs


HSDSCH-RNTI ::= INTEGER (0..65535)

HSDSCH-TDD-Information ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-Info           HSDSCH-MACdFlow-Specific-InfoList,
```

```
    uE-Capabilities-InfoTDD                 UE-Capabilities-InfoTDD,
    hARQ-TDD-InfoList                       HARQ-TDD-InfoList,
    iE-Extensions                           ProtocolExtensionContainer { { HSDSCH-TDD-Information-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-TDD-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-TDD-Information-Response ::= SEQUENCE {
    hSDSCH-MACdFlow-Specific-InfoList-Response      HSDSCH-MACdFlow-Specific-InfoList-Response,
    hSSCCH-TDD-Specific-InfoList-Response           HSSCCH-TDD-Specific-InfoList-Response                  OPTIONAL,
    hSSCCH-TDD-Specific-InfoList-Response-LCR       HSSCCH-TDD-Specific-InfoList-Response-LCR              OPTIONAL,
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-TDD-Information-Response-ExtIEs } }       OPTIONAL,
    ...
}

HSDSCH-TDD-Information-Response-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

3GPP TSG-RAN3 Meeting #29
Gyeongju, Korea, 13th – 17th May 2002

R3-021614

CR-Form-v4

CHANGE REQUEST

⌘ **25.425** **CR** **050** ⌘ ev **1** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	HS-DSCH Initial credits
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May, 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	The current specification allows the start of the HS-DSCH data transport only when the HS-DSCH Capacity Allocation procedure is performed on the User Plane. To introduce the HS-DSCH Initial credits the data transport start shall also be possible if the Node B/DRNC has allocated capacity via the HS-DSCH Initial capacity allocation in the RNSAP.
Summary of change:	⌘	The procedure text has been updated so that the start of the data transport is allowed also without HS-DSCH Capacity allocation procedure if initial credits are allocated in RNSAP signalling. Changes in R1: The compatibility analysis has been added.
Consequences if not approved:	⌘	If the CR is not approved, the start of the data transport is unnecessarily delayed. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification. The change is limited only to the HS-DSCH functionality. Compatibility Analysis towards previous release: No impact. The HSDPA is a new functionality and does not exist in the previous release.

Clauses affected:	⌘	5.1.5			
Other specs affected:	⌘	**X**	Other core specifications	⌘	CR082r1 (25.435 V5.0.0) CR693r1 (25.433 V5.0.0) CR662r1 (25.423 V5.0.0)
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.1.5 HS-DSCH Data Transfer

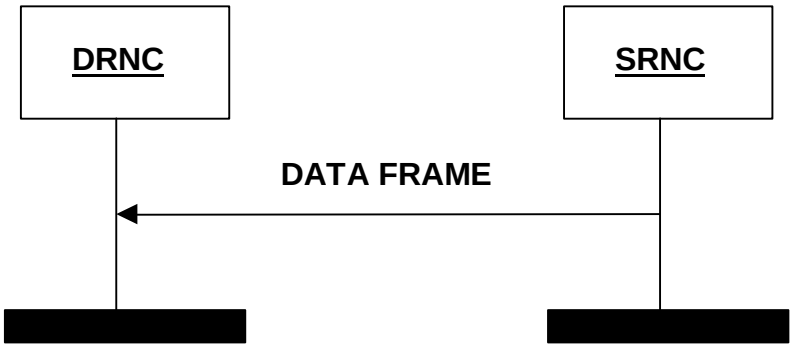

Figure 4AA: HS-DSCH Data Transfer procedure

When the SRNC has been granted capacity by the DRNC via the HS-DSCH CAPACITY ALLOCATION Control Frame or via the HS-DSCH initial capacity allocation as described in [8] and the SRNC has data waiting to be sent, then the HS-DSCH DATA FRAME is used to transfer the data. When data is waiting to be transferred, and a CAPACITY ALLOCATION is received, a DATA FRAME will be transmitted immediately according to allocation received.

Multiple MAC-d PDUs of same length and same priority level (CmCH-PI) may be transmitted in one MAC-d flow in the same HS-DSCH DATA FRAME.

The HS-DSCH DATA FRAME includes a *User Buffer Size* IE to indicate the amount of data pending for the respective MAC-d flow for the indicated priority level. Within one priority level and size the MAC-d PDUs shall be transmitted by the DRNS on the Uu interface in the same order as they were received from the SRNC.

3GPP TSG-RAN3 Meeting #29
Gyeongju, Korea, 13th – 17th May 2002

R3-021602

CR-Form-v4

CHANGE REQUEST

⌘ **25.425** **CR** **051** ⌘ ev **1** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Maximum number of credits
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May, 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change: ⌘

The maximum number of HS-DSCH credits that the Node B can allocate is currently equal to 254. This puts some limits to the HS-DSCH performance. Assuming 5000 bit MAC-d PDUs (which is the max size) the current max number of credits is not a problem

But with smaller MAC-d PDUs the Iub/Iur transport might set the capacity limit which is not desirable: If we assume a MAC-d PDU size of 320 bits, max number of credits to be 254, and the Flow control Round-Trip-Time to be 30 ms, we end up to (320 bits) * 254 credits / 30 ms = 2.7 Mbps, which is limiting the HS-DSCH capacity.

To avoid the situation that the Iur transport is limiting the HS-DSCH capacity it is proposed in this CR that the number of credits field in the HS-DSCH Capacity Allocation frame is extended from 8 bits (255) to 11 bits (2047).

Summary of change: ⌘

R1:

Section 6.3.3.6:

- The value 255 was changed to 2047.

- Figure 19; Cont moved into brackets.

- Impact analysis for previous release added.

R0:

The spare bits in the HS-DSCH Capacity Allocation frame are taken into use for Number of credits IE.

Also the name of the Maximum MAC-d PDU Length has been corrected in the frame picture to correspond the procedure text.

Consequences if not approved:	⌘	If the CR is not approved, the Iub/Iur transport might restrict the HS-DSCH capacity. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification. The change is limited only to the HS-DSCH functionality. Compatibility Analysis towards previous release: No impact. The HSDPA is a new functionality and does not exist in previous release.

Clauses affected:	⌘	5.2.6, 6.3.3.6		
Other specs affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	CR083r1 (25.435 V5.0.0)
Other comments:	⌘			

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http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.2.6 HS-DSCH Capacity Allocation

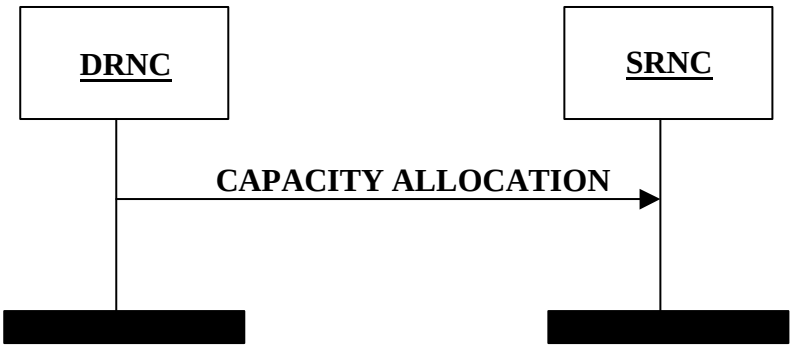

Figure 6C: HS-DSCH Capacity Allocation procedure

HS-DSCH Capacity Allocation procedure is generated within the DRNC. It may be generated either in response to a HS-DSCH Capacity Request or at any other time.

The DRNC may use this message to modify the capacity at any time, irrespective of the reported user buffer status.

The HS-DSCH CAPACITY ALLOCATION frame is used by the DRNC to control the user data flow. *HS-DSCH Credits* IE indicates the number of MAC-d PDUs that the SRNC is allowed to transmit for the MAC-d flow and the associated priority level indicated by the *Common Transport Channel Priority Indicator* IE.

The *Maximum. MAC- d PDU length*, *HS-DSCH Credits*, *HS-DSCH Interval* and *HS-DSCH Repetition Period* IEs indicates the total amount of capacity granted. Any capacity previously granted is replaced.

If *HS-DSCH Credits* IE = 0 (e.g. due to congestion in the DRNC), the SRNC shall immediately stop transmission of MAC-d PDUs. If *HS-DSCH Credits* IE = ~~255~~2047, the SRNC can transmit MAC-d PDUs with unlimited capacity.

The IEs used in the HS-DSCH CAPACITY ALLOCATION Control Frame are the *Common Transport Channel Priority Indicator*, *HS-DSCH Credits*, *Maximum MAC- d PDU Length*, *HS-DSCH Interval* and the *HS-DSCH Repetition Period*.

If the Repetition Period IE = *"unlimited repetition period"* it indicates that the SRNC may transmit the specified number of MAC-d PDUs for an unlimited period according to the bounds of *Maximum MAC-d PDU Length*, *HS-DSCH Credits* and *HS-DSCH Interval* IEs.

6.3.3.6 HS-DSCH CAPACITY ALLOCATION

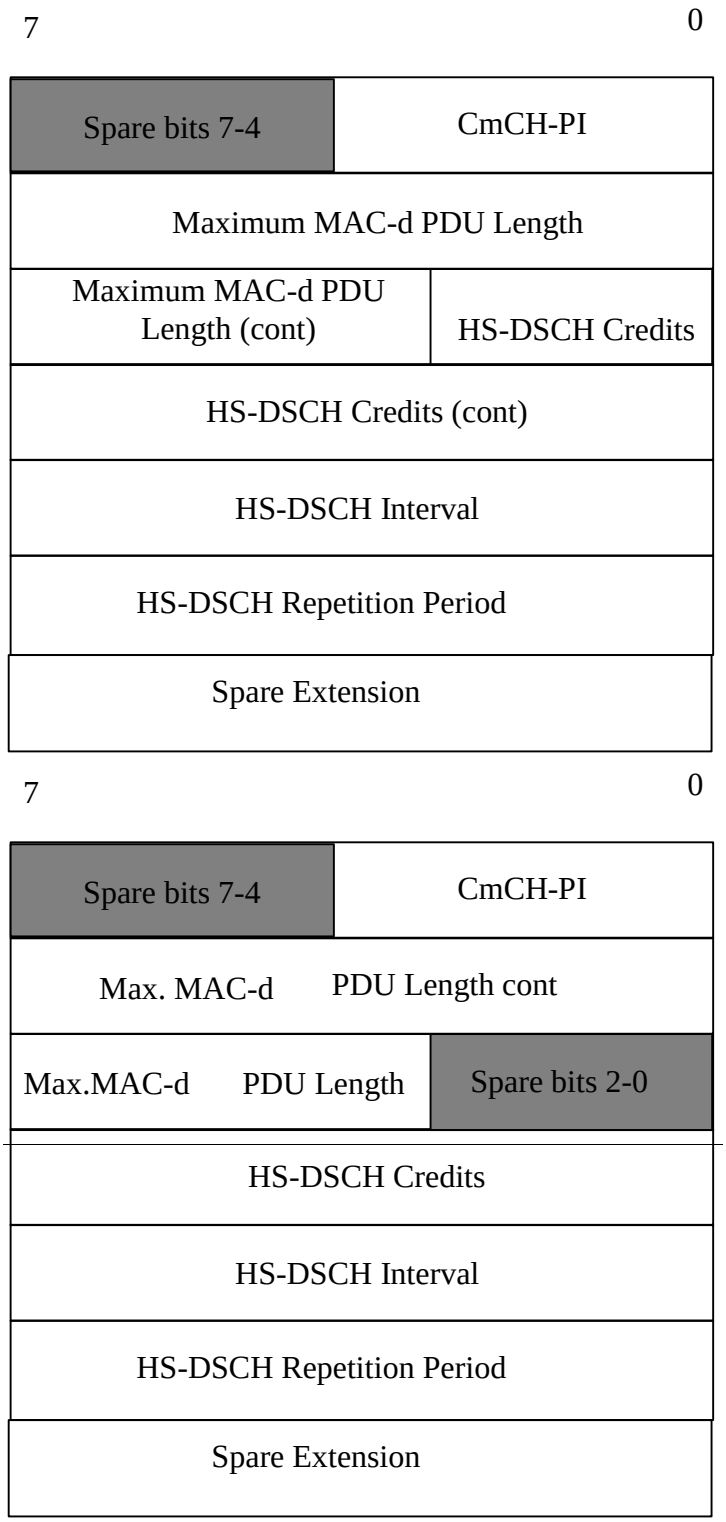

Figure 19: CAPACITY ALLOCATION payload structure

The CAPACITY ALLOCATION Control Frame describes an allocation that the SRNC may use. When the *HS-DSCH Credits* IE has a value of 0 it signifies that there is no resources allocated for transmission and to thus stop transmission. When the *HS-DSCH Credits* IE has a value of ~~255~~2047, it signifies unlimited capacity for transmission of PDUs. When the *HS-DSCH Repetition Period* IE has a value of 0, it signifies that the allocation (*Maximum MAC-d PDU Length, HS-DSCH Credits* and *HS-DSCH Interval* IEs) can be repeated without limit.

6.3.3.6.1 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7.

6.3.3.6.2 Maximum MAC-d PDU Length

Description: The values indicated the maximum allowable PDU size. MAC-d PDU contains the C/T field of the MAC header followed by one RLC PDU.

Field length: See the value of the *MAC-d PDU Length* IE.

6.3.3.6.3 HS-DSCH Credits

Description: The *HS-DSCH Credits* IE indicates the number of MAC-d PDUs that a user may transmit.

Value range: {0-2047, where 0=stop transmission, 2047=unlimited}.~~Refer to subclause 6.3.3.1.3.~~

Field length: 11 bits.~~Refer to subclause 6.3.3.1.3.~~

6.3.3.6.4 HS-DSCH Interval

Description: The value of this field indicates the time interval during which the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY ALLOCATION Control Frame may be transmitted. This value is only applied to the HS-DSCH transport channel.

Value range: Refer to subclause 6.3.3.3.4.

Granularity: Refer to subclause 6.3.3.3.4.

Field Length: Refer to subclause 6.3.3.3.4.

6.3.3.6.5 HS-DSCH Repetition Period

Description: The value of this field indicates the number of subsequent intervals that the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY ALLOCATION Control Frame may be transmitted. These values represent an integer number of Intervals (see subclause 6.3.3.6.4). This field is only applied to the HS-DSCH transport channel.

Value range: Refer to subclause 6.3.3.3.5.

Field Length: Refer to subclause 6.3.3.3.5.

6.3.3.6.8 Spare Extension

Refer to subclause 6.3.3.1.4.

3GPP TSG-RAN3 #29 Meeting
Gyeongju, Korea, 13 – 17 May 2002

Tdoc R3-021258

CR-Form-v3

CHANGE REQUEST

⌘ **25.433** **CR** **656** ⌘ rev **-** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Interaction between HSDPA and IP transport in UTRAN
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	The introduction of HSDPA and IP transport in UTRAN features in Release 5 specifications have not taken into account the interaction between those 2 features, namely the possibility to provide in the request messages the *Binding ID* IE and the *Transport Layer Address* IE.
Summary of change:	⌘	The *Binding ID* IE and the *Transport Layer Address* IE are included in the new *HS-DSCH To Modify* IE, *HS-DSCH FDD Information* IE and *HS-DSCH TDD Information* IE. Relevant procedure text has been added to handle these new optional IEs in the Radio Link Setup and Synchronised Radio Link Reconfiguration Preparation procedures. The *Transport Bearer Request Indicator* IE has been added in the ASN.1 from which it was missing (present in the tabular format). Furthermore, the procedure text handling the transport bearer aspects has been updated to take into account the HS-DSCH MAC-d Flow as they cannot be considered as transport channels. Impact Analysis: Impact assessment towards the previous version of the specification (same release): this CR does not have an isolated impact on the previous version of the specification (same release). This CR has an impact under the protocol and functional point of view. The impact cannot be considered isolated because the change affects more than one system function, namely HSDPA and IP Transport in UTRAN. There is no impact on the Rel-4 version of the specifications as the IEs on which the changes have been done do not exist in Rel-4.
Consequences if not approved:	⌘	If this CR is not approved, then the interaction between the introduction of the IP transport in UTRAN and the introduction of HSDPA will not be handled.

Clauses affected:	⌘	8.2.17.2, 8.3.2.2, 8.3.2.4, 9.2.1.31H, 9.2.2.18D, 9.2.3.5F, 9.3.4			
Other specs affected:	⌘	**X**	Other core specifications	⌘	TS 25.423 CR 621
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.17 Radio Link Setup

8.2.17.1 General

This procedure is used for establishing the necessary resources for a new Node B Communication Context in the Node B.

[FDD – The RL Setup procedure is used to establish one or more radio links. The procedure establishes one or more DCHs on all radio links, and in addition, it can include the establishment of one or more DSCHs or an HS-DSCH on one radio link.]

[TDD – The RL Setup procedure is used for establish one radio link including one or more transport channels. The transport channels can be a mixture of DCHs, DSCHs, and USCHs, or DCHs and an HS-DSCH, including also combinations where one or more transport channel types are not present.]

8.2.17.2 Successful Operation

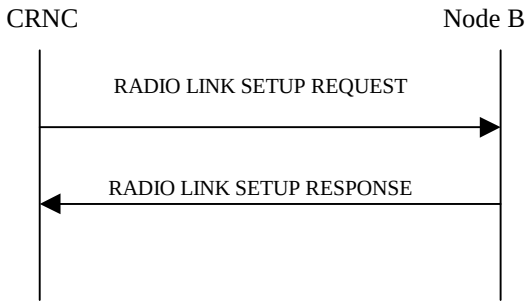

Figure 24: Radio Link Setup procedure, Successful Operation

The procedure is initiated with a RADIO LINK SETUP REQUEST message sent from the CRNC to Node B.

Upon reception of RADIO LINK SETUP REQUEST message, the Node B shall reserve necessary resources and configure the new Radio Link(s) according to the parameters given in the message.

The Node B shall prioritise resource allocation for the RL(s) to be established according to Annex A.

Transport Channels Handling:

DCH(s):

[TDD – If the *DCH Information* IE is present, the Node B shall configure the new DCH(s) according to the parameters given in the message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs then, the Node B shall treat the DCHs in the *DCH Information* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

[FDD – For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If the QE-Selector is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [16].]

For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [16]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [16]].

The Node B shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The Node B shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The Node B shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The received *Frame Handling Priority* IE specified for each Transport Channel should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new RL(s) has been activated.

[FDD – The *Diversity Control Field* IE indicates for each RL (except the first RL in the message) whether the Node B shall combine the concerned RL or not. If the *Diversity Control Field* IE is set to"May", then Node B shall decide for either of the alternatives. If the *Diversity Control Field* IE is set to "Must", the Node B shall combine the RL with one of the other RL. Diversity combining is applied to Dedicated Transport Channels (DCH), i.e. it is not applied to the DSCHs. When a new RL is to be combined, the Node B shall choose which RL(s) to combine it with. If the *Diversity Control Field* IE is set to "Must not" , the Node B shall not combine the RL with any other existing RL.]

[FDD – In the RADIO LINK SETUP RESPONSE message the Node B shall indicate with the *Diversity Indication* IE whether the RL is combined or not. In case of combining, only the *Reference RL ID* IE shall be included to indicate one of the existing RLs that the concerned RL is combined with. In case of not combining the Node B shall include in the RL SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.]

[TDD – The Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.]

In case of coordinated DCH, the *Binding ID* IE and the *Transport Layer Address* IE shall be specified for only one of the coordinated DCHs.

DSCH(s):

If the *DSCH Information* IE is present, the Node B shall configure the new DSCH(s) according to the parameters given in the message.

[FDD – If the RADIO LINK SETUP REQUEST message includes the *TFCI2 Bearer Information* IE then the Node B shall support the establishment of a transport bearer on which the DSCH TFCI Signaling control frames shall be received. The Node B shall manage the time of arrival of these frames according to the values of ToAWS and ToAWE specified in the IE's. The *Binding ID* IE and *Transport Layer Address* IE for the new bearer to be set up for this purpose shall be returned in the RADIO LINK SETUP RESPONSE message.]

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *DSCH Information* IE the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the DSCH.

The Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DSCH of this RL.

[TDD – USCH(s)]:

[TDD – If the *USCH Information* IE is present, the Node B shall configure the new USCH(s) according to the parameters given in the message.]

[TDD - If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *USCH Information* IE the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the USCH.]

[TDD – In case the *USCH Information* IE is present, the Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each USCH of this RL.]

HS-DSCH(s):

If the *HS-DSCH Information* IE is present the Node B shall configure the new HS-DSCH resources according to the parameters given in the message.

[FDD – If the *HS-DSCH Information* IE and the *HS-PDSCH RL ID* IE are present, the Node B shall configure the new HS-DSCH resources in the radio link specified by the HS-PDSCH RL ID.]

In addition the Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearers to be established for the HS-DSCH MAC-d flows of this RL.

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *HS-DSCH Information* IE for an HS-DSCH MAC-d flow, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the concerned HS-DSCH MAC-d flow.

If the *HS-DSCH-RNTI* IE is present, the Node B shall use the HS-DSCH RNTI value for HS-DSCH processing for the respective Node B Communication Context.

Physical Channels Handling:

[FDD – Compressed Mode]:

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, the Node B shall store the information about the Transmission Gap Pattern Sequences to be used in the Compressed Mode Configuration. This Compressed Mode Configuration shall be valid in the Node B until the next Compressed Mode Configuration is configured in the Node B or Node B Communication Context is deleted.]

[FDD – If the *Downlink compressed mode method* IE in one or more Transmission Gap Pattern Sequence is set to 'SF/2' in the RADIO LINK SETUP REQUEST message, the Node B shall use or not the alternate scrambling code as indicated for each DL Channelisation Code in the *Transmission Gap Pattern Sequence Code Information* IE.]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE and the *Active Pattern Sequence Information* IE, the Node B shall use the information to activate the indicated Transmission Gap Pattern Sequence(s) in the new RL.The received *CM Configuration Change CFN* refers to the latest passed CFN with that value The Node B shall treat the received *TGCFN* IEs as follows:]

- [FDD - If any received *TGCFN* IE has the same value as the received *CM Configuration Change CFN* IE, the Node B shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - If any received *TGCFN* IE does not have the same value as the received *CM Configuration Change CFN* IE but the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE has already passed, the Node B shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - For all other Transmission Gap Pattern Sequences included in the *Active Pattern Sequence Information* IE, the Node B shall activate each Transmission Gap Pattern Sequence at the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE for the Transmission Gap Pattern Sequence.]

[FDD – DL Code Information]:

[FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1"*, the second to "*PhCH number 2"*, and so on until the *p*th to "*PhCH number p*".]

General:

[FDD – If the *Propagation Delay* IE is included, the Node B may use this information to speed up the detection of L1 synchronisation.]

[FDD – The *UL SIR Target* IE included in the message shall be used by the Node B as initial UL SIR target for the UL inner loop power control.]

[1.28Mcps TDD – The *UL SIR Target* IE included in the message shall be used by the Node B as initial UL SIR target for the UL inner loop power control according [19] and [21].]

[FDD – If the received *Limited Power Increase* IE is set to 'Used', the Node B shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control.]

[FDD – If the *TFCI Signalling Mode* IE within the RADIO LINK SETUP message indicates that there shall be a hard split on the TFCI field but the *TFCI2 Bearer Information* IE is not included in the message then the Node B shall transmit the TFCI2 field with zero power.]

[FDD - If the *TFCI Signalling Mode* IE within the RADIO LINK SETUP message indicates that there shall be a hard split on the TFCI and the *TFCI2 Bearer Information* IE is included in the message then the Node B shall transmit the TFCI2 field with zero power until Synchronization is achieved on the TFCI2 transport bearer and the first valid DSCH TFCI Signalling control frame is received on this bearer (see ref.[24]).]

[FDD – If the RADIO LINK SETUP REQUEST message includes *the Length of TFCI2* IE, then the Node B shall apply the length of TFCI (field 2) indicated in the message.]

[FDD – If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the Node B shall assume the length of the TFCI (field 2) is 5 bits.]

Radio Link Handling:

[FDD – Transmit Diversity]:

[FDD – When *Diversity Mode* IE is "*STTD*", "*Closedloop mode1*", or "*Closedloop mode2*", the Node B shall activate/deactivate the Transmit Diversity to each Radio Link in accordance with *Transmit Diversity Indication* IE]

DL Power Control:

[FDD – The Node B shall start any DL transmission using the initial DL power specified in the message on each DL DPCH of the RL until either UL synchronisation on the Uu is achieved for the RLS or Power Balancing is activated. No inner loop power control or balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10], subclause 5.2.1.2) and the power control procedure (see subclause 8.3.7), but shall always be kept within the maximum and minimum limit specified in the RADIO LINK SETUP REQUEST message. During compressed mode, the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.]

[FDD - If the *DPC Mode* IE is present in the RADIO LINK SETUP REQUEST message, the Node B shall apply the DPC mode indicated in the message, and be prepared that the DPC mode may be changed during the life time of the RL. If the *DPC Mode* IE is not present in the RADIO LINK SETUP REQUEST message, DPC mode 0 shall be applied (see ref. [10]).]]

[TDD – The Node B shall determine the initial CCTrCH DL power for each CCTrCH by the following rule: If the *CCTrCH Initial DL transmission Power* IE is included for that CCTrCH then the Node B shall use that power for the initial CCTrCH DL power, otherwise the initial CCTrCH DL power is the *Initial DL transmission Power* IE included in the *RL Information* IE. The Node B shall start any DL transmission on each CCTrCH using the initial CCTrCH DL power, as determined above, on each DL DPCH and on each Time Slot of the CCTrCH until the UL synchronisation on the Uu is achieved for theCCTrCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22], subclause 4.2.3.3), but shall always be kept within the maximum and minimum limit specified in the RL SETUP REQUEST message.]

[TDD – If the [3.84Mcps TDD - *DL Time Slot ISCPInfo* IE] or [1.28Mcps TDD - *DL Timeslot ISCP LCR* IE] is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot

as specified in [21], i.e. it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged].

[FDD – If the received *Inner Loop DL PC Status* IE is set to "Active", the Node B shall activate the inner loop DL power control for all RLs. If *Inner Loop DL PC Status* IE is set to "Inactive", the Node B shall deactivate the inner loop DL power control for all RLs according to ref. [10]]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *DL Power Balancing Information* IE and the *Power Adjustment Type* IE is set to "Common" or "Individual", the Node B shall activate the power balancing, if activation of power balancing by the RADIO LINK SETUP REQUEST message is supported is supported, according to subclause 8.3.7, using the *DL Power Balancing Information* IE. If the Node B starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing shall be set to the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL.]

[FDD – If activation of power balancing by the RADIO LINK SETUP REQUEST message is supported by the Node B, the Node B shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

General:

If the RADIO LINK SETUP REQUEST message includes the *RL Specific DCH Information* IE,the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD – If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity* IE and the *S-Field Length* E, the Node B shall activate SSDT, if supported, using the *SSDT Cell Identity* IE and *SSDT Cell Identity Length* IE.]

[FDD – Irrespective of SSDT activation, the Node B shall include in the RADIO LINK SETUP RESPONSE message an indication concerning the capability to support SSDT on this RL. Only if the RADIO LINK SETUP REQUEST message requested SSDT activation and the RADIO LINK SETUP RESPONSE message indicates that the SSDT capability is supported for this RL, SSDT is activated in the Node B.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity for EDSCHPC* IE, the Node B shall activate enhanced DSCH power control, if supported, using the *SSDT Cell Identity for EDSCHPC* IE and *SSDT Cell Identity Length* IE as well as *Enhanced DSCH PC* IE in accordance with ref. [10] subclause 5.2.2. If the RADIO LINK SETUP REQUEST message includes both *SSDT Cell Identity* IE and *SSDT Cell Identity for EDSCHPC* IE, then the Node B shall ignore the value in *SSDT Cell Identity for EDSCHPC* IE. If the enhanced DSCH power control is activated and the TFCI power control in DSCH hard split mode is supported, the primary/secondary status determination in the enhanced DSCH power control is also applied to the TFCI power control in DSCH hard split mode.]

[FDD – Radio Link Set Handling]:

[FDD – The *First RLS Indicator* IE indicates if the concerning RL shall be considered part of the first RLS established towards this UE. The *First RLS Indicator* IE shall be used by the Node B together with the value of the *DL TPC pattern 01 count* IE which the Node B has received in the Cell Setup procedure, to determine the initial TPC pattern in the DL of the concerning RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.]

[FDD – For each RL not having a common generation of the TPC commands in the DL with another RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message a value that uniquely identifies the RL Set within the Node B Communication context.]

[FDD – For all RLs having a common generation of the TPC commands in the DL with another RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message the same value. This value shall uniquely identify the RL Set within the Node B Communication context.]

[FDD – The UL out-of-sync algorithm defined in [10] shall for each of the established RL Set(s) use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE, and the minimum value of the parameters N_INSYNC_IND, that are configured in the cells supporting the radio links of the RL Set]

Response Message:

If the RLs are successfully established, the Node B shall start reception on the new RL(s) and respond with a RADIO LINK SETUP RESPONSE message.

After sending of the RADIO LINK SETUP RESPONSE message the Node B shall continuously attempt to obtain UL synchronisation on the Uu and start reception on the new RL.

For each RL for which the *Delayed Activation* IE is not included in the RADIO LINK SETUP REQUEST message the Node B shall:

- [FDD - start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [16].]
- [TDD - start transmission on the new RL immediately as specified in [16].]

For each RL for which the *Delayed Activation* IE is included in the RADIO LINK SETUP REQUEST message, the Node B shall:

- if the *Delayed Activation* IE indicates "Separate Indication":
  - not start any DL transmission for the concerning RL on the Uu interface;
- if the *Delayed Activation* IE indicates "CFN":
  - [FDD – start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [16], however never before the CFN indicated in the *Activation CFN* IE.]
  - [TDD – start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in [16].]

8.2.17.3 Unsuccessful Operation

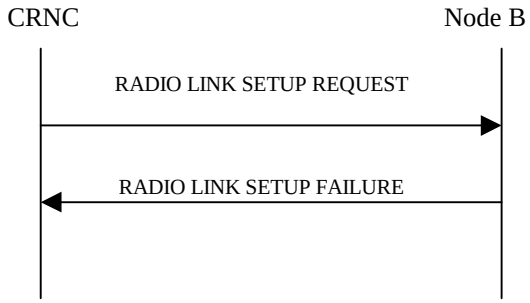

Figure 25: Radio Link Setup procedure: Unsuccessful Operation

If the establishment of at least one radio link is unsuccessful, the Node B shall respond with a RADIO LINK SETUP FAILURE message. The message contains the failure cause in the *Cause* IE.

[FDD – If some radio links were established successfully, the Node B shall indicate this in the RADIO LINK SETUP FAILURE message in the same way as in the RADIO LINK SETUP RESPONSE message.]

Typical cause values are as follows:

Radio Network Layer Cause

- Combining not supported
- Combining Resources not available
- Requested Tx Diversity Mode not supported
- Number of DL codes not supported
- Number of UL codes not supported
- UL SF not supported

- DL SF not supported
- Dedicated Transport Channel Type not supported
- Downlink Shared Channel Type not supported
- Uplink Shared Channel Type not supported
- CM not supported
- DPC mode change not supported
- Delayed Activation not supported

Transport Layer Cause

- Transport Resources Unavailable

Miscellaneous Cause

- O&M Intervention
- Control processing overload
- HW failure

8.2.17.4 Abnormal Conditions

[FDD – If the RADIO LINK SETUP REQUEST message contains the *Active Pattern Sequence Information* IE, but the *Transmission Gap Pattern Sequence Information* IE is not present, then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"] the Node B shall regard the Radio Link Setup procedure as failed and shall respond with a RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCH Information* IE do not have the same *Transmission Time Interval* IE in the *Semi-static Transport Format Information* IE, then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE included in the *RL Information* IE for a specific RL and the *Diversity Control Field* IE is set to "Must", the Node B shall regard the Radio Link Setup procedure as failed and respond with the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport bearer intended to be established, the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Length of TFCI2* IE but the *TFCI signalling option* IE is set to "Normal", then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD – If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE but the *Split type* IE is set to "Logical", then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Split Type* IE set to the value "Hard" and the *Length of TFCI2* IE set to the value "5", then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *Length of TFCI2* IE but the *TFCI signalling option* IE is set to "Normal", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message does not include the *Length of TFCI2* IE but the *Split type* IE is set to "Logical", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *Split Type* IE set to the value "Hard" and the *Length of TFCI2* IE set to the value "5", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

8.3.2 Synchronised Radio Link Reconfiguration Preparation

8.3.2.1 General

The Synchronised Radio Link Reconfiguration Preparation procedure is used to prepare a new configuration of Radio Link(s) related to one UE-UTRAN connection within a Node B.

The Synchronised Radio Link Reconfiguration Preparation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.2.2 Successful Operation

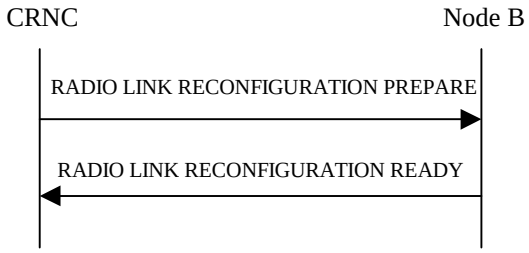

Figure 30: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the CRNC by sending the message RADIO LINK RECONFIGURATION PREPARE to the Node B. The message shall use the Communication Control Port assigned for this Node B Communication Context.

Upon reception, the Node B shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

The Node B shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

DCH Modification:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Modify* IEs then the Node B shall treat them each as follows:

- If the *DCHs to Modify* IE includes the *Frame Handling Priority* IE, the Node B should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new configuration has been activated.

- If the *DCHs to Modify* IE includes the *Transport Format Set* IE for the UL of a DCH, the Node B shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.

- If the *DCHs to Modify* IE includes the *Transport Format Set* IE for the DL of a DCH, the Node B shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.

- If the *DCHs to Modify* IE includes multiple *DCH Specific Info* IEs then the Node B shall treat the DCHs in the *DCHs to Modify* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- If the *DCHs to Modify* IE includes the *UL FP Mode* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify* IE includes the *ToAWS* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify* IE includes the *ToAWE* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- [TDD – If the *DCHs to Modify* IE includes the *CCTrCH ID* IE for the DL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Downlink of this DCH in the new configuration.]

- [TDD – If the *DCHs to Modify* IE includes the *CCTrCH ID* IE for the UL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Uplink of this DCH in the new configuration.]

DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Add* IEs then the Node B shall treat them each as follows:

- If the *DCHs to Add* IE includes multiple *DCH specific Info* IEs then, the Node B shall treat the DCHs in the *DCHs to Add* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- [FDD – For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If the QE-Selector is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [16].]

- For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [16]. [FDD – If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [16].]

- The Node B should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new configuration has been activated.

- The Node B shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The Node B shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The Node B shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- [TDD – The Node B shall apply the *CCTrCH ID* IE (for the DL) in the Downlink of this DCH in the new configuration.]

- [TDD – The Node B shall apply the *CCTrCH ID* IE (for the UL) in the Uplink of this DCH in the new configuration.]

DCH Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Delete* IEs, the Node B shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of coordinated DCHs are requested to be deleted, the Node B shall not include this set of coordinated DCHs in the new configuration.

Physical Channel Modification:

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE then the Node B shall apply the parameters to the new configuration as follows:]

- [FDD – If the *UL DPCH Information* IE includes the *Uplink Scrambling Code* IE, the Node B shall apply this Uplink Scrambling Code to the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *Min UL Channelisation Code Length* IE, the Node B shall apply the value in the new configuration. The Node B shall apply the contents of the *Max Number of UL DPDCHs* IE (if it is included) in the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *UL SIR Target* IE, the Node B shall use the value for the UL inner loop power control when the new configuration is being used.]

- [FDD – If the *UL DPCH Information* IE includes the *Puncture Limit* IE, the Node B shall apply the value in the uplink of the new configuration.]

- [FDD – The Node B shall use the *TFCS* IE for the UL (if present) when reserving resources for the uplink of the new configuration. The Node B shall apply the new TFCS in the Uplink of the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *UL DPCCH Slot Format* IE, the Node B shall set the new Uplink DPCCH Structure to the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *Diversity Mode* IE, the Node B shall apply diversity according to the given value.]

- [FDD – If the *UL DPCH Information* IE includes an *SSDT Cell Identity Length* IE and/or an *S-Field Length* IE, the Node B shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information* IE then the Node B shall apply the parameters to the new configuration as follows:]

- [FDD – The Node B shall use the *TFCS* IE for the DL (if it is present) when reserving resources for the downlink of the new configuration. The Node B shall apply the new TFCS in the Downlink of the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *TFCI Signalling Mode* IE or the *TFCI Presence* IE, the Node B shall use the information when building TFCIs in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *DL DPCCH Slot Format* IE, group the Node B shall set the new Downlink DPCCH Structure to the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Multiplexing Position* IE, the Node B shall apply the indicated multiplexing type in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Used', the Node B shall, if supported, use Limited Power Increase ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Not Used', the Node B shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *PDSCH code mapping* IE then the Node B shall apply the defined mapping between TFCI values and PDSCH channelisation codes.]

- [FDD – If the *DL DPCH Information* IE includes the *PDSCH RL ID* IE then the Node B shall infer that the PDSCH for the specified user will be transmitted on the defined radio link.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information* IE the Node B shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration. This new Compressed Mode Configuration shall be valid in the Node B until the next Compressed Mode Configuration is configured in the Node B or Node B Communication Context is deleted.]

[TDD – UL/DL CCTrCH Modification]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Modify* or *DL CCTrCH to Modify* IEs, then the Node B shall treat them each as follows:]

- [TDD – If the IE includes any of *TFCS* IE, *TFCI coding* IE or *Puncture Limit* IE the Node B shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]

- [TDD – If the IE includes any *UL DPCH to add* or *DL DPCH to add* IEs, the Node B shall include this DPCH in the new configuration.]

- [TDD – If the IE includes any *UL DPCH to delete* or *DL DPCH to delete* IEs, the Node B shall remove this DPCH in the new configuration.]

- [TDD – If the IE includes any UL *DPCH to modify* or *DL DPCH to modify* IEs, and includes any of *Repetition Period* IE, *Repetition Length* IE, or *TDD DPCH Offset* IE or the message includes UL/DL Timeslot Information and includes any of *[3.84Mcps TDD - Midamble shift and Burst Type* IE, *Time Slot* IE], [1.28Mcps TDD - *Midamble shift LCR* IE, *Time Slot LCR* IE], or *TFCI presence* IE or the message includes UL/DL Code information and includes [3.84Mcps TDD - *TDD Channelisation Code* IE], [1.28Mcps TDD - *TDD Channelisation Code LCR* IE], the Node B shall apply these specified information elements as the new values, otherwise the old values specified for this DPCH configuration are still applicable.]

- [1.28Mcps TDD – If the *UL CCTrCH to Modify* IE includes the *UL SIR Target* IE, the Node B shall use the value for the UL inner loop power control according [19] and [21] when the new configuration is being used.]

[TDD – UL/DL CCTrCH Addition]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Add* IE or *DL CCTrCH to Add* IE, the Node B shall include this CCTrCH in the new configuration.]

[TDD – If the *UL/DL CCTrCH to Add* IE includes any *UL/DL DPCH Information* IE, the Node B shall reserve necessary resources for the new configuration of the UL/DL DPCH(s) according to the parameters given in the message.]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL CCTrCH to Add* IE, the Node B shall set the TPC step size of that CCTrCH to the same value as the lowest numbered DL CCTrCH in the current configuration.]

[1.28Mcps TDD –The Node B shall use the *UL SIR Target* IE in the *UL CCTrCH to Add* IE as the UL SIR value for the inner loop power control for this CCTrCH according [19] and [21] in the new configuration.]

[TDD – UL/DL CCTrCH Deletion]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any UL or DL CCTrCH to be deleted , the Node B shall remove this CCTrCH in the new configuration.]

DL Power Control:

- [FDD - If the *RL Information* IE includes the *DL Reference Power* IEs and the power balancing is active, Node B shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported, at the CFN in the RADIO LINK RECONFIGURATION COMMIT message, according to subclause 8.3.7, using the *DL Reference Power* IE. If the CFN modulo the value of the *Adjustment Period* IE is not equal to 0, the power balancing continues with the old reference power until the end of the current adjustment period, and the updated reference power shall be used from the next adjustment period.

[FDD - If updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported by the Node B, the Node B shall include the *DL Power Balancing Updated Indicator* IE in the *RL Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to modify*, *DSCH to add* or *DSCH to delete* IEs, then the Node B shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

The Node B shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DSCH.

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TFCI2 Bearer Information* IE then the Node B shall support the establishment of a transport bearer on which the DSCH TFCI Signaling control frames shall be received if one does not already exist or shall apply the new values if such a bearer does already exist. The *Binding ID* IE and *Transport Layer Address* IE of any new bearer to be set up for this purpose shall be returned in

the RADIO LINK RECONFIGURATION READY message. If the RADIO LINK RECONFIGURATION PREPARE message specifies that the TFCI2 transport bearer is to be deleted then the Node B shall release the resources associated with that bearer in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TFCI2 Bearer Request Indicator IE* in the *TFCI2 Bearer Information* IE with the value "New Bearer Requested", the Node B shall, if supported, establish a new transport bearer replacing the existing transport bearer on which the DSCH TFCI Signaling control frames shall be received. The *Binding ID* IE and *Transport Layer Address* IE of a new bearer to be set up for this purpose shall be returned in the RADIO LINK RECONFIGURATION READY message.]

[FDD – If the *TFCI Signalling Mode* IE within the RADIO LINK RECONFIGURATION PREPARE message indicates that there shall be a hard split on the TFCI field but a TFCI2 transport bearer has not already been set up and *TFCI2 Bearer Information* IE is not included in the message then the Node B shall transmit the TFCI2 field with zero power in the new configuration.]

[FDD – If the *TFCI Signalling Mode* IE within the RADIO LINK RECONFIGURATION PREPARE message indicates that there shall be a hard split on the TFCI and the *TFCI2 Bearer Information* IE is included in the message then the Node B shall transmit the TFCI2 field with zero power until Synchronisation is achieved on the TFCI2 transport bearer and the first valid DSCH TFCI Signalling control frame is received on this bearer in the new configuration (see ref. [24]).]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Length of TFCI2* IE, then the Node B shall apply the length of TFCI (field 2) indicated in the message in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the Node B shall assume the length of the TFCI (field 2) is 5 bits in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *DSCH Common Information IE*, the Node B shall treat it as follows:]

- [FDD - If the *Enhanced DSCH PC Indicator* IE is included and set to "Enhanced DSCH PC Active in the UE ", the Node B shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]

  - [FDD - the *SSDT Cell Identity for EDSCHPC* IE in the *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

  - [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* IE are included in the *RL Information* IE.]

  [FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

[FDD - If the enhanced DSCH power control is activated and the TFCI power control in DSCH hard split mode is supported, the primary/secondary status determination in the enhanced DSCH power control is also applied to the TFCI power control in DSCH hard split mode.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", the Node B shall deactivate enhanced DSCH power control in the new configuration.]

[TDD – USCH Addition/Modification/Deletion:]

- [TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes USCH information for the USCHs to be added/modified/deleted then the Node B shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.]

- [TDD – The Node B shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each USCH.]

RL Information:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *RL Information* IE, the Node B shall treat it as follows:

- [FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2"*, and so on until the *p*th to "*PhCH number p*".]

- [FDD – If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE", the Node B may activate SSDT using the *SSDT Cell Identity* IE in the new configuration.]

- [FDD – If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT not Active in the UE", the Node B shall deactivate SSDT in the new configuration.]

- [FDD – If the *RL Information* IE includes a *DL Code Information* IE, the Node B shall apply the values in the new configuration.]

- [FDD – If the *RL Information* IE contains the *Transmission Gap Pattern Sequence Code Information* IE in the *DL Code Information* IE for any of the allocated DL Channelisation Codes, the Node B shall apply the alternate scrambling code as indicated whenever the downlink compressed mode method SF/2 is active in the new configuration.]

- If the *RL Information* IE includes the *Maximum DL Power* and/or the *Minimum DL Power* IEs, the Node B shall apply the values in the new configuration. [FDD - During compressed mode, the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.].

- [TDD – If the *RL Information* IE includes the *Initial DL Transmission Power* IE, the Node B shall determine the initial CCTrCH DL power for each CCTrCH by the following rule: If the *CCTrCH Initial DL transmission Power* IE is included for that CCTrCH then the Node B shall use that power for the initial CCTrCH DL power, otherwise the initial CCTrCH DL power is the *Initial DL transmission Power* IE included in the *RL Information* IE. The Node B shall apply the determined initial CCTrCH DL power to the transmission on each DPCH of the CCTrCH when starting transmission on a new CCTrCH.until the UL synchronisation on the Uu is achieved for the CCTrCH. If no *Initial DL Transmission power* IE is included with a new CCTrCH (even if *CCTrCH Initial DL transmission Power* IEs are included), the Node B shall use any transmission power level currently used on already existing CCTrCH's when starting transmission for a new CCTrCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22], subclause 4.2.3.3).]

- [FDD- If the *RL Information* IE includes the *DL DPCH Timing Adjustment* IE, the Node B shall adjust the timing of the radio link accordingly in the new configuration.]

Signalling bearer rearrangement:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Signalling Bearer Request Indicator* IE the Node B shall, if supported , allocate a new Communication Control Port for the control of the Node B Communication Context and include the *Target Communication Control Port ID* IE in the RADIO LINK RECONFIGURATION READY message.

HS-DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *HS-DSCH Information to add* IE *or HS-DSCH Information to delete* IEs or *HS-DSCH Information to modify* IE, then the Node B shall use this information to add/modify/delete the indicated HS-DSCH channel to/from the radio link.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-PDSCH RL ID* IE, then the Node B shall configure the HS-PDSCH in the radio link indicated by this IE, while removing any existing HS-PDSCH resources from other radio links associated with the Node B Communication Context.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-DSCH-RNTI* IE, then the Node shall use the HS-DSCH-RNTI for the Node B Communication Context.

If the RADIO LINK CONFIGURATION PREPARE message includes an *HS-DSCH Information to delet*e IE requesting the deletion of certain HS-DSCH resources for the Node B Communication Context, the Node B shall remove the indicated HS-DSCH in the new configuration.

General

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transport Layer Address* IE and *Binding ID* IEs in the *DSCHs to Modify* , *DSCHs to Add*, [TDD - *USCHs to Modify* , *USCHs to Add*], *HS-DSCH To Modify, HS-DSCH To Add* or in the *RL Specific DCH Information* IEs, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

If the requested modifications are allowed by the Node B and the Node B has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the CRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exist a Prepared Reconfiguration, as defined in subclause 3.1.

In the RADIO LINK RECONFIGURATION READY message, the Node B shall include the *RL Information Response* IE for each affected Radio Link.

The Node B shall include in the RADIO LINK RECONFIGURATION READY message the Transport Layer Address and the Binding ID for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

In case of a DCH requiring a new transport bearer on Iub, the *Transport Layer Address* IE and the *Binding ID* shall be included in the IE *DCH Information Response* IE.

In case of a set of coordinated DCHs requiring a new transport bearer on Iub, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCH in the set of coordinated DCHs.

In case of a Radio Link being combined with another Radio Link within the Node B,the RL Information Response IE shall be included only for one of the combined RLs. The *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the combined Radio Links.

8.3.2.3 Unsuccessful Operation

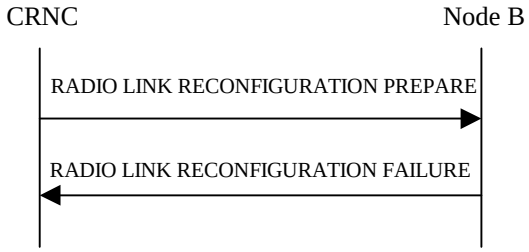

Figure 31: Synchronised Radio Link Reconfiguration Preparation procedure, Unsuccessful Operation

If the Node B cannot reserve the necessary resources for all the new DCHs of one set of co-ordinated DCHs requested to be added, it shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed.

If the requested Synchronised Radio Link Reconfiguration Preparation procedure fails for one or more RLs the Node B shall send the RADIO LINK RECONFIGURATION FAILURE message to the CRNC, indicating the reason for failure.

