TSG RAN Meeting #21 **RP-030451**
Frankfurt, Germany, 16 - 19 September 2003

Title **CRs (Rel-5 only) to TS 25.423 and TS 25.433 on Discard timer signalling for HSDPA**
Source **TSG RAN WG3**
Agenda Item **7.4.6**

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-031229	25.423	5.6.0	5.7.0	REL-5	843	2	F	Discard timer signalling for HSDPA	HSDPA-IubIur
R3-031230	25.433	5.5.0	5.6.0	REL-5	868	2	F	Discard timer signalling for HSDPA	HSDPA-IubIur

h3GPP TSG-RAN3 Meeting #37
Budapest, Hungary, 25th – 29th, August 2003

Tdoc ⌘R3-031229

CR-Form-v7

CHANGE REQUEST

⌘ **25.423** **CR** **843** ⌘ **rev** **2** ⌘ Current version: **5.6.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Discard timer signalling for HSDPA		
Source:	⌘	RAN3		
Work item code:	⌘	HSDPA-IuBIur	***Date:*** ⌘	25/08/2003
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)*
Rel-6	*(Release 6)*

Reason for change: ⌘ Discard timer parameter is currently missing in RAN3 specs. Therefore, this CR proposes a new *Discard Timer* IE for inclusion in RNSAP signalling in the SRNC➔DRNC direction.

Summary of change: ⌘ Rev 2:
Discard Timer value 225 removed from Discard Timer IE

Rev 1:
Discard Timer IE definition and range is changed and some other editorial corrections.

Rev 0:
Introduction Introduction of Discard Timer IE in the HS-DSCH Information To Modify IE, HS-DSCH FDD Information IE and HS-DSCH TDD Information IE.

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 HSDPA only is affected.

This CR has an impact under functional point of view.

The impact can be considered isolated because the change affects one function namely HSDPA.

Consequences if not approved:	⌘	If this CR is not approved HSDPA function is not completed.

Clauses affected:	⌘	8.3.1.2, 8.3.4.2, 9.2.1.30Q, new 9.2.1.x, 9.2.2.19a, 9.2.3.3aa, 9.3.4			
Other specs affected:	⌘	**Y** / **N** **X** / ( ) ( ) / **X** ( ) / **X**	Other core specifications Test specifications O&M Specifications	⌘	CR868 TS 25.433 v5.5.0
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/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.

8.3 DCH Procedures

8.3.1 Radio Link Setup

8.3.1.2 Successful Operation

/* partly omitted */

Transport Channels Handling:

DCH(s):

[TDD - If the *DCH Information* IE is present in the 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 each DCH which do not belong to a set of co-ordinated DCHs , and which includes a *QE-Selector* IE set to "selected", the DRNS shall use the Transport channel BER from that DCH for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If the *QE-Selector* IE is set to "non-selected", the DRNS shall use the Physical channel BER for the QE in the UL data frames, ref. [4].]

For a set of co-ordinated DCHs, the DRNS shall use the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected", the DRNS shall use the Physical channel BER for the QE, ref. [4].] [TDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use 0 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 Information* IE contains a *DCH Specific Info* IE which 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 Guaranteed Rate in the uplink of this DCH. 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 only 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 shall apply the Guaranteed Rate in the downlink of this DCH. 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 only 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 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.

The DRNC shall include the *DSCH Initial Window Size* IE in the RADIO LINK SETUP RESPONSE message for each DSCH, if the DRNS allows the SRNC to start transmission of MAC-c/sh SDUs before the DRNS has allocated capacity on user plane as described in [32].

[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.]

[TDD - If the *USCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall establish the requested USCHs, and the DRNC shall provide the *USCH Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD - CCTrCH Handling]:

[TDD - If the *UL CCTrCH Information* IE is present in the RADIO LINK SETUP REQUEST message, the DRNS shall configure the new UL CCTrCH(s) according to the parameters given in the message.]

[1.28Mcps TDD - If the *UL CCTrCH Information LCR* IE includes the *TDD TPC Uplink Step Size* IE, the DRNS shall configure the uplink TPC step size according to the parameters given in the message.]

[TDD - If the *DL CCTrCH Information* IE is present in the RADIO LINK SETUP REQUEST message, the DRNS shall configure the new DL CCTrCH(s) according to the parameters given in the message.]

[TDD - If the *TPC CCTrCH List* IE is present in the RADIO LINK SETUP REQUEST message, the DRNS shall configure the identified UL CCTrCHs with TPC according to the parameters given in the message.]

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.

If the *HS-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 MAC-d flows.

[FDD - If the *HS-SCCH Power Offset* IE is included in the *HS-DSCH Information* IE, the DRNS may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]

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.]

[FDD - If RADIO LINK SETUP REQUEST message includes the *HS-DSCH Information* IE and the *PDSCH RL ID* IE indicates a Radio Link in the DRNS, then the DRNC shall include the *Measurement Power Offset* IE in the *HS-DSCH Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

If the RADIO LINK SETUP REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH Information* IE, the DRNS shall use this information to optimise MAC-hs scheduling decisions.

If the RADIO LINK SETUP REQUEST message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs.

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 the 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 Sequence(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 concerned 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 concerned 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 Ty*pe 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).]

[TDD - If the RADIO LINK SETUP REQUEST message includes the *Maximum Number of DL Physical Channels per Timeslot* IE the DRNC shall take this value into account when allocating physical resources, otherwise the DRNC can assume that this UE capability is consistent with the other signalled UE capabilities.]

[1.28Mcps TDD - If the RADIO LINK SETUP REQUEST message includes the *Support for 8PSK* IE within the *DL Physical Channel Information* IE *or UL Physical Channel Information* IE, the DRNC shall take this into account in the specified direction when allocating physical resources, otherwise the DRNC can assume that this UE does not support 8PSK resource allocation.]

/* partly omitted */

8.3.4 Synchronised Radio Link Reconfiguration Preparation

8.3.4.2 Successful Operation

/* partly omitted */

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 when the radio link on which the HS-PDSCH is mapped is in the DRNS. Otherwise, the DRNS shall update the configuration of the HS-DSCH according to the received any *HS-DSCH Information To Modify*, *HS-DSCH Information To Add* or *HS-DSCH Information to Delete* IEs. DRNS shall store the latest HS-DSCH configuration until the UE context is deleted.

[FDD - If the *HS-DSCH Information To Modify* IE includes the *HS-SCCH Code Change Grant* IE, then the DRNS may modify the HS-SCCH codes corresponding to the HS-DSCH. The DRNC shall then report the codes which are used in the new configuration specified in the *HS-SCCH Specific Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

[TDD - If the *HS-DSCH Information To Modify* IE includes the *HS-SCCH Code Change Grant* IE, then the DRNS may modify the HS-SCCH parameters corresponding to the HS-DSCH. The DRNC shall then report the values for the parameters which are used in the new configuration specified in the [3.84Mcps TDD - *HS-SCCH Specific Information Response*] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR*] IEs in the RADIO LINK RECONFIGURATION READY message.]

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.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-PDSCH RL ID* IE and there is a HS-DSCH existing in the UE Context after reconfiguration, 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.

- If a reset of the MAC-hs is not required the DRNC shall include the *MAC-hs Reset Indicator* IE in the RADIO LINK RECONFIGURATION READY message.

- [FDD - If the indicated HS-PDSCH RL ID is in the DRNS and is different from previous one, then the DRNC shall include the *Measurement Power Offset* IE in the *HS-DSCH Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

If the RADIO LINK RECONFIGURATION PREPARE message includes any *HS-DSCH Information To Add* IE or *HS-DSCH Information To Modify* 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 MAC-d flows.

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *CQI Feedback Cycle k* IE, the *CQI Repetition Factor* IE , the *ACK-NACK Repetition Factor* IE, *the ACK Power Offset* IE, the *NACK Power Offset* IE or the *CQI Power Offset* IE in the *HS-DSCH Information To Modify* IE, then the DRNS shall use the indicated CQI Feedback Cycle k value, the CQI Repetition Factor or the ACK-NACK Repetition Factor, ACK Power Offset, the NACK Power Offset or the CQI Power Offset in the new configuration.]

[FDD - If the *HS-SCCH Power Offset* IE is included in the *HS-DSCH Information To Add* IE or *HS-DSCH Information To Modify* IE, the DRNS may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TDD ACK NACK Power Offset* IE in the *HS-DSCH Information To Modify* IE, the DRNS shall use the indicated power offset in the new configuration.]

If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Window Size* IE in the *HS-DSCH Information To Modify* IE, then the DRNS shall use the indicated MAC-hs window size value in the new configuration.

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].

If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH Information To Add* IE or *HS-DSCH Information To Modify* IE, the DRNS shall use this information to optimise MAC-hs scheduling decisions.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *T1* IE in the *HS-DSCH Information To Modify* IE, then the DRNS shall use the indicated T1 value in the new configuration.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer* IE in the *HS-DSCH Information To Modify* IE or the *HS-DSCH Information To Add* IE, then the DRNS shall use the indicated Discard Timer value in the new configuration.

[1.28Mcps TDD - Uplink Synchronisation Parameters LCR]:

[1.28Mcps TDD -If the *Uplink Synchronisation Parameters LCR* IE is present, the DRNC shall use the indicated values of *Uplink synchronisation stepsize* IE and *Uplink synchronisation frequency* IE when evaluating the timing of the UL synchronisation.]

[1.28Mcps TDD - Uplink Timing Advance Control LCR]:

[1.28Mcps TDD - The DRNC shall include the *Uplink Timing Advance Control LCR* IE in the RADIO LINK RECONFIGURATION READY message, if the Uplink Timing Advance Control parameters have been changed.]

[TDD] DSCH RNTI Addition/Deletion

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the PDSCH RL ID IE, then the DRNS shall use it as the new RL identifier for PDSCH and PUSCH..]

- [TDD - 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.]

- [TDD - 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.]

- [TDD - 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.]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a DSCHs to Delete IE and/or a USCHs to Delete IE which results in the deletion of all DSCH and USCH resources for the UE Context, then the DRNC shall release the DSCH-RNTI allocated to the UE Context, if there was one.]