Typical cause values are as follows:

Radio Network Layer Cause

- UL SF not supported
- DL SF not supported
- Downlink Shared Channel Type not supported
- Uplink Shared Channel Type not supported

- CM not supported
- Number of DL codes not supported
- Number of UL codes not supported
- RL Timing Adjustment not supported

Transport Layer Cause

- Transport Resources Unavailable

Miscellaneous Cause

- O&M Intervention
- Control processing overload
- HW failure

8.3.2.4 Abnormal Conditions

If only a subset of all the DCHs belonging to a set of co-ordinated DCHs is requested to be deleted, the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the Node B shall send the RADIO LINK RECONFIGURATION FAILURE message to the CRNC.

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"] the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as failed and shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE" and SSDT is not active in the current configuration, the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as failed if the *UL DPCH Information* IE does not include the *SSDT Cell Identity Length* IE. In this case, it shall respond with a RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message includes a *DCHs to Modify* IE or *DCHs to Add* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCHs to Modify* IE or *DCHs to Add* IE do not have the same *Transmission Time Interval* IE in the *Semi-static Transport Format Information* IE, then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.

[FDD - If the *RL Information* IE includes the *DL Reference Power* IEs, but the power balancing is not active in the indicated RL(s), the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the Node B shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the Node B Communication Context set to "Common" in the existing RL(s) but the *RL Information* IE includes more than one *DL Reference Power* IEs, the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the Node B shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Length of TFCI2* IE but the *TFCI signalling option* IE is set to "Normal", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2* IE but the *Split type* IE is set to "Logical", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Split Type* IE set to the value "Hard" and the *Length of TFCI2* IE set to the value "5", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message contains the *Transport Layer Address* IE or the *Binding ID* IE when establishing a transport bearer for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE., and not both are present for a transport bearer intended to be established, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

9.2.1.31H HS-DSCH Information to modify

The HS-DSCH Information to modify provides information for HS-DSCH to be modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information		*0..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.131I		–	
>BLER	O		9.2.1.4A		–	
>Allocation/Retention Priority	O		9.2.1.1A		–	
>Transport Bearer Request Indicator	M		9.2.1.62A		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	–	
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	–	
>Priority Queue Information		*0..<MaxnoofPrioQueues>*			–	
>>Priority Queue ID	M		9.2.1.49C		–	
>>Scheduling Priority Indicator	O		9.2.1.53H		–	
>>**MAC-d PDU Size Index**		*0..<MaxnoofMACdPDUindexes>*			–	
>>>SID	M		9.2.1.53I		–	
>>>MAC-d PDU Size	O		9.2.1.38A		–	
~~>Transport Bearer Request Indicator~~	~~M~~		~~9.2.1.62A~~		–	
Measurement Reporting cycle	O		ENUMERATED (k1, k2)	For FDD only	–	

9.2.2.18D HS-DSCH FDD Information

The HS-DSCH Information provides information for HS-DSCH MAC-d flows to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information		*1..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I		–	
>BLER	M		9.2.1.4A		–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	–	
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	–	
>Priority Queue Information	M	*1..<MaxnoofPrioQueues>*			–	
>>Priority Queue ID	M		9.2.1.49C		–	
>>Scheduling Priority Indicator	M		9.2.1.53H		–	
>>MAC-d PDU Size Index		*1..<MaxnoofMACdPDUindexes>*			–	
>>>SID	M		9.2.1.53I		–	
>>>MAC-d PDU Size	M		9.2.1.38A		–	
UE Capabilities information		*1*			–	
>Max TrCH Bits per HS-DSCH TTI	M		ENUMERATED (7300, 14600, 20456, 28800,...)		–	
>HS-DSCH multi-code capability	M		ENUMERATED (5, 10, 15,...)		–	
>Min Inter-TTI Interval	M		INTEGER (1.. 3,...)		–	
>MAC-hs reordering buffer size	M		INTEGER (1..300,...)	Total combined receiving buffer capability in RLC and MAC-hs in kBytes	–	
HARQ memory partitioning		*1..<MaxnoofHARQprocesses>*			–	
>Process memory size	M		INTEGER (1..172800, ...)		–	
Measurement feedback offset	M		INTEGER (0..79,...)		–	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows
MaxnoofPrioQueues	Maximum number of Priority Queues
MaxnoofHARQprocesses	Maximum number of HARQ processes for one UE.
MaxnoofMACdPDUindexes	Maximum number of different MAC-d PDU SIDs
MaxAllowedinterTTI	Maximum Inter-TTI Interval that should be supported by any UE.
MaxRecordBuffSize	Maximum MAC-hs re-ordering buffer size.
MaxProcessMemSize	Maximum HARQ process memory size.

9.2.3.5F HS-DSCH TDD Information

The HS-DSCH TDD Information provides information for HS-DSCH MAC-d flows to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information		*1..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I		–	
>BLER	M		9.2.1.4A		–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	–	
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	–	
>Priority Queue Information	M	*1..<MaxnoofPrioQueues>*			-	
>>Priority Queue ID	M		9.2.1.49C		-	
>>Scheduling Priority Indicator	M		9.2.1.53H		–	
>>MAC-d PDU Size Index		*1..<MaxnoofMACdPDUindexes>*			-	
>>>SID	M		9.2.1.53I		-	
>>>MAC-d PDU Size	M		9.2.1.38A		-	
UE Capabilities information		*1*			-	
>HS-DSCH TrCh Bits per TTI	M		ENUMERATED (7040, 10228, 14080,...)		-	
>HS-DSCH multi-code capability	M		ENUMERATED (8, 12, 16,...)		-	
>MAC-hs reordering buffer size	M		INTEGER (1..300,...)	Total combined receiving buffer capability in RLC and MAC-hs in kBytes	-	
HARQ Memory partitioning		*1..<MaxnoofHARQprocesses>*			-	
>Process memory size	M		INTEGER (1..168960, ...)		-	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows
MaxnoofPrioQueues	Maximum number of Priority Queues
MaxnoofHARQprocesses	Maximum number of HARQ processes for one UE.
MaxnoofMACdPDUindexes	Maximum number of different MAC-d PDU SIDs
MaxNoOfHSDSCHTrChBitsPerTTI	Maximum Number of HS-DSCH Transport Channel Bits per TTI

9.3.4 Information Elements Definitions

```
--**************************************************************************
--
-- Information Element Definitions
--
--**************************************************************************

NBAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) nbap (2) version1 (1) nbap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=
BEGIN

UNCHANGED TEXT IS REMOVED

HSDSCH-FDD-Information ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-Info       HSDSCH-MACdFlow-Specific-InfoList,
    ueCapability-Info                   UE-Capability-InformationFDD,
    harqMemoryPartitioningFDD           HARQMemoryPartitioningFDD,
    measFeedbackOffset                  INTEGER (0..79,...),
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-FDD-Information-ExtIEs} }              OPTIONAL,
    ...
}

HSDSCH-FDD-Information-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-TDD-Information ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-Info       HSDSCH-MACdFlow-Specific-InfoList,
    ueCapability-Info                   UE-Capability-InformationTDD,
    harqMemoryPartitioningTDD           HARQMemoryPartitioningTDD,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-TDD-Information-ExtIEs} }              OPTIONAL,
    ...
}

HSDSCH-TDD-Information-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem

HSDSCH-MACdFlow-Specific-InfoItem ::= SEQUENCE {
    hsDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bler                                BLER,
    allocationRetentionPriority         AllocationRetentionPriority,
    bindingID                           BindingID                   OPTIONAL,
    transportLayerAddress               TransportLayerAddress       OPTIONAL,
    priorityQueueInfo                   PriorityQueue-InfoList,
```

```
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs} }    OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-Information-to-Modify ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-Info-to-Modify         HSDSCH-MACdFlow-Specific-InfoList-to-Modify                    OPTIONAL,
    measFeedbackRepCycleK                           ENUMERATED { measurement-Feedback-Reporting-Cycle-K1, measurement-Feedback-Reporting-Cycle-K2 }
        OPTIONAL,
    -- only for FDD
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-FDD-Information-to-Modify-ExtIEs} }     OPTIONAL,
    ...
}

HSDSCH-FDD-Information-to-Modify-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem-to-Modify

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify ::= SEQUENCE {
    hsDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bler                                BLER                                    OPTIONAL,
    allocationRetentionPriority         AllocationRetentionPriority             OPTIONAL,
    transportBearerRequestIndicator     TransportBearerRequestIndicator,
    bindingID                           BindingID                               OPTIONAL,
    transportLayerAddress               TransportLayerAddress                   OPTIONAL,
    priorityQueueInfotoModify           PriorityQueue-InfoList-to-Modify        OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs} }   OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

UNCHANGED TEXT IS REMOVED
```

3GPP TSG-RAN3 #29 Meeting
Gyeongju, Korea, 13 – 17 May 2002

Tdoc R3-021609

CR-Form-v3

CHANGE REQUEST

⌘ **25.433** **CR** **658** ⌘ rev **1** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Interaction between HSDPA and Bearer Re-arrangement
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-IuBlur
Date:	⌘	May 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	The introduction of the Bearer Re-arrangement procedure in the Release 5 of the NBAP specification does not take into account the introduction of HSDPA. This interaction not being taken into account, it is currently not possible to re-arrange the HS-DSCH MAC-d Flow transport bearers.
Summary of change:	⌘	R1: ProtocolIE-Id is allocated in the ASN.1. R0: The HS-DSCH MAC-d Flows transport bearers have been added to the list of transport bearers that can be requested to be re-arranged through the BEARER REARRANGEMENT INDICATION message. Impact Analysis: Impact assessment towards the previous version of the specification (same release): this CR does not have an isolated impact on the previous version of the specification (same release). This CR has an impact under the protocol and functional point of view. The impact cannot be considered isolated because the change affects more than one system function, namely HSDPA and Iub Bearer Re-arrangement. There is no impact on the Rel-4 version of the specifications as the IEs on which the changes have been done do not exist in Rel-4.
Consequences if not approved:	⌘	If this CR is not approved, then the interaction between the introduction of HSDPA and the introduction of Bearer Re-arrangement will not be handled and it will not be possible to re-arrange HS-DSCH MAC-d Flows transport bearers.

Clauses affected:	⌘	9.1.87, 9.3.3, 9.3.6		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.1.87 BEARER REARRANGEMENT INDICATION

IE/Group name	Presence	Range	IE Type and Reference	Semantic Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCC C" shall not be used.	YES	ignore
Transaction ID	M		9.2.1.62		–	
Signalling Bearer Request Indicator	O		9.2.1.55A		YES	ignore
DCHs to Re-arrange		*0..<maxnoofDCHs>*			GLOBAL	ignore
>DCH ID	M		9.2.1.20		–	
DSCHs to Re-arrange		*0..<maxnoofDSCHs>*			GLOBAL	ignore
>DSCH ID	M		9.2.1.27		–	
USCHs to Re-arrange		0 .. <Maxnoof USCHs>		TDD only	GLOBAL	ignore
>USCH ID	M		9.2.3.27		–	
HS-DSCHs MAC-d Flow To Re-arrange		*0..<maxnoofMACdFlows>*			GLOBAL	ignore
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I		–	
TFCI2 Bearer Request Indicator	O		9.2.1.56C	FDD only	YES	ignore

Range bound	Explanation
maxnoofDCHs	Maximum number of DCHs for a UE
maxnoofDSCHs	Maximum number of DSCHs for a UE
maxnoofUSCHs	Maximum number of USCHs for a UE
maxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows

9.3.3 PDU Definitions

```
-- **************************************************************
--
-- PDU definitions for NBAP.
--
-- **************************************************************

NBAP-PDU-Contents {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) nbap (2) version1 (1) nbap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************************
--
-- IE parameter types from other modules.
--
-- **************************************************************

IMPORTS
    Active-Pattern-Sequence-Information,
    AddorDeleteIndicator,
    AICH-Power,
    AICH-TransmissionTiming,
    AllocationRetentionPriority,
    APPreambleSignature,
    APSubChannelNumber,
    AvailabilityStatus,
    BCCH-ModificationTime,
    BindingID,
    BlockingPriorityIndicator,
    SCTD-Indicator,
    Cause,
    CCTrCH-ID,
    CDSubChannelNumbers,
    CellParameterID,
    CellSyncBurstAvailabilityIndicator,
    CellSyncBurstCode,
    CellSyncBurstCodeShift,
    CellSyncBurstRepetitionPeriod,
    CellSyncBurstSIR,
    CellSyncBurstTiming,
    CellSyncBurstTimingThreshold,
    CFN,
    Channel-Assignment-Indication,
    ChipOffset,
    C-ID,
    Closedlooptimingadjustmentmode,
```

```
    CommonChannelsCapacityConsumptionLaw,
    Compressed-Mode-Deactivation-Flag,
    CommonMeasurementAccuracy,
    CommonMeasurementType,
    CommonMeasurementValue,
    CommonMeasurementValueInformation,
    CommonPhysicalChannelID,
    Common-PhysicalChannel-Status-Information,
    Common-TransportChannel-Status-Information,
    CommonTransportChannelID,
    CommonTransportChannel-InformationResponse,
    CommunicationControlPortID,
    ConfigurationGenerationID,
    ConstantValue,
    CriticalityDiagnostics,
    CPCH-Allowed-Total-Rate,
    CPCHScramblingCodeNumber,
    CPCH-UL-DPCCH-SlotFormat,
    CRNC-CommunicationContextID,
    CSBMeasurementID,
    CSBTransmissionID,
    DCH-FDD-Information,
    DCH-InformationResponse,
    DCH-ID,
    FDD-DCHs-to-Modify,
    TDD-DCHs-to-Modify,
    DCH-TDD-Information,
    DedicatedChannelsCapacityConsumptionLaw,
    DedicatedMeasurementType,
    DedicatedMeasurementValue,
    DedicatedMeasurementValueInformation,
    DelayedActivation,
    DelayedActivationUpdate,
    DiversityControlField,
    DiversityMode,
    DL-DPCH-SlotFormat,
    DL-DPCH-TimingAdjustment,
    DL-or-Global-CapacityCredit,
    DL-Power,
    DL-PowerBalancing-Information,
    DL-PowerBalancing-ActivationIndicator,
    DLPowerAveragingWindowSize,
    DL-PowerBalancing-UpdatedIndicator,
    DL-ScramblingCode,
    DL-TimeslotISCP,
    DL-Timeslot-Information,
    DL-TimeslotLCR-Information,
    DL-TimeslotISCPInfo,
    DL-TimeslotISCPInfoLCR,
    DL-TPC-Pattern01Count,
    DPC-Mode,
    DPCH-ID,
    DSCH-ID,
```

```
    DSCH-FDD-Common-Information,
    DSCH-FDD-Information,
    DSCH-InformationResponse,
    DSCH-TDD-Information,
    DwPCH-Power,
    End-Of-Audit-Sequence-Indicator,
    EnhancedDSCHPC,
    EnhancedDSCHPCCounter,
    EnhancedDSCHPCIndicator,
    EnhancedDSCHPCWnd,
    EnhancedDSCHPowerOffset,
    FDD-DL-ChannelisationCodeNumber,
    FDD-DL-CodeInformation,
    FDD-S-CCPCH-Offset,
    FDD-TPC-DownlinkStepSize,
    FirstRLS-Indicator,
    FNReportingIndicator,
    FPACH-Power,
    FrameAdjustmentValue,
    FrameHandlingPriority,
    FrameOffset,
    HS-PDSCH-FDD-Code-Information,
    HS-SCCH-ID,
    HS-SCCH-FDD-Code-Information,
    IB-OC-ID,
    IB-SG-DATA,
    IB-SG-POS,
    IB-SG-REP,
    IB-Type,
    IndicationType,
    InformationExchangeID,
    InformationReportCharacteristics,
    InformationType,
    InnerLoopDLPCStatus,
    IPDL-FDD-Parameters,
    IPDL-TDD-Parameters,
    IPDL-Indicator,
    LimitedPowerIncrease,
    Local-Cell-ID,
    MaximumDL-PowerCapability,
    Maximum-PDSCH-Power,
    MaximumTransmissionPower,
    Max-Number-of-PCPCHes,
    MaxNrOfUL-DPDCHs,
    MaxPRACH-MidambleShifts,
    MeasurementFilterCoefficient,
    MeasurementID,
    MidambleAllocationMode,
    MidambleShiftAndBurstType,
    MidambleShiftLCR,
    MinimumDL-PowerCapability,
    MinSpreadingFactor,
    MinUL-ChannelisationCodeLength,
```

```
    MultiplexingPosition,
    NEOT,
    NCyclesPerSFNperiod,
    NFmax,
    NRepetitionsPerCyclePeriod,
    N-INSYNC-IND,
    N-OUTSYNC-IND,
    NeighbouringCellMeasurementInformation,
    NeighbouringFDDCellMeasurementInformation,
    NeighbouringTDDCellMeasurementInformation,
    NodeB-CommunicationContextID,
    NStartMessage,
    PagingIndicatorLength,
    PayloadCRC-PresenceIndicator,
    PCCPCH-Power,
    PCP-Length,
    PDSCH-CodeMapping,
    PDSCHSet-ID,
    PDSCH-ID,
    PICH-Mode,
    PICH-Power,
    PowerAdjustmentType,
    PowerOffset,
    PowerRaiseLimit,
    PRACH-Midamble,
    PreambleSignatures,
    PreambleThreshold,
    PredictedSFNSFNDeviationLimit,
    PredictedTUTRANGPSDeviationLimit,
    PrimaryCPICH-Power,
    PrimaryScramblingCode,
    PropagationDelay,
    SCH-TimeSlot,
    PunctureLimit,
    PUSCHSet-ID,
    PUSCH-ID,
    QE-Selector,
    RACH-SlotFormat,
    RACH-SubChannelNumbers,
    ReferenceClockAvailability,
    ReferenceSFNoffset,
    RepetitionLength,
    RepetitionPeriod,
    ReportCharacteristics,
    RequestedDataValue,
    RequestedDataValueInformation,
    ResourceOperationalState,
    RL-Set-ID,
    RL-ID,
    RL-Specific-DCH-Info,
    Received-total-wide-band-power-Value,
    AdjustmentPeriod,
    ScaledAdjustmentRatio,
```

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    MaxAdjustmentStep,
    RNC-ID,
    ScramblingCodeNumber,
    SecondaryCCPCH-SlotFormat,
    Segment-Type,
    S-FieldLength,
    SFN,
    SFNSFNChangeLimit,
    SFNSFNDriftRate,
    SFNSFNDriftRateQuality,
    SFNSFNQuality,
    ShutdownTimer,
    SIB-Originator,
    SpecialBurstScheduling,
    SignallingBearerRequestIndicator,
    SSDT-Cell-Identity,
    SSDT-CellID-Length,
    SSDT-Indication,
    Start-Of-Audit-Sequence-Indicator,
    STTD-Indicator,
    SSDT-SupportIndicator,
    SyncCase,
    SYNCDlCodeId,
    SyncFrameNumber,
    SynchronisationReportCharacteristics,
    SynchronisationReportType,
    T-Cell,
    T-RLFAILURE,
    TDD-ChannelisationCode,
    TDD-ChannelisationCodeLCR,
    TDD-DL-Code-LCR-Information,
    TDD-DPCHOffset,
    TDD-TPC-DownlinkStepSize,
    TDD-PhysicalChannelOffset,
    TDD-UL-Code-LCR-Information,
    TFCI2-BearerInformationResponse,
    TFCI2BearerRequestIndicator,
    TFCI-Coding,
    TFCI-Presence,
    TFCI-SignallingMode,
    TFCS,
    TimeSlot,
    TimeSlotLCR,
    TimeSlotDirection,
    TimeSlotStatus,
    TimingAdjustmentValue,
    TimingAdvanceApplied,
    ToAWE,
    ToAWS,
    TransmissionDiversityApplied,
    TransmitDiversityIndicator,
    TransmissionGapPatternSequenceCodeInformation,
```

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    Transmission-Gap-Pattern-Sequence-Information,
    TransportBearerRequestIndicator,
    TransportFormatSet,
    TransportLayerAddress,
    TSTD-Indicator,
    TUTRANGPS,
    TUTRANGPSChangeLimit,
    TUTRANGPSDriftRate,
    TUTRANGPSDriftRateQuality,
    TUTRANGPSQuality,
    UARFCN,
    UC-Id,
    USCH-Information,
    USCH-InformationResponse,
    UL-CapacityCredit,
    UL-DPCCH-SlotFormat,
    UL-SIR,
    UL-FP-Mode,
    UL-PhysCH-SF-Variation,
    UL-ScramblingCode,
    UL-Timeslot-Information,
    UL-TimeslotLCR-Information,
    UL-TimeSlot-ISCP-Info,
    UL-TimeSlot-ISCP-LCR-Info,
    UL-TimeslotISCP-Value,
    UL-TimeslotISCP-Value-IncrDecrThres,
    USCH-ID,
    HSDSCH-FDD-Information,
    HSDSCH-FDD-Information-Response,
    HSDSCH-Information-to-Modify,
    HSDSCH-MACdFlow-ID,
    HSDSCH-RNTI,
    HSDSCH-TDD-Information,
    HSDSCH-TDD-Information-Response,
    PrimaryCCPCH-RSCP
FROM NBAP-IEs

    PrivateIE-Container{},
    ProtocolExtensionContainer{},
    ProtocolIE-Container{},
    ProtocolIE-Single-Container{},
    ProtocolIE-ContainerList{},
    NBAP-PRIVATE-IES,
    NBAP-PROTOCOL-IES,
    NBAP-PROTOCOL-EXTENSION
FROM NBAP-Containers

    id-Active-Pattern-Sequence-Information,
    id-AdjustmentRatio,
    id-AICH-Information,
    id-AICH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-AP-AICH-Information,
    id-AP-AICH-ParametersListIE-CTCH-ReconfRqstFDD,
```

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    id-BCH-Information,
    id-BCCH-ModificationTime,
    id-bindingID,
    id-BlockingPriorityIndicator,
    id-Cause,
    id-CauseLevel-PSCH-ReconfFailureTDD,
    id-CauseLevel-RL-AdditionFailureFDD,
    id-CauseLevel-RL-AdditionFailureTDD,
    id-CauseLevel-RL-ReconfFailure,
    id-CauseLevel-RL-SetupFailureFDD,
    id-CauseLevel-RL-SetupFailureTDD,
    id-CauseLevel-SyncAdjustmntFailureTDD,
    id-CCP-InformationItem-AuditRsp,
    id-CCP-InformationList-AuditRsp,
    id-CCP-InformationItem-ResourceStatusInd,
    id-CCTrCH-InformationItem-RL-FailureInd,
    id-CCTrCH-InformationItem-RL-RestoreInd,
    id-CCTrCH-Initial-DL-Power-RL-AdditionRqstTDD,
    id-CCTrCH-Initial-DL-Power-RL-ReconfPrepTDD,
    id-CCTrCH-Initial-DL-Power-RL-SetupRqstTDD,
    id-CDCA-ICH-Information,
    id-CDCA-ICH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-CellAdjustmentInfo-SyncAdjustmntRqstTDD,
    id-CellAdjustmentInfoItem-SyncAdjustmentRqstTDD,
    id-Cell-InformationItem-AuditRsp,
    id-Cell-InformationItem-ResourceStatusInd,
    id-Cell-InformationList-AuditRsp,
    id-CellParameterID,
    id-CellSyncBurstTransInit-CellSyncInitiationRqstTDD,
    id-CellSyncBurstMeasureInit-CellSyncInitiationRqstTDD,
    id-cellSyncBurstRepetitionPeriod,
    id-CellSyncBurstTransReconfiguration-CellSyncReconfRqstTDD,
    id-CellSyncBurstTransReconfInfo-CellSyncReconfRqstTDD,
    id-CellSyncBurstMeasReconfiguration-CellSyncReconfRqstTDD,
    id-CellSyncBurstMeasInfoList-CellSyncReconfRqstTDD,
    id-CellSyncBurstInfoList-CellSyncReconfRqstTDD,
    id-CellSyncInfo-CellSyncReprtTDD,
    id-CFN,
    id-CFNReportingIndicator,
    id-C-ID,
    id-Closed-Loop-Timing-Adjustment-Mode,
    id-CommonMeasurementAccuracy,
    id-CommonMeasurementObjectType-CM-Rprt,
    id-CommonMeasurementObjectType-CM-Rqst,
    id-CommonMeasurementObjectType-CM-Rsp,
    id-CommonMeasurementType,
    id-CommonPhysicalChannelID,
    id-CommonPhysicalChannelType-CTCH-ReconfRqstFDD,
    id-CommonPhysicalChannelType-CTCH-SetupRqstFDD,
    id-CommonPhysicalChannelType-CTCH-SetupRqstTDD,
    id-CommunicationContextInfoItem-Reset,
    id-CommunicationControlPortID,
    id-CommunicationControlPortInfoItem-Reset,
```

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    id-Compressed-Mode-Deactivation-Flag,
    id-ConfigurationGenerationID,
    id-CPCH-Information,
    id-CPCH-Parameters-CTCH-SetupRsp,
    id-CPCH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-CRNC-CommunicationContextID,
    id-CriticalityDiagnostics,
    id-CSBTransmissionID,
    id-CSBMeasurementID,
    id-DCHs-to-Add-FDD,
    id-DCHs-to-Add-TDD,
    id-DCH-AddList-RL-ReconfPrepTDD,
    id-DCH-DeleteList-RL-ReconfPrepFDD,
    id-DCH-DeleteList-RL-ReconfPrepTDD,
    id-DCH-DeleteList-RL-ReconfRqstFDD,
    id-DCH-DeleteList-RL-ReconfRqstTDD,
    id-DCH-FDD-Information,
    id-DCH-TDD-Information,
    id-DCH-InformationResponse,
    id-DCH-RearrangeList-Bearer-RearrangeInd,
    id-DSCH-RearrangeList-Bearer-RearrangeInd,
    id-FDD-DCHs-to-Modify,
    id-TDD-DCHs-to-Modify,
    id-DedicatedMeasurementObjectType-DM-Rprt,
    id-DedicatedMeasurementObjectType-DM-Rqst,
    id-DedicatedMeasurementObjectType-DM-Rsp,
    id-DedicatedMeasurementType,
    id-DelayedActivation,
    id-DelayedActivationList-RL-ActivationCmdFDD,
    id-DelayedActivationList-RL-ActivationCmdTDD,
    id-DelayedActivationInformation-RL-ActivationCmdFDD,
    id-DelayedActivationInformation-RL-ActivationCmdTDD,
    id-DL-CCTrCH-InformationAddList-RL-ReconfPrepTDD,
    id-DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD,
    id-DL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD,
    id-DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD,
    id-DL-CCTrCH-InformationItem-RL-SetupRqstTDD,
    id-DL-CCTrCH-InformationList-RL-AdditionRqstTDD,
    id-DL-CCTrCH-InformationList-RL-SetupRqstTDD,
    id-DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD,
    id-DL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD,
    id-DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD,
    id-DL-DPCH-InformationAddListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-InformationItem-RL-AdditionRqstTDD,
    id-DL-DPCH-InformationList-RL-SetupRqstTDD,
    id-DL-DPCH-InformationModify-AddListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-InformationModify-DeleteListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-InformationModify-ModifyListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-Information-RL-ReconfPrepFDD,
    id-DL-DPCH-Information-RL-ReconfRqstFDD,
    id-DL-DPCH-Information-RL-SetupRqstFDD,
    id-DL-DPCH-TimingAdjustment,
    id-DL-PowerBalancing-Information,
```

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    id-DL-PowerBalancing-ActivationIndicator,
    id-DL-ReferencePowerInformationItem-DL-PC-Rqst,
    id-DL-PowerBalancing-UpdatedIndicator,
    id-DLReferencePower,
    id-DLReferencePowerList-DL-PC-Rqst,
    id-DL-TPC-Pattern01Count,
    id-DPC-Mode,
    id-DPCHConstant,
    id-DSCH-AddItem-RL-ReconfPrepFDD,
    id-DSCHs-to-Add-FDD,
    id-DSCH-DeleteItem-RL-ReconfPrepFDD,
    id-DSCH-DeleteList-RL-ReconfPrepFDD,
    id-DSCHs-to-Add-TDD,
    id-DSCH-Information-DeleteList-RL-ReconfPrepTDD,
    id-DSCH-Information-ModifyList-RL-ReconfPrepTDD,
    id-DSCH-InformationResponse,
    id-DSCH-FDD-Information,
    id-DSCH-FDD-Common-Information,
    id-DSCH-TDD-Information,
    id-DSCH-ModifyItem-RL-ReconfPrepFDD,
    id-DSCH-ModifyList-RL-ReconfPrepFDD,
    id-End-Of-Audit-Sequence-Indicator,
    id-EnhancedDSCHPC,
    id-EnhancedDSCHPCIndicator,
    id-FACH-Information,
    id-FACH-ParametersList-CTCH-ReconfRqstTDD,
    id-FACH-ParametersList-CTCH-SetupRsp,
    id-FACH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-FACH-ParametersListIE-CTCH-SetupRqstFDD,
    id-FACH-ParametersListIE-CTCH-SetupRqstTDD,
    id-IndicationType-ResourceStatusInd,
    id-InformationExchangeID,
    id-InformationExchangeObjectType-InfEx-Rqst,
    id-InformationExchangeObjectType-InfEx-Rsp,
    id-InformationExchangeObjectType-InfEx-Rprt,
    id-InformationReportCharacteristics,
    id-InformationType,
    id-InitDL-Power,
    id-InnerLoopDLPCStatus,
    id-IntStdPhCellSyncInfoItem-CellSyncReprtTDD,
    id-IPDLParameter-Information-Cell-ReconfRqstFDD,
    id-IPDLParameter-Information-Cell-SetupRqstFDD,
    id-IPDLParameter-Information-Cell-ReconfRqstTDD,
    id-IPDLParameter-Information-Cell-SetupRqstTDD,
    id-LateEntranceCellSyncInfoItem-CellSyncReprtTDD,
    id-Limited-power-increase-information-Cell-SetupRqstFDD,
    id-Local-Cell-ID,
    id-Local-Cell-Group-InformationItem-AuditRsp,
    id-Local-Cell-Group-InformationItem-ResourceStatusInd,
    id-Local-Cell-Group-InformationItem2-ResourceStatusInd,
    id-Local-Cell-Group-InformationList-AuditRsp,
    id-Local-Cell-InformationItem-AuditRsp,
    id-Local-Cell-InformationItem-ResourceStatusInd,
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    id-Local-Cell-InformationItem2-ResourceStatusInd,
    id-Local-Cell-InformationList-AuditRsp,
    id-AdjustmentPeriod,
    id-MaxAdjustmentStep,
    id-MaximumTransmissionPower,
    id-MeasurementFilterCoefficient,
    id-MeasurementID,
    id-MIB-SB-SIB-InformationList-SystemInfoUpdateRqst,
    id-NCyclesPerSFNperiod,
    id-NeighbouringCellMeasurementInformation,
    id-NodeB-CommunicationContextID,
    id-NRepetitionsPerCyclePeriod,
    id-P-CCPCH-Information,
    id-P-CPICH-Information,
    id-P-SCH-Information,
    id-PCCPCH-Information-Cell-ReconfRqstTDD,
    id-PCCPCH-Information-Cell-SetupRqstTDD,
    id-PCH-Parameters-CTCH-ReconfRqstTDD,
    id-PCH-Parameters-CTCH-SetupRsp,
    id-PCH-ParametersItem-CTCH-ReconfRqstFDD,
    id-PCH-ParametersItem-CTCH-SetupRqstFDD,
    id-PCH-ParametersItem-CTCH-SetupRqstTDD,
    id-PCH-Information,
    id-PCPCH-Information,
    id-PICH-ParametersItem-CTCH-ReconfRqstFDD,
    id-PDSCH-Information-AddListIE-PSCH-ReconfRqst,
    id-PDSCH-Information-Cell-SetupRqstFDD,
    id-PDSCH-Information-Cell-ReconfRqstFDD,
    id-PDSCH-Information-ModifyListIE-PSCH-ReconfRqst,
    id-PDSCHSets-AddList-PSCH-ReconfRqst,
    id-PDSCHSets-DeleteList-PSCH-ReconfRqst,
    id-PDSCHSets-ModifyList-PSCH-ReconfRqst,
    id-PICH-Information,
    id-PICH-Parameters-CTCH-ReconfRqstTDD,
    id-PICH-ParametersItem-CTCH-SetupRqstTDD,
    id-PowerAdjustmentType,
    id-Power-Local-Cell-Group-InformationItem-AuditRsp,
    id-Power-Local-Cell-Group-InformationItem-ResourceStatusInd,
    id-Power-Local-Cell-Group-InformationItem2-ResourceStatusInd,
    id-Power-Local-Cell-Group-InformationList-AuditRsp,
    id-Power-Local-Cell-Group-InformationList-ResourceStatusInd,
    id-Power-Local-Cell-Group-InformationList2-ResourceStatusInd,
    id-Power-Local-Cell-Group-ID,
    id-PRACH-Information,
    id-PRACHConstant,
    id-PRACH-ParametersItem-CTCH-SetupRqstTDD,
    id-PRACH-ParametersListIE-CTCH-ReconfRqstFDD,
    id-PrimaryCCPCH-Information-Cell-ReconfRqstFDD,
    id-PrimaryCCPCH-Information-Cell-SetupRqstFDD,
    id-PrimaryCPICH-Information-Cell-ReconfRqstFDD,
    id-PrimaryCPICH-Information-Cell-SetupRqstFDD,
    id-PrimarySCH-Information-Cell-ReconfRqstFDD,
    id-PrimarySCH-Information-Cell-SetupRqstFDD,
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    id-PrimaryScramblingCode,
    id-SCH-Information-Cell-ReconfRqstTDD,
    id-SCH-Information-Cell-SetupRqstTDD,
    id-PUSCH-Information-AddListIE-PSCH-ReconfRqst,
    id-PUSCH-Information-ModifyListIE-PSCH-ReconfRqst,
    id-PUSCHConstant,
    id-PUSCHSets-AddList-PSCH-ReconfRqst,
    id-PUSCHSets-DeleteList-PSCH-ReconfRqst,
    id-PUSCHSets-ModifyList-PSCH-ReconfRqst,
    id-RACH-Information,
    id-RACH-Parameters-CTCH-SetupRsp,
    id-RACH-ParametersItem-CTCH-SetupRqstFDD,
    id-RACH-ParameterItem-CTCH-SetupRqstTDD,
    id-ReferenceClockAvailability,
    id-ReferenceSFNoffset,
    id-ReportCharacteristics,
    id-Reporting-Object-RL-FailureInd,
    id-Reporting-Object-RL-RestoreInd,
    id-ResetIndicator,
    id-RL-InformationItem-DM-Rprt,
    id-RL-InformationItem-DM-Rqst,
    id-RL-InformationItem-DM-Rsp,
    id-RL-InformationItem-RL-AdditionRqstFDD,
    id-RL-informationItem-RL-DeletionRqst,
    id-RL-InformationItem-RL-FailureInd,
    id-RL-InformationItem-RL-PreemptRequiredInd,
    id-RL-InformationItem-RL-ReconfPrepFDD,
    id-RL-InformationItem-RL-ReconfRqstFDD,
    id-RL-InformationItem-RL-RestoreInd,
    id-RL-InformationItem-RL-SetupRqstFDD,
    id-RL-InformationList-RL-AdditionRqstFDD,
    id-RL-informationList-RL-DeletionRqst,
    id-RL-InformationList-RL-PreemptRequiredInd,
    id-RL-InformationList-RL-ReconfPrepFDD,
    id-RL-InformationList-RL-ReconfRqstFDD,
    id-RL-InformationList-RL-SetupRqstFDD,
    id-RL-InformationResponseItem-RL-AdditionRspFDD,
    id-RL-InformationResponseItem-RL-ReconfReady,
    id-RL-InformationResponseItem-RL-ReconfRsp,
    id-RL-InformationResponseItem-RL-SetupRspFDD,
    id-RL-InformationResponseList-RL-AdditionRspFDD,
    id-RL-InformationResponseList-RL-ReconfReady,
    id-RL-InformationResponseList-RL-ReconfRsp,
    id-RL-InformationResponseList-RL-SetupRspFDD,
    id-RL-InformationResponse-RL-AdditionRspTDD,
    id-RL-InformationResponse-RL-SetupRspTDD,
    id-RL-Information-RL-AdditionRqstTDD,
    id-RL-Information-RL-ReconfRqstTDD,
    id-RL-Information-RL-ReconfPrepTDD,
    id-RL-Information-RL-SetupRqstTDD,
    id-RL-ReconfigurationFailureItem-RL-ReconfFailure,
    id-RL-Set-InformationItem-DM-Rprt,
    id-RL-Set-InformationItem-DM-Rsp,
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    id-RL-Set-InformationItem-RL-FailureInd,
    id-RL-Set-InformationItem-RL-RestoreInd,
    id-RL-Specific-DCH-Info,
    id-S-CCPCH-Information,
    id-S-CPICH-Information,
    id-SCH-Information,
    id-S-SCH-Information,
    id-Secondary-CCPCHListIE-CTCH-ReconfRqstTDD,
    id-Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD,
    id-Secondary-CCPCH-Parameters-CTCH-ReconfRqstTDD,
    id-SecondaryCPICH-InformationItem-Cell-ReconfRqstFDD,
    id-SecondaryCPICH-InformationItem-Cell-SetupRqstFDD,
    id-SecondaryCPICH-InformationList-Cell-ReconfRqstFDD,
    id-SecondaryCPICH-InformationList-Cell-SetupRqstFDD,
    id-SecondarySCH-Information-Cell-ReconfRqstFDD,
    id-SecondarySCH-Information-Cell-SetupRqstFDD,
    id-SegmentInformationListIE-SystemInfoUpdate,
    id-SFN,
    id-SFNReportingIndicator,
    id-ShutdownTimer,
    id-SignallingBearerRequestIndicator,
    id-SSDT-CellIDforEDSCHPC,
    id-Start-Of-Audit-Sequence-Indicator,
    id-Successful-RL-InformationRespItem-RL-AdditionFailureFDD,
    id-Successful-RL-InformationRespItem-RL-SetupFailureFDD,
    id-Synchronisation-Configuration-Cell-ReconfRqst,
    id-Synchronisation-Configuration-Cell-SetupRqst,
    id-SyncCase,
    id-SyncCaseIndicatorItem-Cell-SetupRqstTDD-PSCH,
    id-SyncFrameNumber,
    id-SynchronisationReportType,
    id-SynchronisationReportCharacteristics,
    id-SyncReportType-CellSyncReprtTDD,
    id-T-Cell,
    id-TargetCommunicationControlPortID,
    id-TFCI2-Bearer-Information-RL-SetupRqstFDD,
    id-TFCI2-BearerInformationResponse,
    id-TFCI2BearerRequestIndicator,
    id-TFCI2-BearerSpecificInformation-RL-ReconfPrepFDD,
    id-Transmission-Gap-Pattern-Sequence-Information,
    id-TimeSlotConfigurationList-Cell-ReconfRqstTDD,
    id-TimeSlotConfigurationList-Cell-SetupRqstTDD,
    id-timeslotInfo-CellSyncInitiationRqstTDD,
    id-TimeslotISCPInfo,
    id-TimingAdvanceApplied,
    id-TransmissionDiversityApplied,
    id-transportlayeraddress,
    id-UARFCNforNt,
    id-UARFCNforNd,
    id-UARFCNforNu,
    id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD,
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    id-UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationItem-RL-SetupRqstTDD,
    id-UL-CCTrCH-InformationList-RL-AdditionRqstTDD,
    id-UL-CCTrCH-InformationList-RL-SetupRqstTDD,
    id-UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD,
    id-UL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD,
    id-UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD,
    id-UL-DPCH-InformationAddListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-InformationItem-RL-AdditionRqstTDD,
    id-UL-DPCH-InformationList-RL-SetupRqstTDD,
    id-UL-DPCH-InformationModify-AddListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-InformationModify-DeleteListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-InformationModify-ModifyListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-Information-RL-ReconfPrepFDD,
    id-UL-DPCH-Information-RL-ReconfRqstFDD,
    id-UL-DPCH-Information-RL-SetupRqstFDD,
    id-Unsuccessful-cell-InformationRespItem-SyncAdjustmntFailureTDD,
    id-Unsuccessful-PDSCHSetItem-PSCH-ReconfFailureTDD,
    id-Unsuccessful-PUSCHSetItem-PSCH-ReconfFailureTDD,
    id-Unsuccessful-RL-InformationRespItem-RL-AdditionFailureFDD,
    id-Unsuccessful-RL-InformationRespItem-RL-SetupFailureFDD,
    id-Unsuccessful-RL-InformationResp-RL-AdditionFailureTDD,
    id-Unsuccessful-RL-InformationResp-RL-SetupFailureTDD,
    id-USCH-Information-Add,
    id-USCH-Information-DeleteList-RL-ReconfPrepTDD,
    id-USCH-Information-ModifyList-RL-ReconfPrepTDD,
    id-USCH-InformationResponse,
    id-USCH-Information,
    id-USCH-RearrangeList-Bearer-RearrangeInd,
    id-DL-DPCH-LCR-Information-RL-SetupRqstTDD,
    id-DL-DPCH-LCR-InformationList-RL-SetupRqstTDD,
    id-DwPCH-LCR-Information,
    id-DwPCH-LCR-Information-AuditRsp,
    id-DwPCH-LCR-InformationList-AuditRsp,
    id-DwPCH-LCR-Information-Cell-SetupRqstTDD,
    id-DwPCH-LCR-Information-Cell-ReconfRqstTDD,
    id-DwPCH-LCR-Information-ResourceStatusInd,
    id-maxFACH-Power-LCR-CTCH-SetupRqstTDD,
    id-maxFACH-Power-LCR-CTCH-ReconfRqstTDD,
    id-FPACH-LCR-Information,
    id-FPACH-LCR-Information-AuditRsp,
    id-FPACH-LCR-InformationList-AuditRsp,
    id-FPACH-LCR-InformationList-ResourceStatusInd,
    id-FPACH-LCR-Parameters-CTCH-SetupRqstTDD,
    id-FPACH-LCR-ParametersItem-CTCH-SetupRqstTDD,
    id-FPACH-LCR-Parameters-CTCH-ReconfRqstTDD,
    id-PCCPCH-LCR-Information-Cell-SetupRqstTDD,
    id-PCH-Power-LCR-CTCH-SetupRqstTDD,
    id-PCH-Power-LCR-CTCH-ReconfRqstTDD,
    id-PICH-LCR-Parameters-CTCH-SetupRqstTDD,
    id-PICH-LCR-ParametersItem-CTCH-SetupRqstTDD,
    id-PRACH-LCR-ParametersList-CTCH-SetupRqstTDD,
    id-PRACH-LCR-ParametersListIE-CTCH-SetupRqstTDD,
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    id-RL-InformationResponse-LCR-RL-SetupRspTDD,
    id-Secondary-CCPCH-LCR-parameterListIE-CTCH-SetupRqstTDD,
    id-Secondary-CCPCH-LCR-parameterList-CTCH-SetupRqstTDD,
    id-TimeSlot,
    id-TimeSlotConfigurationList-LCR-Cell-ReconfRqstTDD,
    id-TimeSlotConfigurationList-LCR-Cell-SetupRqstTDD,
    id-TimeslotISCP-LCR-InfoList-RL-SetupRqstTDD,
    id-TimeSlotLCR-CM-Rqst,
    id-UL-DPCH-LCR-Information-RL-SetupRqstTDD,
    id-UL-DPCH-LCR-InformationList-RL-SetupRqstTDD,
    id-DL-DPCH-InformationItem-LCR-RL-AdditionRqstTDD,
    id-UL-DPCH-InformationItem-LCR-RL-AdditionRqstTDD,
    id-TimeslotISCP-InformationList-LCR-RL-AdditionRqstTDD,
    id-DL-DPCH-LCR-InformationAddList-RL-ReconfPrepTDD,
    id-DL-DPCH-LCR-InformationAddListIE-RL-ReconfPrepTDD,
    id-DL-DPCH-LCR-InformationModify-AddList-RL-ReconfPrepTDD,
    id-DL-DPCH-LCR-InformationModify-AddListIE-RL-ReconfPrepTDD,
    id-DL-Timeslot-LCR-InformationModify-ModifyList-RL-ReconfPrepTDD,
    id-TimeslotISCPInfoList-LCR-DL-PC-RqstTDD,
    id-UL-DPCH-LCR-InformationAddListIE-RL-ReconfPrepTDD,
    id-UL-DPCH-LCR-InformationModify-AddList,
    id-UL-DPCH-LCR-InformationModify-AddListIE-RL-ReconfPrepTDD,
    id-UL-TimeslotLCR-Information-RL-ReconfPrepTDD,
    id-UL-SIRTarget,
    id-PDSCH-AddInformation-LCR-PSCH-ReconfRqst,
    id-PDSCH-AddInformation-LCR-AddListIE-PSCH-ReconfRqst,
    id-PDSCH-ModifyInformation-LCR-PSCH-ReconfRqst,
    id-PDSCH-ModifyInformation-LCR-ModifyListIE-PSCH-ReconfRqst,
    id-PUSCH-AddInformation-LCR-PSCH-ReconfRqst,
    id-PUSCH-AddInformation-LCR-AddListIE-PSCH-ReconfRqst,
    id-PUSCH-ModifyInformation-LCR-PSCH-ReconfRqst,
    id-PUSCH-ModifyInformation-LCR-ModifyListIE-PSCH-ReconfRqst,
    id-PUSCH-Info-DM-Rqst,
    id-PUSCH-Info-DM-Rsp,
    id-PUSCH-Info-DM-Rprt,
    id-RL-InformationResponse-LCR-RL-AdditionRspTDD,
    id-IPDLParameter-Information-LCR-Cell-SetupRqstTDD,
    id-IPDLParameter-Information-LCR-Cell-ReconfRqstTDD,
    id-HS-PDSCH-HS-SCCH-MaxPower-PSCH-ReconfRqst,
    id-HS-PDSCH-HS-SCCH-ScramblingCode-PSCH-ReconfRqst,
    id-HS-PDSCH-FDD-Code-Information-PSCH-ReconfRqst,
    id-HS-SCCH-FDD-Code-Information-PSCH-ReconfRqst,
    id-HS-PDSCH-TDD-Information-PSCH-ReconfRqst,
    id-Add-To-HS-SCCH-Resource-Pool-PSCH-ReconfRqst,
    id-Modify-HS-SCCH-Resource-Pool-PSCH-ReconfRqst,
    id-Delete-From-HS-SCCH-Resource-Pool-PSCH-ReconfRqst,
    id-neighbouringTDDCellMeasurementInformationLCR,
    id-SYNCDlCodeId-TransInitLCR-CellSyncInitiationRqstTDD,
    id-SYNCDlCodeId-MeasureInitLCR-CellSyncInitiationRqstTDD,
    id-SYNCDlCodeIdTransReconfInfoLCR-CellSyncReconfRqstTDD,
    id-SYNCDlCodeIdMeasReconfigurationLCR-CellSyncReconfRqstTDD,
    id-SYNCDlCodeIdMeasInfoList-CellSyncReconfRqstTDD,
    id-SyncDLCodeIdsMeasInfoList-CellSyncReprtTDD,
```

```
    id-SyncDLCodeIdThreInfoLCR,
    id-NSubCyclesPerCyclePeriod-CellSyncReconfRqstTDD,
    id-DwPCH-Power,
    id-Angle-Of-Arrival-Value-LCR,
    id-HSDSCH-FDD-Information,
    id-HSDSCH-FDD-Information-Response,
    id-HSDSCH-FDD-Information-to-Add,
    id-HSDSCH-FDD-Information-to-Delete,
    id-HSDSCH-Information-to-Modify,
    id-HSDSCH-RearrangeList-Bearer-RearrangeInd,
    id-HSDSCH-RNTI,
    id-HSDSCH-TDD-Information,
    id-HSDSCH-TDD-Information-Response,
    id-HSDSCH-TDD-Information-Response-LCR,
    id-HSDSCH-TDD-Information-to-Add,
    id-HSDSCH-TDD-Information-to-Delete,
    id-HSPDSCH-RL-ID,
    id-PrimCCPCH-RSCP-DL-PC-RqstTDD,

    maxNrOfCCTrCHs,
    maxNrOfCellSyncBursts,
    maxNrOfCodes,
    maxNrOfCPCHs,
    maxNrOfDCHs,
    maxNrOfDLTSs,
    maxNrOfDLTSLCRs,
    maxNrOfDPCHs,
    maxNrOfDSCHs,
    maxNrOfFACHs,
    maxNrOfRLs,
    maxNrOfRLs-1,
    maxNrOfRLs-2,
    maxNrOfRLSets,
    maxNrOfPCPCHs,
    maxNrOfPDSCHs,
    maxNrOfPUSCHs,
    maxNrOfPRACHLCRs,
    maxNrOfPDSCHSets,
    maxNrOfPUSCHSets,
    maxNrOfReceptsPerSyncFrame,
    maxNrOfSCCPCHs,
    maxNrOfSCCPCHLCRs,
    maxNrOfULTSs,
    maxNrOfULTSLCRs,
    maxNrOfUSCHs,
    maxAPSigNum,
    maxCPCHCell,
    maxFACHCell,
    maxFPACHCell,
    maxNoofLen,
    maxRACHCell,
    maxPCPCHCell,
    maxPRACHCell,
```