/* partly omitted */

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		–	
>Allocation/Retention Priority	O		9.2.1.1		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
>Traffic Class	O		9.2.1.58A		–	
>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		–	
>>T1	O		9.2.1.54A		–	
>>Discard Timer	O		9.2.1.x			
>>MAC-hs Window Size	O		9.2.1.34C		–	
>>MAC-hs Guaranteed Bit Rate	O		9.2.1.34Aa		–	
>>MAC-d PDU Size Index		*0..<maxnoofMACdPDUindexes>*			–	
>>>SID	M		9.2.1.52D		–	
>>>MAC-d PDU Size	O		9.2.1.34A		–	
CQI Feedback Cycle k	O		9.2.2.24a	For FDD only	–	
CQI Repetition Factor	O		9.2.2.24c	For FDD only	–	
ACK-NACK Repetition Factor	O		9.2.2.a	For FDD only	–	
CQI Power Offset	O		9.2.2.24b	For FDD only	–	
ACK Power Offset	O		9.2.2.b	For FDD only	–	
NACK Power Offset	O		9.2.2.26a	For FDD only	–	
HS-SCCH Power Offset	O		9.2.2.19d	For FDD only	–	
HS-SCCH Code Change Grant	O		9.2.1.30S		–	
TDD ACK NACK Power Offset	O		9.2.3.7I	For TDD 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).

/* partly omitted */

9.2.1.x Discard Timer

The *Discard Timer* IE defines the time to live for a MAC-hs SDU starting from the instance of its arrival into an HSDPA Priority Queue. The DRNS shall use this information to discard out-of-date MAC-hs SDUs from the HSDPA Priority Queues.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Discard Timer			ENUMERATED (20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 250, 300, 400, 500, 750, 1000, 1250, 1500, 1750, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 7500, ...)	Unit: ms

/* partly omitted */

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		–	
>Allocation/Retention Priority	M		9.2.1.1		–	
>Traffic Class	M		9.2.1.58A		–	
>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		–	
>>T1	M		9.2.1.54A		–	
>>Discard Timer	O		9.2.1.x			
>>MAC-hs Window Size	M		9.2.1.34C		–	
>>MAC-hs Guaranteed Bit Rate	O		9.2.1.34Aa		–	
>>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 Physical Layer Category	M		9.2.1.30Oa		–	
>MAC-hs reordering buffer size	M		INTEGER (1..300,…)	The total buffer size defined in UE capability minus the RLC AM buffer	–	
CQI Feedback Cycle k	M		9.2.2.24a		–	
CQI Repetition Factor	C-CQICyclek		9.2.2.24c		–	
ACK-NACK Repetition Factor	M		9.2.2.a		–	
CQI Power Offset	M		9.2.2.24b		–	
ACK Power Offset	M		9.2.2.b		–	
NACK Power Offset	M		9.2.2.26a		–	
HS-SCCH Power Offset	O		9.2.2.19d		–	

Condition	Explanation
CQICyclek	The IE shall be present if the *CQI Feedback Cycle k* IE is set to a value greater than 0.

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).

/* partly omitted */

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		–	
>Allocation/Retention Priority	M		9.2.1.1		–	
>Traffic Class	M		9.2.1.58A		–	
>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			
>>T1	M		9.2.1.54A			
>>Discard Timer	O		9.2.1.x			
>>MAC-hs Window Size	M		9.2.1.34C		–	
>>MAC-hs Guaranteed Bit Rate	O		9.2.1.34Aa			
>>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 Physical Layer Category	M		9.2.1.30Oa		–	
>MAC-hs reordering buffer size	M		INTEGER (1..300,…)	The total buffer size defined in UE capability minus the RLC AM buffer		
TDD ACK NACK Power Offset	M		9.2.3.7I		–	

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).