```
    maxSCCPCHCell,
    maxSCPICHCell,
    maxCellinNodeB,
    maxCCPinNodeB,
    maxCommunicationContext,
    maxLocalCellinNodeB,
    maxNrOfSlotFormatsPRACH,
    maxNrOfCellSyncBursts,
    maxNrOfReceptsPerSyncFrame,
    maxIB,
    maxIBSEG,
    maxNrOfHSSCCHs,
    maxNoOfSyncFramesLCR,
    maxNrofreceptionsperSyncFrameLCR,
    maxNrOfMACdFlows
FROM NBAP-Constants;

UNCHANGED TEXT IS REMOVED

-- **************************************************************
--
-- BEARER REARRANGEMENT INDICATION
--
-- **************************************************************

BearerRearrangementIndication ::= SEQUENCE {
    protocolIEs                     ProtocolIE-Container       {{BearerRearrangementIndication-IEs}},
    protocolExtensions              ProtocolExtensionContainer {{BearerRearrangementIndication-Extensions}}                  OPTIONAL,
    ...
}

BearerRearrangementIndication-IEs NBAP-PROTOCOL-IES ::= {
    { ID    id-CRNC-CommunicationContextID                  CRITICALITY     ignore          TYPE                    CRNC-CommunicationContextID
        PRESENCE    mandatory       } |
    { ID    id-SignallingBearerRequestIndicator                 CRITICALITY     ignore          TYPE                SignallingBearerRequestIndicator
    PRESENCE    optional        } |
    { ID    id-DCH-RearrangeList-Bearer-RearrangeInd                CRITICALITY     ignore      TYPE                DCH-RearrangeList-Bearer-
    RearrangeInd                PRESENCE    optional    } |
    { ID    id-DSCH-RearrangeList-Bearer-RearrangeInd               CRITICALITY     ignore      TYPE                DSCH-RearrangeList-Bearer-
    RearrangeInd                PRESENCE    optional    } |
    { ID    id-USCH-RearrangeList-Bearer-RearrangeInd               CRITICALITY     ignore      TYPE                USCH-RearrangeList-Bearer-
    RearrangeInd                PRESENCE    optional    } |
    { ID    id-TFCI2BearerRequestIndicator                  CRITICALITY     ignore          TYPE                    TFCI2BearerRequestIndicator
    PRESENCE    optional        } |
    { ID    id-HSDSCH-RearrangeList-Bearer-RearrangeInd             CRITICALITY     ignore      TYPE                HSDSCH-RearrangeList-Bearer-
    RearrangeInd                PRESENCE    optional    },
    ...
}

BearerRearrangementIndication-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
DCH-RearrangeList-Bearer-RearrangeInd ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-RearrangeItem-Bearer-RearrangeInd

DCH-RearrangeItem-Bearer-RearrangeInd ::= SEQUENCE {
    dCH-ID                                      DCH-ID,
    iE-Extensions                               ProtocolExtensionContainer { { DCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs} }   OPTIONAL,
    ...
}

DCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-RearrangeList-Bearer-RearrangeInd ::= SEQUENCE (SIZE (1..maxNrOfDSCHs)) OF DSCH-RearrangeItem-Bearer-RearrangeInd

DSCH-RearrangeItem-Bearer-RearrangeInd ::= SEQUENCE {
    dSCH-ID                                     DSCH-ID,
    iE-Extensions                               ProtocolExtensionContainer { { DSCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs} }     OPTIONAL,
    ...
}

DSCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

USCH-RearrangeList-Bearer-RearrangeInd ::= SEQUENCE (SIZE (1..maxNrOfUSCHs)) OF USCH-RearrangeItem-Bearer-RearrangeInd

USCH-RearrangeItem-Bearer-RearrangeInd ::= SEQUENCE {
    uSCH-ID                                     USCH-ID,
    iE-Extensions                               ProtocolExtensionContainer { { USCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs} }     OPTIONAL,
    ...
}

USCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-RearrangeList-Bearer-RearrangeInd ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-RearrangeItem-Bearer-RearrangeInd

HSDSCH-RearrangeItem-Bearer-RearrangeInd ::= SEQUENCE {
    hsDSCH-MACdFlow-ID                          HSDSCH-MACdFlow-ID,
    iE-Extensions                               ProtocolExtensionContainer { { HSDSCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs} }   OPTIONAL,
    ...
}

HSDSCH-RearrangeItem-Bearer-RearrangeInd-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

NBAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) nbap (2) version1 (1) nbap-Constants (4)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

UNCHANGED TEXT IS REMOVED

-- **************************************************************
--
-- IEs
--
-- **************************************************************

id-AICH-Information                                          ProtocolIE-ID ::= 0
id-AICH-InformationItem-ResourceStatusInd                    ProtocolIE-ID ::= 1
id-BCH-Information                                           ProtocolIE-ID ::= 7
id-BCH-InformationItem-ResourceStatusInd                     ProtocolIE-ID ::= 8
id-BCCH-ModificationTime                                     ProtocolIE-ID ::= 9
id-BlockingPriorityIndicator                                 ProtocolIE-ID ::= 10
id-Cause                                                     ProtocolIE-ID ::= 13
id-CCP-InformationItem-AuditRsp                              ProtocolIE-ID ::= 14
id-CCP-InformationList-AuditRsp                              ProtocolIE-ID ::= 15
id-CCP-InformationItem-ResourceStatusInd                     ProtocolIE-ID ::= 16
id-Cell-InformationItem-AuditRsp                             ProtocolIE-ID ::= 17
id-Cell-InformationItem-ResourceStatusInd                    ProtocolIE-ID ::= 18
id-Cell-InformationList-AuditRsp                             ProtocolIE-ID ::= 19
id-CellParameterID                                           ProtocolIE-ID ::= 23
id-CFN                                                       ProtocolIE-ID ::= 24
id-C-ID                                                      ProtocolIE-ID ::= 25
id-CommonMeasurementAccuracy                                 ProtocolIE-ID ::= 39
id-CommonMeasurementObjectType-CM-Rprt                       ProtocolIE-ID ::= 31
id-CommonMeasurementObjectType-CM-Rqst                       ProtocolIE-ID ::= 32
id-CommonMeasurementObjectType-CM-Rsp                        ProtocolIE-ID ::= 33
id-CommonMeasurementType                                     ProtocolIE-ID ::= 34
id-CommonPhysicalChannelID                                   ProtocolIE-ID ::= 35
id-CommonPhysicalChannelType-CTCH-SetupRqstFDD               ProtocolIE-ID ::= 36
id-CommonPhysicalChannelType-CTCH-SetupRqstTDD               ProtocolIE-ID ::= 37
id-CommunicationControlPortID                                ProtocolIE-ID ::= 40
id-ConfigurationGenerationID                                 ProtocolIE-ID ::= 43
id-CRNC-CommunicationContextID                               ProtocolIE-ID ::= 44
id-CriticalityDiagnostics                                    ProtocolIE-ID ::= 45
```

```
id-DCHs-to-Add-FDD                                    ProtocolIE-ID ::= 48
id-DCH-AddList-RL-ReconfPrepTDD                       ProtocolIE-ID ::= 49
id-DCHs-to-Add-TDD                                    ProtocolIE-ID ::= 50
id-DCH-DeleteList-RL-ReconfPrepFDD                    ProtocolIE-ID ::= 52
id-DCH-DeleteList-RL-ReconfPrepTDD                    ProtocolIE-ID ::= 53
id-DCH-DeleteList-RL-ReconfRqstFDD                    ProtocolIE-ID ::= 54
id-DCH-DeleteList-RL-ReconfRqstTDD                    ProtocolIE-ID ::= 55
id-DCH-FDD-Information                                ProtocolIE-ID ::= 56
id-DCH-TDD-Information                                ProtocolIE-ID ::= 57
id-DCH-InformationResponse                            ProtocolIE-ID ::= 59
id-FDD-DCHs-to-Modify                                 ProtocolIE-ID ::= 62
id-TDD-DCHs-to-Modify                                 ProtocolIE-ID ::= 63
id-DCH-ModifyList-RL-ReconfRqstTDD                    ProtocolIE-ID ::= 65
id-DCH-RearrangeList-Bearer-RearrangeInd              ProtocolIE-ID ::= 135
id-DedicatedMeasurementObjectType-DM-Rprt             ProtocolIE-ID ::= 67
id-DedicatedMeasurementObjectType-DM-Rqst             ProtocolIE-ID ::= 68
id-DedicatedMeasurementObjectType-DM-Rsp              ProtocolIE-ID ::= 69
id-DedicatedMeasurementType                           ProtocolIE-ID ::= 70
id-DL-CCTrCH-InformationItem-RL-SetupRqstTDD          ProtocolIE-ID ::= 72
id-DL-CCTrCH-InformationList-RL-AdditionRqstTDD       ProtocolIE-ID ::= 73
id-DL-CCTrCH-InformationList-RL-SetupRqstTDD          ProtocolIE-ID ::= 76
id-DL-DPCH-InformationItem-RL-AdditionRqstTDD         ProtocolIE-ID ::= 77
id-DL-DPCH-InformationList-RL-SetupRqstTDD            ProtocolIE-ID ::= 79
id-DL-DPCH-Information-RL-ReconfPrepFDD               ProtocolIE-ID ::= 81
id-DL-DPCH-Information-RL-ReconfRqstFDD               ProtocolIE-ID ::= 82
id-DL-DPCH-Information-RL-SetupRqstFDD                ProtocolIE-ID ::= 83
id-DL-DPCH-TimingAdjustment                           ProtocolIE-ID ::= 21
id-DL-ReferencePowerInformationItem-DL-PC-Rqst        ProtocolIE-ID ::= 84
id-DLReferencePower                                   ProtocolIE-ID ::= 85
id-DLReferencePowerList-DL-PC-Rqst                    ProtocolIE-ID ::= 86
id-DSCH-AddItem-RL-ReconfPrepFDD                      ProtocolIE-ID ::= 87
id-DSCHs-to-Add-FDD                                   ProtocolIE-ID ::= 89
id-DSCH-DeleteItem-RL-ReconfPrepFDD                   ProtocolIE-ID ::= 91
id-DSCH-DeleteList-RL-ReconfPrepFDD                   ProtocolIE-ID ::= 93
id-DSCHs-to-Add-TDD                                   ProtocolIE-ID ::= 96
id-DSCH-Information-DeleteList-RL-ReconfPrepTDD       ProtocolIE-ID ::= 98
id-DSCH-Information-ModifyList-RL-ReconfPrepTDD       ProtocolIE-ID ::= 100
id-DSCH-InformationResponse                           ProtocolIE-ID ::= 105
id-DSCH-FDD-Information                               ProtocolIE-ID ::= 106
id-DSCH-TDD-Information                               ProtocolIE-ID ::= 107
id-DSCH-ModifyItem-RL-ReconfPrepFDD                   ProtocolIE-ID ::= 108
id-DSCH-ModifyList-RL-ReconfPrepFDD                   ProtocolIE-ID ::= 112
id-DSCH-RearrangeList-Bearer-RearrangeInd             ProtocolIE-ID ::= 136
id-End-Of-Audit-Sequence-Indicator                    ProtocolIE-ID ::= 113
id-FACH-Information                                   ProtocolIE-ID ::= 116
id-FACH-InformationItem-ResourceStatusInd             ProtocolIE-ID ::= 117
id-FACH-ParametersList-CTCH-ReconfRqstTDD             ProtocolIE-ID ::= 120
id-FACH-ParametersListIE-CTCH-SetupRqstFDD            ProtocolIE-ID ::= 121
id-FACH-ParametersListIE-CTCH-SetupRqstTDD            ProtocolIE-ID ::= 122
id-IndicationType-ResourceStatusInd                   ProtocolIE-ID ::= 123
id-Local-Cell-ID                                      ProtocolIE-ID ::= 124
id-Local-Cell-Group-InformationItem-AuditRsp          ProtocolIE-ID ::= 2
id-Local-Cell-Group-InformationItem-ResourceStatusInd ProtocolIE-ID ::= 3
```

```
id-Local-Cell-Group-InformationItem2-ResourceStatusInd          ProtocolIE-ID ::= 4
id-Local-Cell-Group-InformationList-AuditRsp                    ProtocolIE-ID ::= 5
id-Local-Cell-InformationItem-AuditRsp                          ProtocolIE-ID ::= 125
id-Local-Cell-InformationItem-ResourceStatusInd                 ProtocolIE-ID ::= 126
id-Local-Cell-InformationItem2-ResourceStatusInd                ProtocolIE-ID ::= 127
id-Local-Cell-InformationList-AuditRsp                          ProtocolIE-ID ::= 128
id-AdjustmentPeriod                                             ProtocolIE-ID ::= 129
id-MaxAdjustmentStep                                            ProtocolIE-ID ::= 130
id-MaximumTransmissionPower                                     ProtocolIE-ID ::= 131
id-MeasurementFilterCoefficient                                 ProtocolIE-ID ::= 132
id-MeasurementID                                                ProtocolIE-ID ::= 133
id-MessageStructure                                             ProtocolIE-ID ::= 115
id-MIB-SB-SIB-InformationList-SystemInfoUpdateRqst              ProtocolIE-ID ::= 134
id-NodeB-CommunicationContextID                                 ProtocolIE-ID ::= 143
id-NeighbouringCellMeasurementInformation                       ProtocolIE-ID ::= 455
id-P-CCPCH-Information                                          ProtocolIE-ID ::= 144
id-P-CCPCH-InformationItem-ResourceStatusInd                    ProtocolIE-ID ::= 145
id-P-CPICH-Information                                          ProtocolIE-ID ::= 146
id-P-CPICH-InformationItem-ResourceStatusInd                    ProtocolIE-ID ::= 147
id-P-SCH-Information                                            ProtocolIE-ID ::= 148
id-PCCPCH-Information-Cell-ReconfRqstTDD                        ProtocolIE-ID ::= 150
id-PCCPCH-Information-Cell-SetupRqstTDD                         ProtocolIE-ID ::= 151
id-PCH-Parameters-CTCH-ReconfRqstTDD                            ProtocolIE-ID ::= 155
id-PCH-ParametersItem-CTCH-SetupRqstFDD                         ProtocolIE-ID ::= 156
id-PCH-ParametersItem-CTCH-SetupRqstTDD                         ProtocolIE-ID ::= 157
id-PCH-Information                                              ProtocolIE-ID ::= 158
id-PDSCH-Information-AddListIE-PSCH-ReconfRqst                  ProtocolIE-ID ::= 161
id-PDSCH-Information-ModifyListIE-PSCH-ReconfRqst               ProtocolIE-ID ::= 162
id-PDSCHSets-AddList-PSCH-ReconfRqst                            ProtocolIE-ID ::= 163
id-PDSCHSets-DeleteList-PSCH-ReconfRqst                         ProtocolIE-ID ::= 164
id-PDSCHSets-ModifyList-PSCH-ReconfRqst                         ProtocolIE-ID ::= 165
id-PICH-Information                                             ProtocolIE-ID ::= 166
id-PICH-Parameters-CTCH-ReconfRqstTDD                           ProtocolIE-ID ::= 168
id-PowerAdjustmentType                                          ProtocolIE-ID ::= 169
id-PRACH-Information                                            ProtocolIE-ID ::= 170
id-PrimaryCCPCH-Information-Cell-ReconfRqstFDD                  ProtocolIE-ID ::= 175
id-PrimaryCCPCH-Information-Cell-SetupRqstFDD                   ProtocolIE-ID ::= 176
id-PrimaryCPICH-Information-Cell-ReconfRqstFDD                  ProtocolIE-ID ::= 177
id-PrimaryCPICH-Information-Cell-SetupRqstFDD                   ProtocolIE-ID ::= 178
id-PrimarySCH-Information-Cell-ReconfRqstFDD                    ProtocolIE-ID ::= 179
id-PrimarySCH-Information-Cell-SetupRqstFDD                     ProtocolIE-ID ::= 180
id-PrimaryScramblingCode                                        ProtocolIE-ID ::= 181
id-SCH-Information-Cell-ReconfRqstTDD                           ProtocolIE-ID ::= 183
id-SCH-Information-Cell-SetupRqstTDD                            ProtocolIE-ID ::= 184
id-PUSCH-Information-AddListIE-PSCH-ReconfRqst                  ProtocolIE-ID ::= 185
id-PUSCH-Information-ModifyListIE-PSCH-ReconfRqst               ProtocolIE-ID ::= 186
id-PUSCHSets-AddList-PSCH-ReconfRqst                            ProtocolIE-ID ::= 187
id-PUSCHSets-DeleteList-PSCH-ReconfRqst                         ProtocolIE-ID ::= 188
id-PUSCHSets-ModifyList-PSCH-ReconfRqst                         ProtocolIE-ID ::= 189
id-RACH-Information                                             ProtocolIE-ID ::= 190
id-RACH-ParametersItem-CTCH-SetupRqstFDD                        ProtocolIE-ID ::= 196
id-RACH-ParameterItem-CTCH-SetupRqstTDD                         ProtocolIE-ID ::= 197
id-ReportCharacteristics                                        ProtocolIE-ID ::= 198
```

```
id-Reporting-Object-RL-FailureInd                          ProtocolIE-ID ::= 199
id-Reporting-Object-RL-RestoreInd                          ProtocolIE-ID ::= 200
id-RL-InformationItem-DM-Rprt                              ProtocolIE-ID ::= 202
id-RL-InformationItem-DM-Rqst                              ProtocolIE-ID ::= 203
id-RL-InformationItem-DM-Rsp                               ProtocolIE-ID ::= 204
id-RL-InformationItem-RL-AdditionRqstFDD                   ProtocolIE-ID ::= 205
id-RL-informationItem-RL-DeletionRqst                      ProtocolIE-ID ::= 206
id-RL-InformationItem-RL-FailureInd                        ProtocolIE-ID ::= 207
id-RL-InformationItem-RL-PreemptRequiredInd                ProtocolIE-ID ::= 286
id-RL-InformationItem-RL-ReconfPrepFDD                     ProtocolIE-ID ::= 208
id-RL-InformationItem-RL-ReconfRqstFDD                     ProtocolIE-ID ::= 209
id-RL-InformationItem-RL-RestoreInd                        ProtocolIE-ID ::= 210
id-RL-InformationItem-RL-SetupRqstFDD                      ProtocolIE-ID ::= 211
id-RL-InformationList-RL-AdditionRqstFDD                   ProtocolIE-ID ::= 212
id-RL-informationList-RL-DeletionRqst                      ProtocolIE-ID ::= 213
id-RL-InformationList-RL-PreemptRequiredInd                ProtocolIE-ID ::= 237
id-RL-InformationList-RL-ReconfPrepFDD                     ProtocolIE-ID ::= 214
id-RL-InformationList-RL-ReconfRqstFDD                     ProtocolIE-ID ::= 215
id-RL-InformationList-RL-SetupRqstFDD                      ProtocolIE-ID ::= 216
id-RL-InformationResponseItem-RL-AdditionRspFDD            ProtocolIE-ID ::= 217
id-RL-InformationResponseItem-RL-ReconfReady               ProtocolIE-ID ::= 218
id-RL-InformationResponseItem-RL-ReconfRsp                 ProtocolIE-ID ::= 219
id-RL-InformationResponseItem-RL-SetupRspFDD               ProtocolIE-ID ::= 220
id-RL-InformationResponseList-RL-AdditionRspFDD            ProtocolIE-ID ::= 221
id-RL-InformationResponseList-RL-ReconfReady               ProtocolIE-ID ::= 222
id-RL-InformationResponseList-RL-ReconfRsp                 ProtocolIE-ID ::= 223
id-RL-InformationResponseList-RL-SetupRspFDD               ProtocolIE-ID ::= 224
id-RL-InformationResponse-RL-AdditionRspTDD                ProtocolIE-ID ::= 225
id-RL-InformationResponse-RL-SetupRspTDD                   ProtocolIE-ID ::= 226
id-RL-Information-RL-AdditionRqstTDD                       ProtocolIE-ID ::= 227
id-RL-Information-RL-ReconfRqstTDD                         ProtocolIE-ID ::= 228
id-RL-Information-RL-ReconfPrepTDD                         ProtocolIE-ID ::= 229
id-RL-Information-RL-SetupRqstTDD                          ProtocolIE-ID ::= 230
id-RL-ReconfigurationFailureItem-RL-ReconfFailure          ProtocolIE-ID ::= 236
id-RL-Set-InformationItem-DM-Rprt                          ProtocolIE-ID ::= 238
id-RL-Set-InformationItem-DM-Rsp                           ProtocolIE-ID ::= 240
id-RL-Set-InformationItem-RL-FailureInd                    ProtocolIE-ID ::= 241
id-RL-Set-InformationItem-RL-RestoreInd                    ProtocolIE-ID ::= 242
id-S-CCPCH-Information                                     ProtocolIE-ID ::= 247
id-S-CPICH-Information                                     ProtocolIE-ID ::= 249
id-SCH-Information                                         ProtocolIE-ID ::= 251
id-S-SCH-Information                                       ProtocolIE-ID ::= 253
id-Secondary-CCPCHListIE-CTCH-ReconfRqstTDD                ProtocolIE-ID ::= 257
id-Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD       ProtocolIE-ID ::= 258
id-Secondary-CCPCH-Parameters-CTCH-ReconfRqstTDD           ProtocolIE-ID ::= 259
id-SecondaryCPICH-InformationItem-Cell-ReconfRqstFDD       ProtocolIE-ID ::= 260
id-SecondaryCPICH-InformationItem-Cell-SetupRqstFDD        ProtocolIE-ID ::= 261
id-SecondaryCPICH-InformationList-Cell-ReconfRqstFDD       ProtocolIE-ID ::= 262
id-SecondaryCPICH-InformationList-Cell-SetupRqstFDD        ProtocolIE-ID ::= 263
id-SecondarySCH-Information-Cell-ReconfRqstFDD             ProtocolIE-ID ::= 264
id-SecondarySCH-Information-Cell-SetupRqstFDD              ProtocolIE-ID ::= 265
id-SegmentInformationListIE-SystemInfoUpdate               ProtocolIE-ID ::= 266
id-SFN                                                     ProtocolIE-ID ::= 268
```

```
id-SignallingBearerRequestIndicator                                ProtocolIE-ID ::= 138
id-ShutdownTimer                                                   ProtocolIE-ID ::= 269
id-Start-Of-Audit-Sequence-Indicator                               ProtocolIE-ID ::= 114
id-Successful-RL-InformationRespItem-RL-AdditionFailureFDD         ProtocolIE-ID ::= 270
id-Successful-RL-InformationRespItem-RL-SetupFailureFDD            ProtocolIE-ID ::= 271
id-SyncCase                                                        ProtocolIE-ID ::= 274
id-SyncCaseIndicatorItem-Cell-SetupRqstTDD-PSCH                    ProtocolIE-ID ::= 275
id-T-Cell                                                          ProtocolIE-ID ::= 276
id-TargetCommunicationControlPortID                                ProtocolIE-ID ::= 139
id-TimeSlotConfigurationList-Cell-ReconfRqstTDD                    ProtocolIE-ID ::= 277
id-TimeSlotConfigurationList-Cell-SetupRqstTDD                     ProtocolIE-ID ::= 278
id-TransmissionDiversityApplied                                    ProtocolIE-ID ::= 279
id-TypeOfError                                                     ProtocolIE-ID ::= 508
id-UARFCNforNt                                                     ProtocolIE-ID ::= 280
id-UARFCNforNd                                                     ProtocolIE-ID ::= 281
id-UARFCNforNu                                                     ProtocolIE-ID ::= 282
id-UL-CCTrCH-InformationItem-RL-SetupRqstTDD                       ProtocolIE-ID ::= 284
id-UL-CCTrCH-InformationList-RL-AdditionRqstTDD                    ProtocolIE-ID ::= 285
id-UL-CCTrCH-InformationList-RL-SetupRqstTDD                       ProtocolIE-ID ::= 288
id-UL-DPCH-InformationItem-RL-AdditionRqstTDD                      ProtocolIE-ID ::= 289
id-UL-DPCH-InformationList-RL-SetupRqstTDD                         ProtocolIE-ID ::= 291
id-UL-DPCH-Information-RL-ReconfPrepFDD                            ProtocolIE-ID ::= 293
id-UL-DPCH-Information-RL-ReconfRqstFDD                            ProtocolIE-ID ::= 294
id-UL-DPCH-Information-RL-SetupRqstFDD                             ProtocolIE-ID ::= 295
id-Unsuccessful-RL-InformationRespItem-RL-AdditionFailureFDD       ProtocolIE-ID ::= 296
id-Unsuccessful-RL-InformationRespItem-RL-SetupFailureFDD          ProtocolIE-ID ::= 297
id-Unsuccessful-RL-InformationResp-RL-AdditionFailureTDD           ProtocolIE-ID ::= 300
id-Unsuccessful-RL-InformationResp-RL-SetupFailureTDD              ProtocolIE-ID ::= 301
id-USCH-Information-Add                                            ProtocolIE-ID ::= 302
id-USCH-Information-DeleteList-RL-ReconfPrepTDD                    ProtocolIE-ID ::= 304
id-USCH-Information-ModifyList-RL-ReconfPrepTDD                    ProtocolIE-ID ::= 306
id-USCH-InformationResponse                                        ProtocolIE-ID ::= 309
id-USCH-Information                                                ProtocolIE-ID ::= 310
id-USCH-RearrangeList-Bearer-RearrangeInd                          ProtocolIE-ID ::= 141
id-Active-Pattern-Sequence-Information                             ProtocolIE-ID ::= 315
id-AICH-ParametersListIE-CTCH-ReconfRqstFDD                        ProtocolIE-ID ::= 316
id-AdjustmentRatio                                                 ProtocolIE-ID ::= 317
id-AP-AICH-Information                                             ProtocolIE-ID ::= 320
id-AP-AICH-ParametersListIE-CTCH-ReconfRqstFDD                     ProtocolIE-ID ::= 322
id-FACH-ParametersListIE-CTCH-ReconfRqstFDD                        ProtocolIE-ID ::= 323
id-CauseLevel-PSCH-ReconfFailureTDD                                ProtocolIE-ID ::= 324
id-CauseLevel-RL-AdditionFailureFDD                                ProtocolIE-ID ::= 325
id-CauseLevel-RL-AdditionFailureTDD                                ProtocolIE-ID ::= 326
id-CauseLevel-RL-ReconfFailure                                     ProtocolIE-ID ::= 327
id-CauseLevel-RL-SetupFailureFDD                                   ProtocolIE-ID ::= 328
id-CauseLevel-RL-SetupFailureTDD                                   ProtocolIE-ID ::= 329
id-CDCA-ICH-Information                                            ProtocolIE-ID ::= 330
id-CDCA-ICH-ParametersListIE-CTCH-ReconfRqstFDD                    ProtocolIE-ID ::= 332
id-Closed-Loop-Timing-Adjustment-Mode                              ProtocolIE-ID ::= 333
id-CommonPhysicalChannelType-CTCH-ReconfRqstFDD                    ProtocolIE-ID ::= 334
id-Compressed-Mode-Deactivation-Flag                               ProtocolIE-ID ::= 335
id-CPCH-Information                                                ProtocolIE-ID ::= 336
id-CPCH-Parameters-CTCH-SetupRsp                                   ProtocolIE-ID ::= 342
```

```
id-CPCH-ParametersListIE-CTCH-ReconfRqstFDD                    ProtocolIE-ID ::= 343
id-DL-CCTrCH-InformationAddList-RL-ReconfPrepTDD               ProtocolIE-ID ::= 346
id-DL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD            ProtocolIE-ID ::= 347
id-DL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD            ProtocolIE-ID ::= 348
id-DL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD            ProtocolIE-ID ::= 349
id-DL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD            ProtocolIE-ID ::= 350
id-DL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD            ProtocolIE-ID ::= 351
id-DL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD            ProtocolIE-ID ::= 352
id-DL-DPCH-InformationAddListIE-RL-ReconfPrepTDD               ProtocolIE-ID ::= 353
id-DL-DPCH-InformationModify-AddListIE-RL-ReconfPrepTDD        ProtocolIE-ID ::= 355
id-DL-DPCH-InformationModify-DeleteListIE-RL-ReconfPrepTDD     ProtocolIE-ID ::= 356
id-DL-DPCH-InformationModify-ModifyListIE-RL-ReconfPrepTDD     ProtocolIE-ID ::= 357
id-DL-TPC-Pattern01Count                                       ProtocolIE-ID ::= 358
id-DPC-Mode                                                    ProtocolIE-ID ::= 450
id-DPCHConstant                                                ProtocolIE-ID ::= 359
id-DSCH-FDD-Common-Information                                 ProtocolIE-ID ::= 94
id-EnhancedDSCHPC                                              ProtocolIE-ID ::= 110
id-EnhancedDSCHPCIndicator                                     ProtocolIE-ID ::= 111
id-FACH-ParametersList-CTCH-SetupRsp                           ProtocolIE-ID ::= 362
id-Limited-power-increase-information-Cell-SetupRqstFDD        ProtocolIE-ID ::= 369
id-PCH-Parameters-CTCH-SetupRsp                                ProtocolIE-ID ::= 374
id-PCH-ParametersItem-CTCH-ReconfRqstFDD                       ProtocolIE-ID ::= 375
id-PCPCH-Information                                           ProtocolIE-ID ::= 376
id-PICH-ParametersItem-CTCH-ReconfRqstFDD                      ProtocolIE-ID ::= 380
id-PRACHConstant                                               ProtocolIE-ID ::= 381
id-PRACH-ParametersListIE-CTCH-ReconfRqstFDD                   ProtocolIE-ID ::= 383
id-PUSCHConstant                                               ProtocolIE-ID ::= 384
id-RACH-Parameters-CTCH-SetupRsp                               ProtocolIE-ID ::= 385
id-SSDT-CellIDforEDSCHPC                                       ProtocolIE-ID ::= 443
id-Synchronisation-Configuration-Cell-ReconfRqst               ProtocolIE-ID ::= 393
id-Synchronisation-Configuration-Cell-SetupRqst                ProtocolIE-ID ::= 394
id-Transmission-Gap-Pattern-Sequence-Information               ProtocolIE-ID ::= 395
id-UL-CCTrCH-InformationAddList-RL-ReconfPrepTDD               ProtocolIE-ID ::= 396
id-UL-CCTrCH-InformationDeleteItem-RL-ReconfRqstTDD            ProtocolIE-ID ::= 397
id-UL-CCTrCH-InformationDeleteList-RL-ReconfPrepTDD            ProtocolIE-ID ::= 398
id-UL-CCTrCH-InformationDeleteList-RL-ReconfRqstTDD            ProtocolIE-ID ::= 399
id-UL-CCTrCH-InformationModifyItem-RL-ReconfRqstTDD            ProtocolIE-ID ::= 400
id-UL-CCTrCH-InformationModifyList-RL-ReconfPrepTDD            ProtocolIE-ID ::= 401
id-UL-CCTrCH-InformationModifyList-RL-ReconfRqstTDD            ProtocolIE-ID ::= 402
id-UL-DPCH-InformationAddListIE-RL-ReconfPrepTDD               ProtocolIE-ID ::= 403
id-UL-DPCH-InformationModify-AddListIE-RL-ReconfPrepTDD        ProtocolIE-ID ::= 405
id-UL-DPCH-InformationModify-DeleteListIE-RL-ReconfPrepTDD     ProtocolIE-ID ::= 406
id-UL-DPCH-InformationModify-ModifyListIE-RL-ReconfPrepTDD     ProtocolIE-ID ::= 407
id-Unsuccessful-PDSCHSetItem-PSCH-ReconfFailureTDD             ProtocolIE-ID ::= 408
id-Unsuccessful-PUSCHSetItem-PSCH-ReconfFailureTDD             ProtocolIE-ID ::= 409
id-CommunicationContextInfoItem-Reset                          ProtocolIE-ID ::= 412
id-CommunicationControlPortInfoItem-Reset                      ProtocolIE-ID ::= 414
id-ResetIndicator                                              ProtocolIE-ID ::= 416
id-TFCI2-Bearer-Information-RL-SetupRqstFDD                    ProtocolIE-ID ::= 417
id-TFCI2-BearerSpecificInformation-RL-ReconfPrepFDD            ProtocolIE-ID ::= 418
id-TFCI2-BearerInformationResponse                             ProtocolIE-ID ::= 419
id-TFCI2BearerRequestIndicator                                 ProtocolIE-ID ::= 142
id-TimingAdvanceApplied                                        ProtocolIE-ID ::= 287
```

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id-CFNReportingIndicator                                        ProtocolIE-ID ::= 6
id-SFNReportingIndicator                                        ProtocolIE-ID ::= 11
id-InnerLoopDLPCStatus                                          ProtocolIE-ID ::= 12
id-TimeslotISCPInfo                                             ProtocolIE-ID ::= 283
id-PICH-ParametersItem-CTCH-SetupRqstTDD                        ProtocolIE-ID ::= 167
id-PRACH-ParametersItem-CTCH-SetupRqstTDD                       ProtocolIE-ID ::= 20
id-CCTrCH-InformationItem-RL-FailureInd                         ProtocolIE-ID ::= 46
id-CCTrCH-InformationItem-RL-RestoreInd                         ProtocolIE-ID ::= 47
id-CauseLevel-SyncAdjustmntFailureTDD                           ProtocolIE-ID ::= 420
id-CellAdjustmentInfo-SyncAdjustmntRqstTDD                      ProtocolIE-ID ::= 421
id-CellAdjustmentInfoItem-SyncAdjustmentRqstTDD                 ProtocolIE-ID ::= 494
id-CellSyncBurstInfoList-CellSyncReconfRqstTDD                  ProtocolIE-ID ::= 482
id-CellSyncBurstTransInit-CellSyncInitiationRqstTDD             ProtocolIE-ID ::= 422
id-CellSyncBurstMeasureInit-CellSyncInitiationRqstTDD           ProtocolIE-ID ::= 423
id-CellSyncBurstTransReconfiguration-CellSyncReconfRqstTDD      ProtocolIE-ID ::= 424
id-CellSyncBurstMeasReconfiguration-CellSyncReconfRqstTDD       ProtocolIE-ID ::= 425
id-CellSyncBurstTransInfoList-CellSyncReconfRqstTDD             ProtocolIE-ID ::= 426
id-CellSyncBurstMeasInfoList-CellSyncReconfRqstTDD              ProtocolIE-ID ::= 427
id-CellSyncBurstTransReconfInfo-CellSyncReconfRqstTDD           ProtocolIE-ID ::= 428
id-CellSyncInfo-CellSyncReprtTDD                                ProtocolIE-ID ::= 429
id-CSBTransmissionID                                            ProtocolIE-ID ::= 430
id-CSBMeasurementID                                             ProtocolIE-ID ::= 431
id-IntStdPhCellSyncInfoItem-CellSyncReprtTDD                    ProtocolIE-ID ::= 432
id-NCyclesPerSFNperiod                                          ProtocolIE-ID ::= 433
id-NRepetitionsPerCyclePeriod                                   ProtocolIE-ID ::= 434
id-SyncFrameNumber                                              ProtocolIE-ID ::= 437
id-SynchronisationReportType                                    ProtocolIE-ID ::= 438
id-SynchronisationReportCharacteristics                         ProtocolIE-ID ::= 439
id-Unsuccessful-cell-InformationRespItem-SyncAdjustmntFailureTDD ProtocolIE-ID ::= 440
id-LateEntranceCellSyncInfoItem-CellSyncReprtTDD                ProtocolIE-ID ::= 119
id-ReferenceClockAvailability                                   ProtocolIE-ID ::= 435
id-ReferenceSFNoffset                                           ProtocolIE-ID ::= 436
id-InformationExchangeID                                        ProtocolIE-ID ::= 444
id-InformationExchangeObjectType-InfEx-Rqst                     ProtocolIE-ID ::= 445
id-InformationType                                              ProtocolIE-ID ::= 446
id-InformationReportCharacteristics                             ProtocolIE-ID ::= 447
id-InformationExchangeObjectType-InfEx-Rsp                      ProtocolIE-ID ::= 448
id-InformationExchangeObjectType-InfEx-Rprt                     ProtocolIE-ID ::= 449
id-IPDLParameter-Information-Cell-ReconfRqstFDD                 ProtocolIE-ID ::= 451
id-IPDLParameter-Information-Cell-SetupRqstFDD                  ProtocolIE-ID ::= 452
id-IPDLParameter-Information-Cell-ReconfRqstTDD                 ProtocolIE-ID ::= 453
id-IPDLParameter-Information-Cell-SetupRqstTDD                  ProtocolIE-ID ::= 454
id-DL-DPCH-LCR-Information-RL-SetupRqstTDD                      ProtocolIE-ID ::= 74
id-DL-DPCH-LCR-InformationList-RL-SetupRqstTDD                  ProtocolIE-ID ::= 75
id-DwPCH-LCR-Information                                        ProtocolIE-ID ::= 78
id-DwPCH-LCR-Information-AuditRsp                               ProtocolIE-ID ::= 80
id-DwPCH-LCR-InformationList-AuditRsp                           ProtocolIE-ID ::= 90
id-DwPCH-LCR-Information-Cell-SetupRqstTDD                      ProtocolIE-ID ::= 97
id-DwPCH-LCR-Information-Cell-ReconfRqstTDD                     ProtocolIE-ID ::= 99
id-DwPCH-LCR-Information-ResourceStatusInd                      ProtocolIE-ID ::= 101
id-maxFACH-Power-LCR-CTCH-SetupRqstTDD                          ProtocolIE-ID ::= 154
id-maxFACH-Power-LCR-CTCH-ReconfRqstTDD                         ProtocolIE-ID ::= 174
id-FPACH-LCR-Information                                        ProtocolIE-ID ::= 290
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id-FPACH-LCR-Information-AuditRsp                                ProtocolIE-ID ::= 292
id-FPACH-LCR-InformationList-AuditRsp                            ProtocolIE-ID ::= 22
id-FPACH-LCR-InformationList-ResourceStatusInd                   ProtocolIE-ID ::= 311
id-FPACH-LCR-Parameters-CTCH-SetupRqstTDD                        ProtocolIE-ID ::= 312
id-FPACH-LCR-ParametersItem-CTCH-SetupRqstTDD                    ProtocolIE-ID ::= 313
id-FPACH-LCR-Parameters-CTCH-ReconfRqstTDD                       ProtocolIE-ID ::= 314
id-PCCPCH-LCR-Information-Cell-SetupRqstTDD                      ProtocolIE-ID ::= 456
id-PCH-Power-LCR-CTCH-SetupRqstTDD                               ProtocolIE-ID ::= 457
id-PCH-Power-LCR-CTCH-ReconfRqstTDD                              ProtocolIE-ID ::= 458
id-PICH-LCR-Parameters-CTCH-SetupRqstTDD                         ProtocolIE-ID ::= 459
id-PICH-LCR-ParametersItem-CTCH-SetupRqstTDD                     ProtocolIE-ID ::= 460
id-PRACH-LCR-ParametersList-CTCH-SetupRqstTDD                    ProtocolIE-ID ::= 461
id-PRACH-LCR-ParametersListIE-CTCH-SetupRqstTDD                  ProtocolIE-ID ::= 462
id-RL-InformationResponse-LCR-RL-SetupRspTDD                     ProtocolIE-ID ::= 463
id-Secondary-CCPCH-LCR-parameterListIE-CTCH-SetupRqstTDD         ProtocolIE-ID ::= 464
id-Secondary-CCPCH-LCR-parameterList-CTCH-SetupRqstTDD           ProtocolIE-ID ::= 465
id-TimeSlot                                                      ProtocolIE-ID ::= 495
id-TimeSlotConfigurationList-LCR-Cell-ReconfRqstTDD              ProtocolIE-ID ::= 466
id-TimeSlotConfigurationList-LCR-Cell-SetupRqstTDD               ProtocolIE-ID ::= 467
id-TimeslotISCP-LCR-InfoList-RL-SetupRqstTDD                     ProtocolIE-ID ::= 468
id-TimeSlotLCR-CM-Rqst                                           ProtocolIE-ID ::= 469
id-UL-DPCH-LCR-Information-RL-SetupRqstTDD                       ProtocolIE-ID ::= 470
id-UL-DPCH-LCR-InformationList-RL-SetupRqstTDD                   ProtocolIE-ID ::= 471
id-DL-DPCH-InformationItem-LCR-RL-AdditionRqstTDD                ProtocolIE-ID ::= 472
id-UL-DPCH-InformationItem-LCR-RL-AdditionRqstTDD                ProtocolIE-ID ::= 473
id-TimeslotISCP-InformationList-LCR-RL-AdditionRqstTDD           ProtocolIE-ID ::= 474
id-DL-DPCH-LCR-InformationAddList-RL-ReconfPrepTDD               ProtocolIE-ID ::= 475
id-DL-DPCH-LCR-InformationAddListIE-RL-ReconfPrepTDD             ProtocolIE-ID ::= 476
id-DL-DPCH-LCR-InformationModify-AddList-RL-ReconfPrepTDD        ProtocolIE-ID ::= 477
id-DL-DPCH-LCR-InformationModify-AddListIE-RL-ReconfPrepTDD      ProtocolIE-ID ::= 478
id-DL-Timeslot-LCR-InformationModify-ModifyList-RL-ReconfPrepTDD ProtocolIE-ID ::= 479
id-TimeslotISCPInfoList-LCR-DL-PC-RqstTDD                        ProtocolIE-ID ::= 480
id-UL-DPCH-LCR-InformationAddListIE-RL-ReconfPrepTDD             ProtocolIE-ID ::= 481
id-UL-DPCH-LCR-InformationModify-AddList                         ProtocolIE-ID ::= 483
id-UL-DPCH-LCR-InformationModify-AddListIE-RL-ReconfPrepTDD      ProtocolIE-ID ::= 484
id-UL-TimeslotLCR-Information-RL-ReconfPrepTDD                   ProtocolIE-ID ::= 485
id-UL-SIRTarget                                                  ProtocolIE-ID ::= 510
id-PDSCH-AddInformation-LCR-PSCH-ReconfRqst                      ProtocolIE-ID ::= 486
id-PDSCH-AddInformation-LCR-AddListIE-PSCH-ReconfRqst            ProtocolIE-ID ::= 487
id-PDSCH-Information-Cell-SetupRqstFDD                           ProtocolIE-ID ::=  26
id-PDSCH-Information-Cell-ReconfRqstFDD                          ProtocolIE-ID ::=  27
id-PDSCH-ModifyInformation-LCR-PSCH-ReconfRqst                   ProtocolIE-ID ::= 488
id-PDSCH-ModifyInformation-LCR-ModifyListIE-PSCH-ReconfRqst      ProtocolIE-ID ::= 489
id-PUSCH-AddInformation-LCR-PSCH-ReconfRqst                      ProtocolIE-ID ::= 490
id-PUSCH-AddInformation-LCR-AddListIE-PSCH-ReconfRqst            ProtocolIE-ID ::= 491
id-PUSCH-ModifyInformation-LCR-PSCH-ReconfRqst                   ProtocolIE-ID ::= 492
id-PUSCH-ModifyInformation-LCR-ModifyListIE-PSCH-ReconfRqst      ProtocolIE-ID ::= 493
id-timeslotInfo-CellSyncInitiationRqstTDD                        ProtocolIE-ID ::= 496
id-SyncReportType-CellSyncReprtTDD                               ProtocolIE-ID ::= 497
id-Power-Local-Cell-Group-InformationItem-AuditRsp               ProtocolIE-ID ::= 498
id-Power-Local-Cell-Group-InformationItem-ResourceStatusInd      ProtocolIE-ID ::= 499
id-Power-Local-Cell-Group-InformationItem2-ResourceStatusInd     ProtocolIE-ID ::= 500
id-Power-Local-Cell-Group-InformationList-AuditRsp               ProtocolIE-ID ::= 501
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id-Power-Local-Cell-Group-InformationList-ResourceStatusInd        ProtocolIE-ID ::= 502
id-Power-Local-Cell-Group-InformationList2-ResourceStatusInd       ProtocolIE-ID ::= 503
id-Power-Local-Cell-Group-ID                                       ProtocolIE-ID ::= 504
id-PUSCH-Info-DM-Rqst                                              ProtocolIE-ID ::= 505
id-PUSCH-Info-DM-Rsp                                               ProtocolIE-ID ::= 506
id-PUSCH-Info-DM-Rprt                                              ProtocolIE-ID ::= 507
id-InitDL-Power                                                    ProtocolIE-ID ::= 509
id-cellSyncBurstRepetitionPeriod                                   ProtocolIE-ID ::= 511
id-ReportCharacteristicsType-OnModification                        ProtocolIE-ID ::= 512
id-SFNSFNMeasurementValueInformation                               ProtocolIE-ID ::= 513
id-SFNSFNMeasurementThresholdInformation                           ProtocolIE-ID ::= 514
id-TUTRANGPSMeasurementValueInformation                            ProtocolIE-ID ::= 515
id-TUTRANGPSMeasurementThresholdInformation                        ProtocolIE-ID ::= 516
id-Rx-Timing-Deviation-Value-LCR                                   ProtocolIE-ID ::= 520
id-RL-InformationResponse-LCR-RL-AdditionRspTDD                    ProtocolIE-ID ::= 51
id-DL-PowerBalancing-Information                                   ProtocolIE-ID ::= 28
id-DL-PowerBalancing-ActivationIndicator                           ProtocolIE-ID ::= 29
id-DL-PowerBalancing-UpdatedIndicator                              ProtocolIE-ID ::= 30
id-CCTrCH-Initial-DL-Power-RL-SetupRqstTDD                         ProtocolIE-ID ::= 517
id-CCTrCH-Initial-DL-Power-RL-AdditionRqstTDD                      ProtocolIE-ID ::= 518
id-CCTrCH-Initial-DL-Power-RL-ReconfPrepTDD                        ProtocolIE-ID ::= 519
id-IPDLParameter-Information-LCR-Cell-SetupRqstTDD                 ProtocolIE-ID ::= 41
id-IPDLParameter-Information-LCR-Cell-ReconfRqstTDD                ProtocolIE-ID ::= 42
id-HS-PDSCH-HS-SCCH-MaxPower-PSCH-ReconfRqst                       ProtocolIE-ID ::= 522
id-HS-PDSCH-HS-SCCH-ScramblingCode-PSCH-ReconfRqst                 ProtocolIE-ID ::= 523
id-HS-PDSCH-FDD-Code-Information-PSCH-ReconfRqst                   ProtocolIE-ID ::= 524
id-HS-SCCH-FDD-Code-Information-PSCH-ReconfRqst                    ProtocolIE-ID ::= 525
id-HS-PDSCH-TDD-Information-PSCH-ReconfRqst                        ProtocolIE-ID ::= 526
id-Add-To-HS-SCCH-Resource-Pool-PSCH-ReconfRqst                    ProtocolIE-ID ::= 527
id-Modify-HS-SCCH-Resource-Pool-PSCH-ReconfRqst                    ProtocolIE-ID ::= 528
id-Delete-From-HS-SCCH-Resource-Pool-PSCH-ReconfRqst               ProtocolIE-ID ::= 529
id-bindingID                                                       ProtocolIE-ID ::= xxx
id-RL-Specific-DCH-Info                                            ProtocolIE-ID ::= xxx
id-transportlayeraddress                                           ProtocolIE-ID ::= xxx
id-DelayedActivation                                               ProtocolIE-ID ::= 231
id-DelayedActivationList-RL-ActivationCmdFDD                       ProtocolIE-ID ::= 232
id-DelayedActivationInformation-RL-ActivationCmdFDD                ProtocolIE-ID ::= 233
id-DelayedActivationList-RL-ActivationCmdTDD                       ProtocolIE-ID ::= 234
id-DelayedActivationInformation-RL-ActivationCmdTDD                ProtocolIE-ID ::= 235
id-neighbouringTDDCellMeasurementInformationLCR                    ProtocolIE-ID ::= 58
id-SYNCDlCodeId-TransInitLCR-CellSyncInitiationRqstTDD             ProtocolIE-ID ::= 543
id-SYNCDlCodeId-MeasureInitLCR-CellSyncInitiationRqstTDD           ProtocolIE-ID ::= 544
id-SYNCDlCodeIdTransReconfInfoLCR-CellSyncReconfRqstTDD            ProtocolIE-ID ::= 545
id-SYNCDlCodeIdMeasReconfigurationLCR-CellSyncReconfRqstTDD        ProtocolIE-ID ::= 546
id-SYNCDlCodeIdMeasInfoList-CellSyncReconfRqstTDD                  ProtocolIE-ID ::= 547
id-SyncDLCodeIdsMeasInfoList-CellSyncReprtTDD                      ProtocolIE-ID ::= 548
id-SyncDLCodeIdThreInfoLCR                                         ProtocolIE-ID ::= 549
id-NSubCyclesPerCyclePeriod-CellSyncReconfRqstTDD                  ProtocolIE-ID ::= 550
id-DwPCH-Power                                                     ProtocolIE-ID ::= 551
id-Angle-Of-Arrival-Value-LCR                                      ProtocolIE-ID ::= 521
id-HSDSCH-FDD-Information                                          ProtocolIE-ID ::= 530
id-HSDSCH-FDD-Information-Response                                 ProtocolIE-ID ::= 531
id-HSDSCH-FDD-Information-to-Add                                   ProtocolIE-ID ::= 532
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id-HSDSCH-FDD-Information-to-Delete                    ProtocolIE-ID ::= 533
id-HSDSCH-Information-to-Modify                        ProtocolIE-ID ::= 534
id-HSDSCH-RNTI                                         ProtocolIE-ID ::= 535
id-HSDSCH-TDD-Information                              ProtocolIE-ID ::= 536
id-HSDSCH-TDD-Information-Response                     ProtocolIE-ID ::= 537
id-HSDSCH-TDD-Information-Response-LCR                 ProtocolIE-ID ::= 538
id-HSDSCH-TDD-Information-to-Add                       ProtocolIE-ID ::= 539
id-HSDSCH-TDD-Information-to-Delete                    ProtocolIE-ID ::= 540
id-HSPDSCH-RL-ID                                       ProtocolIE-ID ::= 541
id-PrimCCPCH-RSCP-DL-PC-RqstTDD                        ProtocolIE-ID ::= 542
id-HSDSCH-RearrangeList-Bearer-RearrangeInd            ProtocolIE-ID ::= 553

END
```

3GPP TSG-RAN3 Meeting #29
Gyeongju, KOREA, 13th – 17th May, 2002

R3-021664

CR-Form-v4

CHANGE REQUEST

⌘ **25.433** **CR** **693** ⌘ ev **2** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title: ⌘	HS-DSCH Initial credits	
Source: ⌘	R-WG3	
Work item code: ⌘	HSDPA-Iublur	***Date:*** ⌘ May, 2002
Category: ⌘	**F**	***Release:*** ⌘ REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘

The possibility for NodeB to give initial credits to the DRNC / SRNC to be used before any new credits are allocated is missing in the current specification version. Similar feature exists on Iur in FACH Flow Control. To have this opportunity on HS-DSCH channels is even more important in order to ensure fast data transport in UTRAN.

Summary of change: ⌘

R2 (highlighted in light blue):

- In ASN.1, the order of IEs in HS-DSCH Initial Capacity Allocation was aligned with tabular format.

R1 (highlighted in yellow):

- HS-DSCH FDD Information Response IE:

  The HS-DSCH Initial Capacity Allocation was made optional.

- Procedure text added to the Radio Link Setup and Synchronised Radio Link Reconfiguration Preparation procedures.
- IE/Group name corrected for the HS-DSCH Initial Capacity Allocation IE.
- HS-DSCH Initial Window Size: The range changed to INTEGER (1..2047).
- ASN.1 changes (optionality and range as above).

R0:

A new IE ' HS-DSCH Initial Capacity Allocation' has been added into the HS-DSCH FDD Information Response IE and in the HS-DSCH TDD Information Response IE. With this new IE the Node B provides the DRNC/SRNC with the initial credit information: the HS-DSCH Initial Window Size (the number of the MAC-d PDUs) and Maximum MAC-d PDU Size.

This allows the SRNC to start the HS-DSCH data transport without having to

		wait capacity allocation on the User Plane.
Consequences if not approved:	⌘	If this CR is not approved the start of HS-DSCH data transport is possible only when new credits have been requested by the SRNC and allocated bt the NodeB/DRNC. This causes unnecessary delay. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification. The change is limited only to the HS-DSCH functionality. Compatibility Analysis towards previous release: No impact. The HSDPA is a new functionality and does not exist in the previous release.

Clauses affected:	⌘	8.3.2.2, 8.2.17.2, 9.2.1.X, 9.2.2.18E, 9.2.3.5G, 9.3.4		
Other specs affected:	⌘	**X** Other core specifications Test specifications O&M Specifications	⌘	CR662r2 (25.423 V5.0.0) CR050r1 (25.425 V5.0.0) CR082r1 (25.435 V5.0.0)
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.17 Radio Link Setup

8.2.17.1 General

This procedure is used for establishing the necessary resources for a new Node B Communication Context in the Node B.

[FDD – The RL Setup procedure is used to establish one or more radio links. The procedure establishes one or more DCHs on all radio links, and in addition, it can include the establishment of one or more DSCHs or an HS-DSCH on one radio link.]

[TDD – The RL Setup procedure is used for establish one radio link including one or more transport channels. The transport channels can be a mixture of DCHs, DSCHs, and USCHs, or DCHs and an HS-DSCH, including also combinations where one or more transport channel types are not present.]

8.2.17.2 Successful Operation

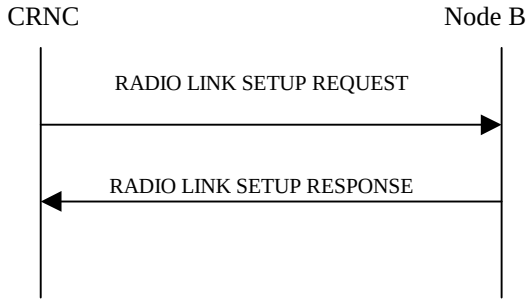


Figure 24: Radio Link Setup procedure, Successful Operation

The procedure is initiated with a RADIO LINK SETUP REQUEST message sent from the CRNC to Node B.

Upon reception of RADIO LINK SETUP REQUEST message, the Node B shall reserve necessary resources and configure the new Radio Link(s) according to the parameters given in the message.

The Node B shall prioritise resource allocation for the RL(s) to be established according to Annex A.

Transport Channels Handling:

DCH(s):

[TDD – If the *DCH Information* IE is present, the Node B shall configure the new DCH(s) according to the parameters given in the message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs then, the Node B shall treat the DCHs in the *DCH Information* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

[FDD – For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If the QE-Selector is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [16].]

For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [16]. [FDD - If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [16]].

The Node B shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The Node B shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The Node B shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The received *Frame Handling Priority* IE specified for each Transport Channel should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new RL(s) has been activated.

[FDD – The *Diversity Control Field* IE indicates for each RL (except the first RL in the message) whether the Node B shall combine the concerned RL or not. If the *Diversity Control Field* IE is set to"May", then Node B shall decide for either of the alternatives. If the *Diversity Control Field* IE is set to "Must", the Node B shall combine the RL with one of the other RL. Diversity combining is applied to Dedicated Transport Channels (DCH), i.e. it is not applied to the DSCHs. When a new RL is to be combined, the Node B shall choose which RL(s) to combine it with. If the *Diversity Control Field* IE is set to "Must not" , the Node B shall not combine the RL with any other existing RL.]

[FDD – In the RADIO LINK SETUP RESPONSE message the Node B shall indicate with the *Diversity Indication* IE whether the RL is combined or not. In case of combining, only the *Reference RL ID* IE shall be included to indicate one of the existing RLs that the concerned RL is combined with. In case of not combining the Node B shall include in the RL SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.]

[TDD – The Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.]

In case of coordinated DCH, the *Binding ID* IE and the *Transport Layer Address* IE shall be specified for only one of the coordinated DCHs.

DSCH(s):

If the *DSCH Information* IE is present, the Node B shall configure the new DSCH(s) according to the parameters given in the message.

[FDD – If the RADIO LINK SETUP REQUEST message includes the *TFCI2 Bearer Information* IE then the Node B shall support the establishment of a transport bearer on which the DSCH TFCI Signaling control frames shall be received. The Node B shall manage the time of arrival of these frames according to the values of ToAWS and ToAWE specified in the IE's. The *Binding ID* IE and *Transport Layer Address* IE for the new bearer to be set up for this purpose shall be returned in the RADIO LINK SETUP RESPONSE message.]

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *DSCH Information* IE the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the DSCH.

The Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DSCH of this RL.

[TDD – USCH(s)]:

[TDD – If the *USCH Information* IE is present, the Node B shall configure the new USCH(s) according to the parameters given in the message.]

[TDD - If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *USCH Information* IE the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the USCH.]

[TDD – In case the *USCH Information* IE is present, the Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each USCH of this RL.]

HS-DSCH(s):

If the *HS-DSCH Information* IE is present the Node B shall configure the new HS-DSCH resources according to the parameters given in the message.

[FDD – If the *HS-DSCH Information* IE and the *HS-PDSCH RL ID* IE are present, the Node B shall configure the new HS-DSCH resources in the radio link specified by the HS-PDSCH RL ID.]

In addition the Node B shall include in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and *Transport Layer Address* IE for the transport bearers to be established for the HS-DSCH MAC-d flows of this RL.

If the *HS-DSCH-RNTI* IE is present, the Node B shall use the HS-DSCH RNTI value for HS-DSCH processing for the respective Node B Communication Context.

The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE in the RADIO LINK SETUP RESPONSE message for each MAC-d flow, if the Node B allows the CRNC to start transmission of the MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].

Physical Channels Handling:

[FDD – Compressed Mode]:

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, the Node B shall store the information about the Transmission Gap Pattern Sequences to be used in the Compressed Mode Configuration. This Compressed Mode Configuration shall be valid in the Node B until the next Compressed Mode Configuration is configured in the Node B or Node B Communication Context is deleted.]

[FDD – If the *Downlink compressed mode method* IE in one or more Transmission Gap Pattern Sequence is set to 'SF/2' in the RADIO LINK SETUP REQUEST message, the Node B shall use or not the alternate scrambling code as indicated for each DL Channelisation Code in the *Transmission Gap Pattern Sequence Code Information* IE.]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE and the *Active Pattern Sequence Information* IE, the Node B shall use the information to activate the indicated Transmission Gap Pattern Sequence(s) in the new RL.The received *CM Configuration Change CFN* refers to the latest passed CFN with that value The Node B shall treat the received *TGCFN* IEs as follows:]

- [FDD - If any received *TGCFN* IE has the same value as the received *CM Configuration Change CFN* IE, the Node B shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - If any received *TGCFN* IE does not have the same value as the received *CM Configuration Change CFN* IE but the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE has already passed, the Node B shall consider the concerning Transmission Gap Pattern Sequence as activated at that CFN.]

- [FDD - For all other Transmission Gap Pattern Sequences included in the *Active Pattern Sequence Information* IE, the Node B shall activate each Transmission Gap Pattern Sequence at the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN* IE for the Transmission Gap Pattern Sequence.]

[FDD – DL Code Information]:

[FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1"*, the second to "*PhCH number 2"*, and so on until the *p*th to "*PhCH number p*".]

General:

[FDD – If the *Propagation Delay* IE is included, the Node B may use this information to speed up the detection of L1 synchronisation.]

[FDD – The *UL SIR Target* IE included in the message shall be used by the Node B as initial UL SIR target for the UL inner loop power control.]

[1.28Mcps TDD – The *UL SIR Target* IE included in the message shall be used by the Node B as initial UL SIR target for the UL inner loop power control according [19] and [21].]

[FDD – If the received *Limited Power Increase* IE is set to 'Used', the Node B shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control.]

[FDD – If the *TFCI Signalling Mode* IE within the RADIO LINK SETUP message indicates that there shall be a hard split on the TFCI field but the *TFCI2 Bearer Information* IE is not included in the message then the Node B shall transmit the TFCI2 field with zero power.]

[FDD - If the *TFCI Signalling Mode* IE within the RADIO LINK SETUP message indicates that there shall be a hard split on the TFCI and the *TFCI2 Bearer Information* IE is included in the message then the Node B shall transmit the TFCI2 field with zero power until Synchronization is achieved on the TFCI2 transport bearer and the first valid DSCH TFCI Signalling control frame is received on this bearer (see ref.[24]).]

[FDD – If the RADIO LINK SETUP REQUEST message includes *the Length of TFCI2* IE, then the Node B shall apply the length of TFCI (field 2) indicated in the message.]

[FDD – If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the Node B shall assume the length of the TFCI (field 2) is 5 bits.]

Radio Link Handling:

[FDD – Transmit Diversity]:

[FDD – When *Diversity Mode* IE is "*STTD*", "*Closedloop mode1*", or "*Closedloop mode2*", the Node B shall activate/deactivate the Transmit Diversity to each Radio Link in accordance with *Transmit Diversity Indication* IE]

DL Power Control:

[FDD – The Node B shall start any DL transmission using the initial DL power specified in the message on each DL DPCH of the RL until either UL synchronisation on the Uu is achieved for the RLS or Power Balancing is activated. No inner loop power control or balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10], subclause 5.2.1.2) and the power control procedure (see subclause 8.3.7), but shall always be kept within the maximum and minimum limit specified in the RADIO LINK SETUP REQUEST message. During compressed mode, the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.]

[FDD - If the *DPC Mode* IE is present in the RADIO LINK SETUP REQUEST message, the Node B shall apply the DPC mode indicated in the message, and be prepared that the DPC mode may be changed during the life time of the RL. If the *DPC Mode* IE is not present in the RADIO LINK SETUP REQUEST message, DPC mode 0 shall be applied (see ref. [10]).]]

[TDD – The Node B shall determine the initial CCTrCH DL power for each CCTrCH by the following rule: If the *CCTrCH Initial DL transmission Power* IE is included for that CCTrCH then the Node B shall use that power for the initial CCTrCH DL power, otherwise the initial CCTrCH DL power is the *Initial DL transmission Power* IE included in the *RL Information* IE. The Node B shall start any DL transmission on each CCTrCH using the initial CCTrCH DL power, as determined above, on each DL DPCH and on each Time Slot of the CCTrCH until the UL synchronisation on the Uu is achieved for theCCTrCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22], subclause 4.2.3.3), but shall always be kept within the maximum and minimum limit specified in the RL SETUP REQUEST message.]

[TDD – If the [3.84Mcps TDD - *DL Time Slot ISCPInfo* IE] or [1.28Mcps TDD - *DL Timeslot ISCP LCR* IE] is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot as specified in [21], i.e. it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged].

[FDD – If the received *Inner Loop DL PC Status* IE is set to "Active", the Node B shall activate the inner loop DL power control for all RLs. If *Inner Loop DL PC Status* IE is set to "Inactive", the Node B shall deactivate the inner loop DL power control for all RLs according to ref. [10]]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *DL Power Balancing Information* IE and the *Power Adjustment Type* IE is set to "Common" or "Individual", the Node B shall activate the power balancing, if activation of power balancing by the RADIO LINK SETUP REQUEST message is supported is supported, according to subclause 8.3.7, using the *DL Power Balancing Information* IE. If the Node B starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing shall be set to the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL.]

[FDD – If activation of power balancing by the RADIO LINK SETUP REQUEST message is supported by the Node B, the Node B shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

General:

If the RADIO LINK SETUP REQUEST message includes the *RL Specific DCH Information* IE,the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD – If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity* IE and the *S-Field Length* E, the Node B shall activate SSDT, if supported, using the *SSDT Cell Identity* IE and *SSDT Cell Identity Length* IE.]

[FDD – Irrespective of SSDT activation, the Node B shall include in the RADIO LINK SETUP RESPONSE message an indication concerning the capability to support SSDT on this RL. Only if the RADIO LINK SETUP REQUEST message requested SSDT activation and the RADIO LINK SETUP RESPONSE message indicates that the SSDT capability is supported for this RL, SSDT is activated in the Node B.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity for EDSCHPC* IE, the Node B shall activate enhanced DSCH power control, if supported, using the *SSDT Cell Identity for EDSCHPC* IE and *SSDT Cell Identity Length* IE as well as *Enhanced DSCH PC* IE in accordance with ref. [10] subclause 5.2.2. If the RADIO LINK SETUP REQUEST message includes both *SSDT Cell Identity* IE and *SSDT Cell Identity for EDSCHPC* IE, then the Node B shall ignore the value in *SSDT Cell Identity for EDSCHPC* IE. If the enhanced DSCH power control is activated and the TFCI power control in DSCH hard split mode is supported, the primary/secondary status determination in the enhanced DSCH power control is also applied to the TFCI power control in DSCH hard split mode.]

[FDD – Radio Link Set Handling]:

[FDD – The *First RLS Indicator* IE indicates if the concerning RL shall be considered part of the first RLS established towards this UE. The *First RLS Indicator* IE shall be used by the Node B together with the value of the *DL TPC pattern 01 count* IE which the Node B has received in the Cell Setup procedure, to determine the initial TPC pattern in the DL of the concerning RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.]

[FDD – For each RL not having a common generation of the TPC commands in the DL with another RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message a value that uniquely identifies the RL Set within the Node B Communication context.]

[FDD – For all RLs having a common generation of the TPC commands in the DL with another RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message the same value. This value shall uniquely identify the RL Set within the Node B Communication context.]

[FDD – The UL out-of-sync algorithm defined in [10] shall for each of the established RL Set(s) use the maximum value of the parameters N_OUTSYNC_IND and T_RLFAILURE, and the minimum value of the parameters N_INSYNC_IND, that are configured in the cells supporting the radio links of the RL Set]

Response Message:

If the RLs are successfully established, the Node B shall start reception on the new RL(s) and respond with a RADIO LINK SETUP RESPONSE message.

After sending of the RADIO LINK SETUP RESPONSE message the Node B shall continuously attempt to obtain UL synchronisation on the Uu and start reception on the new RL.

For each RL for which the *Delayed Activation* IE is not included in the RADIO LINK SETUP REQUEST message the Node B shall:

- [FDD - start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [16].]

- [TDD - start transmission on the new RL immediately as specified in [16].]

For each RL for which the *Delayed Activation* IE is included in the RADIO LINK SETUP REQUEST message, the Node B shall:

- if the *Delayed Activation* IE indicates "Separate Indication":

  - not start any DL transmission for the concerning RL on the Uu interface;

- if the *Delayed Activation* IE indicates "CFN":

  - [FDD – start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [16], however never before the CFN indicated in the *Activation CFN* IE.]

  - [TDD – start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in [16].]

8.3.2 Synchronised Radio Link Reconfiguration Preparation

8.3.2.1 General

The Synchronised Radio Link Reconfiguration Preparation procedure is used to prepare a new configuration of Radio Link(s) related to one UE-UTRAN connection within a Node B.

The Synchronised Radio Link Reconfiguration Preparation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

8.3.2.2 Successful Operation

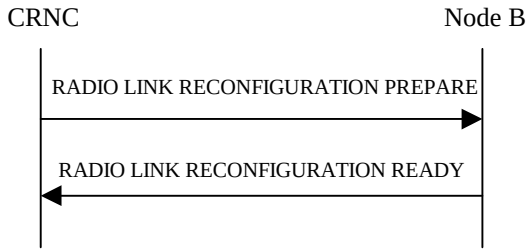


Figure 30: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the CRNC by sending the message RADIO LINK RECONFIGURATION PREPARE to the Node B. The message shall use the Communication Control Port assigned for this Node B Communication Context.

Upon reception, the Node B shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

The Node B shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

DCH Modification:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Modify* IEs then the Node B shall treat them each as follows:

- If the *DCHs to Modify* IE includes the *Frame Handling Priority* IE, the Node B should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new configuration has been activated.

- If the *DCHs to Modify* IE includes the *Transport Format Set* IE for the UL of a DCH, the Node B shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.

- If the *DCHs to Modify* IE includes the *Transport Format Set* IE for the DL of a DCH, the Node B shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.

- If the *DCHs to Modify* IE includes multiple *DCH Specific Info* IEs then the Node B shall treat the DCHs in the *DCHs to Modify* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- If the *DCHs to Modify* IE includes the *UL FP Mode* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify* IE includes the *ToAWS* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs to Modify* IE includes the *ToAWE* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- [TDD – If the *DCHs to Modify* IE includes the *CCTrCH ID* IE for the DL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Downlink of this DCH in the new configuration.]

- [TDD – If the *DCHs to Modify* IE includes the *CCTrCH ID* IE for the UL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Uplink of this DCH in the new configuration.]

DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Add* IEs then the Node B shall treat them each as follows:

- If the *DCHs to Add* IE includes multiple *DCH specific Info* IEs then, the Node B shall treat the DCHs in the *DCHs to Add* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- [FDD – For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If the QE-Selector is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [16].]

- For a set of co-ordinated DCHs the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [16]. [FDD – If no Transport channel BER is available for the selected DCH the Physical channel BER shall be used for the QE, ref. [16]. If all DCHs have *QE-Selector* IE set to "non-selected" the Physical channel BER shall be used for the QE, ref. [16].]

- The Node B should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new configuration has been activated.

- The Node B shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The Node B shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Start Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The Node B shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window End Point in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- [TDD – The Node B shall apply the *CCTrCH ID* IE (for the DL) in the Downlink of this DCH in the new configuration.]

- [TDD – The Node B shall apply the *CCTrCH ID* IE (for the UL) in the Uplink of this DCH in the new configuration.]

DCH Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Delete* IEs, the Node B shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of coordinated DCHs are requested to be deleted, the Node B shall not include this set of coordinated DCHs in the new configuration.

Physical Channel Modification:

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE then the Node B shall apply the parameters to the new configuration as follows:]

- [FDD – If the *UL DPCH Information* IE includes the *Uplink Scrambling Code* IE, the Node B shall apply this Uplink Scrambling Code to the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *Min UL Channelisation Code Length* IE, the Node B shall apply the value in the new configuration. The Node B shall apply the contents of the *Max Number of UL DPDCHs* IE (if it is included) in the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *UL SIR Target* IE, the Node B shall use the value for the UL inner loop power control when the new configuration is being used.]

- [FDD – If the *UL DPCH Information* IE includes the *Puncture Limit* IE, the Node B shall apply the value in the uplink of the new configuration.]

- [FDD – The Node B shall use the *TFCS* IE for the UL (if present) when reserving resources for the uplink of the new configuration. The Node B shall apply the new TFCS in the Uplink of the new configuration.]

- [FDD – If the *UL DPCH Information* IE includes the *UL DPCCH Slot Format* IE, the Node B shall set the new Uplink DPCCH Structure to the new configuration.]

- [FDD - If the *UL DPCH Information* IE includes the *Diversity Mode* IE, the Node B shall apply diversity according to the given value.]

- [FDD – If the *UL DPCH Information* IE includes an *SSDT Cell Identity Length* IE and/or an *S-Field Length* IE, the Node B shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information* IE then the Node B shall apply the parameters to the new configuration as follows:]

- [FDD – The Node B shall use the *TFCS* IE for the DL (if it is present) when reserving resources for the downlink of the new configuration. The Node B shall apply the new TFCS in the Downlink of the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *TFCI Signalling Mode* IE or the *TFCI Presence* IE, the Node B shall use the information when building TFCIs in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *DL DPCCH Slot Format* IE, group the Node B shall set the new Downlink DPCCH Structure to the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Multiplexing Position* IE, the Node B shall apply the indicated multiplexing type in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Used', the Node B shall, if supported, use Limited Power Increase ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE and the IE is set to 'Not Used', the Node B shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

- [FDD – If the *DL DPCH Information* IE includes the *PDSCH code mapping* IE then the Node B shall apply the defined mapping between TFCI values and PDSCH channelisation codes.]

- [FDD – If the *DL DPCH Information* IE includes the *PDSCH RL ID* IE then the Node B shall infer that the PDSCH for the specified user will be transmitted on the defined radio link.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information* IE the Node B shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration. This new Compressed Mode Configuration shall be valid in the Node B until the next Compressed Mode Configuration is configured in the Node B or Node B Communication Context is deleted.]

[TDD – UL/DL CCTrCH Modification]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Modify* or *DL CCTrCH to Modify* IEs, then the Node B shall treat them each as follows:]

- [TDD – If the IE includes any of *TFCS* IE, *TFCI coding* IE or *Puncture Limit* IE the Node B shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]

- [TDD – If the IE includes any *UL DPCH to add* or *DL DPCH to add* IEs, the Node B shall include this DPCH in the new configuration.]

- [TDD – If the IE includes any *UL DPCH to delete* or *DL DPCH to delete* IEs, the Node B shall remove this DPCH in the new configuration.]

- [TDD – If the IE includes any UL *DPCH to modify* or *DL DPCH to modify* IEs, and includes any of *Repetition Period* IE, *Repetition Length* IE, or *TDD DPCH Offset* IE or the message includes UL/DL Timeslot Information and includes any of *[3.84Mcps TDD - Midamble shift and Burst Type* IE, *Time Slot* IE], [1.28Mcps TDD - *Midamble shift LCR* IE, *Time Slot LCR* IE], or *TFCI presence* IE or the message includes UL/DL Code information and includes [3.84Mcps TDD - *TDD Channelisation Code* IE], [1.28Mcps TDD - *TDD Channelisation Code LCR* IE], the Node B shall apply these specified information elements as the new values, otherwise the old values specified for this DPCH configuration are still applicable.]

- [1.28Mcps TDD – If the *UL CCTrCH to Modify* IE includes the *UL SIR Target* IE, the Node B shall use the value for the UL inner loop power control according [19] and [21] when the new configuration is being used.]

[TDD – UL/DL CCTrCH Addition]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Add* IE or *DL CCTrCH to Add* IE, the Node B shall include this CCTrCH in the new configuration.]

[TDD – If the *UL/DL CCTrCH to Add* IE includes any *UL/DL DPCH Information* IE, the Node B shall reserve necessary resources for the new configuration of the UL/DL DPCH(s) according to the parameters given in the message.]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL CCTrCH to Add* IE, the Node B shall set the TPC step size of that CCTrCH to the same value as the lowest numbered DL CCTrCH in the current configuration.]

[1.28Mcps TDD –The Node B shall use the *UL SIR Target* IE in the *UL CCTrCH to Add* IE as the UL SIR value for the inner loop power control for this CCTrCH according [19] and [21] in the new configuration.]

[TDD – UL/DL CCTrCH Deletion]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any UL or DL CCTrCH to be deleted , the Node B shall remove this CCTrCH in the new configuration.]

DL Power Control:

- [FDD - If the *RL Information* IE includes the *DL Reference Power* IEs and the power balancing is active, Node B shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported, at the CFN in the RADIO LINK RECONFIGURATION COMMIT message, according to subclause 8.3.7, using the *DL Reference Power* IE. If the CFN modulo the value of the *Adjustment Period* IE is not equal to 0, the power balancing continues with the old reference power until the end of the current adjustment period, and the updated reference power shall be used from the next adjustment period.

[FDD - If updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported by the Node B, the Node B shall include the *DL Power Balancing Updated Indicator* IE in the *RL Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH to modify*, *DSCH to add* or *DSCH to delete* IEs, then the Node B shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

The Node B shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DSCH.

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TFCI2 Bearer Information* IE then the Node B shall support the establishment of a transport bearer on which the DSCH TFCI Signaling control frames shall be received if one does not already exist or shall apply the new values if such a bearer does already exist. The *Binding ID* IE and *Transport Layer Address* IE of any new bearer to be set up for this purpose shall be returned in the RADIO LINK RECONFIGURATION READY message. If the RADIO LINK RECONFIGURATION PREPARE message specifies that the TFCI2 transport bearer is to be deleted then the Node B shall release the resources associated with that bearer in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TFCI2 Bearer Request Indicator IE* in the *TFCI2 Bearer Information* IE with the value "New Bearer Requested", the Node B shall, if supported, establish a new transport bearer replacing the existing transport bearer on which the DSCH TFCI Signaling control frames shall be received. The *Binding ID* IE and *Transport Layer Address* IE of a new bearer to be set up for this purpose shall be returned in the RADIO LINK RECONFIGURATION READY message.]

[FDD – If the *TFCI Signalling Mode* IE within the RADIO LINK RECONFIGURATION PREPARE message indicates that there shall be a hard split on the TFCI field but a TFCI2 transport bearer has not already been set up and *TFCI2 Bearer Information* IE is not included in the message then the Node B shall transmit the TFCI2 field with zero power in the new configuration.]

[FDD – If the *TFCI Signalling Mode* IE within the RADIO LINK RECONFIGURATION PREPARE message indicates that there shall be a hard split on the TFCI and the *TFCI2 Bearer Information* IE is included in the message then the Node B shall transmit the TFCI2 field with zero power until Synchronisation is achieved on the TFCI2 transport bearer and the first valid DSCH TFCI Signalling control frame is received on this bearer in the new configuration (see ref. [24]).]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Length of TFCI2* IE, then the Node B shall apply the length of TFCI (field 2) indicated in the message in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the Node B shall assume the length of the TFCI (field 2) is 5 bits in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *DSCH Common Information IE*, the Node B shall treat it as follows:]

- [FDD - If the *Enhanced DSCH PC Indicator* IE is included and set to "Enhanced DSCH PC Active in the UE ", the Node B shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]

  - [FDD - the *SSDT Cell Identity for EDSCHPC* IE in the *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

  - [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* IE are included in the *RL Information* IE.]

  [FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

[FDD - If the enhanced DSCH power control is activated and the TFCI power control in DSCH hard split mode is supported, the primary/secondary status determination in the enhanced DSCH power control is also applied to the TFCI power control in DSCH hard split mode.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", the Node B shall deactivate enhanced DSCH power control in the new configuration.]

[TDD – USCH Addition/Modification/Deletion:]

- [TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes USCH information for the USCHs to be added/modified/deleted then the Node B shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.]

- [TDD – The Node B shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each USCH.]

RL Information:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *RL Information* IE, the Node B shall treat it as follows:

- [FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2"*, and so on until the *p*th to "*PhCH number p*".]

- [FDD – If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE", the Node B may activate SSDT using the *SSDT Cell Identity* IE in the new configuration.]

- [FDD – If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT not Active in the UE", the Node B shall deactivate SSDT in the new configuration.]

- [FDD – If the *RL Information* IE includes a *DL Code Information* IE, the Node B shall apply the values in the new configuration.]

- [FDD – If the *RL Information* IE contains the *Transmission Gap Pattern Sequence Code Information* IE in the *DL Code Information* IE for any of the allocated DL Channelisation Codes, the Node B shall apply the alternate scrambling code as indicated whenever the downlink compressed mode method SF/2 is active in the new configuration.]

- If the *RL Information* IE includes the *Maximum DL Power* and/or the *Minimum DL Power* IEs, the Node B shall apply the values in the new configuration. [FDD - During compressed mode, the $P_{SIR}(k)$, as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power in slot k.].

- [TDD – If the *RL Information* IE includes the *Initial DL Transmission Power* IE, the Node B shall determine the initial CCTrCH DL power for each CCTrCH by the following rule: If the *CCTrCH Initial DL transmission Power* IE is included for that CCTrCH then the Node B shall use that power for the initial CCTrCH DL power, otherwise the initial CCTrCH DL power is the *Initial DL transmission Power* IE included in the *RL Information* IE. The Node B shall apply the determined initial CCTrCH DL power to the transmission on each DPCH of the CCTrCH when starting transmission on a new CCTrCH.until the UL synchronisation on the Uu is achieved for the CCTrCH. If no *Initial DL Transmission power* IE is included with a new CCTrCH (even if *CCTrCH Initial DL transmission Power* IEs are included), the Node B shall use any transmission power level currently used on already existing CCTrCH's when starting transmission for a new CCTrCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22], subclause 4.2.3.3).]

- [FDD- If the *RL Information* IE includes the *DL DPCH Timing Adjustment* IE, the Node B shall adjust the timing of the radio link accordingly in the new configuration.]

Signalling bearer rearrangement:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Signalling Bearer Request Indicator* IE the Node B shall, if supported , allocate a new Communication Control Port for the control of the Node B Communication Context and include the *Target Communication Control Port ID* IE in the RADIO LINK RECONFIGURATION READY message.

HS-DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *HS-DSCH Information to add* IE *or HS-DSCH Information to delete* IEs or *HS-DSCH Information to modify* IE, then the Node B shall use this information to add/modify/delete the indicated HS-DSCH channel to/from the radio link.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-PDSCH RL ID* IE, then the Node B shall configure the HS-PDSCH in the radio link indicated by this IE, while removing any existing HS-PDSCH resources from other radio links associated with the Node B Communication Context.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-DSCH-RNTI* IE, then the Node shall use the HS-DSCH-RNTI for the Node B Communication Context.

If the RADIO LINK CONFIGURATION PREPARE message includes an *HS-DSCH Information to delete* IE requesting the deletion of certain HS-DSCH resources for the Node B Communication Context, the Node B shall remove the indicated HS-DSCH in the new configuration.

The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE in the RADIO LINK RECONFIGURATION READY message for each MAC-d flow, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].

General

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transport Layer Address* IE and *Binding ID* IEs in the *DSCHs to Modify* , *DSCHs to Add*, [TDD - *USCHs to Modify* , *USCHs to Add*] or in the *RL Specific DCH Information* IEs, the Node B may use the transport layer address and the binding identifier received from the CRNC

when establishing a transport bearer for any Transport Channel being added, or any Transport Channel being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

If the requested modifications are allowed by the Node B and the Node B has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the CRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exist a Prepared Reconfiguration, as defined in subclause 3.1.

In the RADIO LINK RECONFIGURATION READY message, the Node B shall include the *RL Information Response* IE for each affected Radio Link.

The Node B shall include in the RADIO LINK RECONFIGURATION READY message the Transport Layer Address and the Binding ID for any Transport Channel being added, or any Transport Channel being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

In case of a DCH requiring a new transport bearer on Iub, the *Transport Layer Address* IE and the *Binding ID* shall be included in the IE *DCH Information Response* IE.

In case of a set of coordinated DCHs requiring a new transport bearer on Iub, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCH in the set of coordinated DCHs.

In case of a Radio Link being combined with another Radio Link within the Node B,the RL Information Response IE shall be included only for one of the combined RLs. The *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the combined Radio Links.

9.2.1.X HS-DSCH Initial Capacity Allocation

The *HS-DSCH Initial Capacity Allocation* IE provides flow control information for each scheduling priority class for the HS-DSCH FP over Iub.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH Initial Capacity Allocation		*1..16*			–	
>Scheduling Priority Indicator	M		9.2.1.51A		–	
>Maximum MAC-d PDU Size	M		MAC-d PDU Size 9.2.1.38A		–	
>HS-DSCH Initial Window Size	M		9.2.1.X		–	

9.2.1.X HS-DSCH Initial Window Size

Indicates the initial number of MAC-d PDUs that may be transmitted before new credits are received from the Node B.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
HS-DSCH Initial Window Size			INTEGER (1..2047)	Number of MAC-d PDUs: 2047 = Unlimited number of MAC-d PDUs.

9.2.2.18E HS-DSCH FDD Information Response

The HS-DSCH Information Response provides information for HS-DSCH that have been established or modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information Response		*1..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I		–	
>Binding ID	O		9.2.1.4		–	
>Transport Layer Address	O		9.2.1.63		–	
>HS-DSCH Initial Capacity Allocation	O		9.2.1.x		–	
HS-SCCH Code		*1..<MaxnoofHSSCCHcodes>*				
>Code Number	M		INTEGER (0..127)			
Measurement feedback reporting cycle k1	M		Measurement Feedback Reporting Cycle 9.2.2.21B	employed by the UE when not in soft handover	-	
Measurement feedback reporting cycle k2	M		Measurement Feedback Reporting Cycle 9.2.2.21B	employed by the UE when in soft handover	-	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows.
MaxnoofPrioQueues	Maximum number of Priority Queues
MaxnoofMACdPDUindexes	Maximum number of MAC-d PDU Size Indexes
MaxnoofHSSCCHcodes	Maximum number of HS-SCCH codes.
MaxCodeNumComp	Maximum number of codes at the defined spreading factor, within the complete code tree.

9.2.3.5G HS-DSCH TDD Information Response

The HS-DSCH TDD Information Response provides information for HS-DSCH MAC-d flows that have been established or modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information Response		*1..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I		–	
>Binding ID	O		9.2.1.4		–	
>Transport Layer Address	O		9.2.1.63		–	
> HS-DSCH Initial Capacity Allocation	O		9.2.1.x		–	
HS-SCCH Specific Information Response		*0..<MaxNoOfHSSCCHcodes>*			GLOBAL	reject
>Time Slot	M		9.2.3.23			
>Midamble Shift and Burst Type	M		9.2.3.7		-	
>TDD Channelisation Code	M		9.2.3.19		-	
>HS-SICH Information		*1*			-	
>>Time Slot	M		9.2.3.23		-	
>>Midamble Shift and Burst Type	M		9.2.3.7		-	
>>TDD Channelisation Code	M		9.2.3.19		-	
HS-SCCH Specific Information Response LCR		*0..<MaxNoOfHSSCCHcodes>*			GLOBAL	reject
>Time Slot LCR	M		9.2.3.24A		-	
>Midamble Shift LCR	M		9.2.3.7a		-	
>TDD Channelisation Code LCR	M		9.2.3.19a		-	
>HS-SICH Information LCR		*1*			-	
>>Time Slot LCR	M		9.2.3.24A		-	
>>Midamble Shift LCR	M		9.2.3.7a		-	
>>TDD Channelisation Code LCR	M		9.2.3.19a		-	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows.
MaxnoofPrioQueues	Maximum number of Priority Queues
MaxnoofMACdPDUindexes	Maximum number of different MAC-d Size Indexes (SIDs)
MaxnoofHSSCCHcodes	Maximum number of HS-SCCH codes

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************




***********    UNAFFECTED PARTS OMITTED     ************************



-- ========================================
--  H
-- ========================================

HARQMemoryPartitioningFDD ::= SEQUENCE (SIZE (1..maxNrOfHARQProcesses)) OF HARQMemoryPartitioning-ItemFDD

HARQMemoryPartitioning-ItemFDD ::= SEQUENCE {
    process-Memory-Size                 INTEGER (0..172800,...),
    iE-Extensions                       ProtocolExtensionContainer { { HARQMemoryPartitioning-ItemFDD-ExtIEs} }       OPTIONAL,
    ...
}

HARQMemoryPartitioning-ItemFDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HARQMemoryPartitioningTDD ::= SEQUENCE (SIZE (1..maxNrOfHARQProcesses)) OF HARQMemoryPartitioning-ItemTDD

HARQMemoryPartitioning-ItemTDD ::= SEQUENCE {
    process-Memory-Size                 INTEGER (0..168960,...),
    iE-Extensions                       ProtocolExtensionContainer { { HARQMemoryPartitioning-ItemTDD-ExtIEs} }       OPTIONAL,
    ...
}

HARQMemoryPartitioning-ItemTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-FDD-Information ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-Info       HSDSCH-MACdFlow-Specific-InfoList,
    ueCapability-Info                   UE-Capability-InformationFDD,
    harqMemoryPartitioningFDD           HARQMemoryPartitioningFDD,
    measFeedbackOffset                  INTEGER (0..79,...),
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-FDD-Information-ExtIEs} }              OPTIONAL,
```

```
    ...
}

HSDSCH-FDD-Information-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-TDD-Information ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-Info       HSDSCH-MACdFlow-Specific-InfoList,
    ueCapability-Info                   UE-Capability-InformationTDD,
    harqMemoryPartitioningTDD           HARQMemoryPartitioningTDD,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-TDD-Information-ExtIEs} }              OPTIONAL,
    ...
}

HSDSCH-TDD-Information-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem

HSDSCH-MACdFlow-Specific-InfoItem ::= SEQUENCE {
    hsDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bler                                BLER,
    allocationRetentionPriority         AllocationRetentionPriority,
    priorityQueueInfo                   PriorityQueue-InfoList,
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs} }    OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-Information-to-Modify ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-Info-to-Modify         HSDSCH-MACdFlow-Specific-InfoList-to-Modify                    OPTIONAL,
    measFeedbackRepCycleK                           ENUMERATED { measurement-Feedback-Reporting-Cycle-K1, measurement-Feedback-Reporting-Cycle-K2
}           OPTIONAL,
    -- only for FDD
    iE-Extensions                       ProtocolExtensionContainer { { HSDSCH-FDD-Information-to-Modify-ExtIEs} }     OPTIONAL,
    ...
}

HSDSCH-FDD-Information-to-Modify-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InfoItem-to-Modify

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify ::= SEQUENCE {
    hsDSCH-MACdFlow-ID                  HSDSCH-MACdFlow-ID,
    bler                                BLER                                        OPTIONAL,
    allocationRetentionPriority         AllocationRetentionPriority                 OPTIONAL,
```

```
    priorityQueueInfotoModify          PriorityQueue-InfoList-to-Modify            OPTIONAL,
    iE-Extensions                      ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs} }   OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InfoItem-to-Modify-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-FDD-Information-Response ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-InformationResp        HSDSCH-MACdFlow-Specific-InformationResp,
    hsSCCH-Specific-Information-ResponseFDD         HSSCCH-Specific-InformationRespListFDD,
    measFeedback-CycleK1                            Measurement-Feedback-Reporting-Cycle,
    measFeedback-CycleK2                            Measurement-Feedback-Reporting-Cycle,

    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-FDD-Information-Response-ExtIEs } }     OPTIONAL,
    ...
}

HSDSCH-FDD-Information-Response-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-TDD-Information-Response ::= SEQUENCE {
    hsDSCH-MACdFlow-Specific-InformationResp        HSDSCH-MACdFlow-Specific-InformationResp,
    hsSCCH-Specific-Information-ResponseTDD         HSSCCH-Specific-InformationRespListTDD                        OPTIONAL,
    hsSCCH-Specific-Information-ResponseTDDLCR      HSSCCH-Specific-InformationRespListTDDLCR                     OPTIONAL,
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-TDD-Information-Response-ExtIEs } }     OPTIONAL,
    ...
}

HSDSCH-TDD-Information-Response-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

HSDSCH-MACdFlow-Specific-InformationResp ::= SEQUENCE (SIZE (1..maxNrOfMACdFlows)) OF HSDSCH-MACdFlow-Specific-InformationResp-Item

HSDSCH-MACdFlow-Specific-InformationResp-Item ::= SEQUENCE {
    hsDSCHMacdFlow-Id                               HSDSCH-MACdFlow-ID,
    bindingID                                       BindingID                  OPTIONAL,
    transportLayerAddress                           TransportLayerAddress      OPTIONAL,
    hSDSCH-Initial-Capacity-Allocation              HSDSCH-Initial-Capacity-Allocation OPTIONAL,
    iE-Extensions                                   ProtocolExtensionContainer { { HSDSCH-MACdFlow-Specific-InformationRespItem-ExtIEs } }
    OPTIONAL,
    ...
}

HSDSCH-MACdFlow-Specific-InformationRespItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}


HSDSCH-Initial-Capacity-Allocation::= SEQUENCE (SIZE (1..16)) OF HSDSCH-Initial-Capacity-AllocationItem
```

```
HSDSCH-Initial-Capacity-AllocationItem ::= SEQUENCE {
    schedulingPriorityIndicator     SchedulingPriorityIndicator,
    maximum-MACdPDU-Size            MACdPDU-Size,
    hSDSCH-InitialWindowSize        HSDSCH-InitialWindowSize,
    iE-Extensions                   ProtocolExtensionContainer { {HSDCH-Flow-Control-InformationItem-ExtIEs} } OPTIONAL,
    ...
}

HSDSCH-Initial-Capacity-AllocationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}