/* partly omitted */

9.3.4 Information Element Definitions

```
/* partly omitted */

-- D
DATA-ID ::= INTEGER (0..3)

DCH-FDD-Information     ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-FDD-InformationItem

DCH-FDD-InformationItem ::= SEQUENCE {
    payloadCRC-PresenceIndicator        PayloadCRC-PresenceIndicator,
    ul-FP-Mode                          UL-FP-Mode,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    dCH-SpecificInformationList         DCH-Specific-FDD-InformationList,
    iE-Extensions                       ProtocolExtensionContainer { {DCH-FDD-InformationItem-ExtIEs} } OPTIONAL,
    ...
}

DCH-FDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-Specific-FDD-InformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-Specific-FDD-Item

DCH-Specific-FDD-Item ::=   SEQUENCE {
    dCH-ID                              DCH-ID,
    trCH-SrcStatisticsDescr             TrCH-SrcStatisticsDescr,
    ul-transportFormatSet               TransportFormatSet,
    dl-transportFormatSet               TransportFormatSet,
    ul-BLER                             BLER,
    dl-BLER                             BLER,
    allocationRetentionPriority         AllocationRetentionPriority,
    frameHandlingPriority               FrameHandlingPriority,
    qE-Selector                         QE-Selector,
    dRACControl                         DRACControl,
    iE-Extensions                       ProtocolExtensionContainer { {DCH-FDD-SpecificItem-ExtIEs} } OPTIONAL,
    ...
}

DCH-FDD-SpecificItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Guaranteed-Rate-Information     CRITICALITY ignore  EXTENSION Guaranteed-Rate-Information     PRESENCE optional }|
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass  PRESENCE mandatory},
    ...
}

DCH-ID                  ::= INTEGER (0..255)

DCH-InformationResponse ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-InformationResponseItem
```

```
DCH-InformationResponseItem ::= SEQUENCE {
    dCH-ID                      DCH-ID,
    bindingID                   BindingID              OPTIONAL,
    transportLayerAddress       TransportLayerAddress  OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { {DCH-InformationResponseItem-ExtIEs} } OPTIONAL,
    ...
}

DCH-InformationResponseItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Allowed-Rate-Information        CRITICALITY ignore  EXTENSION Allowed-Rate-Information     PRESENCE optional },
    ...
}

DCH-TDD-Information     ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-TDD-InformationItem

DCH-TDD-InformationItem ::= SEQUENCE {
    payloadCRC-PresenceIndicator        PayloadCRC-PresenceIndicator,
    ul-FP-Mode                          UL-FP-Mode,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    dCH-SpecificInformationList         DCH-Specific-TDD-InformationList,
    iE-Extensions                       ProtocolExtensionContainer { {DCH-TDD-InformationItem-ExtIEs} } OPTIONAL,
    ...
}

DCH-TDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-Specific-TDD-InformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-Specific-TDD-Item

DCH-Specific-TDD-Item ::=   SEQUENCE {
    dCH-ID                              DCH-ID,
    ul-cCTrCH-ID                        CCTrCH-ID, -- UL CCTrCH in which the DCH is mapped
    dl-cCTrCH-ID                        CCTrCH-ID, -- DL CCTrCH in which the DCH is mapped
    trCH-SrcStatisticsDescr             TrCH-SrcStatisticsDescr,
    ul-transportFormatSet               TransportFormatSet,
    dl-transportFormatSet               TransportFormatSet,
    ul-BLER                             BLER,
    dl-BLER                             BLER,
    allocationRetentionPriority         AllocationRetentionPriority,
    frameHandlingPriority               FrameHandlingPriority,
    qE-Selector                         QE-Selector         OPTIONAL,
    -- This IE shall be present if DCH is part of set of Co-ordinated DCHs
    iE-Extensions                       ProtocolExtensionContainer { {DCH-Specific-TDD-Item-ExtIEs} } OPTIONAL,
    ...
}

DCH-Specific-TDD-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Guaranteed-Rate-Information     CRITICALITY ignore  EXTENSION Guaranteed-Rate-Information     PRESENCE optional }|
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass  PRESENCE mandatory},
```

```
    ...
}

DedicatedMeasurementType ::= ENUMERATED {
    sir,
    sir-error,
    transmitted-code-power,
    rSCP,
    rx-timing-deviation,
    round-trip-time,
    ...,
    rx-timing-deviation-LCR,
    angle-Of-Arrival-LCR,
    hs-sich-quality
}

DedicatedMeasurementValue ::= CHOICE {
    sIR-Value           SIR-Value,
    sIR-ErrorValue          SIR-Error-Value,
    transmittedCodePowerValue   Transmitted-Code-Power-Value,
    rSCP                RSCP-Value, -- TDD only
    rxTimingDeviationValue  Rx-Timing-Deviation-Value,  -- 3.84Mcps TDD only
    roundTripTime       Round-Trip-Time-Value,  -- FDD only
    ...,
    extension-DedicatedMeasurementValue     Extension-DedicatedMeasurementValue
}

Extension-DedicatedMeasurementValue ::= ProtocolIE-Single-Container {{ Extension-DedicatedMeasurementValueIE }}

Extension-DedicatedMeasurementValueIE RNSAP-PROTOCOL-IES ::= {
    { ID id-Rx-Timing-Deviation-Value-LCR   CRITICALITY reject  TYPE Rx-Timing-Deviation-Value-LCR   PRESENCE mandatory }|
    { ID id-Angle-Of-Arrival-Value-LCR      CRITICALITY reject  TYPE Angle-Of-Arrival-Value-LCR PRESENCE mandatory }|
    { ID id-HS-SICH-Reception-Quality       CRITICALITY reject  TYPE HS-SICH-Reception-Quality-Value PRESENCE mandatory },
    ...
}

DedicatedMeasurementValueInformation ::= CHOICE {
    measurementAvailable        DedicatedMeasurementAvailable,
    measurementnotAvailable     DedicatedMeasurementnotAvailable
}

DedicatedMeasurementAvailable::= SEQUENCE {
    dedicatedmeasurementValue       DedicatedMeasurementValue,
    cFN                             CFN                     OPTIONAL,
    ie-Extensions                   ProtocolExtensionContainer { { DedicatedMeasurementAvailableItem-ExtIEs} }     OPTIONAL,
    ...
}

DedicatedMeasurementAvailableItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
DedicatedMeasurementnotAvailable ::= NULL

DelayedActivation ::= CHOICE {
    cfn                     CFN,
    separate-indication     NULL
}

DelayedActivationUpdate ::= CHOICE {
    activate        Activate-Info,
    deactivate      Deactivate-Info
}

Activate-Info ::= SEQUENCE {
    activation-type         Execution-Type,
    initial-dl-tx-power     DL-Power,
    firstRLS-Indicator      FirstRLS-Indicator                                      OPTIONAL, --FDD Only
    propagation-delay       PropagationDelay                                        OPTIONAL, --FDD Only
    iE-Extensions           ProtocolExtensionContainer { { Activate-Info-ExtIEs} }  OPTIONAL,
    ...
}

Activate-Info-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Deactivate-Info ::= SEQUENCE {
    deactivation-type       Execution-Type,
    iE-Extensions           ProtocolExtensionContainer { { Deactivate-Info-ExtIEs} }        OPTIONAL,
    ...
}

Deactivate-Info-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Execution-Type ::= CHOICE {
    synchronised    CFN,
    unsynchronised  NULL
}

DeltaSIR                ::= INTEGER (0..30)
-- Step 0.1 dB, Range 0..3 dB.

DGPSCorrections ::= SEQUENCE {
    gPSTOW                                  GPSTOW,
    gPS-Status-Health                       GPS-Status-Health,
    satellite-DGPSCorrections-Information   SEQUENCE (SIZE (1..maxNoSat)) OF
        SEQUENCE {
```

```
            sAT-ID                              SAT-ID,
            iode-dgps                           BIT STRING (SIZE (8)),
            uDRE                                UDRE,
            pRC                                 PRC,
            range-Correction-Rate               Range-Correction-Rate,
            iE-Extensions                       ProtocolExtensionContainer { { Satellite-DGPSCorrections-Information-ExtIEs} }    OPTIONAL,
            ...
        },
    iE-Extensions                   ProtocolExtensionContainer { { DGPSCorrections-ExtIEs} }      OPTIONAL,
    ...
}

Satellite-DGPSCorrections-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DGPSCorrections-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DGPSThreshold ::= SEQUENCE {
    pRCDeviation        PRCDeviation,
    iE-Extensions       ProtocolExtensionContainer { { DGPSThreshold-ExtIEs} }      OPTIONAL,
    ...
}

DGPSThreshold-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DiscardTimer ::= ENUMERATED
{v20,v40,v60,v80,v100,v120,v140,v160,v180,v200,v250,v300,v400,v500,v750,v1000,v1250,v1500,v1750,v2000,v2500,v3000,v3500,v4000,v4500,v5000,v7500.
 ...
}

DiversityControlField           ::= ENUMERATED {
    may,
    must,
    must-not
}

DiversityMode               ::= ENUMERATED {
    none,
    sTTD,
    closedLoopMode1,
    closedLoopMode2,
    ...
}
```

```
DL-DPCH-SlotFormat          ::= INTEGER (0..16,...)

DL-DPCH-TimingAdjustment ::= ENUMERATED {
    timing-advance,
    timing-delay
}

DL-Power                ::= INTEGER (-350..150)
-- Value = DL-Power / 10
-- Unit dB, Range –35dB .. +15dB, Step 0.1dB

DL-PowerBalancing-Information ::= SEQUENCE {
    powerAdjustmentType                 PowerAdjustmentType,
    dLReferencePower                    DL-Power        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common'
    dLReferencePowerList-DL-PC-Rqst     DL-ReferencePowerInformationList        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Individual'
    maxAdjustmentStep                   MaxAdjustmentStep       OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    adjustmentPeriod                    AdjustmentPeriod        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    adjustmentRatio                     ScaledAdjustmentRatio   OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    iE-Extensions                       ProtocolExtensionContainer { { DL-PowerBalancing-Information-ExtIEs } } OPTIONAL,
    ...
}

DL-PowerBalancing-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-ReferencePowerInformationList        ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF DL-ReferencePowerInformationItem

DL-ReferencePowerInformationItem ::= SEQUENCE {
    rL-ID                       RL-ID,
    dl-Reference-Power          DL-Power,
    iE-Extensions               ProtocolExtensionContainer { {DL-ReferencePowerInformationItem-ExtIEs} } OPTIONAL,
    ...
}

DL-ReferencePowerInformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PowerBalancing-ActivationIndicator   ::= ENUMERATED {
    dL-PowerBalancing-Activated
}

DL-PowerBalancing-UpdatedIndicator  ::= ENUMERATED {
    dL-PowerBalancing-Updated
```

```
}

DL-ReferencePowerInformation    ::= SEQUENCE {
    common-DL-ReferencePowerInformation         DL-Power        OPTIONAL,
    individual-DL-ReferencePowerInformation     DL-ReferencePowerInformationList        OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { DL-ReferencePowerInformation-ExtIEs } } OPTIONAL,
    ...
}

DL-ReferencePowerInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

D-RNTI                  ::= INTEGER (0..1048575)

D-RNTI-ReleaseIndication ::= ENUMERATED {
    release-D-RNTI,
    not-release-D-RNTI
}

DL-ScramblingCode           ::= INTEGER (0..15)

DL-FrameType ::= ENUMERATED {
    typeA,
    typeB,
    ...
}

DL-Timeslot-Information ::= SEQUENCE ( SIZE (1..maxNrOfTS)) OF DL-Timeslot-InformationItem

DL-Timeslot-InformationItem ::= SEQUENCE {
    timeSlot                    TimeSlot,
    midambleShiftAndBurstType   MidambleShiftAndBurstType,
    tFCI-Presence               TFCI-Presence,
    dL-Code-Information         TDD-DL-Code-Information,
    iE-Extensions               ProtocolExtensionContainer { {DL-Timeslot-InformationItem-ExtIEs} } OPTIONAL,
    ...
}

DL-Timeslot-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeslotLCR-Information ::= SEQUENCE (SIZE (1.. maxNrOfDLTsLCR)) OF DL-TimeslotLCR-InformationItem

DL-TimeslotLCR-InformationItem   ::= SEQUENCE {
    timeSlotLCR                         TimeSlotLCR,
    midambleShiftLCR                    MidambleShiftLCR,
    tFCI-Presence                       TFCI-Presence,
    dL-Code-LCR-Information          TDD-DL-Code-LCR-Information,
    iE-Extensions                       ProtocolExtensionContainer { { DL-TimeslotLCR-InformationItem-ExtIEs} }   OPTIONAL,
```

```
    ...
}

DL-TimeslotLCR-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-Maximum-DL-Power-TimeslotLCR-InformationItem    CRITICALITY ignore   EXTENSION DL-Power                  PRESENCE optional }|
    -- Applicable to 1.28Mcps TDD only
    { ID id-Minimum-DL-Power-TimeslotLCR-InformationItem    CRITICALITY ignore   EXTENSION DL-Power                  PRESENCE optional },
    -- Applicable to 1.28Mcps TDD only
    ...
}

DL-TimeSlot-ISCP-Info ::= SEQUENCE (SIZE (1..maxNrOfDLTs)) OF DL-TimeSlot-ISCP-InfoItem

DL-TimeSlot-ISCP-InfoItem ::= SEQUENCE {
    timeSlot                    TimeSlot,
    dL-TimeslotISCP             DL-TimeslotISCP,
    iE-Extensions               ProtocolExtensionContainer { { DL-TimeSlot-ISCP-InfoItem-ExtIEs} } OPTIONAL,
    ...
}

DL-TimeSlot-ISCP-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeSlot-ISCP-LCR-Information ::= SEQUENCE (SIZE (1..maxNrOfDLTsLCR)) OF DL-TimeSlot-ISCP-LCR-InfoItem

DL-TimeSlot-ISCP-LCR-InfoItem ::= SEQUENCE {