HSDSCH-InitialWindowSize            ::= INTEGER (1..2047)
-- Number of MAC-d PDUs.
-- 2047 = Unlimited number of MAC-d PDUs
```

3GPP TSG-RAN3 Meeting #29
Gyeongju, Korea, 13th – 17th May 2002

Tdoc R3-021254

CR-Form-v3

CHANGE REQUEST

⌘ **25.435** **CR** **080** ⌘ rev ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	HSDPA Correction
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-IuBIur
Date:	⌘	May 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘ There is some error in the HSDPA figure. In addition, the references are wrong. This CR was in principle agreed at RAN3 #28.

Summary of change: ⌘
- Figure 35 & 36 were corrected.
- References in 6.3.3.10.3 & 6.3.3.11.6 were corrected.

Consequences if not approved: ⌘ If this CR is not approved, HS-DSCH part has wrong information and ambiguous.

Impact Analysis:

Impact assessment towards the previous version of the specification (same release):

This CR has isolated impact with the previous version of the specification (same release) because this is only impact on HSDPA function.

Clauses affected: ⌘ 6.3.3.10, 6.3.3.10.3, 6.3.3.11, 6.3.3.11.6

Other specs affected: ⌘
☐ Other core specifications ⌘
☐ Test specifications
☐ O&M Specifications

Other comments: ⌘

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.3.3.10 HS-DSCH CAPACITY REQUEST

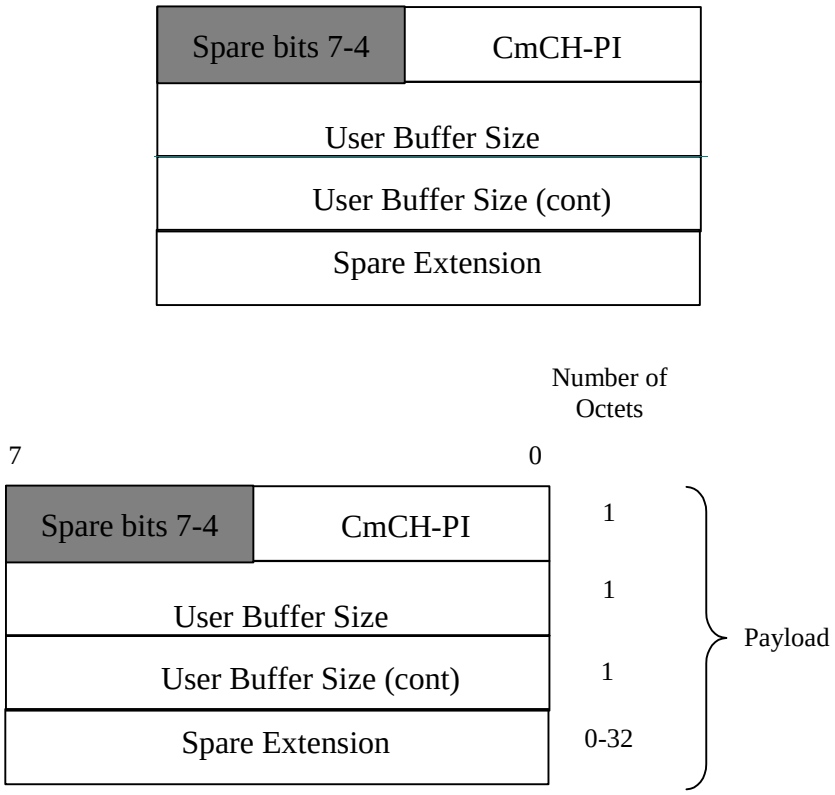


Figure 35: CAPACITY REQUEST payload structure

HS-DSCH Capacity Request is sent for each priority group to indicate the user buffer size. The control frame is sent by the HS-DSCH CAPACITY REQUEST is sent for each priority group to indicate the user buffer size. The control frame is sent by the SRNC when the SRNC considers the user buffer status needs an increased buffer reporting frequency. This may be sent to signal an event, such as, data arrival or user-buffer discard. This control frame is used to improve user-buffer reporting above the level produced by the user-buffer reporting associated with the HS-DSCH DATA FRAMEs.

6.3.3.10.1 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.7.21.

6.3.3.10.2 User Buffer Size

Refer to subclause 6.2.7.22.

6.3.3.10.3 Spare Extension

Refer to subclause ~~6.2.7.19~~6.3.3.1.4.

6.3.3.11 HS-DSCH CAPACITY ALLOCATION

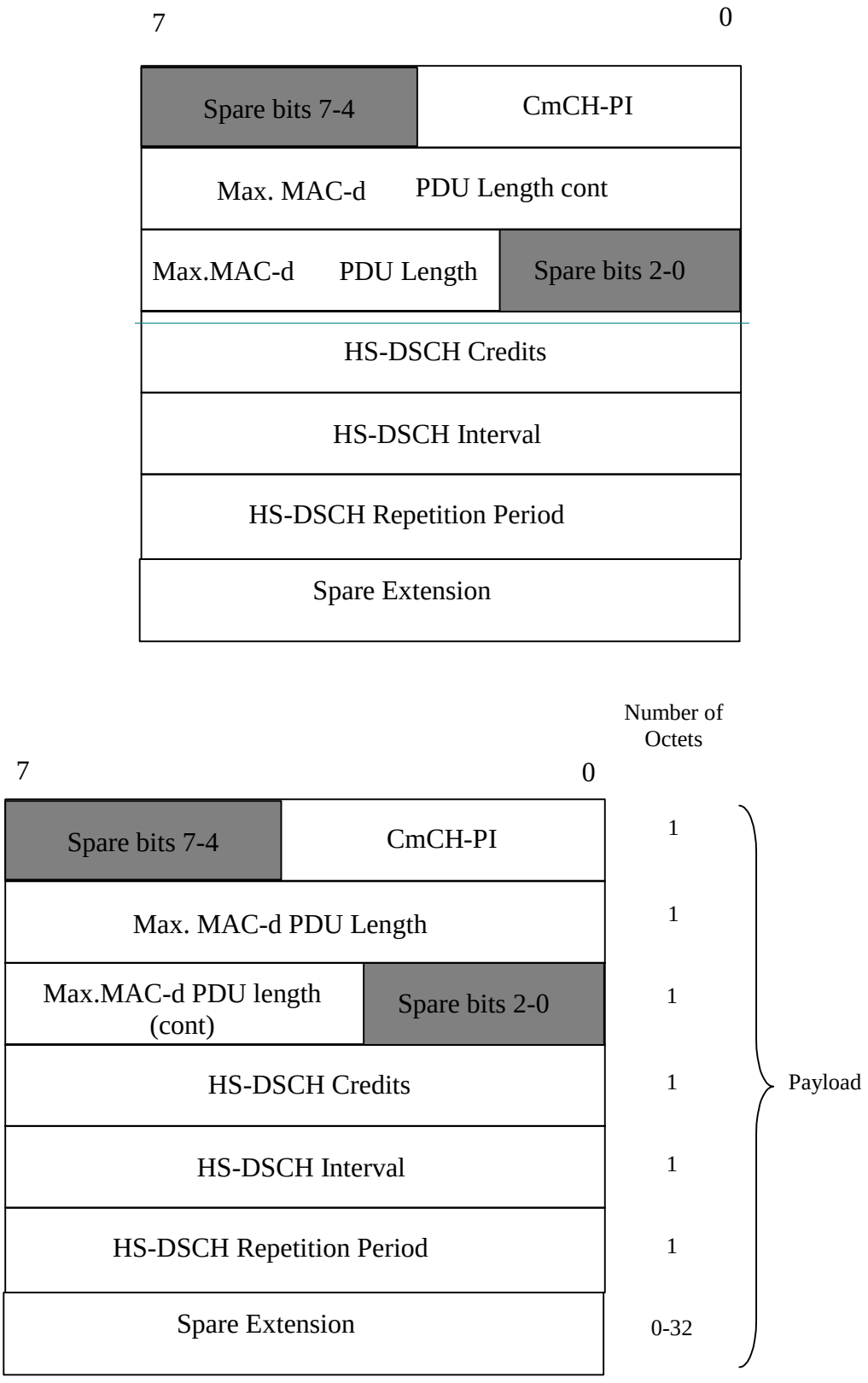


Figure 36: CAPACITY ALLOCATION payload structure

The CAPACITY ALLOCATION Control Frame describes an allocation that the SRNC may use. When the *HS-DSCH Credits* IE has a value of 0 it signifies that there is no resources allocated for transmission and to thus stop transmission. When the *HS-DSCH Credits* IE has a value of 255, it signifies unlimited capacity for transmission of PDUs. When the

HS-DSCH Repetition Period IE has a value of 0, it signifies that the allocation (*Maximum MAC-d PDU Length, HS-DSCH Credits* and *HS-DSCH Interval* IEs) can be repeated without limit.

6.3.3.11.1 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.7.21.

6.3.3.11.2 Maximum MAC-d PDU Length

Description: The values indicated the maximum allowable PDU size. MAC-d PDU contains the C/T field of the MAC header followed by one RLC PDU.

Field length: See the value of the *MAC-d PDU Length* IE.

6.3.3.11.3 HS-DSCH Credits

Description: The *HS-DSCH Credits* IE indicates the number of MAC-d PDUs that a user may transmit.

Value range: {0-255, where 0=stop transmission, 255=unlimited}.

Field length: 8 bits.

6.3.3.11.4 HS-DSCH Interval

Description: The value of this field indicates the time interval during which the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY ALLOCATION Control Frame may be transmitted. This value is only applied to the HS-DSCH transport channel.

Value range: {0-2550 ms}.

Granularity: 10ms.

Field Length: 8 bits.

6.3.3.11.5 HS-DSCH Repetition Period

Description: The value of this field indicates the number of subsequent intervals that the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY ALLOCATION Control Frame may be transmitted. These values represent an integer number of Intervals (see subclause 6.3.3.3.4). This field is only applied to the HS-DSCH transport channel.

Value range: {0-255, where 0= unlimited repetition period}.

Field Length: 8 bits.

6.3.3.11.6 Spare Extension

Refer to subclause ~~6.2.7.19~~6.3.3.1.4.

3GPP TSG-RAN3 Meeting #29
Gyeongju, Korea, 13th – 17th May 2002

R3-021615

CR-Form-v4

CHANGE REQUEST

⌘ **25.435 CR 082** ⌘ ev **1** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	HS-DSCH Initial credits
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May, 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘

The current specification allows the start of the HS-DSCH data transport only when the HS-DSCH Capacity Allocation procedure is performed on the User Plane. To introduce the HS-DSCH Initial credits the data transport start shall also be possible if the Node B has allocated capacity via the HS-DSCH Initial capacity allocation in the NBAP.

Summary of change: ⌘

The procedure text has been updated so that the start of the data transport is allowed also without HS-DSCH Capacity allocation procedure if initial credits are allocated in NBAP signalling.

Changes in R1:

The compatibility analysis has been added.

Consequences if not approved: ⌘

If the CR is not approved, the start of the data transport is unnecessarily delayed.

Impact Analysis:

Impact assessment towards the previous version of the specification (same release):

This CR has isolated impact with the previous version of the specification. The change is limited only to the HS-DSCH functionality.

Compatibility Analysis towards previous release:

No impact. The HSDPA is a new functionality and does not exist in the previous release.

Clauses affected:	⌘	5.1.6			
Other specs	⌘	**X**	Other core specifications	⌘	CR050r1 (25.425 V5.0.0) CR662r1 (25.423 V5.0.0) CR693r1 (25.433 V5.0.0)
affected:			Test specifications		
			O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.1.6 High Speed Downlink Shared Channels

The Data Transfer procedure is used to transfer a HS-DSCH DATA FRAME from the CRNC to a Node B.

When the CRNC has been granted capacity by the Node B via the HS-DSCH CAPACITY ALLOCATION Control Frame or via the HS-DSCH initial capacity allocation as described in [6] and the CRNC has data waiting to be sent, then the HS-DSCH DATA FRAME is used to transfer the data. When data is waiting to be transferred, and a CAPACITY ALLOCATION is received, a DATA FRAME will be transmitted immediately according to allocation received.

Multiple MAC-d PDUs of same length and same priority level (CmCH-PI) may be transmitted in one MAC-d flow in the same HS-DSCH DATA FRAME.

The HS-DSCH DATA FRAME includes a *User Buffer Size* IE to indicate the amount of data pending for the respective MAC-d flow for the indicated priority level. Within one priority level and size the MAC-d PDUs shall be transmitted by the Node B on the Uu interface in the same order as they were received from the CRNC.

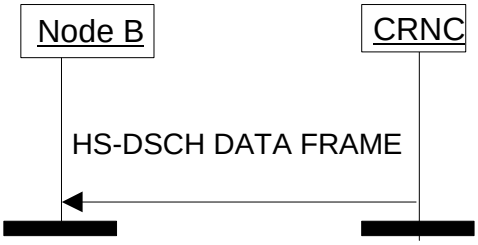


Figure 6A: DSCH Data Transfer procedure

3GPP TSG-RAN3 Meeting #29 **R3-021603**
Gyeongju, Korea, 13th – 17th May 2002

CR-Form-v4

CHANGE REQUEST

⌘ **25.435 CR 083** ⌘ ev **1** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Maximum number of credits		
Source:	⌘	R-WG3		
Work item code:	⌘	HSDPA-Iublur	***Date:*** ⌘	May, 2002
Category:	⌘	**F**	***Release:*** ⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘

The maximum number of HS-DSCH credits that the Node B can allocate is currently equal to 254. This puts some limits to the HS-DSCH performance. Assuming 5000 bit MAC-d PDUs (which is the max size) the current max number of credits is not a problem.

But with smaller MAC-d PDUs the Iub/Iur transport might set the capacity limit which is not desirable: If we assume a MAC-d PDU size of 320 bits, max number of credits to be 254, and the Flow control Round-Trip-Time to be 30 ms, we end up to (320 bits) * 254 credits / 30 ms = 2.7 Mbps, which is limiting the HS-DSCH capacity.

To avoid the situation that the Iub transport is limiting the HS-DSCH capacity it is proposed in this CR that the number of credits field in the HS-DSCH Capacity Allocation frame is extended from 8 bits (255) to 11 bits (2047).

Summary of change: ⌘

R1:

Section 6.3.3.11:

- The value 255 was changed to 2047.

- Figure 36; Cont moved into brackets.

- Impact analysis for previous release added.

R0:

The spare bits in the HS-DSCH Capacity Allocation frame are taken into use for Number of credits IE.

Also the name of the Maximum MAC-d PDU Length has been corrected in the frame picture to correspond the procedure text.

Consequences if not approved:	⌘	If the CR is not approved, the Iub/Iur transport might restrict the HS-DSCH capacity. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification. The change is limited only to the HS-DSCH functionality. Compatibility Analysis towards previous release: No impact. The HSDPA functionality is a new feature in Rel-5.

Clauses affected:	⌘	5.10, 6.3.3.11		
Other specs affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	CR051r1 (25.425 V5.0.0)
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.10 HS-DSCH Capacity Allocation

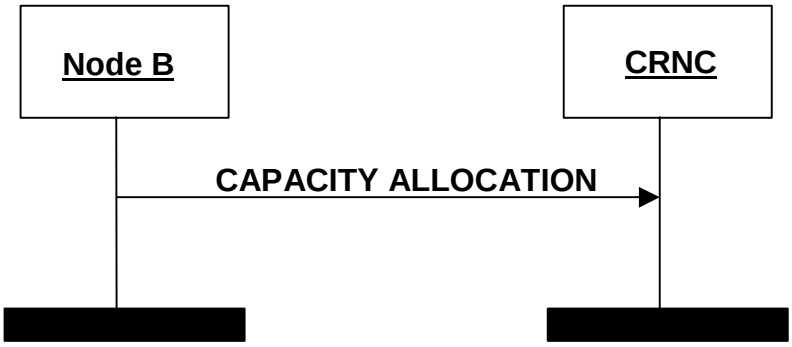


Figure 12C: HS-DSCH Capacity Allocation procedure

HS-DSCH Capacity Allocation procedure is generated within the Node B. It may be generated either in response to a HS-DSCH Capacity Request or at any other time.

The Node B may use this message to modify the capacity at any time, irrespective of the reported user buffer status.

The HS-DSCH CAPACITY ALLOCATION frame is used by the Node B to control the user data flow. *HS-DSCH Credits* IE indicates the number of MAC-d PDUs that the CRNC is allowed to transmit for the MAC-d flow and the associated priority level indicated by the *Common Transport Channel Priority Indicator* IE.

The *Maximum. MAC- d PDU length*, *HS-DSCH Credits*, *HS-DSCH Interval* and *HS-DSCH Repetition Period* IEs indicates the total amount of capacity granted. Any capacity previously granted is replaced.

If *HS-DSCH Credits* IE = 0 (e.g. due to congestion in the Node B), the CRNC shall immediately stop transmission of MAC-d PDUs. If *HS-DSCH Credits* IE = 2047~~255~~, the CRNC can transmit MAC-d PDUs with unlimited capacity.

The IEs used in the HS-DSCH CAPACITY ALLOCATION Control Frame are the *Common Transport Channel Priority Indicator*, *HS-DSCH Credits*, *Maximum MAC- d PDU Length*, *HS-DSCH Interval* and the *HS-DSCH Repetition Period*.

If the HS-DSCH Repetition Period IE = *"unlimited repetition period"* it indicates that the CRNC may transmit the specified number of MAC-d PDUs for an unlimited period according to the bounds of *Maximum MAC-d PDU Length*, *HS-DSCH Credits* and *HS-DSCH Interval* IEs.

6.3.3.11 HS-DSCH CAPACITY ALLOCATION

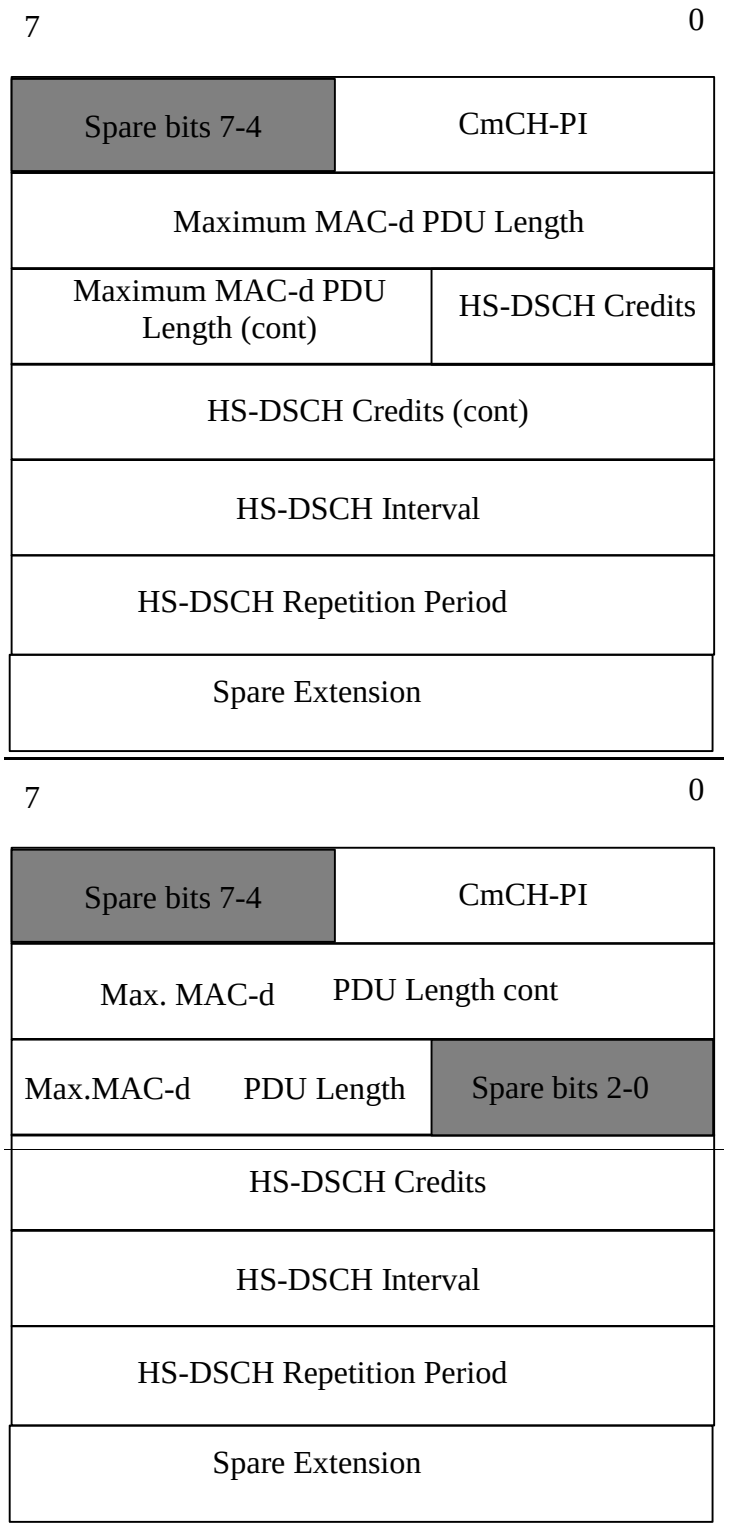


Figure 36: CAPACITY ALLOCATION payload structure

The CAPACITY ALLOCATION Control Frame describes an allocation that the SRNC may use. When the *HS-DSCH Credits* IE has a value of 0 it signifies that there is no resources allocated for transmission and to thus stop transmission. When the *HS-DSCH Credits* IE has a value of ~~255~~2047, it signifies unlimited capacity for transmission of PDUs. When the *HS-DSCH Repetition Period* IE has a value of 0, it signifies that the allocation (*Maximum MAC-d PDU Length, HS-DSCH Credits* and *HS-DSCH Interval* IEs) can be repeated without limit.

6.3.3.11.1 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.7.21.

6.3.3.11.2 Maximum MAC-d PDU Length

Description: The values indicated the maximum allowable PDU size. MAC-d PDU contains the C/T field of the MAC header followed by one RLC PDU.

Field length: See the value of the *MAC-d PDU Length* IE.

6.3.3.11.3 HS-DSCH Credits

Description: The *HS-DSCH Credits* IE indicates the number of MAC-d PDUs that a user may transmit.

Value range: {0-2047, where 0=stop transmission, 2047=unlimited}.~~{0-255, where 0=stop transmission, 255=unlimited}.~~

Field length: ~~8~~ 11 bits.

6.3.3.11.4 HS-DSCH Interval

Description: The value of this field indicates the time interval during which the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY ALLOCATION Control Frame may be transmitted. This value is only applied to the HS-DSCH transport channel.

Value range: {0-2550 ms}.

Granularity: 10ms.

Field Length: 8 bits.

6.3.3.11.5 HS-DSCH Repetition Period

Description: The value of this field indicates the number of subsequent intervals that the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY ALLOCATION Control Frame may be transmitted. These values represent an integer number of Intervals (see subclause 6.3.3.3.4). This field is only applied to the HS-DSCH transport channel.

Value range: {0-255, where 0= unlimited repetition period}.

Field Length: 8 bits.

6.3.3.11.6 Spare Extension

Refer to subclause 6.2.7.19.

3GPP TSG-RAN3 Meeting #29
Gyeongju, Korea, May 13th-17th, 2002

Tdoc R3-021281

CR-Form-v5

CHANGE REQUEST

⌘ **TR 25.877** **CR** **001** ⌘ **rev** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Alignment of email approved CRs after RAN3#27 with TR 25.877
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May 7, 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	After RAN3#27 concluded, there were quite a few CRs that were approved via email but were never captured in the HSDPA TR for RAN3. There were also several agreements reached in RAN1 and RAN2 that were also agreed in the Orlando meeting that needed to be captured in this TR also. This contribution now tries to incorporate those CRs and agreements into the HSDPA TR.
Summary of change:	⌘	The CR's and agreements have been incorporated into the RAN3 HSDPA TR. After RAN3#27: Incorporated "C/T removal" comment from RAN3#28.
Consequences if not approved:	⌘	TR 25.877 (HSDPA for RAN3) will not be aligned with what was agreed to be in the RAN3 specifications.

Clauses affected:	⌘	Almost all of them.		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	None. None.
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] RP-010262: "High Speed Downlink Packet Access (HSDPA; Work Item Description" (http://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_11/Docs/PDFs/).

[2] 3GPP TR 25.855 (V5.0.0): "High Speed Downlink Packet Access (HSDPA); Overall UTRAN description".

[3] 3GPP TS 25.308 (V5.2~~1~~.0): "UTRA High Speed Downlink Packet Access (HSDPA); Overall description; Stage 2".

[4] 3GPP TS 25.401: "UTRAN Overall Description".

[5] 3GPP TS 25.420: "UTRAN Iur Interface General Aspects and Principles".

[6] 3GPP TS 25.423: "UTRAN Iur Interface RNSAP Signalling".

[7] 3GPP TS 25.425: "UTRAN Iur Interface User Plane Protocols for Common Transport Channel Data Streams".

[8] 3GPP TS 25.430: "UTRAN lub Interface: General Aspects and Principles".

[9] 3GPP TS 25.433: "UTRAN Iub Interface NBAP Signalling".

[10] 3GPP TS 25.435: "UTRAN Iub Interface User Plane Protocols for Common Transport Channel Data Streams".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

~~**Example:** text used to clarify abstract rules by applying them literally~~

Version Flag (VF): The VF field is a one bit flag providing extension capabilities of the MAC-hs PDU format. The VF field shall be set to zero and the value one is reserved in this version of the protocol.

Queue identifier (Queue ID): The Queue ID field provides identification of the reordering queue in the receiver, in order to support independent buffer handling of data belonging to different reordering queues.

Transmission Sequence Number (TSN): The TSN field provides an identifier for the transmission sequence number on the HS-DSCH. The TSN field is used for reordering purposes to support in-sequence delivery to higher layers.

Size index identifier (SID): The SID fields identify the size of a set of consecutive MAC-d PDUs. The MAC-d PDU size for a given SID is configured by higher layers and is independent for each Queue ID.

Number of MAC-D PDUs (N): The number of consecutive MAC-d PDUs with equal size is identified with the N field.

Flag (F): The F field is a flag indicating if more SID fields are present in the MAC-hs header or not. If the F field is set to "0" the F field is followed by a SID field. If the F field is set to "0" the F field is followed by a MAC-d PDU.

3.2 Symbols

None.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CFN	Connection Frame Number
CP	Control Plane
DCH	Dedicated Channel
FP	Frame Protocol
H-ARQ~~I~~	Hybrid Automatic Repeat reQuest~~HS-DSCH Indicator~~
HSDPA	High Speed Downlink Packet Access
HS-DPCCH	High Speed Dedicated Physical Control Channel
HS-DSCH	High Speed Downlink Shared Channel
HS-PDSCH	High Speed Physical Downlink Shared Channel
HS-SCCH	High Speed Shared Control Channel
HS-SICH	HSDPA Shared Information Channel
MAC-hs	Medium Access Control-high speed
RL	Radio Link
SID	Size InDex
TB	Transport Block
TFRI	Transport Format and Resource Indicator
UP	User Plane

4 Background and Introduction

In RAN#11 plenary meeting a work item [1] was approved for High Speed Downlink Packet Access. The work item includes techniques such as adaptive modulation and coding, H-~~hybrid~~ ARQ and fast scheduling with the goal to increase throughput, reduce delay and achieve high peak rates.

5 Requirements

In addition to the overall system requirements outlined and agreed upon in clause 5 of [2], the following specific requirements to RAN3 should be applied:

1. Alignments between the TDD mode and the FDD mode HSDPA solution are desirable. Although, these should not take precedence if it leads to major performance degradations in one mode.

6 Study Areas

6.1 Impacts on Iub Interface - General Aspects

The protocol architecture of HSDPA is described in [3]. From the figure 1 and from the figures describing MAC architecture it is obvious that general aspects and principles of Iub interface should be updated accordingly. One new

MAC functional entity, the MAC-hs, is added to the R99 architecture. The MAC-hs is located in the Node B. If one or more HS-DSCHs are in operation the MAC-hs SDUs to be transmitted are transferred from MAC-d via MAC-c/sh to the MAC-hs via the Iub interface. The transport channel that the HSDPA functionality will use is called HS-DSCH. The transport channel is controlled by MAC-hs. The HS-DSCH FP will handle the data transport from SRNC to CRNC (if the Iur interface is involved) and between CRNC and the Node B.

Items to be added/modified to Iub interface for preparing Node B logical model for HS-DSCH are (subclauses according to TS 25.430):

4.4 Iub Interface Capabilities

4.4.x Iub HS-DSCH data stream

The Iub interface provides the means for transport of high speed downlink shared channel, HS-DSCH, data frames between RNC and Node B. An Iub HS-DSCH data stream corresponds to the data carried on one MAC-d flow for one UE. A UE may have multiple HS-DSCH data streams.

4.5 Iub Interface Characteristics

4.5.1 Mapping of Iub data streams

HS-DSCH: OneAn Iub HS-DSCH data stream is carried on one transport bearer. For each HS-DSCH data stream, a transport bearer must be established over the Iub interface. Otherwise, multiple Iub HS-DSCH data streams may share one transport bearer.

5.2 Functional split over Iub

5.2.1 Traffic management of High Speed Shared Channels

The high speed shared channels shall be controlled from the Node B. This includes the control of the HS-DSCH channels as well as the required control channels on the radio interface.

6 Node B logical Model over Iub

6.1 Overview

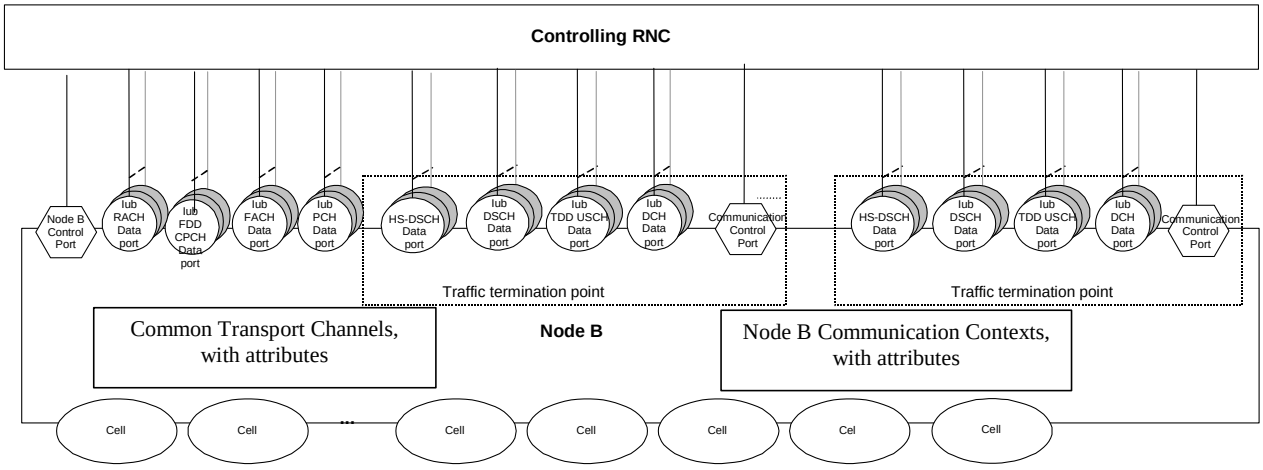


Figure 1: Logical Model of Node B

6.2 Elements of the logical model

6.2.1 Node B Communication Contexts for Dedicated and Shared Channels

A Node B Communication Context corresponds to all the dedicated resources that are necessary for a user in dedicated mode and using dedicated and/or shared channels as restricted to a given Node B. [TDD - The Node B Communication Context also exists for users in Cell_FACH mode (i.e. non-dedicated mode) provided a USCH and/or DSCH and/or HS-DSCH has been allocated to these users.]

There are a number of Node B Communication Contexts inside a given Node B.

The attributes to a Node B Communication Context shall include the following (not exhaustive):

- The list of Cells where dedicated and/or shared physical resources are used.
- The list of DCH which are mapped on the dedicated physical resources for that Node B Communication Context.
- The list of DSCH and USCH [TDD] which are used by the respective UE.
- The list of HS-DSCH MAC-d flows which are used by the respective UE.
- The complete DCH characteristics for each DCH, identified by its DCH-identifier [4].
- The complete Transport Channel characteristics for each DSCH and USCH, identified by its Shared Channel identifier [4].
- HS-DSCH characteristics for each HS-DSCH~~, identified by its High Speed Shared Channel identifier~~.
- The list of Iub DCH Data Ports.
- The list of Iub DSCH Data ports and Iub USCH data ports.
- The list of Iub HS-DSCH Data ports.
- For each Iub DCH Data Port, the corresponding DCH and cells which are carried on this data port.
- For each Iub DSCH and USCH data port, the corresponding DSCH or USCH and cells which serve that DSCH or USCH.
- For each Iub HS-DSCH d~~D~~ata port, the corresponding HS-DSCH data stream~~s~~ and ~~the~~ cell~~s~~ which serve~~s~~ tha~~t~~~~se~~ HS-DSCH data stream~~s~~.
- Physical layer parameters (outer loop power control, etc).

~~6.2.x Node B Communication Contexts for HS-DSCH~~

6.2.3.x Iub HS-DSCH Data Port

An Iub HS-DSCH Data Port represents a user plane~~UP transport~~ bearer carrying one ~~or more~~ Iub HS-DSCH Data Stream~~s~~ between the Node B and the RNC.

6.2.3.3 ~~—~~Traffic Termination Point represents DCH, DSCH, HS-DSCH and ~~TDD~~ USCH [TDD] ~~and HS-DSCH~~ data streams
~~————~~belonging to one or more Node B Communication Contexts (UE contexts), which are controlled via one
~~————~~Communication Control Port. The Traffic Termination Point is thus a descriptive entity which neither is controlled over Iub nor by O&M ~~Proposed Logical Model of Node B is according to figure 1~~.

6.2.4 Radio Network Logical r~~R~~esources

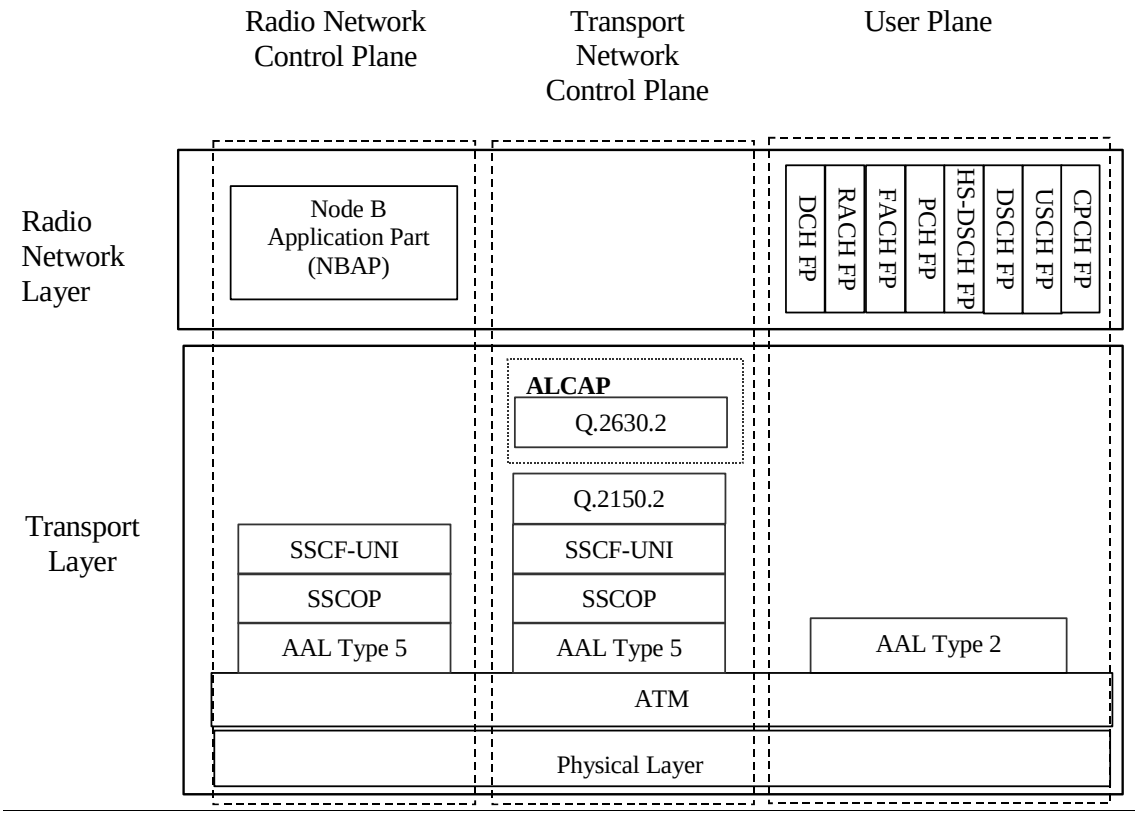
6.2.4.4 Physical Shared Channels

Physical Shared Channels includes the Physical Downlink Shared Channels (PDSCH), High Speed Physical Shared Channels (HS-PDSCH) and [TDD - The Physical Uplink Shared Channels (PUSCH)]. These PDSCH and PUSCH [TDD] are special cases of the Common Physical Channels.

[FDD - A HS-PDSCH is defined by a channelisation code within a code subtree that is configured within a specific Communication Context. The HS-PDSCH is activated dynamically as part of the HS-DSCH scheduling.]

[TDD - A HS-PDSCH is defined by a channelisation code, a time slot and other Physical Channel parameters. The HS-PDSCH is activated dynamically as part of the HS-DSCH scheduling.]

7 Iub Interface Protocol Structure



6.2 Impacts on Iub/Iur Control Plane Protocols

6.2.1 HSDPA Signalling Requirements (Comparison between DSCH and HS-DSCH)

With respect to the majority of R99/Rel4 transport channels, HS-DSCH is different in several aspects. We focus on the following:

1) the HS-DSCH Transport Block Set consists of one Transport Block only;

2) one Transport Block corresponds to several MAC-d PDUs (i.e. MAC-hs SDUs);

3) there is only one CCTrCH of HS-DSCH type per UE.

According to point 1), the Transport Format Set definition is very much simplified in that it is entirely determined by the Transport Block size. Point 3) obviates the need for any Transport Format Combinations.

HS-DSCH makes use of explicit out-of-band signalling carried on the HS-SCCH channels. The following out-of-band signalling information is carried on a per-TTI basis:

- channelisation code set (a set of up to 15 codes chosen in a contiguous manner from the global HSDPA code set);
- modulation scheme (either QPSK or 16-QAM);
- ~~- Transport Format (defining a Transport Block size from a set of configured~~ Transport Block sizes~~);~~
- H-ARQ process;
- Redundancy and Constellation version;
- New data indicator;

- UE identity.~~-~~

In addition, the size of the MAC-d PDUs belonging to a Transport Block is carried in every MAC-hs header. Hence, almost all information required for signal decoding is *explicitly* signalled, which is a departure from the DSCH paradigm where a lot of configuration is needed (e.g. TB size, TB set size, channelisation codes). The only parameter related to Transport Formats that remains to be configured for HS-DSCH is the allowed set of Transport Block sizes.

The following table summarise the main differences between DSCH and HS-DSCH from a configuration viewpoint.

	DSCH	**HS-DSCH**
Static part (CP configured)	• TTI; • Type of Channel coding ~~type~~; • Coding rate; • Rate matching attribute; • CRC size.	1) Parameters related to MAC-d Flow Specific Information~~transport formats~~: • BLER • Allocation/Retention Priority • Priority Queue Information o Scheduling Priority~~table of MAC-d PDU SIDs;~~ ~~□~~o table of MAC-d PDU sizes and SIDs~~allowed TB sizes (will be used on HS-SCCH).~~ 2) Parameters related to UE capabilities: ~~□max number of HS-PDSCH codes;~~ • max TrCH bits per HS-DSCH TTI; • min inter-TTI interval. • HS-DSCH multi-code capability • MAC-hs reordering buffer size 3) H-ARQ process info • Process memory size~~.~~
Static part (not configured via CP)	N/A	• TTI = 2ms for FDD, 10 ms for 3.84 Mcps TDD, and 5 ms for 1.28 Mcps TDD; • Channel coding = turbo; • Coding rate = 1/3; ~~□Rate matching = FFS;~~ • CRC size = 24bits; • Spreading factor = 16.
Dynamic part (UP)	TF Combinations consisting of: • TB size; • TB Set size; • Channelisation codes.	There are no TF Combinations. Transport Format info consists of: • one or several MAC-d PDU SIDs and the number of consecutive PDUs with these sizes (N) (in MAC-hs PDU header); • Transport Format indicating the TB size and modulation scheme (on HS-SCCH).
TB and TB Set meaning	1 TB = 1 MAC-c/sh SDU + Header (TCTF, UE-id type, UE-id) 1 TB Set = N * TB	1 TB = N * MAC-d PDU + Header (VF, Queue ID, TSN, SID, N, F~~Priority~~) 1 TB Set = 1 TB
Spreading Factor	variable	fixed = 16
TFCI or TFRI meaning	TFCI identifies a TFC i.e.: • TB size~~codes~~; • TB Set size; • Channelisation codes~~TB Set size~~.	Explicitly signalled via TFRI: • TB size; • Channelisation code set; • Modulation scheme. Implicitly signalled: ~~□~~MAC-d PDU size (via MAC-hs PDU header).~~TB size (via Transport Format).~~ ~~□MAC-d PDU size (via MAC-hs PDU header).~~
UE identifier	added by CRNC in the MAC-c/sh header; transparent to Node B	used by Node B for a UE-specific CRC in HS-SCCH and/or HS-DSCH
NOTE: Current working assumption is that the same scrambling code is used for HS-PDSCH and~~,~~ HS-SCCH. The DPCH may use the same or a different scrambling code.		

It is obvious that HS-DSCH needs less configuration related to Transport Formats and channel coding for two reasons:

1. many HS-DSCH parameters are already fixed (e.g. TTI, Channel c~~C~~oding ~~type~~, C~~c~~oding rate, CRC size, Spreading factor); and

2. a lot of HS-DSCH information is explicitly or implicitly signalled via HS-SCCH (e.g. TB size, Channelisation code set, modulation scheme, ~~Transport Block size,~~ MAC-d~~hs~~ P~~S~~DU size).

On the other hand, HS-DSCH needs some additional static configuration information related to UE ~~HSDPA~~ capabilities (including H-ARQ process info~~configuration~~), which has no equivalent in DSCH.

Also shown in the table are some important semantic innovations with HSDPA:

- a single HS-DSCH Transport Block may consist of several MAC-d~~hs~~ P~~S~~DUs; and
- the MAC-hs header carries new types of information (VF, Queue ID, TSN, SID, N, F~~HARQ process ID, Priority, Padding indicator~~) instead of/along with a UE-id.

6.2.2 Impacts on NBAP Procedures

For supporting HSDPA, the radio link (which shall carry the HS-DSCH) has to be set up or reconfigured.

Examples of parameters that are necessary for HSDPA are the following:

~~- information about the HI that should be included in the DPCH;~~

- configuration of the HS-SCCH;
- configuration of HS-DSCH;
- etc.

The following procedures of NBAP have to be changed in order to initiate the HS-DSCH configuration and capacity allocation:

Radio Link Setup (FDD and TDD)

To support HSDPA, one or more HS-DSCHs have to be set up in addition to the DCH. The CRNC sends a RADIO LINK SETUP REQUEST to the Node B, containing the necessary parameters for HS-DSCH configuration (HS-DSCH id, transport format set, etc.).

The message RADIO LINK SETUP RESPONSE should provide information about HS-DSCHs that have been established or modified.

Synchronised Radio Link Reconfiguration Preparation (FDD and TDD)

~~The DPCH has to be changed to include the HI. It is suggested that the preparation of the DPCH can be performed by including an *HI presence* IE in the message RADIO LINK RECONFIGURATION PREPARE.~~

The message RADIO LINK RECONFIGURATION PREPARE has to ~~also~~ include the information that allows the Node B the addition, modification or deletion of HS-DSCHs. If a HS-DSCH is added or modified, the parameters concerning HS-DSCH configuration have to be sent to the Node B (HS-DSCH id, transport format set, etc.).

The message RADIO LINK RECONFIGURATION READY should provide information about HS-DSCHs that have been established or modified.

~~**Common Transport Channel Setup (FDD and TDD)**~~

~~A HS-SCCH has to be set up for carrying the HS-DSCH related information. Therefore, the information of the HS-SCCH should be included in the message COMMON TRANSPORT CHANNEL SETUP REQUEST.~~

~~The message COMMON TRANSPORT CHANNEL SETUP RESPONSE shall contain the "*Shared Control Channel Parameters*" that inform the CRNC about the new configured channels.~~

Physical Shared Channel Reconfiguration (FDD and TDD)