    timeSlotLCR                     TimeSlotLCR,
    dL-TimeslotISCP                 DL-TimeslotISCP,
    iE-Extensions                   ProtocolExtensionContainer { { DL-TimeSlot-ISCP-LCR-InfoItem-ExtIEs} }   OPTIONAL,
    ...
 }

DL-TimeSlot-ISCP-LCR-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeslotISCP         ::= INTEGER (0..91)
-- According to mapping in [24]

Downlink-Compressed-Mode-Method     ::= ENUMERATED {
    puncturing,
    sFdiv2,
    higher-layer-scheduling,
    ...
}

DPC-Mode ::= ENUMERATED {
   mode0,
   mode1,
   ...
```

```
}

DPC-Mode-Change-SupportIndicator ::= ENUMERATED {
   dPC-ModeChangeSupported
}

DPCH-ID                ::= INTEGER (0..239)

DPCHConstantValue ::= INTEGER (-10..10)
-- Unit dB, Step 1dB

DRACControl     ::= ENUMERATED {
    requested,
    not-requested
}

DRXCycleLengthCoefficient              ::= INTEGER (3..9)
-- See in [16]

DSCH-FDD-Information::= SEQUENCE {
    dSCH-Specific-Information          DSCH-Specific-FDD-Item,
-- This DSCH-Specific-FDD-Item is the first DSCH-Specific-FDD-Item in DSCH-FDD-Information. If more than one DSCH-Specific-FDD-Item;s should be defined
in a DSCH-FDD-Information, from 2nd DSCH-Specific-FDD Item, they will be included in the DSCH-Specific-FDD-Additional-List in the DSCH-FDD-Information-
ExtIEs.
    pdSCH-RL-ID                        RL-ID,
    tFCS                               TFCS,
    iE-Extensions                      ProtocolExtensionContainer { {DSCH-FDD-Information-ExtIEs} } OPTIONAL,
    ...
}

DSCH-FDD-Information-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DSCH-Specific-FDD-Additional-List       CRITICALITY reject  EXTENSION DSCH-Specific-FDD-Additional-List      PRESENCE optional }|
    { ID id-EnhancedDSCHPC             CRITICALITY ignore  EXTENSION EnhancedDSCHPC                PRESENCE optional },
    ...
}

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

DSCH-Specific-FDD-Item ::= SEQUENCE {
    dSCH-ID                            DSCH-ID,
    trChSourceStatisticsDescriptor     TrCH-SrcStatisticsDescr,
    transportFormatSet                 TransportFormatSet,
    allocationRetentionPriority        AllocationRetentionPriority,
    schedulingPriorityIndicator        SchedulingPriorityIndicator,
    bLER                               BLER,
    iE-Extensions                      ProtocolExtensionContainer { {DSCH-Specific-FDD-Item-ExtIEs} } OPTIONAL,
    ...
}

DSCH-Specific-FDD-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass      PRESENCE mandatory}|
```

```
    { ID id-BindingID                       CRITICALITY ignore      EXTENSION   BindingID       PRESENCE            optional }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID id-TransportLayerAddress           CRITICALITY ignore      EXTENSION   TransportLayerAddress     PRESENCE    optional },
    -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

DSCH-Specific-FDD-Additional-List ::= SEQUENCE (SIZE(1..maxNoOfDSCHs-1)) OF DSCH-Specific-FDD-Item

DSCH-FDD-InformationResponse ::= SEQUENCE {
    dsch-Specific-InformationResponse   DSCH-Specific-FDD-InformationResponse,
    pdSCHCodeMapping                    PDSCHCodeMapping,
    iE-Extensions                       ProtocolExtensionContainer { { DSCH-FDD-InformationResponse-ExtIEs} } OPTIONAL,
    ...
}

DSCH-FDD-InformationResponse-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-Specific-FDD-InformationResponse ::= SEQUENCE (SIZE(1..maxNoOfDSCHs)) OF DSCH-Specific-FDD-Response-Item

DSCH-Specific-FDD-Response-Item ::= SEQUENCE {
    dsch-ID                         DSCH-ID,
    dSCH-FlowControlInformation     DSCH-FlowControlInformation,
    bindingID                       BindingID               OPTIONAL,
    transportLayerAddress           TransportLayerAddress   OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { {DSCH-Specific-FDD-Response-Item-ExtIEs} } OPTIONAL,
    ...
}

DSCH-Specific-FDD-Response-Item-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-FlowControlInformation ::=  SEQUENCE (SIZE(1..16)) OF DSCH-FlowControlItem

DSCH-FlowControlItem ::= SEQUENCE {
    dSCH-SchedulingPriority             SchedulingPriorityIndicator,
    mAC-c-sh-SDU-Lengths                MAC-c-sh-SDU-LengthList,
    iE-Extensions                       ProtocolExtensionContainer { {DSCH-FlowControlItem-ExtIEs} } OPTIONAL,
    ...
}

DSCH-FlowControlItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-DSCH-InitialWindowSize  CRITICALITY ignore  EXTENSION   DSCH-InitialWindowSize  PRESENCE optional },
    ...
}

DSCH-ID                ::= INTEGER (0..255)
```

```
DSCH-InitialWindowSize          ::= INTEGER (1..255)
-- Number of MAC-c/sh SDUs.
-- 255 = Unlimited number of MAC-c/sh SDUs

DSCH-TDD-Information ::=  SEQUENCE (SIZE (1..maxNoOfDSCHs)) OF DSCH-TDD-InformationItem

DSCH-TDD-InformationItem ::= SEQUENCE {
    dSCH-ID                          DSCH-ID,
    dl-ccTrCHID                      CCTrCH-ID, -- DL CCTrCH in which the DSCH is mapped
    trChSourceStatisticsDescriptor   TrCH-SrcStatisticsDescr,
    transportFormatSet               TransportFormatSet,
    allocationRetentionPriority      AllocationRetentionPriority,
    schedulingPriorityIndicator      SchedulingPriorityIndicator,
    bLER                             BLER,
    iE-Extensions                    ProtocolExtensionContainer { {DSCH-TDD-InformationItem-ExtIEs} } OPTIONAL,
    ...
}

DSCH-TDD-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    { ID id-TrafficClass        CRITICALITY ignore  EXTENSION TrafficClass      PRESENCE mandatory}|
    { ID id-BindingID                       CRITICALITY ignore      EXTENSION   BindingID      PRESENCE            optional }|
    -- Shall be ignored if bearer establishment with ALCAP.
    { ID id-TransportLayerAddress           CRITICALITY ignore      EXTENSION   TransportLayerAddress     PRESENCE    optional },
    -- Shall be ignored if bearer establishment with ALCAP.
    ...
}

/* partly omitted */

-- P

PagingCause ::= ENUMERATED {
    terminating-conversational-call,
    terminating-streaming-call,
    terminating-interactive-call,
    terminating-background-call,
    terminating-low-priority-signalling,
    ...,
    terminating-high-priority-signalling,
    terminating–cause-unknown
}
-- See in [16]

PagingRecordType ::= ENUMERATED {
    imsi-gsm-map,
    tmsi-gsm-map,
    p-tmsi-gsm-map,
    imsi-ds-41,
    tmsi-ds-41,
    ...
}
```

```
-- See in [16]

PartialReportingIndicator ::= ENUMERATED {
    partial-reporting-allowed
}

PayloadCRC-PresenceIndicator ::= ENUMERATED {
    crc-included,
    crc-not-included
}

PCCPCH-Power ::= INTEGER (-150..400,...)
-- PCCPCH-power = power * 10
-- If power <= -15 PCCPCH shall be set to -150
-- If power >= 40 PCCPCH shall be set to 400
-- Unit dBm, Range -15dBm .. +40 dBm, Step 0.1dBm

PCH-InformationList ::= SEQUENCE (SIZE(0..1)) OF PCH-InformationItem

PCH-InformationItem ::= SEQUENCE {
    transportFormatSet              TransportFormatSet,
    iE-Extensions                   ProtocolExtensionContainer { { PCH-InformationItem-ExtIEs} } OPTIONAL,
    ...
}

PCH-InformationItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PC-Preamble ::= INTEGER(0..7,...)

PDSCHCodeMapping ::= SEQUENCE {
    dL-ScramblingCode       DL-ScramblingCode,
    signallingMethod        PDSCHCodeMapping-SignallingMethod,
    iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-ExtIEs} } OPTIONAL,
    ...
}

PDSCHCodeMapping-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod ::= CHOICE {
    pDSCHCodeMapping-SignallingMethod-CodeRange     PDSCHCodeMapping-SignallingMethod-CodeRange,
    pDSCHCodeMapping-SignallingMethod-TFCIRange     PDSCHCodeMapping-SignallingMethod-TFCIRange,
    pDSCHCodeMapping-SignallingMethod-Explicit      PDSCHCodeMapping-SignallingMethod-Explicit,
    ...,
    pDSCHCodeMapping-SignallingMethod-Replace       PDSCHCodeMapping-SignallingMethod-Replace
 }

PDSCHCodeMapping-SignallingMethod-CodeRange ::= SEQUENCE (SIZE (1..maxNoCodeGroups)) OF
```

```
    SEQUENCE {
        spreadingFactor         SpreadingFactor,
        multi-code-info         Multi-code-info,
        start-CodeNumber        CodeNumber,
        stop-CodeNumber         CodeNumber,
        iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-SignallingMethod-CodeRange-ExtIEs} } OPTIONAL,
        ...
    }

PDSCHCodeMapping-SignallingMethod-CodeRange-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod-TFCIRange ::= SEQUENCE (SIZE (1..maxNoTFCIGroups)) OF
    SEQUENCE {
        maxTFCIvalue            MaxTFCIvalue,
        spreadingFactor         SpreadingFactor,
        multi-code-info         Multi-code-info,
        codeNumber              CodeNumber,
        iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-SignallingMethod-TFCIRange-ExtIEs} } OPTIONAL,
        ...
    }

PDSCHCodeMapping-SignallingMethod-TFCIRange-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod-Explicit ::= SEQUENCE (SIZE (1..maxTFCI2Combs)) OF
    SEQUENCE {
        spreadingFactor         SpreadingFactor,
        multi-code-info         Multi-code-info,
        codeNumber              CodeNumber,
        iE-Extensions           ProtocolExtensionContainer { { PDSCHCodeMapping-SignallingMethod-Explicit-ExtIEs} } OPTIONAL,
        ...
    }

PDSCHCodeMapping-SignallingMethod-Explicit-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCHCodeMapping-SignallingMethod-Replace ::= SEQUENCE (SIZE (1..maxTFCI2Combs)) OF
    SEQUENCE {
        tfci-Field2                 TFCS-MaxTFCI-field2-Value,
        spreadingFactor             SpreadingFactor,
        multi-CodeInfo              Multi-code-info,
        codeNumber                  CodeNumber,
        iE-Extensions               ProtocolExtensionContainer { { PDSCHCodeMapping-SignallingMethod-Replace-ExtIEs} }   OPTIONAL,
    ...
}

PDSCHCodeMapping-SignallingMethod-Replace-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
```

```
    ...
}

Periodic ::= SEQUENCE {
    reportPeriodicity       ReportPeriodicity,
    iE-Extensions           ProtocolExtensionContainer { {Periodic-ExtIEs} } OPTIONAL,
    ...
}

Periodic-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PeriodicInformation ::= SEQUENCE {
    informationReportPeriodicity        InformationReportPeriodicity,
    iE-Extensions                       ProtocolExtensionContainer { {PeriodicInformation-ExtIEs} } OPTIONAL,
    ...
}

PeriodicInformation-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

Permanent-NAS-UE-Identity ::= CHOICE {
    imsi        IMSI,
    ...
}

PLMN-Identity ::= OCTET STRING (SIZE(3))

PowerAdjustmentType ::= ENUMERATED {
    none,
    common,
    individual
}

PowerOffset             ::= INTEGER (0..24)

PRC ::= INTEGER (-2047..2047)
--pseudo range correction; scaling factor 0.32 meters

PRCDeviation ::= ENUMERATED {
    prcd1,
    prcd2,
    prcd5,
    prcd10,
    ...
}

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
```

```
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PredictedSFNSFNDeviationLimit ::= INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

PredictedTUTRANGPSDeviationLimit ::= INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

PrimaryCPICH-Power          ::= INTEGER (-100..500)
-- step 0.1 (Range –10.0..50.0) Unit is dBm

PrimaryCPICH-EcNo           ::= INTEGER (-30..30)

PrimaryCCPCH-RSCP           ::= INTEGER (0..91)
-- According to maping in [14]

PrimaryScramblingCode           ::= INTEGER (0..511)

PriorityLevel               ::= INTEGER (0..15)
-- 0 = spare, 1 = highest priority, ...14 = lowest priority and 15 = no priority

PriorityQueue-Id ::= INTEGER (0..maxNrOfPrioQueues-1)

PriorityQueue-InfoList ::= SEQUENCE (SIZE (1..maxNrOfPrioQueues)) OF PriorityQueue-InfoItem

PriorityQueue-InfoItem ::= SEQUENCE {
    priorityQueue-Id                    PriorityQueue-Id,
    schedulingPriorityIndicator         SchedulingPriorityIndicator,
    t1                                  T1,
    discardTimer                        DiscardTimer                OPTIONAL,
    mAC-hsWindowSize                    MAC-hsWindowSize,
    mAChsGuaranteedBitRate              MAChsGuaranteedBitRate      OPTIONAL,
    mACdPDU-Size-Index                  MACdPDU-Size-IndexList,
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-ExtIEs } }        OPTIONAL,
    ...
}

PriorityQueue-InfoItem-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PriorityQueue-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfPrioQueues)) OF PriorityQueue-InfoItem-to-Modify

PriorityQueue-InfoItem-to-Modify ::= SEQUENCE {
    priorityQueue-Id                    PriorityQueue-Id,
```

```
    schedulingPriorityIndicator         SchedulingPriorityIndicator             OPTIONAL,
    t1                                  T1                                      OPTIONAL,
    discardTimer                        DiscardTimer                            OPTIONAL,
    mAC-hsWindowSize                    MAC-hsWindowSize                        OPTIONAL,
    mAChsGuaranteedBitRate              MAChsGuaranteedBitRate                  OPTIONAL,
    mACdPDU-Size-Index-to-Modify        MACdPDU-Size-IndexList-to-Modify                    OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-to-Modify-ExtIEs } }      OPTIONAL,
    ...
}

PriorityQueue-InfoItem-to-Modify-ExtIEs RNSAP-PROTOCOL-EXTENSION ::= {
    ...
}

PropagationDelay            ::= INTEGER (0..255)

PunctureLimit               ::= INTEGER (0..15)
-- 0: 40%; 1: 44%; ... 14: 96%; 15: 100
```

3GPP TSG-RAN3 Meeting #37
Budapest, Hungary, 25th – 29th, August 2003

Tdoc ⌘R3-031230

CR-Form-v7

CHANGE REQUEST

⌘ **25.433** **CR** **868** ⌘ **rev** **2** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Discard timer signalling for HSDPA
Source:	⌘	RAN3
Work item code:	⌘	HSDPA-IuBIur
Date:	⌘	25/08/2003
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)*
Rel-6	*(Release 6)*

Reason for change: ⌘ Signalling for discard timer is currently missing in RAN3 specs. Therefore, this CR proposes a new *Discard Timer* IE for inclusion in NBAP signalling in the CRNC→NodeB direction.

Summary of change: ⌘

Rev 2:
Discard Timer value 225 removed from Discard Timer IE

Rev 1:
Discard Timer IE definition and range is changed and some other editorial corrections.

Rev 0:
Introduction of Discard Timer IE in the HS-DSCH Information To Modify IE, HS-DSCH FDD Information IE and HS-DSCH TDD Information IE.

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 HSDPA only is affected.

This CR has an impact under functional point of view.

The impact can be considered isolated because the change affects one function namely HSDPA.

Consequences if not approved:	⌘	If the CR is not approved HSDPA function is not completed.

Clauses affected:	⌘	8.2.17.2, 8.3.2.2, 9.2.1.31H, new 9.2.1.x, 9.2.2.18D, 9.2.3.5F, 9.3.4			
Other specs affected:	⌘	**Y** / **N** **X** / ☐ Other core specifications ☐ / **X** Test specifications ☐ / **X** O&M Specifications	⌘	CR843 TS 25.423 v5.6.0	
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/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.

8.2.17 Radio Link Setup

8.2.17.2 Successful Operation

/* partly omitted */

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* IE 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 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 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 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", the 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.
- If the *Diversity Control Field* IE is set to "Must not", the Node B shall not combine the RL with any other existing 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.]

[FDD - In the RADIO LINK SETUP RESPONSE message, the Node B shall indicate for each RL with the Diversity Indication in the *RL Information Response* IE whether the RL is combined or not.

- [FDD - In case of not combining with a RL previously listed in the RADIO LINK SETUP RESPONSE message or for the first RL in the RADIO LINK SETUP RESPONSE message, the Node B shall include

in the *DCH Information Response* IE in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.]

- [FDD - Otherwise in case of combining, the *RL ID* IE indicates (one of) the RL(s) previously listed in this RADIO LINK SETUP RESPONSE message with which the concerned RL is combined.]

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

In the case of a set of co-ordinated DCHs, the *Binding ID* IE and the *Transport Layer Address* IE shall be specified for only one of the DCHs in the set of co-ordinated 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 IEs. The *TFCI2 Bearer Information Response* IE containing the *Binding ID* IE and the *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 *TFCI2 Bearer Information* IE the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a TFCI2 transport bearer.]

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 *DSCH Information Response* IE in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and the *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 -If the *USCH Information* IE is present, the Node B shall include in the *USCH Information Response* IE in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and the *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-SCCH Power Offset* IE is included in the *HS-DSCH Information* IE, the Node B may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]

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 message 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.

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].

[FDD - If the RADIO LINK SETUP REQUEST message includes *Measurement Power Offset* IE in the *HS-DSCH Information* IE, then the Node B shall use the measurement power offset as described in ref [10], subclause 6A.2.]

If the RADIO LINK SETUP REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH Information* IE, the Node B shall use this information to optimise MAC-hs scheduling decisions.

If the RADIO LINK SETUP REQUEST message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to discard the out-of-dated MAC-hs SDUs.

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 the 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 concerned 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 concerned 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 is 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*".]

[TDD - PDSCH RL ID]:

[TDD - If the *PDSCH RL ID* IE is included in RADIO LINK SETUP REQUEST message, the Node B shall use the PDSCH RL ID as an identifier for the PDSCH and/or PUSCH in this radio link.]

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 REQUEST 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 REQUEST 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.]

[1.28Mcps TDD - If the *UL CCTrCH Information* IE includes the *TDD TPC UL Step Size* IE, the Node B shall configure the uplink TPC step size according to the parameters given in the message.]

/* partly omitted */

8.3.2 Synchronised Radio Link Reconfiguration Preparation

8.3.2.2 Successful Operation

/* partly omitted */

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 Modify* IE or *HS-DSCH Information To Delete* IE, then the Node B shall use this information to add/modify/delete the indicated HS-DSCH channel to/from the radio link when the radio link on which the HS-PDSCH is mapped is in the Node B. Otherwise, the Node B shall update the configuration of the HS-DSCH according to the received *HS-DSCH Information To Modify*, *HS-DSCH Information To Add* or *HS-DSCH Information to Delete* IEs. Node B shall store the latest HS-DSCH configuration until the Node B Communication Context is deleted.

[FDD - If the *HS-DSCH To Modify* IE includes the *HS-SCCH Code Change Grant* IE, then the Node B may modify the HS-SCCH codes corresponding to the HS-DSCH. The Node B shall then report the codes which are used in the new configuration specified in *HS-SCCH Specific Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

[TDD - If the *HS-DSCH To Modify* IE includes the *HS-SCCH Code Change Grant* IE, then the Node B may modify the HS-SCCH parameters codes corresponding to the HS-DSCH. The Node B shall then report the values for the parameters which are used in the new configuration specified in the [3.84Mcps TDD - *HS-SCCH Specific Information Response*] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR*] IEs in the RADIO LINK RECONFIGURATION READY message.]

[FDD – If the *HS-SCCH Power Offset* IE is included in the *HS-DSCH Information To Add* IE or *HS-DSCH Information To Modify* IE, the Node B may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *CQI Feedback Cycle k* IE, the *CQI Repetition Factor* IE , the *ACK-NACK Repetition Factor* IE, *the ACK Power Offset* IE, the *NACK Power Offset* IE or the *CQI Power Offset* IE in the *HS-DSCH Information To Modify* IE, then the DRNS shall use the indicated CQI Feedback Cycle k value, the CQI Repetition Factor or the ACK-NACK Repetition Factor, ACK Power Offset, the NACK Power Offset or the CQI Power Offset in the new configuration.]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TDD ACK NACK Power Offset* IE in the *HS-DSCH To Modify* IE, the DRNS shall use the indicated power offset in the new configuration.]

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 B shall use the HS-DSCH-RNTI for the Node B Communication Context.

If the new configuration does not include a HS-DSCH, the HS-DSCH-RNTI, if existing in the Node B Communication Context, shall be deleted from the Node B Communication Context.

If the RADIO LINK RECONFIGURATION 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.

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].

If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Window Size* IE in the *HS-DSCH Information To Modify* IE, then the Node B shall use the indicated MAC-hs window size value in the new configuration.

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes *Measurement Power Offset* IE in the *HS-DSCH Information To Add* IE or the *HS-DSCH Information To Modify* IE, then the Node B shall use the measurement power offset as described in [10] subclause 6A.2.]

If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH Information To Add* IE or *HS-DSCH Information To Modify* IE, the Node B shall use this information to optimise MAC-hs scheduling decisions.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *T1* IE in the *HS-DSCH Information To Modify* IE, then the Node B shall use the indicated T1 value in the new configuration.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer* IE in the *HS-DSCH Information To Modify* IE or the *HS-DSCH Information To Add* IE, then the Node B shall use the indicated Discard Timer value 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 Information To Modify*, *HS-DSCH Information 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 exists a Prepared Reconfiguration, as defined in subclause 3.1.

The Node B shall include in the RADIO LINK RECONFIGURATION READY message the *Transport Layer Address* IE and the *Binding ID* 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 the case of a set of co-ordinated DCHs requiring a new transport bearer on the Iub interface, 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 co-ordinated DCHs.

In the case of a Radio Link being combined with another Radio Link within the Node B, 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.

/* partly omitted */

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		9.2.1.31I		–	
>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		–	
>>T1	O		9.2.1.56a		–	
>>Discard Timer	O		9.2.1.x			
>>MAC-hs Window Size	O		9.2.1.38B		–	
>>MAC-hs Guaranteed Bit Rate	O		9.2.1.38Aa		–	
>>MAC-d PDU Size Index		*0..<maxnoofMACdPDUindexes>*			–	
>>>SID	M		9.2.1.53I		–	
>>>MAC-d PDU Size	O		9.2.1.38A		–	
CQI Feedback Cycle k	O		9.2.2.21B	For FDD only	–	
CQI Repetition Factor	O		9.2.2.4Cb	For FDD only	–	
ACK-NACK Repetition Factor	O		9.2.2.a	For FDD only	–	
CQI Power Offset	O		9.2.2.4Ca	For FDD only	–	
ACK Power Offset	O		9.2.2.b	For FDD only	–	
NACK Power Offset	O		9.2.2.23a	For FDD only	–	
HS-SCCH Power Offset	O		9.2.2.18I	For FDD only	–	
Measurement Power Offset	O		9.2.2.21C	For FDD only	–	
HS-SCCH Code Change Grant	O		9.2.1.31L		–	
TDD ACK NACK Power Offset	O		9.2.3.18F	For TDD only	–	

/* partly omitted */

9.2.1.x Discard Timer

The *Discard Timer* IE defines the time to live for a MAC-hs SDU starting from the instance of its arrival into an HSDPA Priority Queue. The Node B shall use this information to discard out-of-data MAC-hs SDUs from the HSDPA Priority Queues.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Discard Timer			ENUMERATED (20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 250, 300, 400, 500, 750, 1000, 1250, 1500, 1750, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 7500, ...)	Unit: ms

/* partly omitted */

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		–	
>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		*1..<maxnoofPrioQueues>*			–	
>>Priority Queue ID	M		9.2.1.49C		–	
>>Scheduling Priority Indicator	M		9.2.1.53H		–	
>>T1	M		9.2.1.56a		–	
>>Discard Timer	O		9.2.1.x			
>>MAC-hs Window Size	M		9.2.1.38B		–	
>>MAC-hs Guaranteed Bit Rate	O		9.2.1.38Aa		–	
>>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 Physical Layer Category	M		9.2.1.31Ia		–	
>MAC-hs Reordering Buffer Size	M		INTEGER (1..300,...)	The total buffer size defined in UE capability minus the RLC AM buffer.	–	
CQI Feedback Cycle k	M		9.2.2.21B		–	
CQI Repetition Factor	C-CQICyclek		9.2.2.4Cb		–	
ACK-NACK Repetition Factor	M		9.2.2.a		–	
CQI Power Offset	M		9.2.2.4Ca		–	
ACK Power Offset	M		9.2.2.b		–	
NACK Power Offset	M		9.2.2.23a		–	
HS-SCCH Power Offset	O		9.2.2.18I		–	
Measurement Power Offset	O		9.2.2.21C		–	

Condition	Explanation
CQICyclek	The IE shall be present if the *CQI Feedback Cycle k* IE is set to a value greater than 0.