The information about the assigning of HS-DSCH related resources to the Node B~~set of HS-PDSCHs which the Node B should use for scheduling~~ is sent in the message PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST from CRNC to Node B. ~~An IE-group "HS-PDSCH to add Information" resp. "HS-PDSCH to modify Information" has to be added (FFS).~~

6.2.2.1 Impacts on Dedicated NBAP Procedures and Message Contents

In this section~~discussion~~ we focus on the dedicated NBAP procedures related to HS-DSCH channel addition/deletion:

- Radio Link Setup; and
- Synchronised Radio Link Reconfiguration Preparation.

The following four NBAP messages are involved in these two procedures:

1. RADIO LINK SETUP REQUEST;
2. RADIO LINK RECONFIGURATION PREPARE;
3. RADIO LINK SETUP RESPONSE; and
4. RADIO LINK RECONFIGURATION READY.

Signalling means is needed in NBAP for:

- configuring HS-DSCH transport and physical channels; and
- providing information on codes allocated to HS-SCCH.

Our intent is to use messages 1) and 2) for configuring HS-DSCH channels at the Node B. The relevant information would be carried in a new *HS-DSCH FDD Information* IE or *HS-DSCH TDD Information* IE, in the same way it is done today with its DSCH equivalent.

Messages 3) and 4) would be used by Node B to inform the CRNC about the codes allocated by Node B for the HS-SCCH channels. The relevant information would be carried in a new *HS-DSCH FDD Information Response* IE or *HS-DSCH TDD Information Response* IE, in the same way it is done today with its DSCH equivalent.

Note that we use ***RNSAP*** IEs as a starting point for the definition of new ***NBAP*** IEs. This is explained by the fact that the Node B with HSDPA performs several functions (e.g. code allocation, scheduling) similar to those performed by CRNC/DRNC with DSCH. The data units carried on Iub are now *MAC SDU flows* rather then Transport Block flows, which is again similar to the DSCH case over Iur.

6.2.2.1.1 DSCH-related IEs in RNSAP

- **DSCH FDD Information IE in RNSAP**.

The *DSCH FDD Information* IE provides information for DSCHs to be established.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
DSCH Specific FDD Information		*1..<maxnoofDSCHs>*			–	
>DSCH ID	M		9.2.1.26A		–	
>TrCh Source Statistics Descriptor	M		9.2.1.65		–	
>Transport Format Set	M		9.2.1.64	For DSCH	–	
>Allocation/Retention Priority	M		9.2.1.1		–	
>Scheduling Priority Indicator	M		9.2.1.51A		–	
>BLER	M		9.2.1.4		–	
PDSCH RL ID	M		RL ID 9.2.1.49		–	
TFCS	M		9.2.1.63	For DSCH	–	
>Enhanced DSCH PC	O		9.2.2.13D		YES	ignore

Range bound	Explanation
MaxnoofDSCHs	Maximum number of DSCHs for one UE.

- **DSCH FDD Information Response IE in RNSAP**.

The *DSCH FDD Information Response* IE provides information for DSCHs that have been established or modified.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
DSCH Specific FDD Information Response		*1..<MaxnoofDSCHs>*			–	
>DSCH ID	M		9.2.1.26A		–	
>DSCH Flow Control Information	M		9.2.1.26B		–	
>Binding ID	O		9.2.1.3		–	
>Transport Layer Address	O		9.2.1.62		–	
PDSCH Code Mapping	M		9.2.2.27A	PDSCH code mapping to be used	–	

Range bound	Explanation
MaxnoofDSCHs	Maximum number of DSCHs for one UE.

6.2.2.1.2 Proposed HS-DSCH-related IEs for NBAP for Downlink Signalling

6.2.2.1.2.1 Option 1 - One Transport Bearer per HS-DSCH MAC-d Flow

It is assumed that HS-DSCH MAC-d flows are carried over Iub interface in the same way as DSCH MAC-c/sh SDU flows are in R99/Rel4 i.e. every MAC-d flow is carried on a separate transport bearer. This assumption has an impact on the details of the IE contents.

- **Proposed *HS-DSCH FDD Information* IE for NBAP**.

The *HS-DSCH FDD Information* IE provides information for HS-DSCH MAC-d flows to be established. It may be included in the RADIO LINK SETUP REQUEST or RADIO LINK RECONFIGURATION PREPARE messages.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific ~~FDD~~ Information		*1..<Maxnoo fMACdFlow s>*			–	
>HS-DSCH MAC-d Flow ID[2]	M		INTEGER (0..*Maxnoof Prio~~rity~~Que ues – 1*)		–	
>BLER	M		INTEGER (-63..0)	Step 0.1. (Range – 6.3…0). It is the Log10 of the BLER	–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>**Priority Queue Information**	M	*1..<Maxnoo fPrio~~rity~~Que ues>*			–	
>>Priority Queue ID[3]	M		INTEGER (0..*Maxnoof Prio~~rity~~Que ues – 1*)		–	
>>Scheduling Priority Indicator	M~~O~~		INTEGER (0..15)	Relative priority of the HS-DSCH data frame: 0=Lowest Priority … 15=Highest Priority	–	
>>**MAC-d PDU Size Index**[4]	~~O~~	*1..<Maxnoo fMACdPDU indexes>*			–	
>>>SID	M~~O~~		INTEGER (0..MaxNoO fMACdPDU s)	~~(FFS)~~	–	
>>>MAC-d PDU Size	M~~O~~		INTEGER (1..5000,…) ~~(FFS)~~		–	
UE Capabilities information					–	
>Max TrCh Bits per HS-DSCH TTI[7]	M		ENUMERA TED (7300, 14600, 20456, 28800,...)~~IN TEGER (FFS)~~		–	
>HS-~~P~~DSCH multi-code capability[7]	M		ENUMERA TED (5, 10, 15,...)~~INTE GER (1..*Maxnoof HSPDSCHc odes*)~~		–	
>Min Inter-TTI Interval[7]	M		INTEGER (1.. 3,...)~~FFS~~		–	
>MAC-hs reordering buffer size	M		INTEGER (1..300,...)~~I NTEGER (FFS)~~	Total combined receiving buffer capability in RLC and MAC-hs in kBytes	–	

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HARQ Information		*1..<MaxnoofHARQprocesses>*			–	
>>Process memory size	M		INTEGER (1..172800,...) (FFS)		–	
Measurement feedback offset	M		INTEGER (0..79,...)		–	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows
MaxnoofPriorityQueues	Maximum number of Priority Queues. The value for MaxnoofPrioQueues is 8.
MaxnoofHSDSCHTFcount	Maximum number of HS-DSCH TF count
MaxnoofHARQprocesses	Maximum number of H-ARQ processes for one UE.
MaxnoofHSPDSCHcodes	Maximum number of HS-PDSCH codes
MaxnoofMACdPDUindexes	Maximum number of different MAC-d PDU SIDs
MaxNoOfMACdPDUs	Maximum number of different MAC-d PDUs. The value for MaxNoOfMACdPDUs is 8.

NOTE 1: VoidHS-DSCH RNTI is needed for the UE-specific CRC in HS-SCCH and/or HS-DSCH.

NOTE 2: The number of MAC-d flows is lower or equal to the number of Priority Queues.

NOTE 3: It is assumed that each Priority Queue has a unique Priority Queue ID allocated by SRNC and distributed to Node B via NBAP/RNSAP procedures (NOTE: this detail is to be considered within RAN3; it is not in the scope of RAN2); the mapping between the 16 RAB priorities and the Priority Queue IDs is FFS.

NOTE 4: MAC-d PDU sizes and their mapping to SIDs is determined by SRNC. Node B can impose a restriction on the maximum permitted MAC-d PDU size.

NOTE 5: Void.

NOTE 6: VoidThere is no notion for TFCS, since there may be only one HS-DSCH per UE.

NOTE 7: in order to avoid duplicate efforts, the parameters related to UE capabilities could be defined by pointing to the equivalent RRC definitions.

NOTE 8: VoidThe following RNSAP IEs (in red) should be added to NBAP: *RAB attributes (FFS)*, *Scheduling Priority Indicator* and *BLER*.

NOTE 9: Void.

- **Proposed *HS-DSCH TDD Information* IE for NBAP**.

The *HS-DSCH TDD Information* IE provides information for HS-DSCH MAC-d flows to be established. It may be included in the RADIO LINK SETUP REQUEST or RADIO LINK RECONFIGURATION PREPARE messages.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information		*1..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		INTEGER (0..7)		–	
>BLER	M		INTEGER (-63..0)	Step 0.1. (Range –6.3…0). It is the Log10 of the BLER	–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Priority Queue Information	M	*1..<MaxnoofPrioQueues>*			-	
>>Priority Queue ID	M		INTEGER (0..7)		-	
>>Scheduling Priority Indicator	M		INTEGER (0..15)	Relative priority of the HS-DSCH data frame: 0=Lowest Priority … 15=Highest Priority	–	
>>MAC-d PDU Size Index		*1..<MaxnoofMACdPDUindexes>*			-	
>>>SID	M		INTEGER (0..7)		-	
>>>MAC-d PDU Size	M		INTEGER (1..5000,…)		-	
UE Capabilities information		*1*			-	
>HS-DSCH TrCh Bits per TTI	M		ENUMERATED (7040, 10228, 14080,...)		-	
>HS-DSCH multi-code capability	M		ENUMERATED (8, 12, 16,...)		-	
>MAC-hs reordering buffer size	M		INTEGER (1..300,...)	Total combined receiving buffer capability in RLC and MAC-hs in kBytes	-	
HARQ Memory partitioning		*1..<MaxnoofHARQprocesses>*			-	
>Process memory size	M		INTEGER (1..168960, ...)		-	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows
MaxnoofPrioQueues	Maximum number of Priority Queues
MaxnoofHARQprocesses	Maximum number of HARQ processes for one UE.
MaxnoofMACdPDUindexes	Maximum number of different MAC-d PDU SIDs
MaxNoOfHSDSCHTrChBitsPerTTI	Maximum Number of HS-DSCH Transport Channel Bits per TTI

- **Proposed HS-DSCH FDD Information Response IE for NBAP**.

The *HS-DSCH FDD Information Response* IE provides information for HS-DSCH that have been established or modified. It may be included in the RADIO LINK SETUP RESPONSE and RADIO LINK RECONFIGURATION READY messages.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information Response		*1..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		INTEGER (0..*MaxnoofPrioQueues - 1*)		–	
>Binding ID	O		9.2.1.4		–	
>Transport Layer Address	O		9.2.1.63		–	
HS-SCCH Code		*1..<MaxnoofHSSCCHcodes>*				
>Code Number	M		INTEGER (0..127)			
Measurement feedback reporting cycle k1	M		ENUMERATED (0, 1, 5, 10, 20, 40, 80,…)~~INTEGER(0, 1, 5, 10, 20, 40, 80)~~	employed by the UE when not in soft handover. Multiples of 2 ms intervals;	–	
Measurement feedback reporting cycle k2	M		ENUMERATED (0, 1, 5, 10, 20, 40, 80,…)~~INTEGER(0, 1, 5, 10, 20, 40, 80)~~	employed by the UE when in soft handover. Multiples of 2 ms intervals;	–	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows.
MaxnoofPriority~~ity~~Queues	Maximum number of Priority Queues. The value for MaxnoofPrioQueues is 8.
MaxnoofMACdPDUlengths	Maximum number of different MAC-d PDU lengths
MaxnoofHSSCCHsets	Maximum number of HS-SCCH sets.

NOTE 1: Void.

NOTE 2: Void~~PDSCH Code Mapping is replaced by HS-SCCH sets information~~.

NOTE 3: Void~~*List of HS-SCCH sets* IE is needed only for the alternative where the Node B is allowed to re-allocate Serving HS-SCCH sets to UEs without involving RRC and/or NBAP/RNSAP procedures~~.

NOTE 4: Void~~For TDD, information related to the HS-SICH should also be provided by the Node B~~.

NOTE 5: Void~~RL IDs of Radio Link over which HI is transmitted are listed except for HS-PDSCH RL ID~~.

- **Proposed HS-DSCH TDD Information Response IE for NBAP**.

The *HS-DSCH TDD Information Response* IE provides information for HS-DSCH MAC-d flows that have been established or modified. It may be included in the RADIO LINK SETUP RESPONSE and RADIO LINK RECONFIGURATION READY messages.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific Information Response		*1..<MaxnoofMACdFlows>*			–	
>HS-DSCH MAC-d Flow ID	M		INTEGER (0..7)		–	
>Binding ID	O		9.2.1.4		–	
>Transport Layer Address	O		9.2.1.63		–	
HS-SCCH Specific Information Response		*0..<MaxNoOfHSSCCHcodes>*			GLOBAL	reject
>Time Slot	M		9.2.3.23			
>Midamble Shift and Burst Type	M		9.2.3.7		-	
>TDD Channelisation Code	M		9.2.3.19		-	
>HS-SICH Information		*1*			-	
>>Time Slot	M		9.2.3.23		-	
>>Midamble Shift and Burst Type	M		9.2.3.7		-	
>>TDD Channelisation Code	M		9.2.3.19		-	
HS-SCCH Specific Information Response LCR		*0..<MaxNoOfHSSCCHcodes>*			GLOBAL	reject
>Time Slot LCR	M		9.2.3.24A		-	
>Midamble Shift LCR	M		9.2.3.7a		-	
>TDD Channelisation Code LCR	M		9.2.3.19a		-	
>HS-SICH Information LCR		*1*			-	
>>Time Slot LCR	M		9.2.3.24A		-	
>>Midamble Shift LCR	M		9.2.3.7a		-	
>>TDD Channelisation Code LCR	M		9.2.3.19a		-	

Range bound	Explanation
MaxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows.
MaxnoofPrioQueues	Maximum number of Priority Queues
MaxnoofMACdPDUindexes	Maximum number of different MAC-d Size Indexes (SIDs)
MaxnoofHSSCCHcodes	Maximum number of HS-SCCH codes

6.2.2.1.2.2 Option 2 - One Transport Bearer for Multiple HS-DSCH MAC-d Flows for Multiple UE's

RNC decides whether it wants to allow HSDPA Iub Mux or not. If RNC decides to allow Mux, it chooses candidate transport bearer to be shared and includes them in the *Transport Bearer id List* IE in *HS-DSCH MAC-d Flow Specific FDD Information* IE. If Node B receives any Transport Bearer ids in the *Transport Bearer id List* IE then it understands that the~~considers~~ RNC will allow~~s~~ HSDPA Iub Mux option and chooses one transport bearer in the list. Even if the~~though~~ Node B receives more than one ~~of~~ Transport Bearer id~~s~~ in the *Transport Bearer id List* IE ~~but~~ it can still decide~~s~~ not to share a transport bearer after which the~~n~~ Node B can provide~~s a~~ new transport bearer information (TNL

address and Binding id). If Node B doesn't receives *Transport Bearer id List* IE, then it assumes that RNC doesn't allow HSDPA Iub Mux and provides ~~a~~ new transport bearer information (TNL address and Binding id).

- **Proposed *HS-DSCH Information* IE for NBAP**.

It is proposed to add one~~1~~ additional IE in *HS-DSCH MAC-d Flow Specific Information* IE for Option 2 (in addition to the already proposed additions under Option 1).

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific ~~FDD~~ Information						
…						
>**Transport Bearer id List**		*0.. MaxnoofTr Bearerid*				
>>Transport Bearer id	M		INTEGER			

Range bound	Explanation
MaxnoofTrBearerid	Maximum number of HS-DSCH Transport bearers which can be shared

NOTE 1: For TDD, the same *Transport Bearer id List* IE shall be included in the TDD *HS-DSCH MAC-d Flow Specific ~~TDD~~ Information* IE for NBAP.

- **Proposed HS-DSCH Information Response IE for NBAP**.

It is proposed to add one~~1~~ additional IE in *HS-DSCH FDD Information Response* IE.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
HS-DSCH MAC-d Flow Specific ~~FDD~~ Information Response						
>Transport Bearer Id	M		INTEGER			

- Transport Bearer Id.

The *Transport Bearer Id* IE is the identifier of the transport bearer for HS-DSCH data stream. It is unique among the transport bearers for HS-DSCHs over Iub at a certain time.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Transport Bearer Id			INTEGER	

NOTE 2: For TDD, the same *Transport Bearer Id* IE shall be included in the TDD *HS-DSCH ~~TDD~~ Information Response* IE for NBAP.

6.2.2.1.3 Proposed HS-DSCH-related IEs for NBAP for Uplink Signalling

Information for HS-DPCCH (Status Indicator(ACK/NACK) and Channel Quality Indicator): current working assumption is that this channel does not need to be configured via NBAP/RNSAP procedures.

6.2.2.2 Impacts on Dedicated RNSAP Procedures and Message Contents

The information elements proposed above for NBAP could be used for RNSAP as they are.

6.2.2.3 NBAP cell-level configuration handling

6.2.2.3.1 FDD

6.2.2.3.1.1 Impact on NBAP Procedures

To configure the cell-based parameters, 3 possibilities can be considered in NBAP.

- Adding new parameters in Cell Setup/Cell Reconfiguration procedure.
- Adding new parameters in Common Transport Channel Setup/Common Transport Channel Reconfiguration procedure.
- Defining new procedures:
  - During the initial phase, there is no big difference which procedure will be used since the Cell Setup procedure and the Common Transport Channel Setup procedure are used at about same time. But reconfiguring the HS-DSCH cell based parameters should be considered rather carefully because this new function should not affect R99/REL-4 implementation too much.
  - The parameters in CELL RECONFIGURATION REQUEST message and COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message are very static and can be considered as O&M parameters. On the other hand, HS-DSCH cell based parameters should be configured based on cell but they don't need to be that static .(i.e. like the parameters in CELL RECONFIGURATION REQUEST message or COMMON TRANSPORT CHANNEL RECONFIGURATION message). Since for many reasons, (for example, load sharing,..) the RNC may need to reconfigure the cell based HS-DSCH IEs rather frequently, and we have to try to avoid affecting existing implementations too much, it is proposed to define a new procedure for delivering cell based HS-DSCH parameters.

6.2.2.3.1.2 Proposed cell based HS-DSCH IEs

The following parameters can be considered as cell specific and should be configured for the HSDPA resource pool.

IE/Group Name	Presence	Range	IE type and Reference	Semantics description	Criticality	Assigned Criticality
>HS_PDSCH + HS-SCCH Total Power	O		Maximum Transmission Power 9.2.1.40~~FFS~~	Maximum transmission power to be allowed for HS-PDSCH and HS-SCCH codes	YES	reject
~~> DL Scrambling Code for~~ HS-_PDSCH and HS-SCCH Scrambling Code	O~~M~~		DL Scrambling Code 9.2.2.13~~INTEGER (0..15)~~	Scrambling code on which HS-PDSCH and HS-SCCH is transmitted. 0= Primary scrambling code of the cell 1…15 = Secondary scrambling code	YES	reject
~~>Code Information for~~ HS_PDSCH FDD Code Information		*0..1*	9.2.2.x1		YES	reject
~~>Code Information for~~ HS-_SCCH FDD Code Information		*0..1*	9.2.2.x2		YES	reject

- HS_PDSCH + HS-SCCH Total Power.

The HS_PDSCH + HS-SCCH Total Power defines the total power for all HS-PDSCHs and all HS-SCCHs. ~~Details are FFS.~~

IE/Group Name	Presence	Range	IE type and reference	Semantics description
HS_PDSCH + HS-SCCH Total Power	O	~~FFS~~	Maximum Transmission Power 9.2.1.40	Maximum transmission power to be allowed for HS-PDSCH and HS-SCCH codes

- Code Information for HS_PDSCH.

The Code Information for HS_PDSCH defines the number of codes, which will be assigned for HS-PDSCHs.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Number of HS-PDSCH Codes	M		INTEGER (0..maxCodeNumComp-1)	
Start Code Number	C-NumCodes ~~M~~		Integer(0..maxCodeNumComp-1)	~~HS-DSCH code start.~~

Condition	Explanation
NumCodes	The IE shall be present if the *Number of HS-PDSCH Codes* IE is set to a value greater than 0.
Range bound	**Explanation**
MaxCodeNumComp	Maximum number of codes at the defined spreading factor, within the complete code tree.

- Code Information for HS_SCCH.

The Code Information for HS_SCCH defines the codes, which will be assigned for HS-SCCH. The Node B will assign codes for HS-SCCHs among these codes when it sets up a HS-DSCH.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
>>**HS_SCCH Code**		*0~~1~~..< MaxnoofHSSCCHs >*		
>>>Code Number	M		INTEGER~~nteger~~(0..maxCodeNumComp-1)	

Range bound	Explanation
MaxnoofHSSCCHs	Maximum number of HS-SCCHs for one cell. ~~The value for MaxnoofHSSCCHs is FFS.~~
MaxCodeNumComp	Maximum number of codes at the defined spreading factor, within the complete code tree.

6.2.2.3.2 TDD

6.2.2.3.2.1 Physical Shared Channel Reconfiguration [TDD] procedure

This information of the set of HS-PDSCHs that the Node B should use for scheduling is sent through PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST [TDD] message.

HS-PDSCH Sets to add		*0..1*[(1)]			GLOBAL	Reject
>DL Timeslot Information		0 .. <maxnoofDLts>		For 3.84Mcps TDD only	–	
>>Time Slot	M		9.2.3.23		–	
>>Midamble Shift and Burst Type	M		9.2.3.7		–	
>>DL Code Information		1 .. <maxnoOfHS-PDSCH>			–	
>>>HS-PDSCH ID	M		XX		–	
>>>TDD Channelisation Code	M		9.2.3.19		–	

HS-PDSCH Set to Modify		*0..1*			GLOBAL	Reject
>DL Timeslot Information		0 .. <maxnoofDLts>		For 3.84Mcps TDD only	–	
>>Time Slot	M		9.2.3.23		–	
>>Midamble Shift and Burst Type	O		9.2.3.7		–	
>>DL Code Information		0 .. <maxnoOfHS-PDSCH>			–	
>>>HS-PDSCH ID	M		XX		–	
>>>TDD Channelisation Code	O		9.2.3.19		–	

Range bound	Explanation
Maxnoof HS-PDSCH	Maximum number of HS-DSCH in a cell for 3.84Mcps TDD only.
MaxnoofDLts	Maximum number of Downlink time slots in a cell for 3.84Mcps TDD.

- **HS-PDSCH ID**.

The HS-PDSCH ID identifies unambiguously a HS-PDSCH inside a cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
HS-PDSCH ID			INTEGER (0..255)	

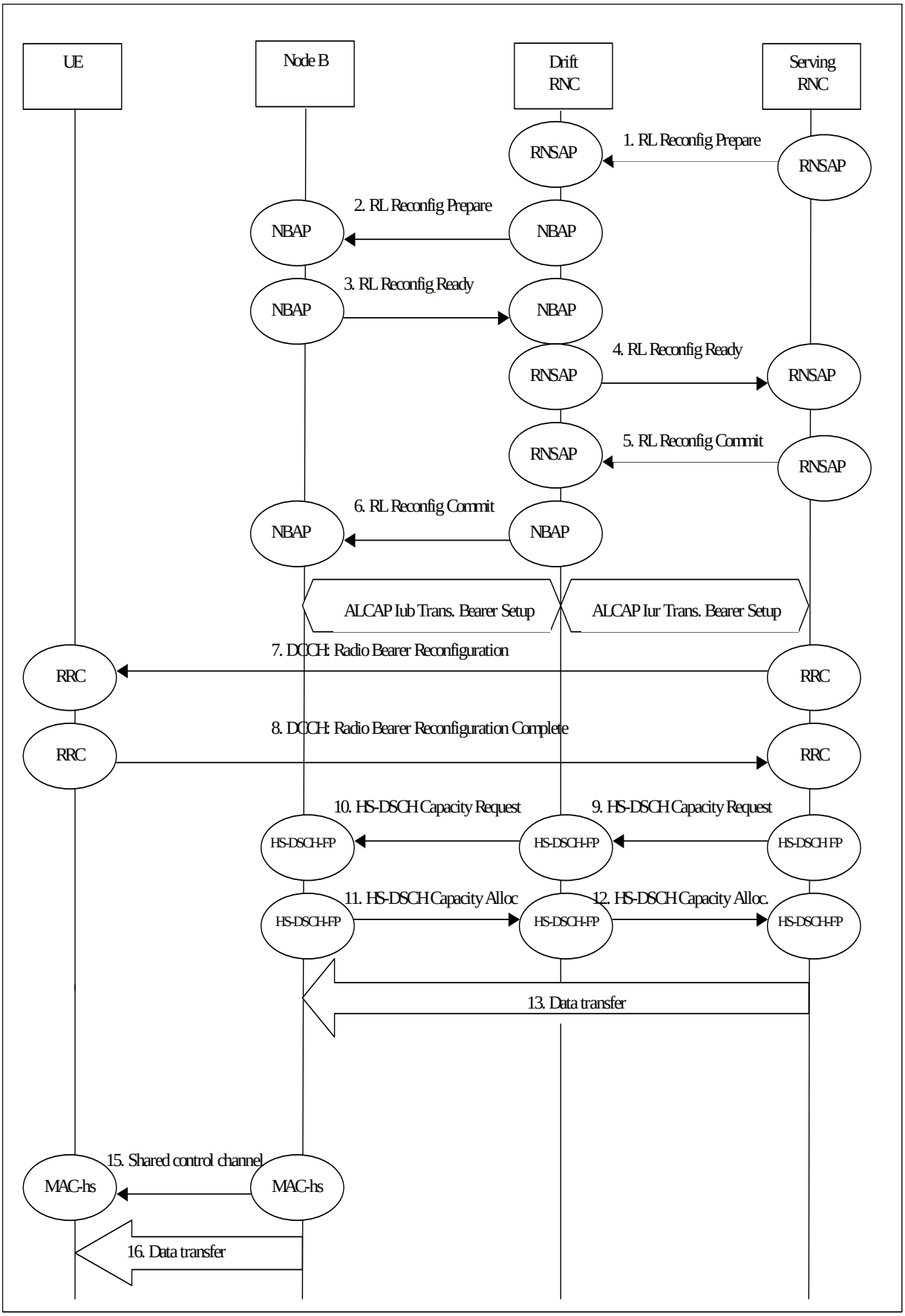
This information of the physical resource of HS-SCCHs (DL) and HS-SICHs (UL) is sent through COMMON TRANSPORT CHANNEL SETUP REQUEST and COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST messages.

>>HS-SCCH Physical Channel Parameters		*0..<MaxnoofHS-SCCHs>*			GLOBAL	Reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>Time Slot	M		9.2.3.23		–	
>>>Midamble shift and Burst Type	M		9.2.3.7		–	
>>>HS-SCCH Power	M		DL Power 9.2.1.21		–	
>>> HS-SICH Physical Channel Parameters	M	*1*			YES	Reject
>>>>Time Slot	M		9.2.3.23		–	
>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>> Midamble shift and Burst Type	FFS		9.2.3.6		–	

Range bound	Explanation
MaxnooHS-SCCHs	Maximum number of HS-SCCH in a cell for 3.84Mcps TDD.

6.2.3 Example of HS-DSCH Configuration and Capacity Allocation

The following picture is an example sequence chart explaining the setup of HS-DSCH. It is assumed that the UE is in cell_DCH state. In case no RL haves already been established, the Radio Link Setup procedure is used instead of the Radio Link Reconfiguration procedure.


UE
Node B
Drift RNC
Serving RNC
RNSAP
1. RL Reconfig Prepare
RNSAP
2. RL Reconfig Prepare
NBAP
NBAP
3. RL Reconfig Ready
NBAP
NBAP
4. RL Reconfig Ready
RNSAP
RNSAP
RNSAP
5. RL Reconfig Commit
RNSAP
6. RL Reconfig Commit
NBAP
NBAP
ALCAP Iub Trans. Bearer Setup
ALCAP Iur Trans. Bearer Setup
7. DCCH: Radio Bearer Reconfiguration
RRC
RRC
8. DCCH: Radio Bearer Reconfiguration Complete
RRC
RRC
10. HS-DSCH Capacity Request
9. HS-DSCH Capacity Request
HS-DSCH-FP
HS-DSCH-FP
HS-DSCH FP
11. HS-DSCH Capacity Alloc
12. HS-DSCH Capacity Alloc.
HS-DSCH-FP
HS-DSCH-FP
HS-DSCH-FP
13. Data transfer
15. Shared control channel
MAC-hs
MAC-hs
16. Data transfer

Example 1

1. For supporting HSDPA, the radio link which shall carry the HS-DSCH has to be reconfigured. The SRNC initiates a Radio Link Reconfiguration by sending RADIO LINK RECONFIGURATION PREPARE message to DRNC.

2. The DRNC requests the respective Node B to prepare the synchronised RL reconfiguration by sending the NBAP RADIO LINK RECONFIGURATION PREPARE message.

3. Node B configures resources for the HS-DSCH and responds with NBAP RADIO LINK RECONFIGURATION READY message.

4. When the DRNC has completed the preparation phase, RADIO LINK RECONFIGURATION READY message is sent to the SRNC.

5. RNSAP RADIO LINK RECONFIGURATION COMMIT message is sent from SRNC to DRNC.

6. NBAP RADIO LINK RECONFIGURATION COMMIT message is sent from DRNC to Node B.

7. The SRNC sends a RADIO BEARER RECONFIGURATION message to the UE to establish the requested HS-DSCH.

8. The UE replies with a RADIO BEARER RECONFIGURATION COMPLETE message. - At this point in time, the HS-DSCH Transport Channel has been set up, and it is assumed that the MAC-hs in the Node B has already been configured earlier to have access to a pool of HS-PDSCH resources for HS-DSCH scheduling.

9. As soon as the SRNC detects the necessity to send HS-DL data on one HS-DSCH, it sends a HS-DSCH CAPACITY REQUEST control frame within the HS-DSCH Frame Protocol to the CRNC.

10. The CRNC forwards this message (HS-DSCH CAPACITY REQUEST control frame) to the Node B. So in this example sequence, the CRNC does not interfere with the HS-DSCH scheduling.

11. The Node B determines the amount of data (credits) that can be transmitted on the HS-DSCH and reports this information back to the DRNC in a HS-DSCH CAPACITY ALLOCATION control frame in the HS-DSCH Frame Protocol.

12. The DRNC sends the HS-DSCH CAPACITY ALLOCATION control frame to SRNC. So again, the DRNC does not react itself to that message in this example.

13. The SRNC starts sending DL data to the Node B. (This is done via the two HS-DSCH Frame Protocol "hops" on Iur and Iub interface.)
The Node B schedules the DL transmission of DL data on HS-DSCH which includes allocation of PDSCH resources.

14. Void.~~The Node B transmits the HI on the DPCH to the respective UE.~~

15. The Node B transmits the signalling information (HS-PDSCH coordinates) to the UE using the HS-SCCH.

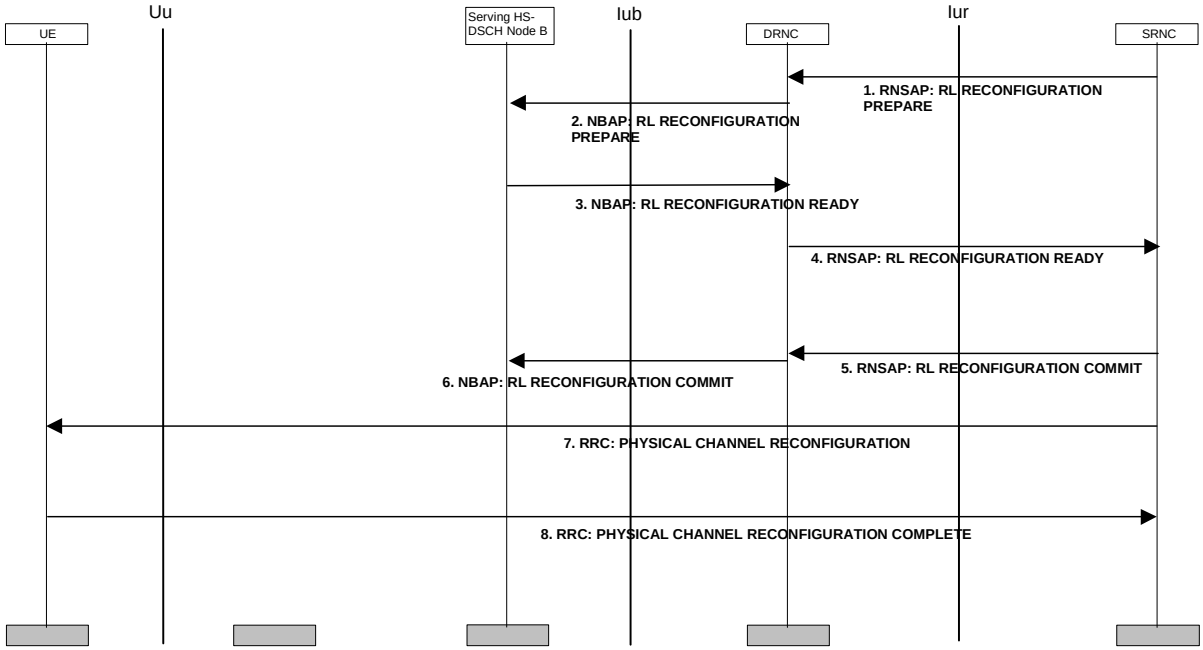
16. The Node B sends the HS-DSCH data to the UE on the HS-PDSCH(s).

6.2.4 Examples of HS-DSCH Mobility Procedures

NOTE: All signalling flows in this subclause assume that the non multiplexing of flows for different UE's on one transport bearer is used (Option 1 - One Transport Bearer per HS-DSCH Transport Channel).

6.2.4.1 Intra-Node B serving HS-DSCH cell change

An example of an intra-Node B serving HS-DSCH cell change while keeping the active set is shown in the figure below.



Example 2: Intra-Node B serving HS-DSCH cell change

1. The SRNC decides there is a need for a serving HS-DSCH cell change and prepares a RADIO LINK RECONFIGURATION PREPARE message which is transmitted to the DRNC. The message includes an identification of the target HS-DSCH cell.

2. In this case, both the source and target HS-DSCH cells are controlled by the same Node B. The DRNC requests the serving HS-DSCH Node B to perform a synchronised radio link reconfiguration using the RADIO LINK RECONFIGURATION PREPARE message. The reconfiguration comprises a transfer of the HS-DSCH resources from the source HS-DSCH radio link to the target HS-DSCH radio link. The message includes also necessary information to setup the HS-DSCH resources in the target HS-DSCH cell, including a DRNC selected HS-DSCH UE identity.

3. The serving HS-DSCH Node B returns a RADIO LINK RECONFIGURATION READY message.

4. The DRNC returns a RADIO LINK RECONFIGURATION READY message to the SRNC. The message includes HS-SCCH set info, scrambling code for the target HS-DSCH cell and the HS-DSCH UE identity.

5. The SRNC now proceeds by transmitting RADIO LINK RECONFIGURATION COMMIT message to the DRNC including an SRNC selected activation time in the form of a CFN.

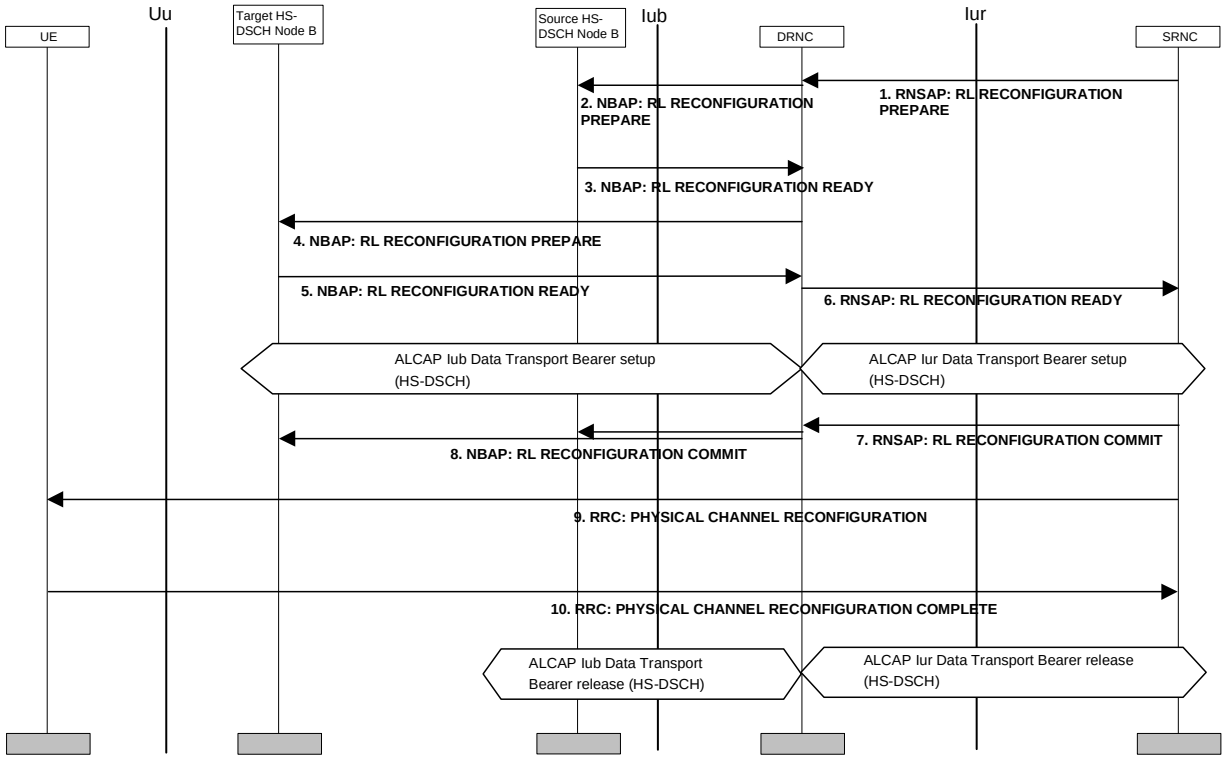
6. The DRNC transmits a RADIO LINK RECONFIGURATION COMMIT message to the serving HS-DSCH Node B including the activation time. At the indicated activation time, the serving HS-DSCH Node B stops HS-DSCH transmission to the UE in the source HS-DSCH cell and starts HS-DSCH transmission to the UE in the target HS-DSCH cell.

7. The SRNC transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The message includes activation time, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and HS-DSCH UE identity.

8. At the indicated activation time the UE resets MAC-hs, stops receiving HS-DSCH in the source HS-DSCH cell and starts HS-DSCH reception in the target HS-DSCH cell. The UE returns a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SRNC.

6.2.4.2 Inter-Node B serving HS-DSCH cell change

An example of an inter-Node B serving HS-DSCH cell change while keeping the active set is shown in the figure below.



Example 3: Inter-Node B serving HS-DSCH cell change

1. The SRNC decides there is a need for a serving HS-DSCH cell change and prepares a RADIO LINK RECONFIGURATION PREPARE message which is transmitted to the DRNC. The message indicates the target HS-DSCH cell.

2. In this case, the source and target HS-DSCH cells are controlled by different Node Bs. The DRNC requests the source HS-DSCH Node B to perform a synchronised radio link reconfiguration using the RADIO LINK RECONFIGURATION PREPARE message, removing its HS-DSCH resources for the source HS-DSCH radio link.

3. The source HS-DSCH Node B returns a RADIO LINK RECONFIGURATION READY message including an indicator that MAC-hs will reset as a result of the reconfiguration.

4. The DRNC requests the target HS-DSCH Node B to perform a synchronised radio link reconfiguration using the RADIO LINK RECONFIGURATION PREPARE message, adding HS-DSCH resources for the target HS-DSCH radio link. The message includes also necessary information to setup the HS-DSCH resources in the target HS-DSCH cell, including a DRNC selected HS-DSCH UE identity.

5. The target HS-DSCH Node B returns a RADIO LINK RECONFIGURATION READY message.

6. The DRNC returns a RADIO LINK RECONFIGURATION READY message to the SRNC. The message includes HS-SCCH set info, scrambling code for the target HS-DSCH cell and the HS-DSCH UE identity.

7. The HS-DSCH transport bearer to the target HS-DSCH Node B is established. The SRNC proceeds by transmitting RADIO LINK RECONFIGURATION COMMIT to the DRNC including an SRNC selected activation time in the form of a CFN.

8. The DRNC transmits a RADIO LINK RECONFIGURATION COMMIT message to the source HS-DSCH Node B and the target HS-DSCH Node B including the activation time. At the indicated activation time the source HS-DSCH Node B stops and the target HS-DSCH Node B starts transmitting on the HS-DSCH to the UE.

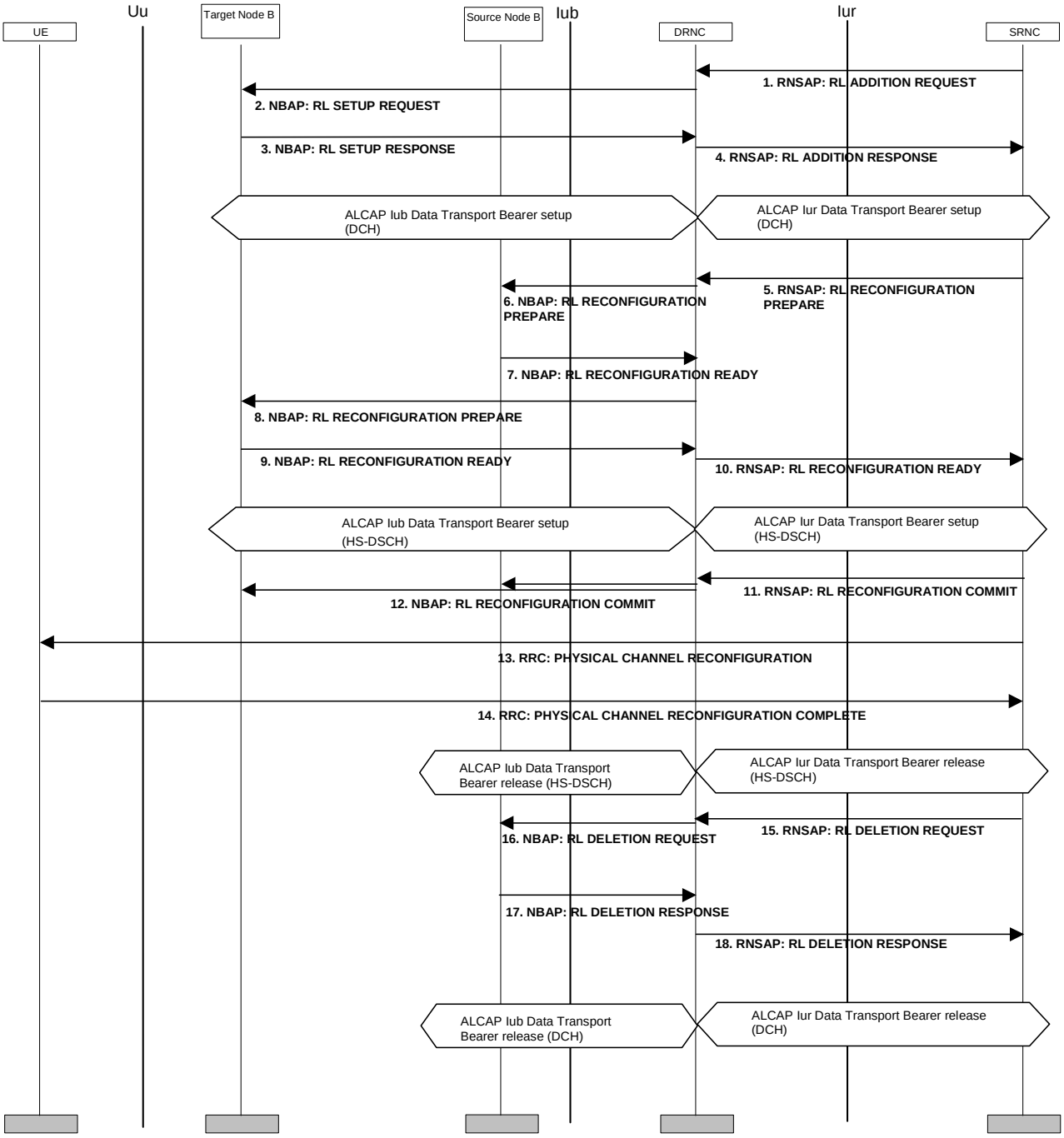
9. The SRNC also transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The message includes activation time, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and HS-DSCH UE identity.

10. At the indicated activation time the UE resets MAC-hs, stops receiving HS-DSCH in the source HS-DSCH cell and starts HS-DSCH reception in the target HS-DSCH cell. The UE returns a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SRNC. The HS-DSCH transport bearer to the source HS-DSCH Node B is then released.

6.2.4.3 Inter-Node B serving HS-DSCH cell change at hard handover

Two examples of hard handover combined with an inter-Node B serving HS-DSCH cell change are shown in figures below.

In the first example the source Node B and the target Node B are controlled by the same DRNC. The HS-DSCH mobility procedure is performed in two steps: the first step consists of establishing a new radio link without the HS-DSCH resources; the next step is a transfer of the HS-DSCH resources to this new radio link followed by a release of the old radio link. In the radio interface, a combined procedure is used.



Example 4: Inter-Node B serving HS-DSCH cell change during hard handover (two step approach)

1. The SRNC decides that there is a need for a hard handover combined with a serving HS-DSCH cell change. It prepares a RADIO LINK ADDITION REQUEST message, which is transmitted to the DRNC. The message indicates the target cell for hard handover.

2. The DRNC allocates radio resources for the new radio link and requests the target Node B to establish a new radio link by transmitting a RADIO LINK SETUP REQUEST message including the necessary parameters for DPCH establishment.

3. The target Node B allocates resources, starts physical layer reception on the DPCH on the new radio link and responds with RADIO LINK SETUP RESPONSE message.

4. The DRNC responds to the SRNC with RADIO LINK ADDITION RESPONSE message and the DCH transport bearer is established.

5. As the next step, the SRNC prepares a RADIO LINK RECONFIGURATION PREPARE message which is transmitted to the DRNC. The message indicates the target HS-DSCH cell.

6. The DRNC requests the source HS-DSCH Node B to perform a synchronised radio link reconfiguration using the RADIO LINK RECONFIGURATION REQUEST message, removing its HS-DSCH resources for the source HS-DSCH radio link.

7. The source HS-DSCH Node B returns a RADIO LINK RECONFIGURATION READY message.

8. The DRNC requests the target HS-DSCH Node B to perform a synchronised radio link reconfiguration using the RADIO LINK RECONFIGURATION REQUEST message, adding HS-DSCH resources for the target HS-DSCH radio link. The message also includes ~~also~~ necessary information to setup the HS-DSCH resources in the target HS-DSCH cell, including a DRNC selected HS-DSCH UE identity.

9. The target HS-DSCH Node B returns a RADIO LINK RECONFIGURATION READY message to the DRNC.

10. The DRNC returns a RADIO LINK RECONFIGURATION READY message to the SRNC. The message includes HS-SCCH set info, scrambling code for the target HS-DSCH cell and the HS-DSCH UE identity.

11. The HS-DSCH transport bearer to the target HS-DSCH Node B is established. The SRNC proceeds by transmitting RADIO LINK RECONFIGURATION COMMIT message to the DRNC including an SRNC selected activation time in the form of a CFN.

12. The DRNC transmits a RADIO LINK RECONFIGURATION COMMIT message to the source HS-DSCH Node B and the target HS-DSCH Node B including the activation time. At the indicated activation time the source HS-DSCH Node B stops and the target HS-DSCH Node B starts transmitting on the HS-DSCH to the UE.

13. The SRNC also transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The message includes activation time, DPCH information for the target cell, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and HS-DSCH UE identity.

14. At the indicated activation time the UE abandons the current active set, initiates establishment of the DPCH in the target cell and resets MAC-hs. When physical layer synchronisation is established in the target cell, it starts DPCH reception and transmission and HS-DSCH reception in the target cell. The UE returns a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SRNC. The HS-DSCH transport bearer to the source HS-DSCH Node B is released.

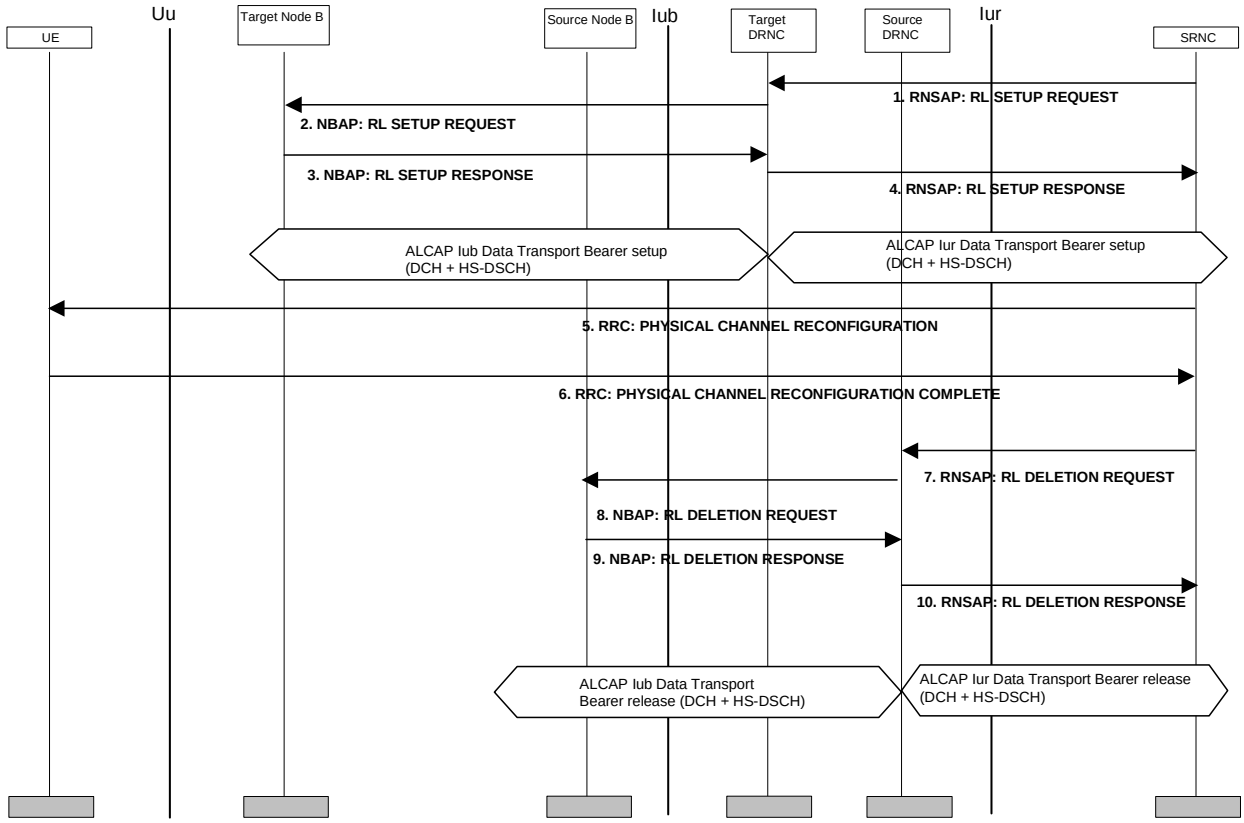
15. The SRNC then finalises the procedure by transmitting a RADIO LINK DELETION REQUEST message to the DRNC. In the message the source cell to be deleted is identified.

16. The DRNC transmits a RADIO LINK DELETION REQUEST message to the source Node B.

17. The source Node B releases resources for the source radio link and returns a RADIO LINK DELETION RESPONSE message to the DRNC.

18. The DRNC returns a RADIO LINK DELETION RESPONSE message to the SRNC. The DCH transport bearer to the source Node B is released.

In the second example the source Node B and the target Node B are controlled by two different DRNCs, referred to as source DRNC and target DRNC, respectively. The HS-DSCH mobility procedure is performed in a single step.



Example 5: Inter-Node B serving HS-DSCH cell change during hard handover (single-step approach)

1. The SRNC decides that there is a need for hard handover combined with serving HS-DSCH cell change. It prepares a RADIO LINK SETUP REQUEST message, which is transmitted to the target DRNC. The message indicates the target cell for hard handover along with some information for setup of HS-DSCH resources in the target HS-DSCH cell.

2. The target DRNC allocates radio resources for the new radio link and requests the target Node B to establish a new radio link by transmitting a RADIO LINK SETUP REQUEST. The message includes the necessary parameters for DPCH establishment, as well as information for setup of HS-DSCH resources.

3. The target Node B allocates resources, starts physical layer reception on the DPCH on the new radio link and responds with RADIO LINK SETUP RESPONSE message. The message includes HS-SCCH set info and HS-DSCH flow control info.

4. The target DRNC responds to the SRNC with RADIO LINK SETUP RESPONSE message. The message includes HS-SCCH set info, HS-DSCH flow control info and the HS-DSCH UE identity. DCH and HS-DSCH transport bearers are established on both Iub and Iur.

5. The SRNC transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The message includes activation time, DPCH information for the target cell, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and HS-DSCH UE identity.

6. At the indicated activation time the UE abandons the current active set, initiates establishment of the DPCH in the target cell and resets MAC-hs. When physical layer synchronisation is established in the target cell, it starts DPCH reception and transmission and HS-DSCH reception in the target cell. The UE returns a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SRNC.

7. The SRNC then finalises the procedure by transmitting a RADIO LINK DELETION REQUEST message to the source DRNC. In the message the source cell to be deleted is identified.

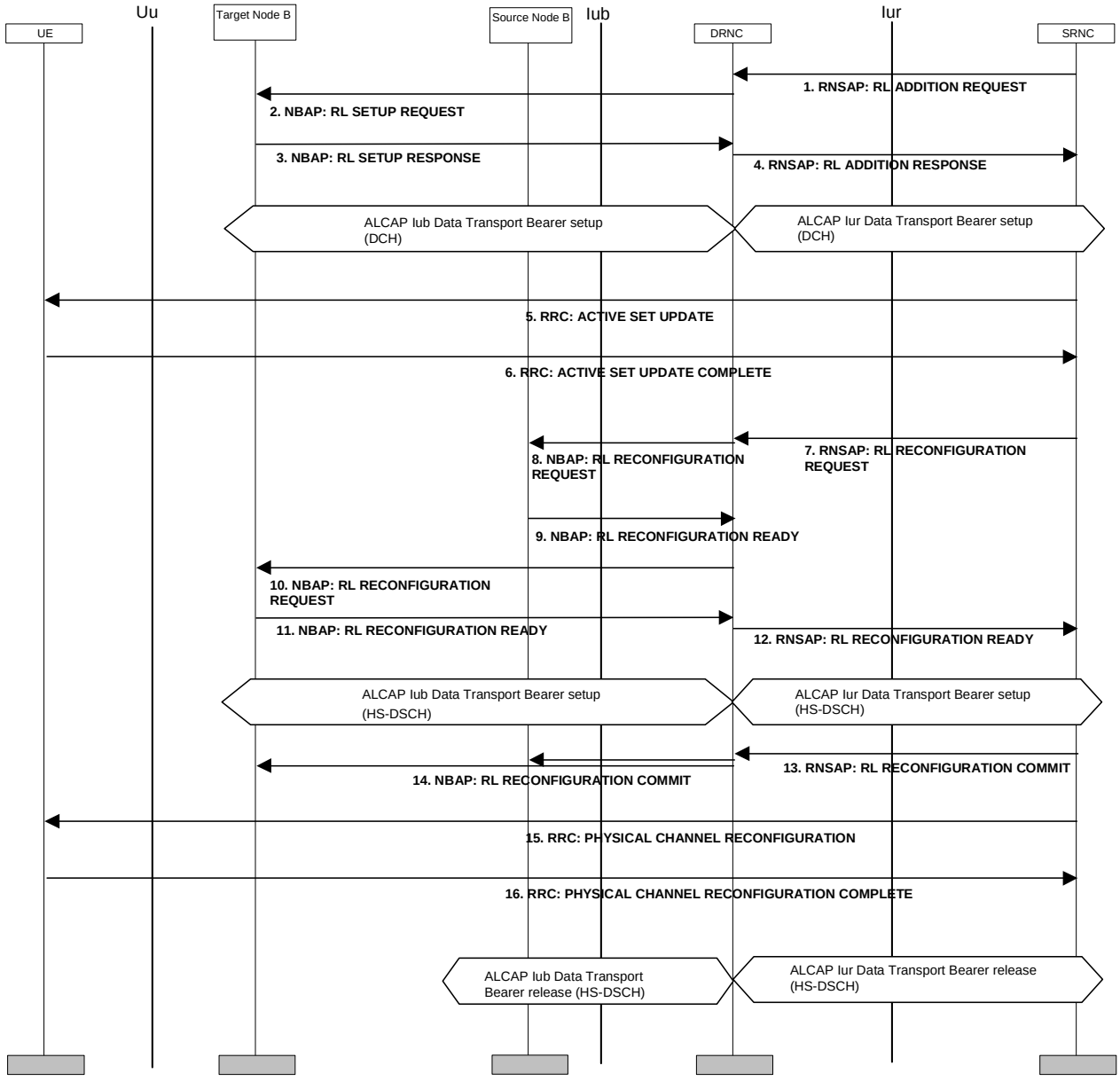
8. The source DRNC transmits a RADIO LINK DELETION REQUEST message to the source Node B.

9. The source Node B releases resources for the source radio link and returns a RADIO LINK DELETION RESPONSE message to the source DRNC.

10. The source DRNC returns a RADIO LINK DELETION RESPONSE message to the SRNC. The DCH and HS-DSCH transport bearers to the source Node B are released.

6.2.4.4 Inter-Node B serving HS-DSCH cell change after radio link addition

An example of addition of a radio link becoming the serving HS-DSCH radio link is shown in the figure below. This procedure is performed using two steps, both within the network and towards the UE. In the first step, the new radio link is added to the active set. The HS-DSCH is transferred to the added radio link as a second step.



Example 6: Inter-Node B serving HS-DSCH cell change after radio link addition

1. The SRNC decides there is a need for an addition of a radio link, which would become the new serving HS-DSCH cell. As a first step the SRNC requests the DRNC to establish the new radio link without the HS-DSCH resources by transmitting a RADIO LINK ADDITION REQUEST message to the DRNC.

2. The DRNC allocates radio resources for the new radio link and requests the target Node B to establish a new radio link by transmitting a RADIO LINK SETUP REQUEST message including the necessary parameters for DPCH establishment.

3. The target Node B allocates resources, starts physical layer reception on the DPCH on the new radio link and responds with RADIO LINK SETUP RESPONSE message.

4. The DRNC responds to the SRNC with RADIO LINK ADDITION RESPONSE message. The DCH transport bearer is then established.

5. The SRNC prepares an ACTIVE SET UPDATE message and transmits it to the UE. The message includes an identification of the radio link to add.

6. The UE adds the new radio link to its active set and returns an ACTIVE SET UPDATE COMPLETE message to the SRNC.

7. As the next step, the SRNC prepares a RADIO LINK RECONFIGURATION REQUEST~~PREPARE~~ message which is transmitted to the DRNC. The message indicates the target HS-DSCH cell.

8. If we assume the source and target HS-DSCH cells are controlled by different Node Bs, the DRNC requests the source HS-DSCH Node B to perform a synchronised radio link reconfiguration using the RADIO LINK RECONFIGURATION REQUEST message, removing its HS-DSCH resources for the source HS-DSCH radio link.

9. The source Node B returns a RADIO LINK RECONFIGURATION READY message to the DRNC.

10. The DRNC requests the target HS-DSCH Node B to perform a synchronised radio link reconfiguration using the RADIO LINK RECONFIGURATION REQUEST message, adding HS-DSCH resources for the target HS-DSCH radio link. The message also includes ~~also~~ necessary information to setup the HS-DSCH resources in the target HS-DSCH cell, including a DRNC selected HS-DSCH UE identity.

11. The source HS-DSCH Node B returns a RADIO LINK RECONFIGURATION READY message.

12. The DRNC returns a RADIO LINK RECONFIGURATION READY message to the SRNC. The message includes HS-SCCH set info, scrambling code for the target HS-DSCH cell and the HS-DSCH UE identity.

13. The HS-DSCH transport bearer to the target HS-DSCH Node B is established. The SRNC proceeds by transmitting RADIO LINK RECONFIGURATION COMMIT message to the DRNC including an SRNC selected activation time in the form of a CFN.

14. The DRNC transmits RADIO LINK RECONFIGURATION COMMIT messages to the source HS-DSCH Node B and the target HS-DSCH Node B including the activation time. At the indicated activation time, the source HS-DSCH Node B stops and the target HS-DSCH Node B starts transmitting on the HS-DSCH to the UE.

15. The SRNC also transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The message includes activation time, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and HS-DSCH UE identity.

16. At the indicated activation time, the UE resets MAC-hs, stops receiving HS-DSCH in the source HS-DSCH cell and starts HS-DSCH reception in the target HS-DSCH cell. The UE returns a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SRNC. The HS-DSCH transport bearer to the source HS-DSCH Node B is released.

6.2.5 Open Issues

Void.

6.3 Impacts on Iub Interface User Plane Protocols

6.3.1 Transport Bearer Options

6.3.1.1 Option 1 - One Transport Bearer per HS-DSCH Transport Channel

6.3.1.1.1 Frame Protocol Aspects for HS-DSCH

Node B with HSDPA has several functions which are similar to the DRNC functions with DSCH in the following aspects:

- it handles a certain pool of code and power resources autonomously, like the DRNC;
- it performs several traffic management functions (e.g. code mapping, scheduling) like the DRNC; and
- it controls MAC-d flows over Iub (rather than Transport Block streams), just as a DRNC controls MAC-c/sh SDU data flows across Iur.

We focus on the latter observation to stress that the Iub interface with HSDPA should be compared to the Iur (rather than Iub) interface with DSCH and that the Iur behaviour with HSDPA should be identical to the Iur behaviour with DSCH.

Assuming that each HS-DSCH MAC-d flow is carried on a separate Iub/Iur transport bearer (figure 2), then the Data and Control Frame formats for the HS-DSCH Frame Protocol over Iub/Iur could be almost the same as their DSCH equivalents over Iur, the only exception being the following:

1) MAC-c/sh SDU is renamed MAC-d PDU.~~CmCH-PI may have to be replaced by Priority Queue ID (FFS); and~~

~~2) MAC-c/sh SDU is renamed MAC-d PDU.~~

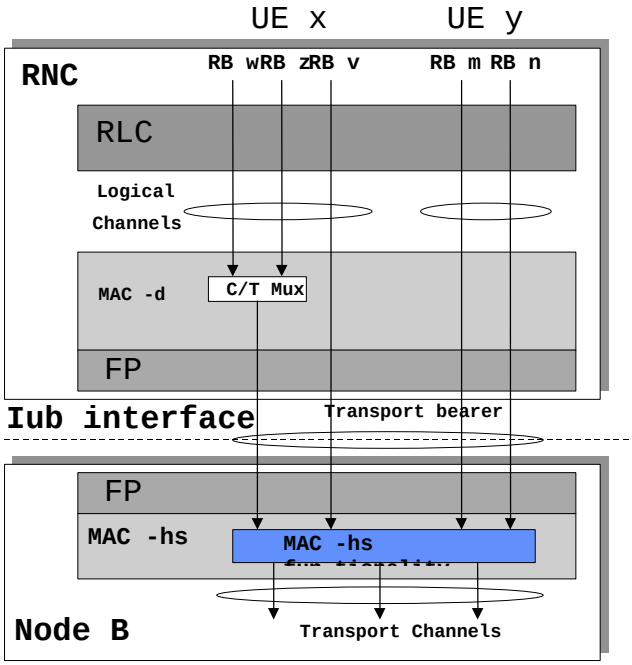


Figure 2: The case which no MAC level multiplexing is allowed over Iub

6.3.1.1.2 Data Frame Format for HS-DSCH Frame Protocol

The HS-DSCH data frames have almost the same format as their DSCH counterparts.

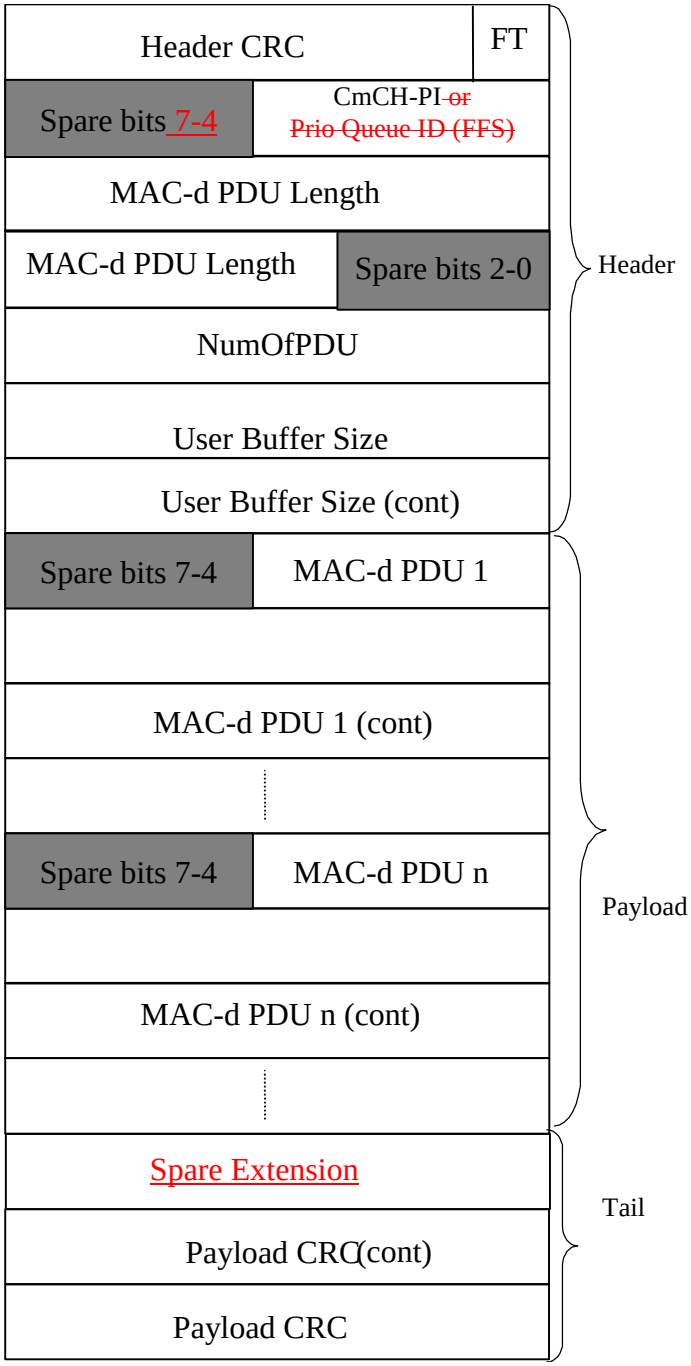


Figure 3: HS-DSCH Iur/Iub Data Frame structure

Header CRC: Cyclic Redundancy Checksum calculated on the header of a data frame with a polynomial.

CmCH-P: The *Common Transport Channel Priority Indicator* IE indicates the priority of the data frame and the SDUs included which are waiting in the SRNC's Tx buffer for transmission via the HS-DSCH. As in case of the HS-DSCH on Iur, the *CmCH-PI* is in the range 0 to 15, where 0 means lowest priority and 15 is the highest priority.

~~*Priority Queue ID:* This field identifies the MAC-hs Priority Queue in the Node B to which the MAC-d PDUs in this frame should be delivered. The Priority Queue ID is allocated by SRNC via NBAP/RNSAP procedures.~~

Frame Type (FT): Describes if it is a control frame or a data frame.

MAC-d PDU Length - The value of that field indicates the length of every MAC-d PDU in the payload of the HS-DSCH data frame in number of bits.

NumOfPDU: Indicates the number of MAC-d PDUs in the payload.

User Buffer Size: Indicates the users' buffer size (i.e. the amount of data in the buffer) in octets for a given Common Transport Channel Priority Indicator level~~(or Priority Queue)~~.

MAC-d PDU: A MAC-d PDU contains the *C/T* IE field of the MAC header followed by one RLC PDU~~same as MAC-hs SDU~~.

Payload CRC: Cyclic Redundancy Checksum calculated on the payload~~header~~ of a data frame with a polynomial.

Spare Extension: Indicates the location where new IEs can in the future be added in a backward compatible way.

6.3.1.1.3 Control Frame Format for HS-DSCH Frame Protocol

The flow control mechanism for HSDPA is based on two Control Frames:

- HS-DSCH Capacity Request; and
- HS-DSCH Capacity Allocation.

The HS-DSCH Capacity Request/Allocation control frames have almost the same format as their DSCH counterparts.

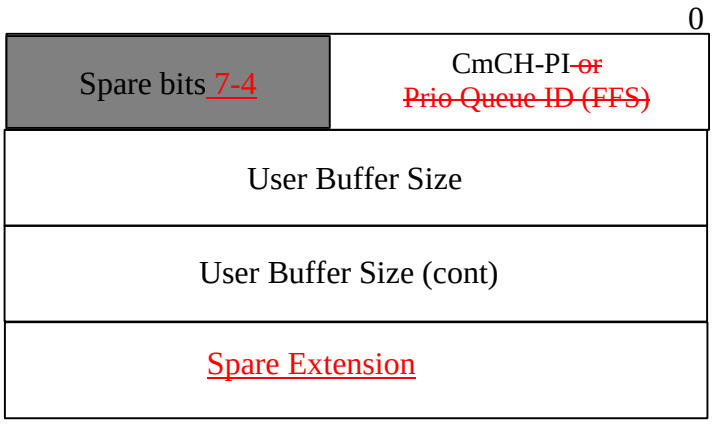


Figure 4: HS-DSCH Capacity Request Control Frame

CmCH-PI: The *Common Transport Channel Priority Indicator* IE indicates the priority of the data frame and the SDUs included which are waiting in the SRNC's Tx buffer for transmission via the HS-DSCH. As in the case of the DSCH on Iur, the *CmCH-PI* is in the range 0 to 15, where 0 means lowest priority and 15 is the highest priority.

~~*Priority Queue ID:* The *Priority Queue ID* indicates the Priority Queue for which the User Buffer Size information is provided.~~

User Buffer Size: Indicates the users' buffer size (i.e. the amount of data in the buffer in the SRNC) in octets for ~~a~~the given~~indicated~~ Common Transport Channel Priority Indicator level.

~~(or Priority Queue)~~.*Spare Extension* - Indicates the location where new IEs can in the future be added in a backward compatible way

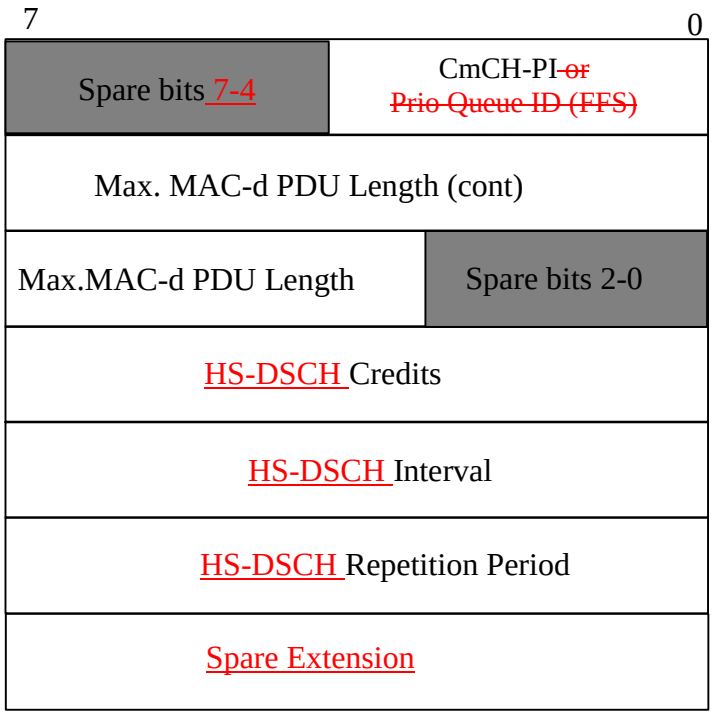


Figure 5: HS-DSCH Capacity Allocation Control Frame

CmCH-PI: The *Common Transport Channel Priority Indicator* IE indicates the priority of the PDUs for which credit (a transmission permit) is allocated with that message.

~~*Priority Queue ID:* The *Priority Queue ID* indicates the Priority Queue in the Node B for which credit (a transmission permit) is allocated with this message.~~

Max MAC-d PDU Length: The value indicates the maximum allowable MAC-d PDU size. MAC-d PDU contains the C/T field of the MAC header followed by one RLC PDU Field length: See the value of the *MAC-d PDU Length* IE.

HS-DSCH Credits: The *HS-DSCH Credits* IE indicates the number of MAC-d PDUs that a user may transmit ~~for the indicated CmCH-PI (or Priority Queue ID)~~.

HS-DSCH Interval: The value of this field indicates the time interval during which the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~ control frame may be transmitted. This value is only applied to the HS-DSCH transport channel.

HS-DSCH Repetition Pperiod: The value of this field indicates the number of subsequent intervals that the *HS-DSCH Credits* IE granted in the HS-DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~ control frame may be transmitted. These values represent an integer number of Intervals (see subclause 6.3.3.3.4). This field is only applied to the HS-DSCH transport channel.

Spare Extension - Indicates the location where new IEs can in the future be added in a backward compatible way

6.3.1.1.4 Open Issues

Void.

6.3.1.2 Option 2 - One Transport Bearer for Multiple MAC-d flows for Multiple UE's

6.3.1.2.1 Frame Protocol Aspects for HS-DSCH

This alternative is to allow multiple UEs to share the same transport bearers over Iub. Therefore transport bearers can be configured based on following factors:

- number of cells in Node-B i.e. if Node-B supports more than one cell => one transport bearer / cell;

- priorities => transport bearer / priority;
- only one transport bearer / Node-B;
- the number of HSDPA related physical channels on Node-B;

  etc.

In order to allow multiple MAC-d flows to use the same transport resources on Iub-interface, the MAC-d flows multiplexing - currently UE-ID multiplexing is provided only for the common channels (FACH/RACH)- should be adopted for the HSDPA related channels on Iub. In practice this means that either the services of the MAC-c/sh is needed, or if the multiplexing is provided on the FP level a new MAC-d flow multiplexing functionality is required on the FP layer.

Figure 6 presents the models where the MAC-d flow Mux is provided either on the MAC-c/sh or on the FP layer respectively.

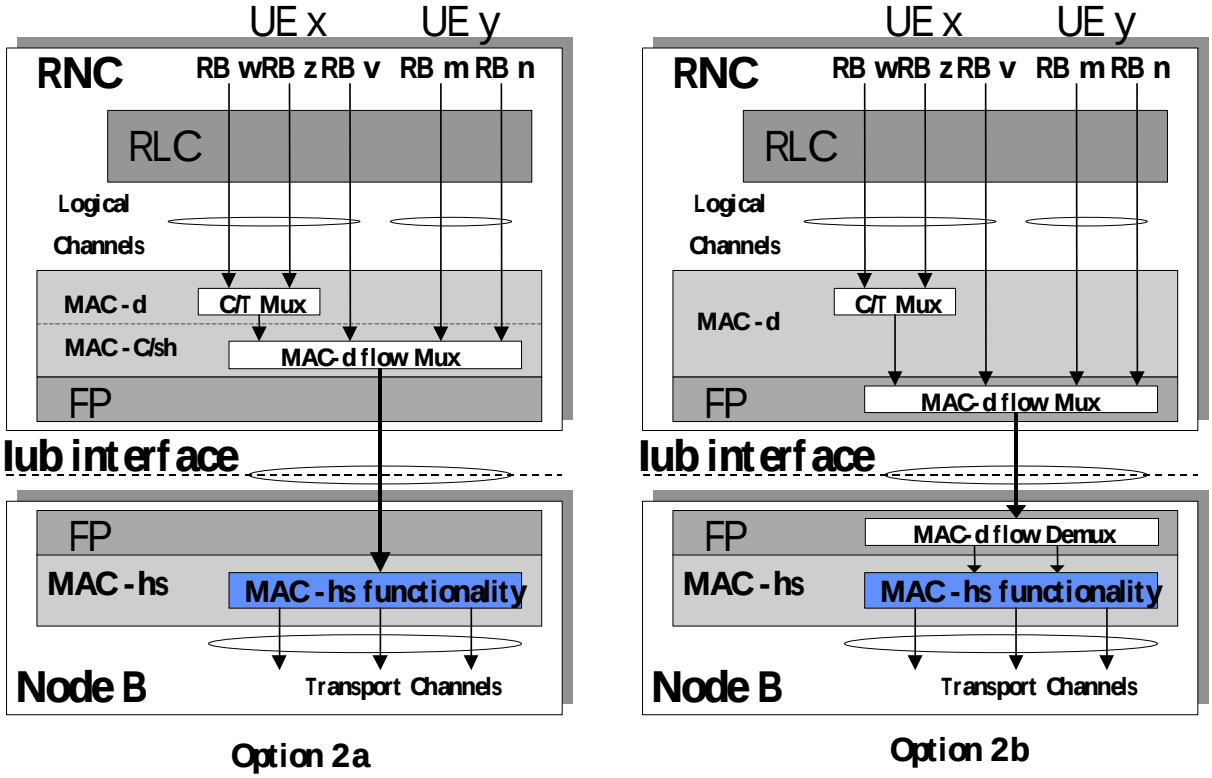


Figure 6: The case which MAC level multiplexing is allowed over Iub

In the option 2a ***(not the current RAN2 assumption)***, the MAC-d flow Mux could be based on the use of the RNTI in the MAC header. This method is already being used for common channels and it doesn't introduce anything new to the MAC-c/sh. In the option 2b, the MAC-d flow Mux is moved to the FP layer, where the MAC-d flow Mux could be based either on RNTI or on a new identification in addition to MAC-d Flow ID, which needs to be defined on the FP layer for this purpose.

It is noted that option 2b is preferable considering the interaction with RAN2 and the work load.

6.3.1.2.2 Data Frame Format for HS-DSCH Frame Protocol

The HS-DSCH FP facilitates multiplexing of data streams from different UEs onto the same data frame and allows multiple UEs and multiple MAD-d flows to share the same transport bearer.

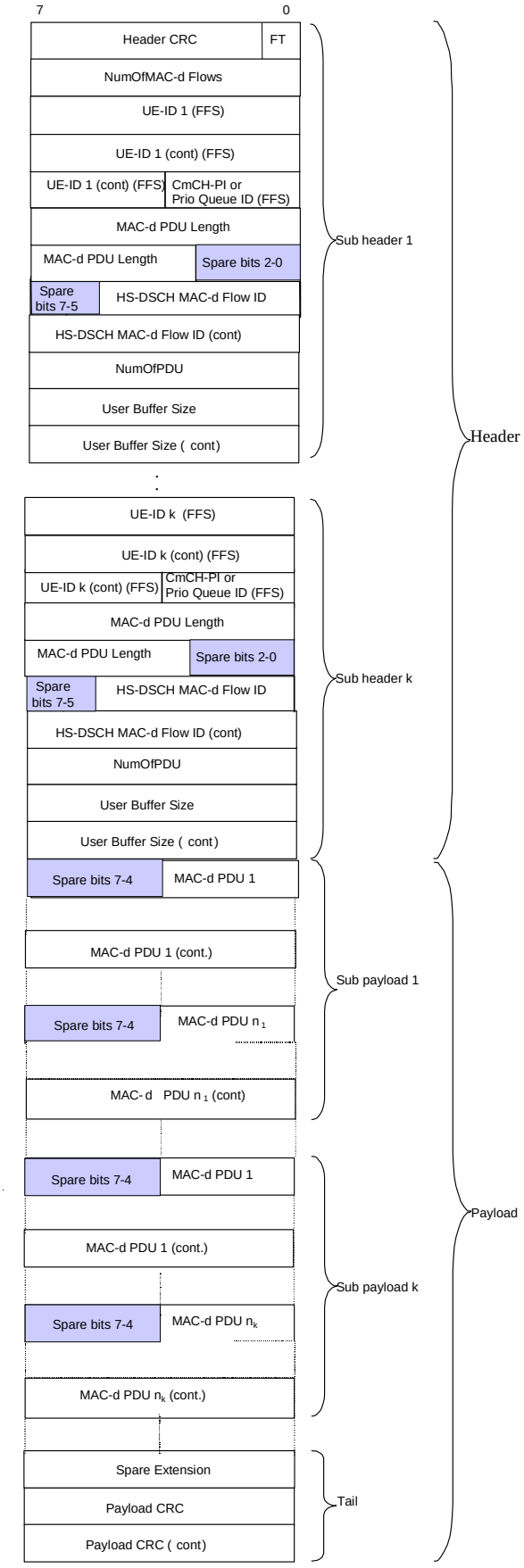


Figure 7: HS-DSCH Iur/Iub Data Frame Structure

Header of data frame consists of NumOfMAC-d Flows and 1 to k sub-headers of data streams for each MAC-d flow. In the payload are placed sub-payloads for each UE-ID and HS-DSCH MAC-d Flow ID combination.

6.3.1.2.2.1 Coding of information elements in data frames

Header CRC:

Description: Cyclic Redundancy Checksum calculated on the header of a data frame with polynomial X^7+X^6+X^2+1. The CRC calculation shall cover all bits in the header, starting from bit 0 in the first byte (FT field) up to the end of the header.

Value range: {0-127}.

Field length: 7 bits.

Frame Type (FT)

Description: describes if it is a control frame or a data frame.

Value range: {0=data, 1=control}.

Field Length: 1 bit.

NumOfMAC-d Flows:

Description: Indicates the number of MAC-d Flows in the payload.

Value range: {1-255}.

Field Length: 8 bits.

UE-ID (FFS)

As UE-ID is proposed to use DRNTI. Using proprietary UE-ID for FP is FFS.

Description: Identifies the UE in the DRNC.

Value range: {0-1048575}.

Field length: 20 bits.

Common Transport Channel Priority Indicator (CmCH-PI)

Description: CmCH-PI is the relative priority of the data frame and the SDUs included.

Value range: {0-15, where 0=lowest priority, 15=highest priority}.

Field length: 4 bits.

Priority Queue ID

Same definition with the one in subclause 6.3.1.1.2.

MAC-d PDU Length

Description: The value of that field indicates the size of MAC-d PDU.

Value range: Same value range with the one in option 1.

Field Length: Same length with the one in option 1

HS-DSCH MAC-d Flow ID

Description: The value of that field indicates which MAC-d flow this PDU belongs to.

Value range: Same value range with the one in NBAP will be defined.

Field Length: FFS.

NumOfPDU

Description: Indicates the number of MAC-d PDUs in the payload.

Value range: {1-255}.

Field Length: 8 bits.

User Buffer Size

Description: Indicates the users' buffer size (i.e. the amount of data in the buffer) in octets for a given Common Transport Channel Priority.

Value range: {0-65535}.

Field length: 16 bits.

MAC-d PDU

Description: Same as option 1.

Field length: Same as option 1.

Payload CRC

Description: Cyclic Redundancy Checksum calculated on the payload of a data frame with polynomial X^16+X^15+X^2+1. The CRC calculation shall cover all bits in the data frame payload, starting from bit 7 in the first byte up to bit 0 in the byte before the payload CRC.

Field length: 16 bits.

Spare Extension

Description: Indicates the location where new IEs can in the future be added in a backward compatible way.

Field length: 0-2 octets.

6.3.1.2.3 Control Frame Format for HS-DSCH Frame Protocol

In addition to the HS-DSCH Data Frame, all the control frames, which will be delivered over Iub HS-DSCH transport bearer, should be considered. Since in case HS-DSCH data frames may be multiplexed, and control frames also share the transport bearer, each control frame (Capacity Request, Capacity Allocation, …) on HS-DSCH transport bearer should include UE-id and HS-DSCH MAC-d Flow ID.

6.3.1.2.4 Open Issues

- In case the CRNC indicates that the Node B may multiplex, can the Node B choose freely among the available transport bearers, or could there be limits regarding what level of multiplexing the CRNC can handle on each transport bearer.
- Interaction between solutions performing UE multiplexing and Ddirect SRNC-Node B bearers.

6.3.1.3 Inter-operability of Options 1 and 2

Both options 1 and 2 can exist together. In the case that either Node B or CRNC doesn't want to multiplex HSDPA data streams then a separate bearer will be set up for each HSDPA data stream. When the CRNC has to set up a HSDPA data stream over the Iub, it will inform the Node B a candidate list of transport bearer (This information implies whether Node B allows to multiplex or not). The Node B will then decide whether it wants to multiplex this data stream or not and in the case the Node B decides to multiplex, it will also choose the transport bearer to be shared among the one CRNC gave.

3 possible cases can be considered;

1. CRNC allows HSDPA data stream multiplexing and Node B decides to multiplex;
2. CRNC allows HSDPA data stream multiplexing and Node B decides not to multiplex;

3. CRNC doesn't allow HSDPA data stream multiplexing.

Case 1: Since both sides decide to multiplex, Node B chooses transport bearer to be shared and provides this information to the CRNC instead of new transport bearer information.

Case 2: Since mux-option cannot be used, Node B provides new transport bearer information to CRNC.

Case 3: Since mux-option cannot be used, Node B provides new transport bearer information to CRNC.

6.3.1.3.1 Signalling Flow Cases

6.3.1.3.1.1 CRNC allows HSDPA data stream multiplexing and Node B decides to multiplex (Case 1)

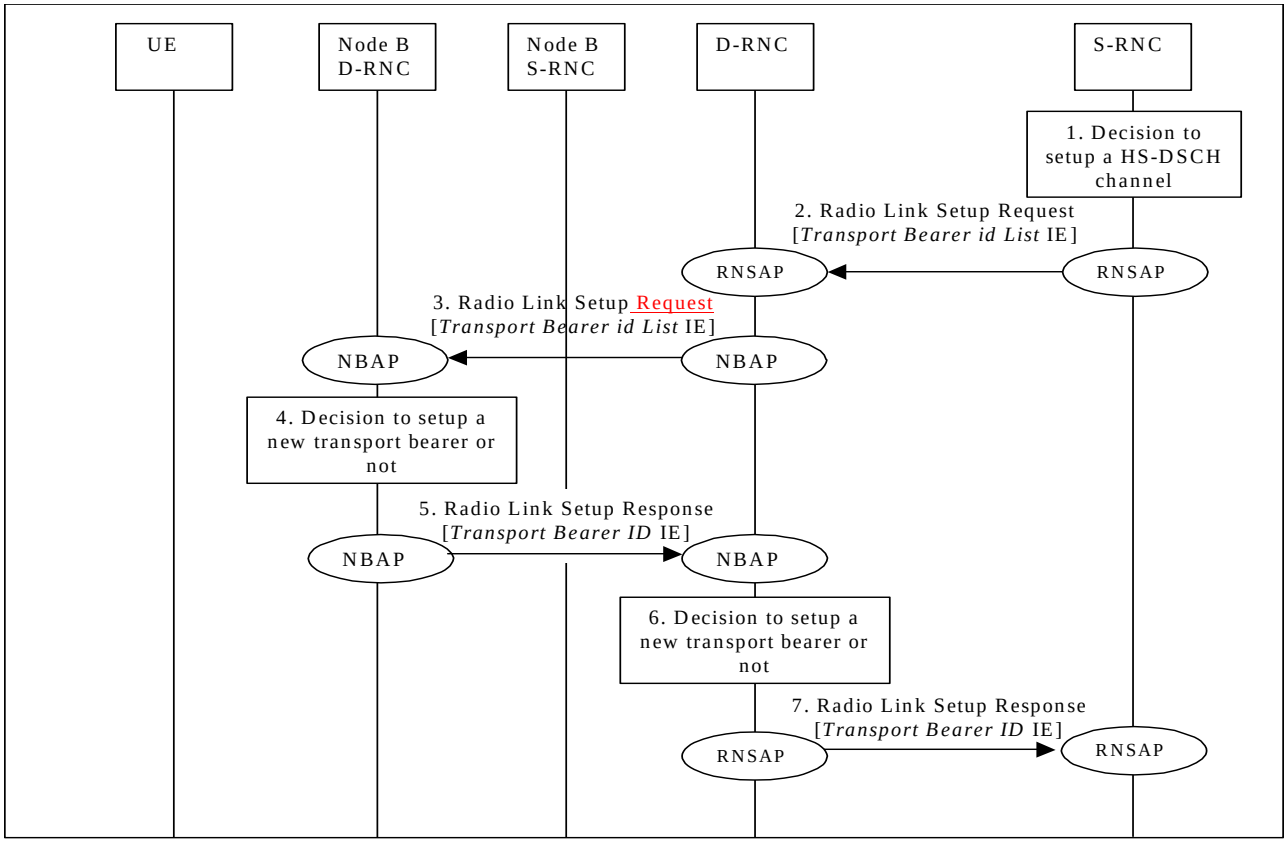


Figure 8: Node B decides to Multiplex

1. SRNC needs to set up a HS-DSCH channel.

2. SRNC sends RADIO LINK SETUP REQUEST message to DRNC with *Transport Bearer id List* IE. *Transport Bearer id List* IE shows which transport bearer can be shared as well as whether this data stream may be multiplexed or not. In this example *Transport Bearer id List* IE has more than zero transport bearer id. (Mux option over Iur is FFS.)

3. DRNC sends RADIO LINK SETUP REQUEST message to Node B with *Transport Bearer id List* IE. *Transport Bearer id List* IE shows which transport bearer can be shared as well as whether this data stream may be multiplexed or not. In this example *Transport Bearer id List* IE has more than zero transport bearer id.

4. Node B decides if mux option will be used or not. In this example, Node B decides to multiplex.

5. Node B chooses a transport bearer to be shared among the transport bearer ids in the list received and replies with the transport bearer ID in the RADIO LINK SETUP RESPONSE message.

6. DRNC decides if mux option will be used or not. In this example DRNC decides to multiplex. (Mux option over Iur is FFS.)

7. DRNC chooses a transport bearer to be shared among the transport bearer ids in the list received and replies with the transport bearer ID in the RADIO LINK SETUP RESPONSE message.

6.3.1.3.1.2 CRNC allows HSDPA data stream multiplexing and Node B decides not to multiplex (Case 2)

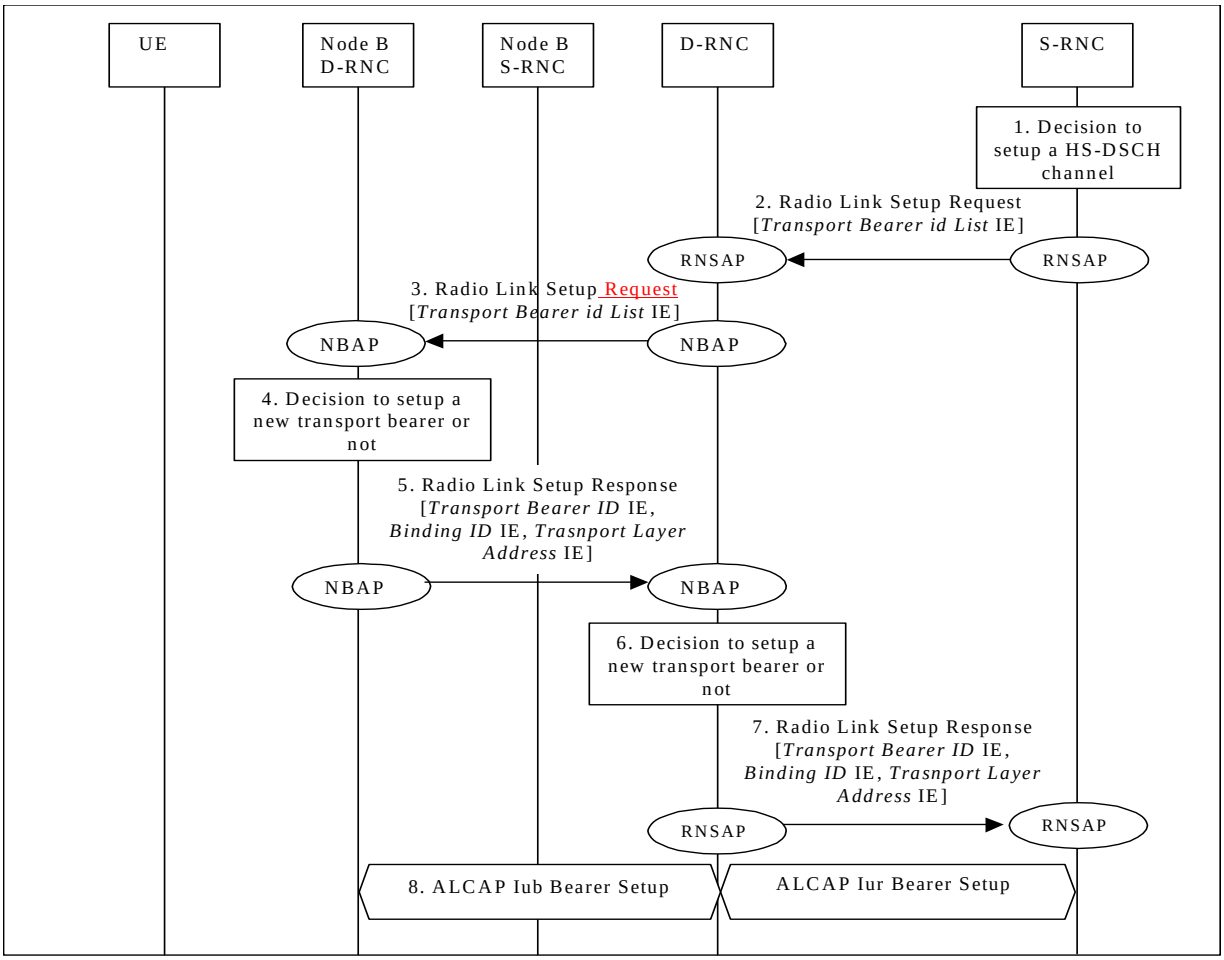


Figure 9: Node B decides not to multiplex

1. SRNC needs to set up a HS-DSCH channel.

2. SRNC sends RADIO LINK SETUP REQUEST message to DRNC with *Transport Bearer id List* IE. *Transport Bearer id List* IE shows which transport bearer can be shared as well as whether this data stream may be multiplexed or not. In this example *Transport Bearer id List* IE has more than zero transport bearer id. (Mux option over Iur is FFS.)

3. DRNC sends RADIO LINK SETUP REQUEST message to Node B with *Transport Bearer id List* IE. *Transport Bearer id List* IE shows which transport bearer can be shared as well as whether this data stream may be multiplexed or not. In this example *Transport Bearer id List* IE has more than zero transport bearer id.

4. Node B decides if mux option will be used or not. In this example Node B decides not to multiplex.

5. Node B replies with a new transport bearer ID as well as new transport information in the RADIO LINK SETUP RESPONSE message.

6. DRNC decides if mux option will be used or not. In this example DRNC decides not to multiplex. (Mux option over Iur is FFS.)

7. DRNC replies with a new transport bearer ID as well as new transport information in the RADIO LINK SETUP RESPONSE message.

8. New transport bearers over Iub/Iur set up.

6.3.2 Flow Control Options

This study area is intended to describe the various proposed solutions for the flow control mechanism for HSDPA.

6.3.2.1 Option 1 - Credit Based Flow Control

The need is foreseen to introduce flow control on the Iub and Iur interfaces. It can be introduced either directly between the SRNC and the Node B in order to reduce transmission time delay or separately on both the Iub and Iur interfaces. In both cases, the same structure shall be used over Iub and Iur for the control frames. Therefore, the control frames can either be sent through the CRNC transparently and no RNL multiplexing of HS-DSCH transport channels is performed across the Iub/Iur or the control frames can be sent from the SRNC to the DRNC and from the DRNC to the Node B (if there is a DRNC involved).

The same flow control mechanism with small modifications is proposed to be used for HS-DSCH data streams on the Iub/Iur interface as in R99 for the DSCH data streams on the Iur interface. The flow control is done via exchange of HS-DSCH CAPACITY~~apacity~~ REQUEST~~equest~~ and HS-DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~ control frames between the Node B and SRNC for a given priority group. The data transfer is done via transfer of HS-DSCH Data Frames from the SRNC to the Node B for a given priority group. The flow control frames and data transfer frames that are used over the Iur and Iub interfaces shall be of the same format. The small modifications shall be applied for parameters in the HS-DSCH CAPACITY~~apacity~~ ALLOCATION control~~llocation~~ frame- a parameter to indicate the maximum MAC-hs SDU length is probably not needed (because in one HS-DSCH, a constant Transport Block Size is used which fits to a constant MAC-hs SDU size) and the value range of the *HS-DSCH Credits* IE should be probably increased (FFS).

The following three subclauses present parameters for the HS-DSCH CAPACITY~~apacity~~ REQUEST~~equest~~, HS-DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~, and HS-DSCH Data Frames. These frames have the same structure, this whatever the chosen flow control option: the (A,B) couple can either be (SRNC,Node B) if the flow control is directly between the SRNC and the Node B or (SRNC,DRNC) & (CRNC,Node B) if the flow control is handled separately on Iur and Iub.

6.3.2.1.1 HS-DSCH Data Transfer

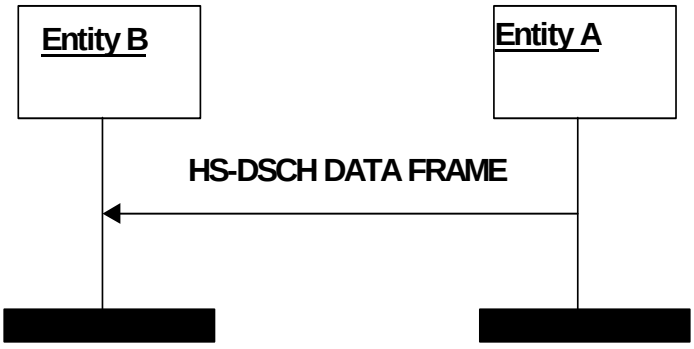


Figure 10: HS-DSCH Data Transfer

Header CRC: See Section 6.3.1.1.2 for definition~~Cyclic Redundancy Checksum calculated on the header of a data frame with a polynomial~~.

CmCH-PI: The *Common Transport Channel Priority Indicator* IE indicates the priority of the data frame and the SDUs included which are waiting in the Entity A's Tx buffer for transmission via the HS-DSCH. As in case of the DSCH on Iur, the *CmCH-PI* is in the range 0 to 15, where 0 means lowest priority and 15 is the highest priority.

Frame Type (FT): See Section 6.3.1.1.2 for definition~~Describes if it is a control frame or a data frame~~.

MAC-d~~c/hs~~ PDU Length: See Section 6.3.1.1.2 for definition~~The value of that field indicates the length of every MAC-c/hs SDU in the payload of the HS-DSCH data frame in number of bits~~.

NumOfPSDU: See Section 6.3.1.1.2 for definitionIndicates the number of MAC-hs SDUs in the payload.

User Buffer Size: See Section 6.3.1.1.2 for definitionIndicates the users' buffer size in octets for a given Common Transport Channel Priority.

MAC-dhs PSDU: See Section 6.3.1.1.2 for definitionA MAC-hs SDU contains the C/T field of the MAC header followed by one RLC PDU.

Payload CRC: See Section 6.3.1.1.2 for definitionCyclic Redundancy Checksum calculated on the header of a data frame.

Spare Extension: See Section 6.3.1.1.2 for definitionIndicates the location where new IEs can in the future be added in a backward compatible way.

6.3.2.1.2 HS-DSCH Capacity Request

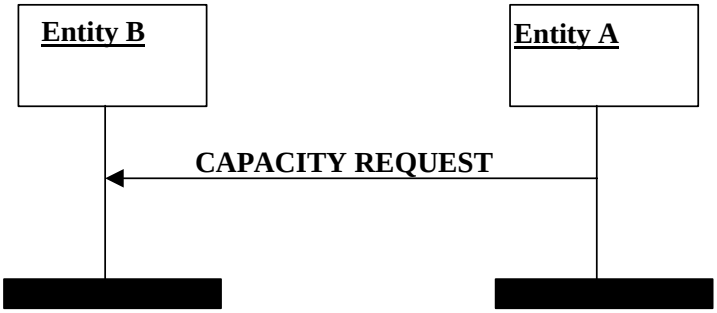


Figure 11: HS-DSCH Capacity Request

CmCH-PI: The *Common Transport Channel Priority Indicator* IE indicates the priority of the data frame and the SDUs included which are waiting in the Entity A's Tx buffer for transmission via the HS-DSCH. As in the case of the DSCH on Iur, the *CmCH-PI* is in the range 0 to 15, where 0 means lowest priority and 15 is the highest priority.

User Buffer Size: Indicates the users' buffer size (i.e. the amount of data in the buffer in the Entity A) in octets for the indicated Common Transport Channel Priority.