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 PDU SIDs

/* partly omitted */

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		–	
>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		–	
>>T1	M		9.2.1.56a		–	
>>Discard Timer	O		9.2.1.x			
>>MAC-hs Window Size	M		9.2.1.38B		–	
>>MAC-hs Guaranteed Bit Rate	O		9.2.1.38Aa		–	
>>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 Physical Layer Category	M		9.2.1.31Ia		–	
>MAC-hs Reordering Buffer Size	M		INTEGER (1..300,...)	The total buffer size defined in UE capability minus the RLC AM buffer.	–	
TDD ACK NACK Power Offset	M		9.2.3.18F		–	

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 PDU SIDs

/* partly omitted */

9.3.4 Information Elements Definitions

/* partly omitted */

```
-- ==========================================
--  D
-- ==========================================

DATA-ID ::= INTEGER (0..3)

DCH-ID ::= INTEGER (0..255)

DCH-FDD-Information ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-FDD-InformationItem

DCH-FDD-InformationItem ::= SEQUENCE {
    payloadCRC-PresenceIndicator        PayloadCRC-PresenceIndicator,
    ul-FP-Mode                          UL-FP-Mode,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    dCH-SpecificInformationList         DCH-Specific-FDD-InformationList,
    iE-Extensions                       ProtocolExtensionContainer { { DCH-FDD-InformationItem-ExtIEs} }           OPTIONAL,
    ...
}

DCH-FDD-InformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-Specific-FDD-InformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-Specific-FDD-Item

DCH-Specific-FDD-Item ::=   SEQUENCE {
    dCH-ID                              DCH-ID,
    ul-TransportFormatSet               TransportFormatSet,
    dl-TransportFormatSet               TransportFormatSet,
    allocationRetentionPriority         AllocationRetentionPriority,
    frameHandlingPriority               FrameHandlingPriority,
    qE-Selector                         QE-Selector,
    iE-Extensions                       ProtocolExtensionContainer { { DCH-Specific-FDD-Item-ExtIEs} }             OPTIONAL,
    ...
}

DCH-Specific-FDD-Item-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-InformationResponse ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-InformationResponseItem

DCH-InformationResponseItem ::= SEQUENCE {
    dCH-ID                                      DCH-ID,
```

```
    bindingID                                   BindingID               OPTIONAL,
    transportLayerAddress                       TransportLayerAddress   OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { DCH-InformationResponseItem-ExtIEs} }    OPTIONAL,
    ...
}

DCH-InformationResponseItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-TDD-Information ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-TDD-InformationItem

DCH-TDD-InformationItem ::= SEQUENCE {
    payloadCRC-PresenceIndicator        PayloadCRC-PresenceIndicator,
    ul-FP-Mode                          UL-FP-Mode,
    toAWS                               ToAWS,
    toAWE                               ToAWE,
    dCH-SpecificInformationList         DCH-Specific-TDD-InformationList,
    iE-Extensions                           ProtocolExtensionContainer { { DCH-TDD-InformationItem-ExtIEs} }          OPTIONAL,
    ...
}

DCH-TDD-InformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-Specific-TDD-InformationList ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-Specific-TDD-Item

DCH-Specific-TDD-Item ::=   SEQUENCE {
    dCH-ID                                  DCH-ID,
    ul-CCTrCH-ID                            CCTrCH-ID,
    dl-CCTrCH-ID                            CCTrCH-ID,
    ul-TransportFormatSet                   TransportFormatSet,
    dl-TransportFormatSet                   TransportFormatSet,
    allocationRetentionPriority             AllocationRetentionPriority,
    frameHandlingPriority                   FrameHandlingPriority,
    qE-Selector                             QE-Selector                     OPTIONAL,
    -- This IE shall be present if DCH is part of set of Coordinated DCHs
    iE-Extensions                           ProtocolExtensionContainer { { DCH-Specific-TDD-Item-ExtIEs} }            OPTIONAL,
    ...
}

DCH-Specific-TDD-Item-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

FDD-DCHs-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF FDD-DCHs-to-ModifyItem

FDD-DCHs-to-ModifyItem   ::= SEQUENCE {
    ul-FP-Mode                          UL-FP-Mode      OPTIONAL,
    toAWS                               ToAWS           OPTIONAL,
```

```
    toAWE                           ToAWE           OPTIONAL,
    transportBearerRequestIndicator TransportBearerRequestIndicator,
    dCH-SpecificInformationList     DCH-ModifySpecificInformation-FDD,
    iE-Extensions                   ProtocolExtensionContainer { { FDD-DCHs-to-ModifyItem-ExtIEs} }          OPTIONAL,
    ...
}

FDD-DCHs-to-ModifyItem-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-ModifySpecificInformation-FDD::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-ModifySpecificItem-FDD

DCH-ModifySpecificItem-FDD::=   SEQUENCE {
    dCH-ID                                  DCH-ID,
    ul-TransportFormatSet                   TransportFormatSet          OPTIONAL,
    dl-TransportFormatSet                   TransportFormatSet          OPTIONAL,
    allocationRetentionPriority             AllocationRetentionPriority OPTIONAL,
    frameHandlingPriority                   FrameHandlingPriority       OPTIONAL,
    iE-Extensions                           ProtocolExtensionContainer { { DCH-ModifySpecificItem-FDD-ExtIEs} }     OPTIONAL,
    ...
}

DCH-ModifySpecificItem-FDD-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}


TDD-DCHs-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-ModifyItem-TDD

DCH-ModifyItem-TDD ::= SEQUENCE {
    ul-FP-Mode                      UL-FP-Mode      OPTIONAL,
    toAWS                           ToAWS           OPTIONAL,
    toAWE                           ToAWE           OPTIONAL,
    transportBearerRequestIndicator TransportBearerRequestIndicator,
    dCH-SpecificInformationList     DCH-ModifySpecificInformation-TDD,
    iE-Extensions                   ProtocolExtensionContainer { { TDD-DCHs-to-ModifyItem-ExtIEs} }          OPTIONAL,
    ...
}

TDD-DCHs-to-ModifyItem-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DCH-ModifySpecificInformation-TDD ::= SEQUENCE (SIZE (1..maxNrOfDCHs)) OF DCH-ModifySpecificItem-TDD

DCH-ModifySpecificItem-TDD ::=  SEQUENCE {
    dCH-ID                                  DCH-ID,
    ul-CCTrCH-ID                            CCTrCH-ID                   OPTIONAL,
    dl-CCTrCH-ID                            CCTrCH-ID                   OPTIONAL,
    ul-TransportFormatSet                   TransportFormatSet          OPTIONAL,
```

```
    dl-TransportFormatSet                       TransportFormatSet          OPTIONAL,
    allocationRetentionPriority                 AllocationRetentionPriority OPTIONAL,
    frameHandlingPriority                       FrameHandlingPriority       OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { DCH-ModifySpecificItem-TDD-ExtIEs} }        OPTIONAL,
    ...
}

DCH-ModifySpecificItem-TDD-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DedicatedChannelsCapacityConsumptionLaw ::= SEQUENCE ( SIZE(1..maxNrOfSF) ) OF
    SEQUENCE {
        dl-Cost-1       INTEGER (0..65535),
        dl-Cost-2       INTEGER (0..65535),
        ul-Cost-1       INTEGER (0..65535),
        ul-Cost-2       INTEGER (0..65535),
        iE-Extensions       ProtocolExtensionContainer { { DedicatedChannelsCapacityConsumptionLaw-ExtIEs } }         OPTIONAL,
    ...
}

DedicatedChannelsCapacityConsumptionLaw-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DedicatedMeasurementType ::= ENUMERATED {
    sir,
    sir-error,
    transmitted-code-power,
    rscp,
    rx-timing-deviation,
    round-trip-time,
    ...,
    rx-timing-deviation-LCR,
    angle-Of-Arrival-LCR,
    hs-sich-quality
}

DedicatedMeasurementValue ::= CHOICE {
    sIR-Value                       SIR-Value,
    sIR-ErrorValue                  SIR-Error-Value,
    transmittedCodePowerValue           Transmitted-Code-Power-Value,
    rSCP                                RSCP-Value,
    rxTimingDeviationValue              Rx-Timing-Deviation-Value,
    roundTripTime                       Round-Trip-Time-Value,
    ...,
    extension-DedicatedMeasurementValue     Extension-DedicatedMeasurementValue
}

Extension-DedicatedMeasurementValue ::= ProtocolIE-Single-Container {{ Extension-DedicatedMeasurementValueIE }}
```

```
Extension-DedicatedMeasurementValueIE NBAP-PROTOCOL-IES ::= {
    { ID id-Rx-Timing-Deviation-Value-LCR   CRITICALITY reject  TYPE Rx-Timing-Deviation-Value-LCR   PRESENCE mandatory }|
    { ID id-Angle-Of-Arrival-Value-LCR  CRITICALITY reject  TYPE Angle-Of-Arrival-Value-LCR PRESENCE mandatory }|
    { ID id-HS-SICH-Reception-Quality   CRITICALITY reject  TYPE HS-SICH-Reception-Quality-Value  PRESENCE mandatory },
    ...
}

DedicatedMeasurementValueInformation ::= CHOICE {
    measurementAvailable        DedicatedMeasurementAvailable,
    measurementnotAvailable     DedicatedMeasurementnotAvailable
}

DedicatedMeasurementAvailable::= SEQUENCE {
    dedicatedmeasurementValue       DedicatedMeasurementValue,
    cFN                             CFN                         OPTIONAL,
    ie-Extensions                   ProtocolExtensionContainer { { DedicatedMeasurementAvailableItem-ExtIEs} }        OPTIONAL,
    ...
}

DedicatedMeasurementAvailableItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DedicatedMeasurementnotAvailable ::= NULL

DelayedActivation ::= CHOICE {
    cfn                     CFN,
    separate-indication     NULL
}

DelayedActivationUpdate ::= CHOICE {
    activate        Activate-Info,
    deactivate      Deactivate-Info
}

Activate-Info ::= SEQUENCE {
    activation-type         Execution-Type,
    initial-dl-tx-power     DL-Power,
    firstRLS-Indicator      FirstRLS-Indicator                                      OPTIONAL, --FDD Only
    propagation-delay       PropagationDelay                                        OPTIONAL, --FDD Only
    iE-Extensions           ProtocolExtensionContainer { { Activate-Info-ExtIEs} }      OPTIONAL,
    ...
}
```

```
Activate-Info-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Deactivate-Info ::= SEQUENCE {
    deactivation-type       Execution-Type,
    iE-Extensions           ProtocolExtensionContainer { { Deactivate-Info-ExtIEs} }        OPTIONAL,
    ...
}

Deactivate-Info-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

Execution-Type ::= CHOICE {
    synchronised    CFN,
    unsynchronised  NULL
}

Detected-PCPCH-access-preambles ::= INTEGER (0..240,...)
-- According to mapping in [22].

DeltaSIR               ::= INTEGER (0..30)
-- Unit dB, Step 0.1 dB, Range 0..3 dB.

DGPSCorrections ::= SEQUENCE {
   gpstow               GPSTOW,
   status-health        GPS-Status-Health,
   satelliteinfo        SAT-Info-DGPSCorrections,
   ie-Extensions        ProtocolExtensionContainer { { DGPSCorrections-ExtIEs} }       OPTIONAL,
   ...
}

DGPSCorrections-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DGPSThresholds ::= SEQUENCE {
   prcdeviation         PRCDeviation,
   ie-Extensions        ProtocolExtensionContainer { { DGPSThresholds-ExtIEs} }     OPTIONAL,
   ...
}

DGPSThresholds-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