6.3.2.1.3 HS-DSCH Capacity Allocation

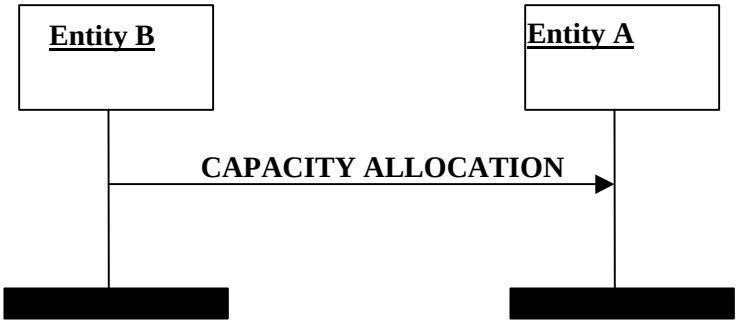


Figure 12: HS-DSCH Capacity Allocation

CmCH-PI: The *Common Transport Channel Priority Indicator* IE indicates the priority of the SDUs for which credit (a transmission permit) is allocated with that message. This means that the Entity A can use this credit value only for sending SDUs with exactly that indicated CmCH-PI. If the Entity A were to send SDUs with a higher or lower CmCH-PI, and if there were no allocated credit for these deviated CmCH-PI values, the Node B would have the right to ignore these SDUs, i.e. to refrain from processing and forwarding them.

HS-DSCH Credits: See Section 6.3.1.1.3 for definitionThe *Credits* IE indicates the number of MAC-hs SDUs that a user may transmit with the indicated CmCH-PI.

HS-DSCH Interval: See Section 6.3.1.1.3 for definition The value of this field indicates the time interval during which the Credits granted in the HS-DSCH Capacity Allocation frame may be transmitted.

HS-DSCH Repetition period: See Section 6.3.1.1.3 for definition ~~The value of this field indicates the number of subsequent intervals that the Credits granted in the HS-DSCH Capacity Allocation frame may be transmitted~~.

Max. MAC c/sh SDU length: probably obsolete [FFS].

3GPP TSG-RAN WG3 Meeting #28
Gyeongju, Korea, 13th –17th May 2002

Tdoc R3-021520

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.931** **CR** **018** ⌘ **rev** **1** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	HSDPA Additions for Example Procedures
Source:	⌘	R-WG3
Work item code:	⌘	HSDPA-Iublur
Date:	⌘	May 2002
Category:	⌘	**B**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	To incorporate HSDPA changes into this RAN 3 specification. This CR introduces the HS-DSCH Mobility Procedures and HS-DSCH Configuration and Capacity Allocation example.
Summary of change:	⌘	Rev 0: This CR introduces the HS-DSCH Mobility Procedures and HS-DSCH Configuration and Capacity Allocation example. Additions according to discussion at RAN3#28: It is stated, that these are ATM examples. Abbreviations were added. Rev 1: Section 7.10.x.1, item 5: “NBAP message” renamed to “RNSAP message” Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification because the change affects only the HS-DSCH functionality.
Consequences if not approved:	⌘	HSDPA is not considered in 25.931. See TR 25.877 for more details

Clauses affected:	⌘	7.10.x, 7.11.1.x, 7.17x		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3.2 Abbreviations

For the purposes of the present document the following abbreviations apply:

NOTE: More extensive abbreviations on UMTS are provided in [1].

AAL2	ATM Adaptation Layer type 2
ACK	Acknowledgement
AICH	Acquisition Indicator Channel
ALCAP	Access Link Control Application Part
AM	Acknowledged Mode
AS	Access Stratum
ATM	Asynchronous Transfer Mode
BCCH	Broadcast Control Channel
BCFE	Broadcast Control Functional Entity
BER	Bit Error Rate
BLER	Block Error Rate
BMC	Broadcast/Multicast Control
BSS	Base Station Sub-system
BSSMAP	Base Station System Management Application Part
CCCH	Common Control Channel
CCPCH	Common Control Physical Channel
CFN	Connection Frame Number
CM	Connection Management
CN	Core Network
CPCH	Common Packet CHannel
CPICH	Common Pilot Channel
CRNC	Controlling RNC
C-RNTI	Cell RNTI
CS	Circuit Switched
DCA	Dynamic Channel Allocation
DCCH	Dedicated Control Channel
DCFE	Dedicated Control Functional Entity
DCH	Dedicated Channel
DC-SAP	Dedicated Control-SAP
DL	Downlink
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DRAC	Dynamic Resource Allocation Control
DRNC	Drift RNC
DRNS	Drift RNS
DRX	Discontinuous Reception
DSCH	Downlink Shared Channel
DTCH	Dedicated Traffic Channel
EP	Elementary Procedure
FACH	Forward Access Channel
FAUSCH	Fast Uplink Signalling Channel
FDD	Frequency Division Duplex
FFS	For Further Study
FN	Frame Number
FP	Frame Protocol
HS-DSCH	High Speed Downlink Shared Channel
HS-PDSCH	High Speed Physical Downlink Shared Channel
HS-SCCH	High Speed Shared Control Channel
ID	Identifier
IE	Information Element
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
ISCP	Interference on Signal Code Power
L1	Layer 1

L2	Layer 2
L3	Layer 3
LAI	Location Area Identity
MAC	Medium Access Control
MAC-hs	Medium Access Control for HS-DSCH
MCC	Mobile Country Code
MM	Mobility Management
MNC	Mobile Network Code
MS	Mobile Station
MSC	Mobile services Switching Center
NAS	Non Access Stratum
NBAP	Node B Application Protocol
Nt-SAP	Notification SAP
NW	Network
O	Optional
ODMA	Opportunity Driven Multiple Access
PCCH	Paging Control Channel
PCH	Paging Channel
PDCP	Packet Data Convergence Protocol
PDSCH	Physical Downlink Shared Channel
PDU	Protocol Data Unit
PLMN	Public Land Mobile Network
PNFE	Paging and Notification control Functional Entity
PRACH	Physical Random Access CHannel
PS	Packet Switched
PSCH	Physical Synchronisation Channel
P-TMSI	Packet Temporary Mobile Subscriber Identity
PUSCH	Physical Uplink Shared Channel
QoS	Quality of Service
RAB	Radio Access Bearer
RACH	Random Access CHannel
RAI	Routing Area Identity
RANAP	Radio Access Network Application Part
RB	Radio Bearer
RFE	Routing Functional Entity
RL	Radio Link
RLC	Radio Link Control
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTI	Radio Network Temporary Identifier
RRC	Radio Resource Control
RSCP	Received Signal Code Power
RSSI	Received Signal Strength Indicator
SAI	Service Area Identifier
SAP	Service Access Point
SCCP	Signalling Connection Control Part
SCFE	Shared Control Function Entity
SF	Spreading Factor
SFN	System Frame Number
SGSN	Serving GPRS Support Node
SHCCH	Shared Control Channel
SIR	Signal to Interference Ratio
SRNC	Serving RNC
SRNS	Serving RNS
S-RNTI	SRNC - RNTI
SSDT	Site Selection Diversity Transmission
TDD	Time Division Duplex
TEID	Tunnel Endpoint Identifier
TF	Transport Format
TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set

TFS	Transport Format Set
TME	Transfer Mode Entity
TMSI	Temporary Mobile Subscriber Identity
Tr	Transparent
Tx	Transmission
UARFCN	UMTS Absolute Radio Frequency Channel Number
UE	User Equipment
UL	Uplink
UM	Unacknowledged Mode
UMTS	Universal Mobile Telecommunication System
UNACK	Unacknowledgement
URA	UTRAN Registration Area
U-RNTI	UTRAN-RNTI
USCH	Uplink Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

7.10.x HS-DSCH Mobility Procedures

7.10.x.1 Intra-Node B synchronised serving HS-DSCH cell change

This subclause shows an example of an intra-Node B serving HS-DSCH cell change while keeping the dedicated physical channel configuration and the active set.

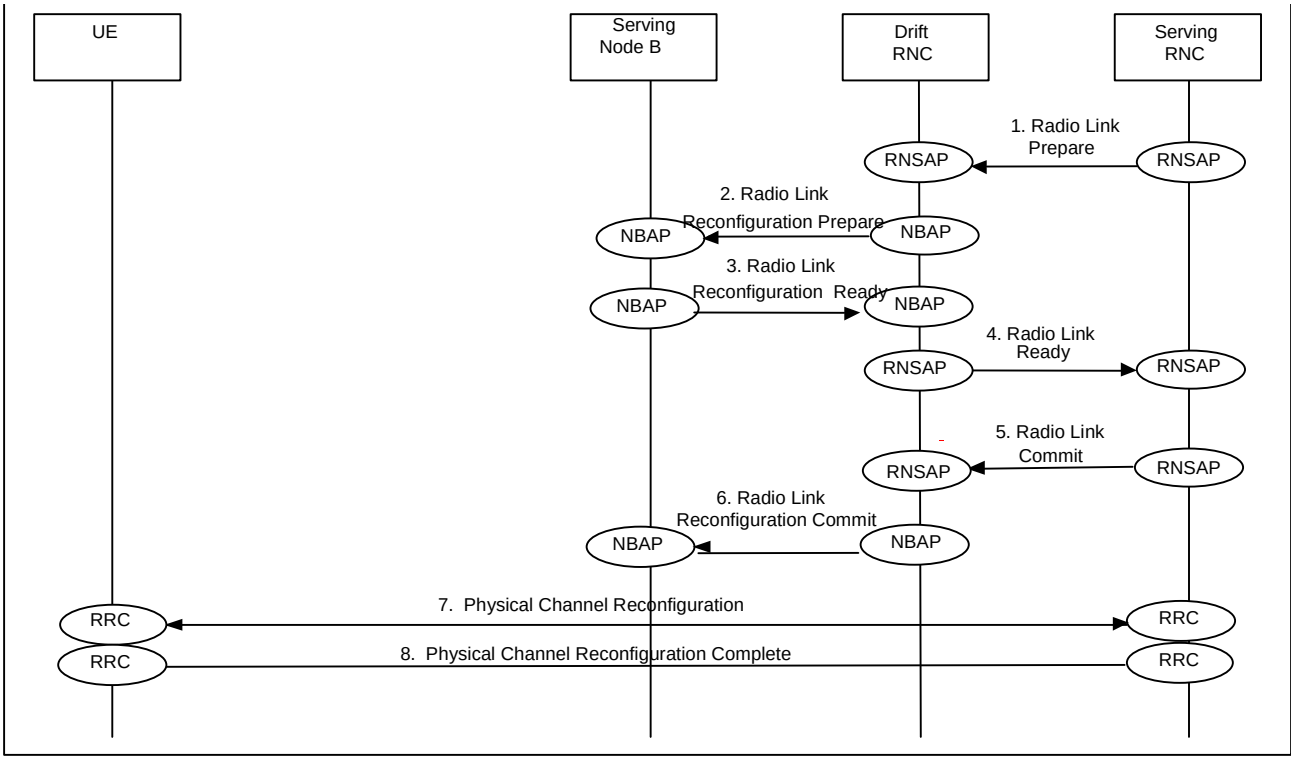


Figure A: Intra-Node B synchronised serving HS-DSCH cell change

1. The SRNC decides there is a need for a serving HS-DSCH cell change and prepares a RNSAP message **Radio Link Reconfiguration Prepare** which is transmitted to the DRNC.
   Parameters: HS-DSCH information and a SRNC selected HS-PDSCH RL ID.

2. In this case, both the source and target HS-DSCH cells are controlled by the same Node B. The DRNC requests the serving HS-DSCH Node B to perform a synchronised radio link reconfiguration using the NBAP message **Radio Link Reconfiguration Prepare**. The reconfiguration comprises a transfer of the HS-DSCH resources from the source HS-DSCH radio link to the target HS-DSCH radio link.
   Parameters: HS-DSCH Information, a DRNC selected HS-DSCH RNTI and the HS-PDSCH RL ID.

3. The serving HS-DSCH Node B returns a NBAP message **Radio Link Reconfiguration Ready**.
   Parameters: HS-DSCH Information Response.

4. The DRNC returns a RNSAP message **Radio Link Reconfiguration Ready** to the SRNC.
   Parameters: HS-DSCH Information Response and the DRNC selected HS-DSCH-RNTI.

5. The SRNC now proceeds by transmitting RNSAP message **Radio Link Reconfiguration Commit** to the DRNC.
   Parameters: SRNC selected activation time in the form of a CFN.

6. The DRNC transmits a NBAP message **Radio Link Reconfiguration Commit** to the serving HS-DSCH Node B. At the indicated activation time the serving HS-DSCH Node B stops HS-DSCH transmission to the UE in the source HS-DSCH cell and starts HS-DSCH transmission to the UE in the target HS-DSCH cell. Parameters: SRNC selected activation time in the form of a CFN.

7. The SRNC transmits a RRC message **Physical Channel Reconfiguration** to the UE. Parameters: activation time, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and H-RNTI.

8. At the indicated activation time the UE, stops receiving HS-DSCH in the source HS-DSCH cell and starts HS-DSCH reception in the target HS-DSCH cell. The UE then returns a RRC message **Physical Channel Reconfiguration Complete** to the SRNC.

7.10.x.2 Inter-Node B (intra DRNC) synchronised serving HS-DSCH cell change

This subclause shows an ATM example of an inter-Node B serving HS-DSCH cell change while keeping the dedicated physical channel configuration and active set.

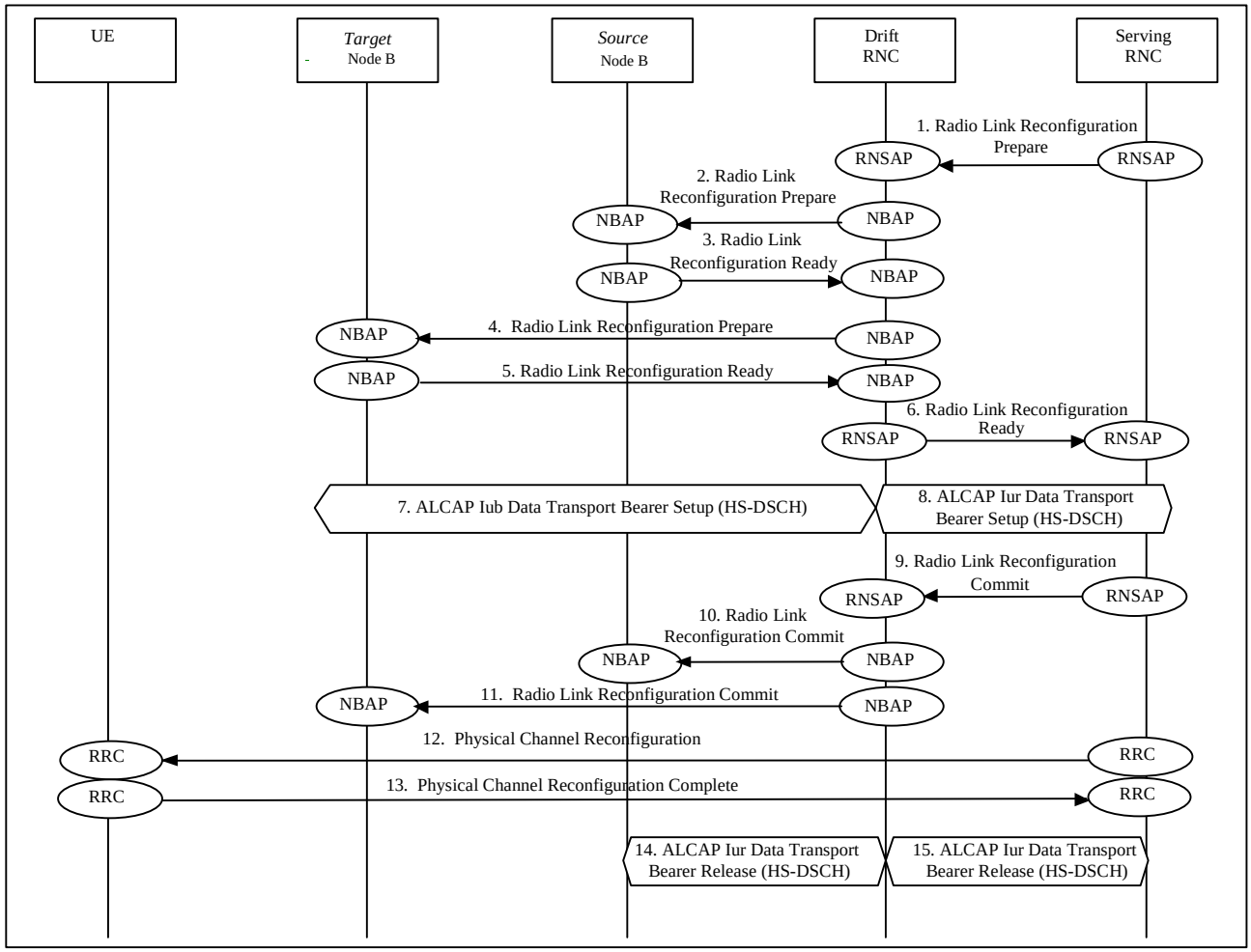


Figure B: Inter-Node B (intra-DRNC) synchronised serving HS-DSCH cell change

1. The SRNC decides there is a need for a serving HS-DSCH cell change and prepares the RNSAP message **a Radio Link Reconfiguration Prepare** which is transmitted to the DRNC. Parameters: HS-DSCH Information and a SRNC selected HS-PDSCH RL ID.

2. In this case, the source and target HS-DSCH cells are controlled by different Node Bs. The DRNC requests the source HS-DSCH Node B to perform a synchronised radio link reconfiguration using the NBAP message Radio Link Reconfiguration Prepare, removing its HS-DSCH resources for the source HS-DSCH radio link Parameters: HS-DSCH Information, a DRNC selected HS-DSCH RNTI and the HS-PDSCH RL ID.

3. The source HS-DSCH Node B returns a NBAP message **Radio Link Reconfiguration Ready**.
   Parameters: HS-DSCH Information Response.

4. The DRNC requests the target HS-DSCH Node B to perform a synchronised radio link reconfiguration using the NBAP message **Radio Link Reconfiguration Prepare**, adding HS-DSCH resources for the target HS-DSCH radio link.
   Parameters: HS-DSCH Information, a DRNC selected HS-DSCH RNTI and the HS-PDSCH RL ID.

5. The target HS-DSCH Node B returns the NBAP message **Radio Link Reconfiguration Ready**.
   Parameters: HS-DSCH Information Response.

6. The DRNC returns the RNSAP message **Radio Link Reconfiguration Ready** to the SRNC.
   Parameters: HS-DSCH Information Response and the DRNC selected HS-DSCH-RNTI.

7. The DRNC initiates set-up of a new Iub Data Transport Bearers using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iub Data Transport Bearer to the HS-DSCH.

8. The SRNC initiates set-up of a new Iur Data Transport bearer using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iur Data Transport Bearer to the HS-DSCH.

9. The HS-DSCH transport bearer to the target HS-DSCH Node B is established. The SRNC proceeds by transmitting the RNSAP message **Radio Link Reconfiguration Commit** to the DRNC.
   Parameters: SRNC selected activation time in the form of a CFN.

10. The DRNC transmits the NBAP message **Radio Link Reconfiguration Commit** to the source HS-DSCH Node B including the activation time. At the indicated activation time the source HS-DSCH Node B stops and the target HS-DSCH Node B starts transmitting on the HS-DSCH to the UE.
    Parameters: SRNC selected activation time in the form of a CFN.

11. The DRNC transmits the NBAP message **Radio Link Reconfiguration Commit** to the target HS-DSCH Node B including the activation time. At the indicated activation time the source HS-DSCH Node B stops and the target HS-DSCH Node B starts transmitting on the HS-DSCH to the UE.
    Parameters: SRNC selected activation time in form of a CFN.

12. The SRNC also transmits a RRC message **Physical Channel Reconfiguration** to the UE.
    Parameters: activation time, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and H-RNTI.

13. At the indicated activation time the UE stops receiving HS-DSCH in the source HS-DSCH cell and starts HS-DSCH reception in the target HS-DSCH cell. The UE returns a RRC message **Physical Channel Reconfiguration Complete** to the SRNC.

14. The DRNC initiates release of the old Iub Data Transport bearer using ALCAP protocol.

15. The SRNC initiates release of the old Iur Data Transport bearer using ALCAP protocol.

<Not affected part is omitted>

7.11.1.x Inter-Node B synchronised serving HS-DSCH cell change at hard handover

This subclause shows ATM examples of hard handover combined with an inter–Node B serving HS-DSCH cell change.

7.11.1.x.1 Inter-Node B (intra DRNC) synchronised serving HS-DSCH cell change at hard handover

In the following example the HS-DSCH mobility procedure is performed in two steps: the first step consists of establishing a new radio link without the HS-DSCH resources; the next step is a transfer of the HS-DSCH resources to this new radio link followed by a release of the old radio link. In the radio interface, a combined procedure is used.

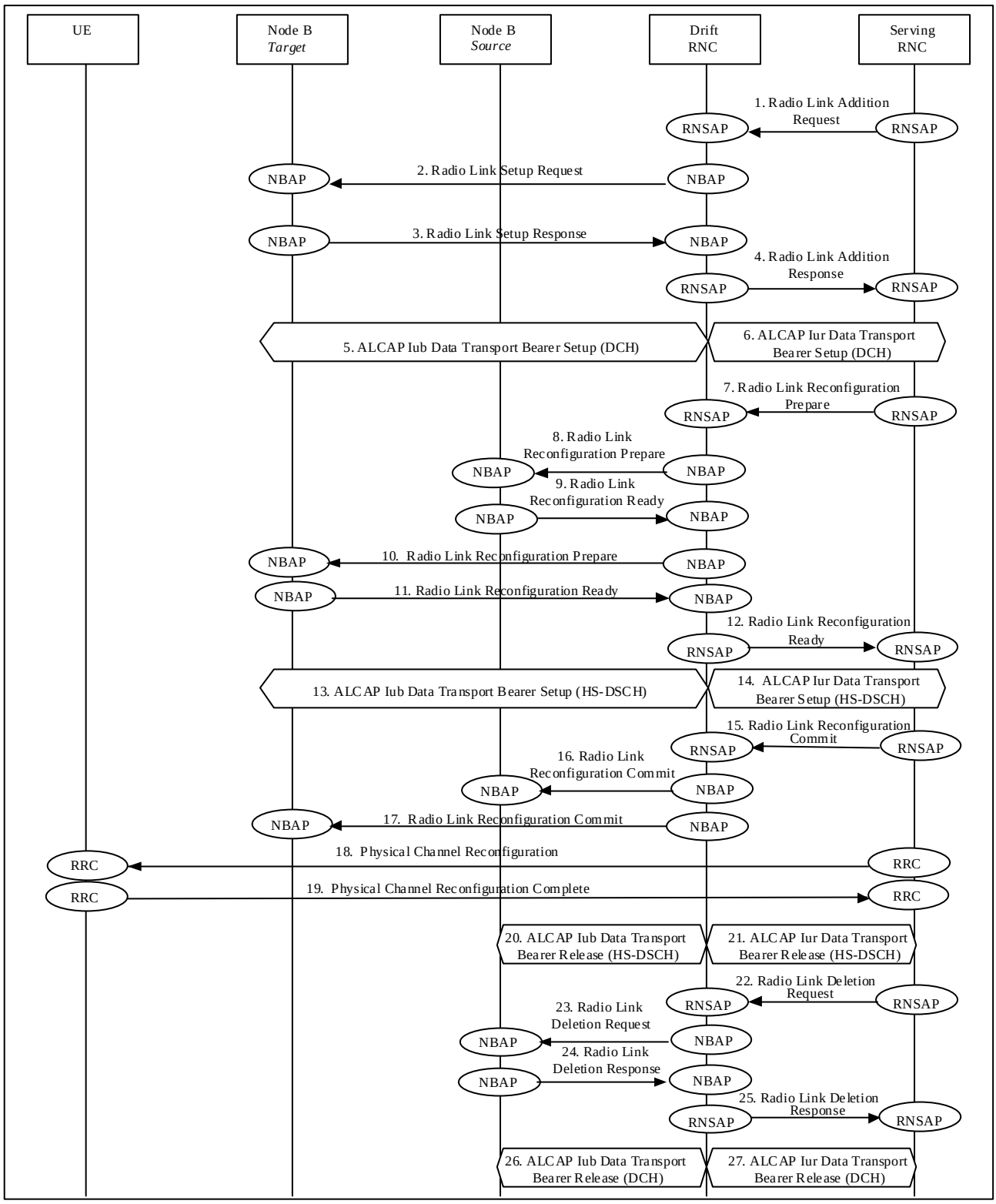


Figure C: Inter-Node B (intra DRNC) synchronised serving HS-DSCH cell change at hard handover

1. The SRNC decides that there is a need for a hard handover combined with a serving HS-DSCH cell change. It prepares a RNSAP message **Radio Link Addition Request**, which is transmitted to the DRNC.
Parameters: target cell ID.

2. The DRNC allocates radio resources for the new radio link and requests the target Node B to establish a new radio link by transmitting a NBAP message **Radio Link Setup Request.**
Parameters: HS-DSCH Information and HS-PDSCH RL ID.

3. The target Node B allocates resources, starts physical layer reception on the DPCH on the new radio link and responds with the NBAP message **Radio Link Setup Response**.
   Parameters: HS-DSCH Information Response.

4. The DRNC responds to the SRNC with the RNSAP message **Radio Link Addition Response** and the DCH transport bearer is established.

5. The DRNC initiates set-up of a new Iub Data Transport Bearers using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iur Data Transport Bearer to the DCH.

6. The SRNC initiates set-up of a new Iur Data Transport Bearers using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iur Data Transport Bearer to the DCH.

7. As the next step, the SRNC prepares the RNSAP message **Radio Link Reconfiguration Prepare** which is transmitted to the DRNC.
   Parameters: HS-DSCH information, and SRNC selected HS-PDSCH RL ID.

8. The DRNC requests the source HS-DSCH Node B to perform a synchronised radio link reconfiguration using the NBAP message **Radio Link Reconfiguration Prepare**, removing its HS-DSCH resources for the source HS-DSCH radio link.
   Parameters: HS-DSCH Information, a DRNC allocated HS-DSCH-RNTI and HS-PDSCH RL ID.

9. The source HS-DSCH Node B returns the NBAP message **Radio Link Reconfiguration Ready**.
   Parameters: HS-DSCH Information Response.

10. The DRNC requests the target HS-DSCH Node B to perform a synchronised radio link reconfiguration using the NBAP message **Radio Link Reconfiguration Prepare**, adding HS-DSCH resources for the target HS-DSCH radio link.
    Parameters: HS-DSCH information including an HS-PDSCH RL ID and a DRNC selected HS-DSCH RNTI.

11. The target HS-DSCH Node B returns the NBAP message **Radio Link Reconfiguration Ready**.
    Parameters: HS-DSCH Information Response.

12. The DRNC returns the RNSAP message **Radio Link Reconfiguration Ready** to the SRNC.
    Parameters: HS-DSCH information response and the DRNC selected HS-DSCH-RNTI.

13. The DRNC initiates set-up of a new Iub Data Transport Bearers using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iur Data Transport Bearer to the HS-DSCH.

14. The DRNC initiates set-up of a new Iur Data Transport Bearers using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iur Data Transport Bearer to the HS-DSCH.

15. The HS-DSCH transport bearer to the target HS-DSCH Node B is established. The SRNC proceeds by transmitting the RNSAP message **Radio Link Reconfiguration Commit** to the DRNC including an SRNC selected activation time in the form of a CFN.
    Parameters: SRNC selected activation time in the form of a CFN.

16. The DRNC transmits a NBAP message **Radio Link Reconfiguration Commit** to the source HS-DSCH Node B including the activation time. At the indicated activation time the source HS-DSCH Node B stops and the target HS-DSCH Node B starts transmitting on the HS-DSCH to the UE.
    Parameters: SRNC selected activation time in the form of a CFN.

17. The DRNC transmits a NBAP message **Radio Link Reconfiguration Commit** to the target HS-DSCH Node B including the activation time. At the indicated activation time the source HS-DSCH Node B stops and the target HS-DSCH Node B starts transmitting on the HS-DSCH to the UE.
    Parameters: SRNC selected activation time in the form of a CFN

18. The SRNC also transmits a RRC message **Physical Channel Reconfiguration** to the UE.
    Parameters: activation time, DPCH information for the target cell, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and H-RNTI.

19. At the indicated activation time the UE abandons the current active set and initiates establishment of the DPCH in the target cell. When physical layer synchronisation is established in the target cell, it starts DPCH reception and transmission and HS-DSCH reception in the target cell. The UE returns the RRC message **Physical Channel Reconfiguration Complete** to the SRNC.

20. The DRNC initiates release of the old Iub Data Transport bearer to the source HS-DSCH Node B using ALCAP protocol.

21. The SRNC initiates release of the old Iur Data Transport bearer using ALCAP protocol.

22. The SRNC then finalises the procedure by transmitting the RNSAP message **Radio Link Deletion Request** to the DRNC.
In the message the source cell to be deleted is identified.
Parameters: RL ID.

23. The DRNC transmits the NBAP message **Radio Link Deletion Request** to the source Node B.
Parameters: RL ID.

24. The source Node B releases resources for the source radio link and returns the NBAP message **Radio Link Deletion Response** to the DRNC.

25. The DRNC returns the RNSAP message **Radio Link Deletion Response** to the SRNC.

26. The DRNC initiates release of the old Iub DCH Transport bearer to the source HS-DSCH Node B using ALCAP protocol.

27. The SRNC initiates release of the old Iur DCH Transport bearer using ALCAP protocol.

7.11.1.x.2 Inter-Node B (inter DRNC) synchronised serving HS-DSCH cell change at hard handover

In this second example the source Node B and the target Node B are controlled by two different DRNCs, referred to as source DRNC and target DRNC, respectively. In this case the HS-DSCH mobility procedure is performed in a single step.

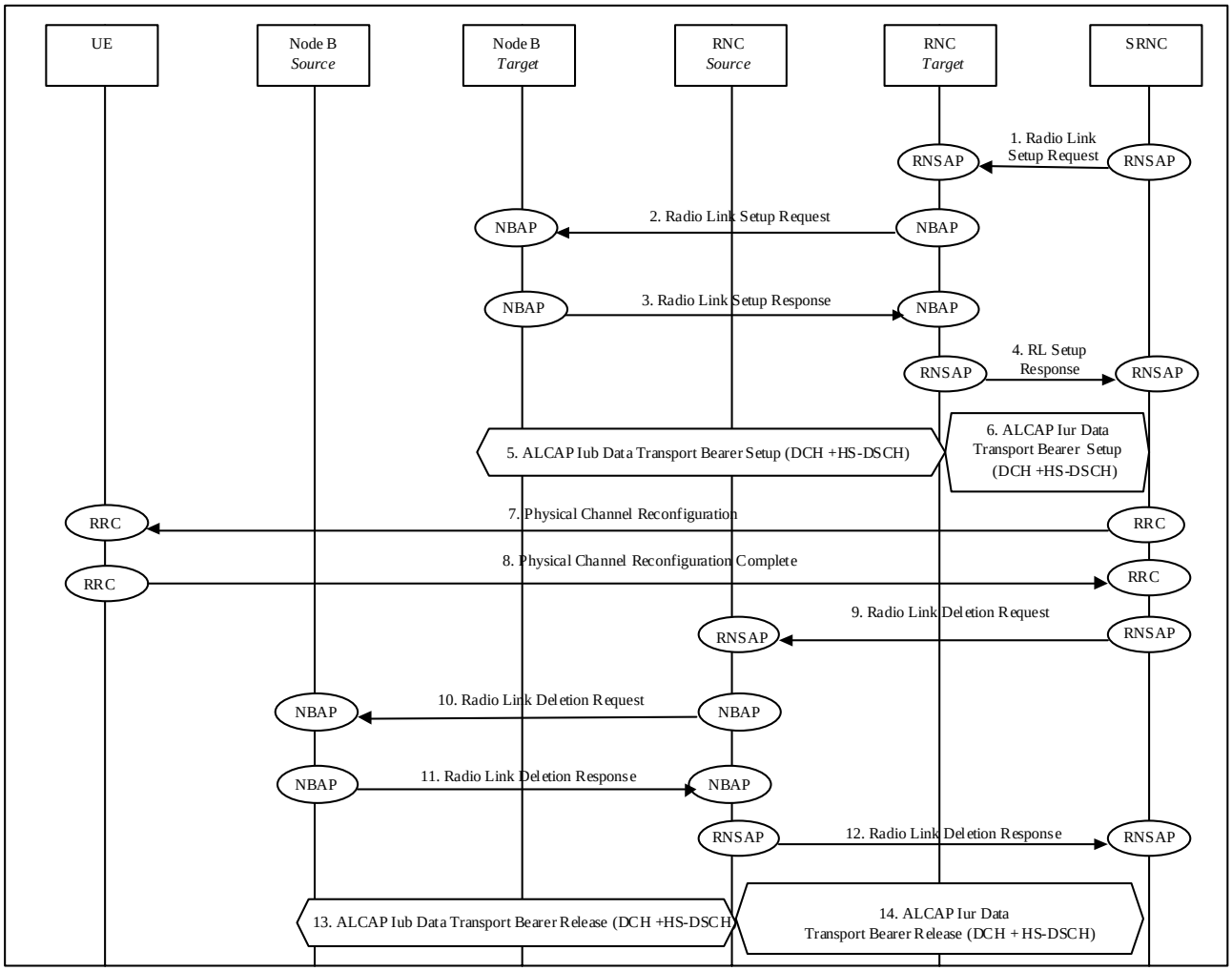


Figure D: Inter-Node B (inter DRNC) synchronised serving HS-DSCH cell change at hard handover

1. The SRNC decides that there is a need for hard handover combined with serving HS-DSCH cell change. It prepares the RNSAP message **Radio Link Setup Request**, which is transmitted to the target DRNC.
   Parameters: HS-DSCH information and HS-PDSCH RL ID.

2. The target DRNC allocates radio resources for the new radio link and requests the target Node B to establish a new radio link by transmitting the NBAP message **Radio Link Setup Request**.
   Parameters: HS-DSCH information, HS-DSCH-RNTI and HS-PDSCH RL ID.

3. The target Node B allocates resources, starts physical layer reception on the DPCH on the new radio link and responds with the NBAP message **Radio Link Setup Response**.
   -Parameters: HS-DSCH Information Response.

4. The target DRNC responds to the SRNC with the RNSAP message **Radio Link Setup Response**.
   Parameters: HS-DSCH Information Response and HS-DSCH-RNTI.

5. The DRNC initiates the setup of Iub DCH and HS-DSCH Data Transport bearers to the target HS-DSCH Node B using ALCAP protocol.

6. The SRNC initiates the setup of Iur DCH and HS-DSCH Data Transport bearers.

7. The SRNC transmits the RRC message **Physical Channel Reconfiguration** to the UE.
   Parameters: activation time, DPCH information for the target cell, MAC-hs reset indicator, serving HS-DSCH radio link indicator, HS-SCCH set info and H-RNTI.

8. At the indicated activation time the UE abandons the current active set and initiates establishment of the DPCH in the target cell. When physical layer synchronisation is established in the target cell, it starts DPCH reception and

transmission and HS-DSCH reception in the target cell. The UE returns the RRC message **Physical Channel Reconfiguration Complete** to the SRNC.

9. The SRNC then finalises the procedure by transmitting the RNSAP message **Radio Link Deletion Request** to the source DRNC.
   In the message the source cell to be deleted is identified.
   Parameters: RL ID.

10. The source DRNC transmits the NBAP message **Radio Link Deletion Request** to the source Node B.
    Parameters: RL ID.

11. The source Node B releases resources for the source radio link and returns the NBAP message **Radio Link Deletion Response** to the source DRNC.

12. The source DRNC returns the RNSAP message **Radio Link Deletion Response** to the SRNC.

13. The DRNC initiates the release of the old Iub DCH and HS-DSCH Data Transport bearers to the target HS-DSCH Node B using ALCAP protocol.

14. The SRNC initiates the release of the old Iur DCH and HS-DSCH Data Transport bearers.

<Not affected part is omitted>

7.17 ~~USCH/DSCH~~ Shared Channels Configuration and Capacity Allocation ~~[TDD]~~

7.17.x1 USCH/DSCH Configuration and Capacity Allocation [TDD]

This subclause shows an example of USCH/DSCH configuration and capacity allocation.

It is assumed that no RL has been already established for the considered RRC connection on the serving cell (i.e. the UE is in cell_FACH state without USCH/DSCH) and that only standalone USCH/DSCH are going to be configured. In case the UE is in cell_DCH state or in cell_FACH state with USCH/DSCH, the Radio Link Reconfiguration procedure is used in steps 1-4-5-6 instead of the Radio Link Setup procedure.

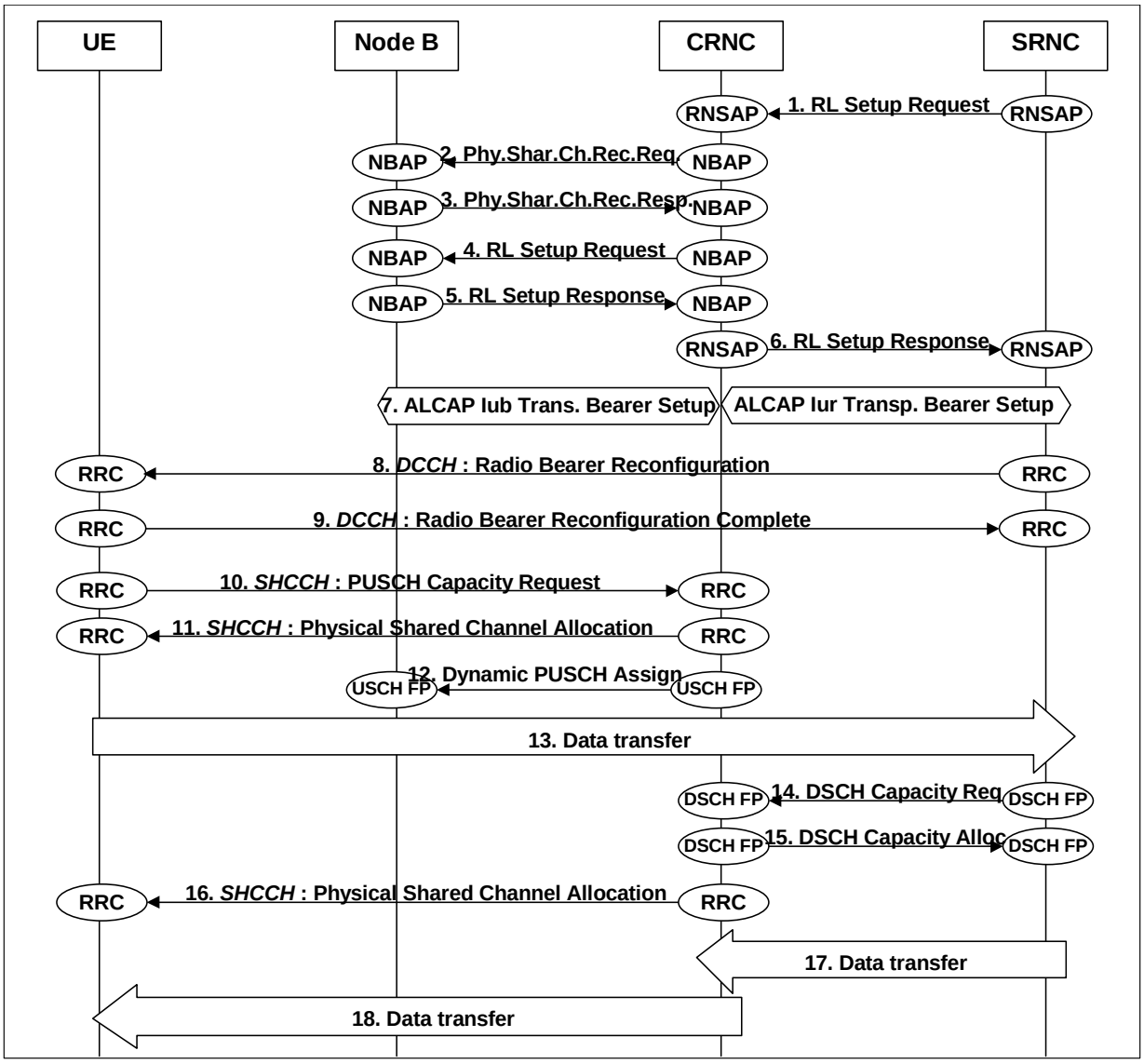


Figure 45A USCH/DSCH Configuration and Capacity Allocation

1. In case no RL has already been established on the RNC controlling the serving cell, the SRNC sends the RNSAP message **Radio Link Setup Request** to the target RNC.
   Parameters: target RNC identifier, s-RNTI, Cell id, Transport Format Set (for DSCHs and USCHs), Transport Format Combination Set.

2. If necessary, the CRNC sends to the Node B the NBAP message **Physical Shared Channel Reconfiguration Request** in order to add, modify or delete any PDSCH Sets and PUSCH Sets in the Common Transport Channel

data base.
Parameters: PDSCH Info (to add, modify or delete), PUSCH Info (to add, modify or delete).

3. The Node B updates the PDSCH and PUSCH Sets in the Common Transport Channel data base and makes them available to all the current and future DSCH and USCH transport channels. Then it responds with the NBAP message **Physical Shared Channel Reconfiguration Response**.

4. The RNC sends the NBAP message **Radio Link Setup Request** to the target Node-B.
Parameters: Cell id, Transport Format Set (for DSCHs and USCHs), Transport Format Combination Set, Power control information, etc.

5. Node B configures resources for USCHs and DSCHs and responds with NBAP message **Radio Link Setup Response**.
Parameters: Signalling link termination, Transport layer addressing information for the Iub Data Transport Bearer.

6. When the Target RNC has completed preparation phase, the RNSAP message **Radio Link Setup Response** is sent to the SRNC.

7. Target RNC initiates set-up of Iub Data Transport bearer using ALCAP protocol while the SRNC initiates set-up of Iur Data Transport bearer. These requests contain the AAL2 Binding Identity to bind the Iub/Iur Data Transport Bearers to the DSCHs/USCHs. The request for set-up of Iub Data Transport bearer is acknowledged by Node B, while the request for set-up of Iur Data Transport bearer is acknowledged by Target RNC.

8. The SRNC sends the RRC message **Radio Bearer Reconfiguration** to establish the requested USCHs and DSCHs.
Parameters: Radio Bearer information.

9. The UE replies with the RRC message **Radio Bearer Reconfiguration Complete**.

10. As soon as the RRC in the UE detects the necessity to sends UL data on one USCH, it sends the RRC message **PUSCH Capacity Request** to obtain allocation of PUSCH resources from the CRNC.
Parameters: C-RNTI, Radio Bearer ID, RLC buffer info.

11. The CRNC determines which PUSCH Set to allocate to the USCH and sends a **Physical Shared Channel Allocation** message to the UE.
Parameters: C-RNTI, Allocation Period info (Activation CFN, Duration), PUSCH info.

12. The CRNC signals the allocation of PUSCH resources for a given UE to the Node B by means of a Dynamic PUSCH Assignment control frame.
Parameters: PUSCH Set Id, Activation CFN, and Duration.

13. At the scheduled CFN the UE may start transmitting UL data on the USCH for the assigned allocation period. UL data are forwarded by the CRNC to the SRNC.

14. As soon as the SRNC detects the necessity to sends DL data on one DSCH, it sends a DSCH Capacity Request control frame to the CRNC.
Parameters: Common Transport Channel Priority Indicator, User buffer size.

15. The CRNC determines the amount of data (credits) that can be transmitted on the DSCH and reports this information back to the SRNC by means of DSCH Capacity Allocation control message.
Parameters: Common Transport Channel Priority Indicator, Max MACc-sh SDU Length, Credits, Interval, and Repetition Period.

16. The CRNC determines which PDSCH Set to allocate to the DSCH and sends a RRC message **Physical Shared Channel Allocation** to the UE.
Parameters: C-RNTI, Allocation Period info (Activation CFN, Duration), PDSCH info.

17. The SRNC starts sending DL data to the CRNC.

18. The CRNC schedules the DL transmission of DL data on DSCH according to the allocation of PDSCH resources.

7.17.x2 HS-DSCH Configuration and Capacity Allocation

The following ATM example shows a sequence chart explaining the setup of HS-DSCH. It is assumed that the UE is in cell_DCH state. In case no RL has already been established, the Radio Link Setup procedure is used instead of the Radio Link Reconfiguration procedure.

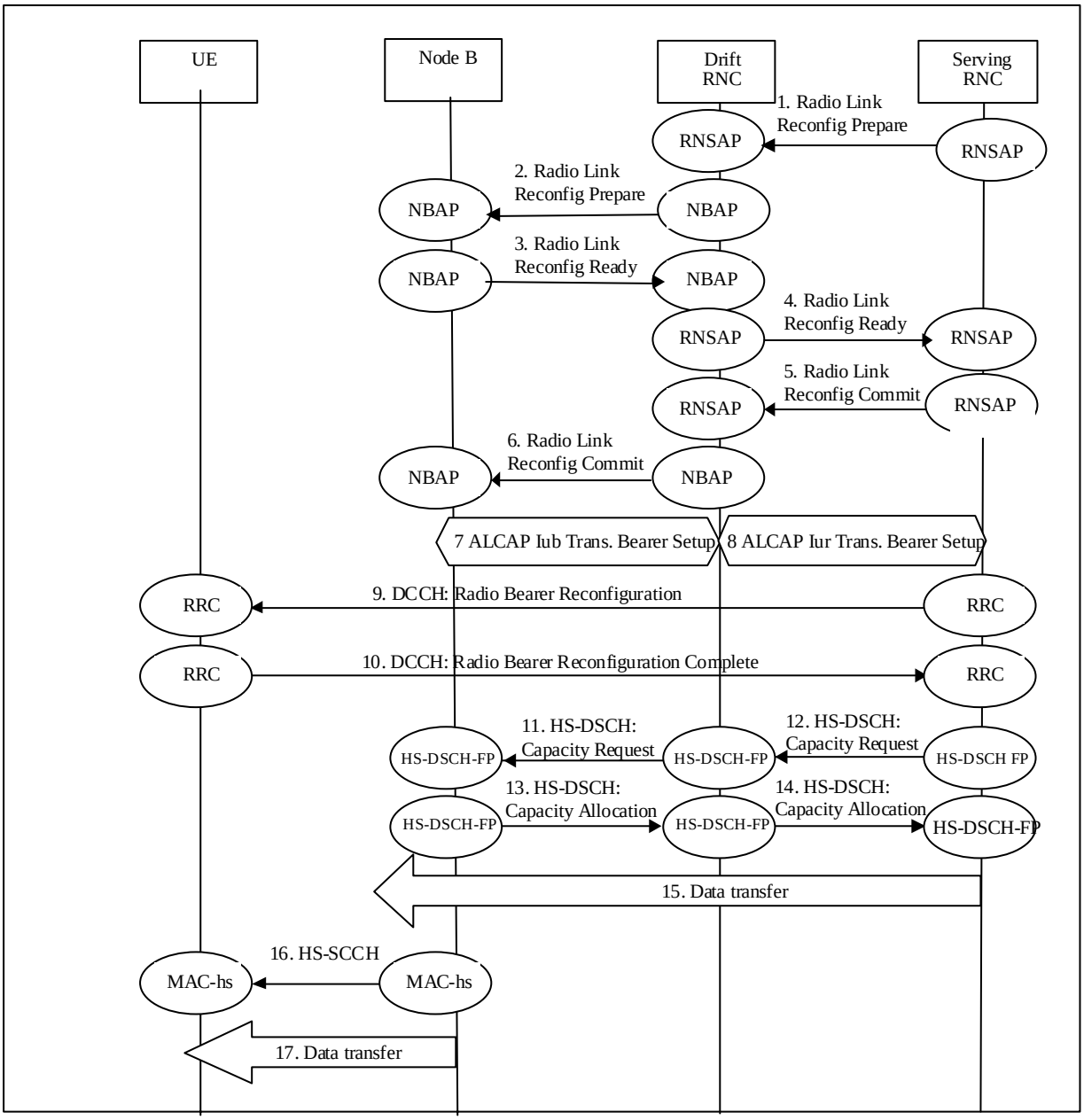


Figure E : HS-DSCH Configuration and Capacity Allocation

1. In order to channel-switch to the HS-DSCH, the radio link which shall carry the HS-DSCH has to be reconfigured. The SRNC initiates a Radio Link Reconfiguration by sending the RNSAP message **Radio Link Reconfiguration Prepare** to DRNC.
   Parameters: HS-DSCH information and a SRNC selected HS-PDSCH RL ID.

2. The DRNC requests the respective Node B to prepare the synchronised RL reconfiguration by sending the NBAP message **Radio Link Reconfiguration Prepare**.
   Parameters: HS-DSCH Information, a DRNC selected HS-DSCH RNTI and the HS-PDSCH RL ID.

3. Node B configures resources for the HS-DSCH and responds with the NBAP message **Radio Link Reconfiguration Ready**.
   Parameters: HS-DSCH Information Response.

4. When the DRNC has completed the preparation phase, the RNSAP message **Radio Link Reconfiguration Ready** is sent to the SRNC.
   Parameters: HS-DSCH Information Response and the DRNC selected HS-DSCH-RNTI.

5. The RNSAP message **Radio Link Reconfiguration Commit** is sent from SRNC to DRNC.

6. The NBAP message **Radio Link Reconfiguration Commit** is sent from DRNC to Node B.

7. The DRNC initiates set-up of Iub Data Transport Bearers using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iub Data Transport Bearer to the HS-DSCH.

8. The SRNC initiates set-up of Iur Data Transport bearer using ALCAP protocol. This request contains the AAL2 Binding Identity to bind the Iur Data Transport Bearer to the HS-DSCH.

9. The SRNC sends the RRC message **Radio Bearer Reconfiguration** to the UE to establish the requested HS-DSCH.

10. The UE replies with the RRC message **Radio Bearer Reconfiguration Complete**. At this point in time, the HS-DSCH Transport Channel has been set up, and it is assumed that the MAC-hs in the Node B has already been configured earlier to have access to a pool of HS-PDSCH resources for HS-DSCH scheduling.

11. As soon as the SRNC detects the necessity to send HS-DL data on one HS-DSCH, it sends an HS-DSCH **Capacity Request** control frame within the HS-DSCH Frame Protocol to the CRNC.
    Parameters: Common Transport Channel Priority Indicator and User Buffer Size.

12. The CRNC forwards this message (HS-DSCH **Capacity Request** control frame) to the Node B. So in this example sequence, the CRNC does not interfere with the HS-DSCH scheduling.
    Parameters: Common Transport Channel Priority Indicator and User Buffer Size.

13. The Node B determines the amount of data (credits) that can be transmitted on the HS-DSCH and reports this information back to the DRNC in a HS-DSCH **Capacity Allocation** control frame in the HS-DSCH Frame Protocol.
    Parameters: Common Transport Channel Priority Indicator, HS-DSCH Credits, HS-DSCH Interval, HS-DSCH Repetition period, Maximum MAC-d PDU length.

14. The DRNC sends the HS-DSCH **Capacity Allocation** control frame to SRNC. So again, the DRNC does not react itself to that message in this example.
    Parameters: Common Transport Channel Priority Indicator, HS-DSCH Credits, HS-DSCH Interval, HS-DSCH Repetition period, Maximum MAC-d PDU length.

15. The SRNC starts sending DL data to the Node B. This is done via the two HS-DSCH Frame Protocol "hops" on Iur and Iub interface. The Node B schedules the DL transmission of DL data on HS-DSCH which includes allocation of PDSCH resources.

16. The Node B transmits the control information for the concerned UE using the HS-SCCH.

17. The Node B sends the HS-DSCH data to the UE on the HS-PDSCH(s).