```
DiscardTimer ::= ENUMERATED
{v20,v40,v60,v80,v100,v120,v140,v160,v180,v200,v250,v300,v400,v500,v750,v1000,v1250,v1500,v1750,v2000,v2500,v3000,v3500,v4000,v4500,v5000,v7500,
 ...
}

DiversityControlField ::= ENUMERATED {
    may,
    must,
    must-not,
    ...
}

DiversityMode ::= ENUMERATED {
    none,
    sTTD,
    closed-loop-mode1,
    closed-loop-mode2,
    ...
}

DL-DPCH-SlotFormat ::= INTEGER (0..16,...)

DL-DPCH-TimingAdjustment ::= ENUMERATED {
    timing-advance,
    timing-delay
}

DL-Timeslot-Information ::= SEQUENCE (SIZE (1.. maxNrOfDLTSs)) OF DL-Timeslot-InformationItem

DL-Timeslot-InformationItem  ::= SEQUENCE {
    timeSlot                            TimeSlot,
    midambleShiftAndBurstType           MidambleShiftAndBurstType,
    tFCI-Presence                       TFCI-Presence,
    dL-Code-Information                 TDD-DL-Code-Information,
    iE-Extensions                       ProtocolExtensionContainer { { DL-Timeslot-InformationItem-ExtIEs} }      OPTIONAL,
    ...
}

DL-Timeslot-InformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeslotLCR-Information ::= SEQUENCE (SIZE (1.. maxNrOfDLTSLCRs)) OF DL-TimeslotLCR-InformationItem

DL-TimeslotLCR-InformationItem   ::= SEQUENCE {
    timeSlotLCR                         TimeSlotLCR,
    midambleShiftLCR                    MidambleShiftLCR,
    tFCI-Presence                       TFCI-Presence,
    dL-Code-LCR-Information             TDD-DL-Code-LCR-Information,
    iE-Extensions                       ProtocolExtensionContainer { { DL-TimeslotLCR-InformationItem-ExtIEs} }   OPTIONAL,
```

```
    ...
}

DL-TimeslotLCR-InformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-Initial-DL-Power-TimeslotLCR-InformationItem    CRITICALITY ignore   EXTENSION DL-Power                  PRESENCE optional }|
    -- Applicable to 1.28Mcps TDD only
    { ID id-Maximum-DL-Power-TimeslotLCR-InformationItem    CRITICALITY ignore   EXTENSION DL-Power                  PRESENCE optional }|
    -- Applicable to 1.28Mcps TDD only
    { ID id-Minimum-DL-Power-TimeslotLCR-InformationItem  CRITICALITY ignore    EXTENSION DL-Power                  PRESENCE optional },
    -- Applicable to 1.28Mcps TDD only
    ...
}

DL-FrameType ::= ENUMERATED {
    typeA,
    typeB,
    ...
}

DL-or-Global-CapacityCredit ::= INTEGER (0..65535)

DL-Power ::= INTEGER (-350..150)
-- Value = DL-Power/10
-- Unit dB, Range -35dB .. +15dB, Step +0.1dB

DLPowerAveragingWindowSize ::= INTEGER (1..60)

DL-PowerBalancing-Information ::= SEQUENCE {
    powerAdjustmentType                 PowerAdjustmentType,
    dLReferencePower                    DL-Power        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common'
    dLReferencePowerList-DL-PC-Rqst     DL-ReferencePowerInformationList        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Individual'
    maxAdjustmentStep                   MaxAdjustmentStep       OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    adjustmentPeriod                    AdjustmentPeriod        OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    adjustmentRatio                     ScaledAdjustmentRatio   OPTIONAL,
    -- This IE shall be present if Power Adjustment Type IE equals to 'Common' or 'Individual'
    iE-Extensions                       ProtocolExtensionContainer { { DL-PowerBalancing-Information-ExtIEs } } OPTIONAL,
    ...
}

DL-PowerBalancing-Information-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-ReferencePowerInformationList        ::= SEQUENCE (SIZE (1..maxNrOfRLs)) OF DL-ReferencePowerInformationItem

DL-ReferencePowerInformationItem ::= SEQUENCE {
    rL-ID                       RL-ID,
```

```
    dl-Reference-Power          DL-Power,
    iE-Extensions               ProtocolExtensionContainer { {DL-ReferencePowerInformationItem-ExtIEs} } OPTIONAL,
    ...
}

DL-ReferencePowerInformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-PowerBalancing-ActivationIndicator   ::= ENUMERATED {
    dL-PowerBalancing-Activated
}

DL-PowerBalancing-UpdatedIndicator  ::= ENUMERATED {
    dL-PowerBalancing-Updated
}

DL-ScramblingCode ::= INTEGER (0..15)
-- 0= Primary scrambling code of the cell, 1..15= Secondary scrambling code --

DL-TimeslotISCP ::= INTEGER (0..91)

DL-TimeslotISCPInfo ::= SEQUENCE (SIZE (1..maxNrOfDLTSs)) OF DL-TimeslotISCPInfoItem

DL-TimeslotISCPInfoItem ::= SEQUENCE {
    timeSlot                    TimeSlot,
    dL-TimeslotISCP             DL-TimeslotISCP,
    iE-Extensions               ProtocolExtensionContainer { {DL-TimeslotISCPInfoItem-ExtIEs} }                     OPTIONAL,
    ...
    }

DL-TimeslotISCPInfoItem-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TimeslotISCPInfoLCR ::= SEQUENCE (SIZE (1..maxNrOfDLTSLCRs)) OF DL-TimeslotISCPInfoItemLCR

DL-TimeslotISCPInfoItemLCR ::= SEQUENCE {
    timeSlotLCR                 TimeSlotLCR,
    dL-TimeslotISCP             DL-TimeslotISCP,
    iE-Extensions               ProtocolExtensionContainer { {DL-TimeslotISCPInfoItemLCR-ExtIEs} }                      OPTIONAL,
    ...
    }

DL-TimeslotISCPInfoItemLCR-ExtIEs  NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TPC-Pattern01Count ::= INTEGER (0..30,...)

Downlink-Compressed-Mode-Method     ::= ENUMERATED {
```

```
    puncturing,
    sFdiv2,
    higher-layer-scheduling,
    ...
}

DPC-Mode ::= ENUMERATED {
    mode0,
    mode1,
    ...
}

DPCH-ID ::= INTEGER (0..239)

DSCH-ID ::= INTEGER (0..255)

DSCH-InformationResponse ::= SEQUENCE (SIZE (1..maxNrOfDSCHs)) OF DSCH-InformationResponseItem

DSCH-InformationResponseItem ::= SEQUENCE {
    dSCH-ID                                     DSCH-ID,
    bindingID                                   BindingID                   OPTIONAL,
    transportLayerAddress                       TransportLayerAddress       OPTIONAL,
    iE-Extensions                               ProtocolExtensionContainer { { DSCH-InformationResponseItem-ExtIEs } }     OPTIONAL,
    ...
}

DSCH-InformationResponseItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-FDD-Common-Information ::= SEQUENCE {
    enhancedDSCHPCIndicator         EnhancedDSCHPCIndicator     OPTIONAL,
    enhancedDSCHPC                  EnhancedDSCHPC              OPTIONAL,
    -- The IE shall be present if the Enhanced DSCH PC Indicator IE is set to "Enhanced DSCH PC Active in the UE".
    iE-Extensions                       ProtocolExtensionContainer { { DSCH-FDD-Common-Information-ExtIEs} }          OPTIONAL,
    ...
}

DSCH-FDD-Common-Information-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

DSCH-FDD-Information ::= SEQUENCE (SIZE (1..maxNrOfDSCHs)) OF DSCH-FDD-InformationItem

DSCH-FDD-InformationItem ::= SEQUENCE {
    dSCH-ID                             DSCH-ID,
    transportFormatSet                  TransportFormatSet,
    allocationRetentionPriority         AllocationRetentionPriority,
    frameHandlingPriority               FrameHandlingPriority,
    toAWS                               ToAWS,
```

```
    toAWE                           ToAWE,
    iE-Extensions                   ProtocolExtensionContainer { { DSCH-FDD-InformationItem-ExtIEs} }            OPTIONAL,
    ...
}

DSCH-FDD-InformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-bindingID                   CRITICALITY ignore      EXTENSION   BindingID       PRESENCE            optional }|
    { ID id-transportlayeraddress       CRITICALITY ignore      EXTENSION   TransportLayerAddress               PRESENCE    optional },
    ...
}

DSCH-TDD-Information ::= SEQUENCE (SIZE (1..maxNrOfDSCHs)) OF DSCH-TDD-InformationItem

DSCH-TDD-InformationItem ::= SEQUENCE {
    dSCH-ID                         DSCH-ID,
    cCTrCH-ID                       CCTrCH-ID,
    transportFormatSet              TransportFormatSet,
    allocationRetentionPriority     AllocationRetentionPriority,
    frameHandlingPriority           FrameHandlingPriority,
    toAWS                           ToAWS,
    toAWE                           ToAWE,
    iE-Extensions                   ProtocolExtensionContainer { { DSCH-TDD-InformationItem-ExtIEs} }         OPTIONAL,
    ...
}

DSCH-TDD-InformationItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    { ID id-bindingID                   CRITICALITY ignore      EXTENSION   BindingID       PRESENCE            optional }|
    { ID id-transportlayeraddress       CRITICALITY ignore      EXTENSION   TransportLayerAddress               PRESENCE    optional },
    ...
}

DwPCH-Power ::= ENUMERATED {minus10, minus9, minus8, minus7, minus6, minus5, minus4, minus3, minus2, minus1, zero, plus1, plus2, plus3, plus4, plus5,
...}

/* partly omitted */

-- ========================================
--  P
-- ========================================

PagingIndicatorLength ::= ENUMERATED {
    v2,
    v4,
    v8,
    ...
}

PayloadCRC-PresenceIndicator ::= ENUMERATED {
    cRC-Included,
    cRC-NotIncluded,
    ...
```

```
}

PCCPCH-Power ::= INTEGER (-150..400,...)
-- PCCPCH-power = power * 10
-- If power <= -15 PCCPCH shall be set to -150
-- If power >= 40 PCCPCH shall be set to 400
-- Unit dBm, Range -15dBm .. +40 dBm, Step +0.1dB

PCP-Length ::= ENUMERATED{
    v0,
    v8
}

PDSCH-CodeMapping ::= SEQUENCE {
    dl-ScramblingCode               DL-ScramblingCode,
    signallingMethod                    CHOICE {
        code-Range                      PDSCH-CodeMapping-PDSCH-CodeMappingInformationList,
        tFCI-Range                      PDSCH-CodeMapping-DSCH-MappingInformationList,
        explicit                            PDSCH-CodeMapping-PDSCH-CodeInformationList,
        ...,
        replace                         PDSCH-CodeMapping-ReplacedPDSCH-CodeInformationList
    },
    iE-Extensions                           ProtocolExtensionContainer  { { PDSCH-CodeMapping-ExtIEs} }              OPTIONAL,
    ...
}

PDSCH-CodeMapping-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCH-CodeMapping-CodeNumberComp ::= INTEGER (0..maxCodeNrComp-1)

PDSCH-CodeMapping-SpreadingFactor ::= ENUMERATED {
    v4,
    v8,
    v16,
    v32,
    v64,
    v128,
    v256,
    ...
}

PDSCH-CodeMapping-PDSCH-CodeMappingInformationList ::= SEQUENCE (SIZE (1..maxNrOfCodeGroups)) OF
    SEQUENCE {
        spreadingFactor             PDSCH-CodeMapping-SpreadingFactor,
        multi-CodeInfo              PDSCH-Multi-CodeInfo,
        start-CodeNumber                PDSCH-CodeMapping-CodeNumberComp,
        stop-CodeNumber             PDSCH-CodeMapping-CodeNumberComp,
        iE-Extensions                   ProtocolExtensionContainer  { { PDSCH-CodeMapping-PDSCH-CodeMappingInformationList-ExtIEs} }    OPTIONAL,
        ...
```

```
}

PDSCH-CodeMapping-PDSCH-CodeMappingInformationList-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCH-CodeMapping-DSCH-MappingInformationList ::= SEQUENCE (SIZE (1..maxNrOfTFCIGroups)) OF
    SEQUENCE {
        maxTFCI-field2-Value            PDSCH-CodeMapping-MaxTFCI-Field2-Value,
        spreadingFactor             PDSCH-CodeMapping-SpreadingFactor,
        multi-CodeInfo              PDSCH-Multi-CodeInfo,
        codeNumber                  PDSCH-CodeMapping-CodeNumberComp,
        iE-Extensions                   ProtocolExtensionContainer  { { PDSCH-CodeMapping-DSCH-MappingInformationList-ExtIEs} }   OPTIONAL,
        ...
}

PDSCH-CodeMapping-DSCH-MappingInformationList-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCH-CodeMapping-MaxTFCI-Field2-Value ::= INTEGER (1..1023)

PDSCH-CodeMapping-PDSCH-CodeInformationList ::= SEQUENCE (SIZE (1..maxNrOfTFCI2Combs)) OF
    SEQUENCE {
        spreadingFactor             PDSCH-CodeMapping-SpreadingFactor,
        multi-CodeInfo              PDSCH-Multi-CodeInfo,
        codeNumber                  PDSCH-CodeMapping-CodeNumberComp,
        iE-Extensions                   ProtocolExtensionContainer  { { PDSCH-CodeMapping-PDSCH-CodeInformationList-ExtIEs} }     OPTIONAL,
        ...
}

PDSCH-CodeMapping-PDSCH-CodeInformationList-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCH-CodeMapping-ReplacedPDSCH-CodeInformationList ::= SEQUENCE (SIZE (1..maxNrOfTFCI2Combs)) OF
    SEQUENCE {
        tfci-Field2                 TFCS-MaxTFCI-field2-Value,
        spreadingFactor             PDSCH-CodeMapping-SpreadingFactor,
        multi-CodeInfo              PDSCH-Multi-CodeInfo,
        codeNumber                  PDSCH-CodeMapping-CodeNumberComp,
        iE-Extensions               ProtocolExtensionContainer { { PDSCH-CodeMapping-ReplacedPDSCH-CodeInformationList-ExtIEs} }     OPTIONAL,
    ...
}

PDSCH-CodeMapping-ReplacedPDSCH-CodeInformationList-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDSCH-Multi-CodeInfo ::= INTEGER (1..16)
```

```
PDSCH-ID ::= INTEGER (0..255)

PDSCHSet-ID ::= INTEGER (0..255)

PICH-Mode ::= ENUMERATED {
    v18,
    v36,
    v72,
    v144,
    ...
}

PICH-Power ::= INTEGER (-10..5)
-- Unit dB, Range -10dB .. +5dB, Step +1dB

PowerAdjustmentType ::= ENUMERATED {
    none,
    common,
    individual
}

PowerOffset ::= INTEGER (0..24)
-- PowerOffset = offset * 0.25
-- Unit dB, Range 0dB .. +6dB, Step +0.25dB

PowerRaiseLimit ::= INTEGER (0..10)

PRACH-Midamble ::= ENUMERATED {
    inverted,
    direct,
    ...
}

PRC ::= INTEGER (-2047..2047)
--pseudo range correction; scaling factor 0.32 meters

PRCDeviation ::= ENUMERATED {
   one,
   two,
   five,
   ten,
   ...
}

PreambleSignatures ::= BIT STRING {
                                    signature15(0),
                                    signature14(1),
                                    signature13(2),
                                    signature12(3),
                                    signature11(4),
                                    signature10(5),
```

```
                                    signature9(6),
                                    signature8(7),
                                    signature7(8),
                                    signature6(9),
                                    signature5(10),
                                    signature4(11),
                                    signature3(12),
                                    signature2(13),
                                    signature1(14),
                                    signature0(15)
                                    } (SIZE (16))

PreambleThreshold ::= INTEGER (0..72)
-- 0= -36.0dB, 1= -35.5dB, ... , 72= 0.0dB

PredictedSFNSFNDeviationLimit ::=INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

PredictedTUTRANGPSDeviationLimit ::= INTEGER (1..256)
-- Unit chip, Step 1/16 chip, Range 1/16..16 chip

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PrimaryCPICH-Power ::= INTEGER(-100..500)
-- step 0.1 (Range –10.0..50.0) Unit is dBm

PrimaryScramblingCode ::= INTEGER (0..511)

PriorityLevel               ::= INTEGER (0..15)
-- 0 = spare, 1 = highest priority, ...14 = lowest priority and 15 = no priority

PriorityQueue-Id ::= INTEGER (0..maxNrOfPriorityQueues-1)

PriorityQueue-InfoList ::= SEQUENCE (SIZE (1..maxNrOfPriorityQueues)) OF PriorityQueue-InfoItem

PriorityQueue-InfoItem ::= SEQUENCE {
    priorityQueueId                 PriorityQueue-Id,
    schedulingPriorityIndicator     SchedulingPriorityIndicator,
    t1                              T1,
    discardTimer                    DiscardTimer            OPTIONAL,
    mAC-hsWindowSize                MAC-hsWindowSize,
    mAChsGuaranteedBitRate          MAChsGuaranteedBitRate                  OPTIONAL,
    macdPDU-Size-Index              MACdPDU-Size-Indexlist,
```

```
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-ExtIEs} }             OPTIONAL,
    ...
}

PriorityQueue-InfoItem-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PriorityQueue-InfoList-to-Modify ::= SEQUENCE (SIZE (1..maxNrOfPriorityQueues)) OF PriorityQueue-InfoItem-to-Modify

PriorityQueue-InfoItem-to-Modify ::= SEQUENCE {
    priorityQueueId                     PriorityQueue-Id,
    schedulingPriorityIndicator         SchedulingPriorityIndicator                                             OPTIONAL,
    t1                                  T1                                                                      OPTIONAL,
    discardTimer                        DiscardTimer                                                            OPTIONAL,
    mAC-hsWindowSize                    MAC-hsWindowSize                                                        OPTIONAL,
    mAChsGuaranteedBitRate              MAChsGuaranteedBitRate                                                  OPTIONAL,
    macdPDU-Size-Index-to-Modify        MACdPDU-Size-Indexlist-to-Modify                                        OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { PriorityQueue-InfoItem-to-Modify-ExtIEs} }    OPTIONAL,
    ...
}

PriorityQueue-InfoItem-to-Modify-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

PrimaryCCPCH-RSCP ::= INTEGER (0..91)

PropagationDelay ::= INTEGER (0..255)
-- Unit: chips, step size 3 chips
-- example: 0 = 0chip, 1 = 3chips

SCH-TimeSlot ::= INTEGER (0..6)

PunctureLimit ::= INTEGER (0..15)
-- 0: 40%; 1: 44%; ... 14: 96%; 15: 100%

PUSCH-ID ::= INTEGER (0..255)

PUSCHSet-ID ::= INTEGER (0..255)
```