TSG-RAN Meeting #28
Quebec, Canada, 1-3 June 2005

RP-050339

Title: **Proposed CR 2540r3 to TS 25.331 on Timing Maintained Hard Handover**

Source: **Ericsson**

Agenda item: **7.3**

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	2540	3	Rel-6	Timing Maintained Hard Handover	B	6.5.0	6.6.0	-	TEI-6

CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **TS 25.331 CR 2540** | ⌘**rev** | **3** | ⌘ | Current version: | **6.5.0** | ⌘ |

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Timing Maintained Hard Handover	
Source:	⌘	Ericsson	
Work item code: ⌘	TEI6	***Date:*** ⌘	May 2005

Category:	⌘ **B**	***Release:*** ⌘	Rel-6

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:
   Ph2   *(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)*
   Rel-7 *(Release 7)*

Reason for change: ⌘	Timing-maintained hard handover can be performed without usage of synchronisation procedure A. The current specification requests the UE/UTRAN to perform synchronisation procedure A, which is delaying the process of timing-maintained hard handover. Not using synchronisation procedure A for timing maintained hard handover means that UE will perform the reconfiguration (hard handover) without changing its uplink transmit timing. UE performance requirements on interrupt times at hard handover can be sharpened (TS 25.133).
Summary of change: ⌘	The use of synchronisation procedure A for timing-maintained hard handover is under control of UTRAN. The new IE "Timing maintained Synchronization indicator" is introduced in the following RRC messages: PHYSICAL CHANNEL RECONFIGURATION, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, RADIO BEARER SETUP and TRANSPORT CHANNEL RECONFIGURATION. <u>ASN.1 misalignment with Tabular</u>: In RadioBearerRelease-r6-IEs, DL-CommonInformation-r5 is replaced with DL-CommonInformation-r6, to align with 10.3.6.24.
Consequences if not approved: ⌘	The process of timing maintained hard handover is delayed.

Clauses affected:	⌘	8.6.6.1, 10.3.6.18, 10.3.6.23oa, 11.2, 11.3		

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	25.214, 25.423, 25.433, 25.133
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.3.5.1 Timing re-initialised hard handover

8.3.5.1.1 General

The purpose of the timing re-initialised hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) along with a change in the CFN in the UE according to the SFN of the target cell.(see subclause 8.5.15).

> NOTE: During the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure is initiated when UTRAN does not know the target SFN timing before hard handover.

8.3.5.1.2 Initiation

Timing re-initialised hard handover initiated by the UTRAN is normally performed by using the procedure "Physical channel reconfiguration" (subclause 8.2.6), but may also be performed by using either one of the following procedures:

- "radio bearer establishment" (subclause 8.2.1);

- "Radio bearer reconfiguration" (subclause 8.2.2);

- "Radio bearer release" (subclause 8.2.3); or

- "Transport channel reconfiguration" (subclause 8.2.4).

If IE "Timing indication" has the value "initialise", UE shall:

1> execute the Timing Re-initialised hard handover procedure by following the procedure indicated in the subclause relevant to the procedure chosen by the UTRAN.

In this case of a timing re-initialised hard handover, UTRAN should include the IE "Default DPCH Offset Value" and:

1> in FDD mode:

2> set "Default DPCH Offset Value" and "DPCH frame offset" respecting the following relation

$$\text{(Default DPCH Offset Value) mod } 38400 = \text{DPCH frame offset}_j$$

3> where j indicates the first radio link listed in the message and the IE values used are the Actual Values of the IEs as defined in clause 11.

If the IE "Default DPCH Offset Value" is included, the UE shall:

1> in FDD mode:

2> if the above relation between "Default DPCH Offset Value" and "DPCH frame offset" is not respected:

3> set the variable INVALID_CONFIGURATION to true.

If the IE "Default DPCH Offset Value" is not included, the UE shall:

1> set the variable INVALID_CONFIGURATION to true.

8.3.5.2 Timing-maintained hard handover

8.3.5.2.1 General

The purpose of the Timing-maintained hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) while maintaining the CFN in the UE.

NOTE: During the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure can be initiated only if UTRAN knows the target SFN timing before hard handover. The target SFN timing can be known by UTRAN in the following 2 cases:

- UE reads SFN when measuring "Cell synchronisation information" and sends it to the UTRAN in MEASUREMENT REPORT message.

- UTRAN internally knows the time difference between the cells.

8.3.5.2.2 Initiation

Timing-maintained hard handover initiated by the network is normally performed by using the procedure "Physical channel reconfiguration" (subclause 8.2.6), but may also be performed by using either one of the following procedures:

- "radio bearer establishment" (subclause 8.2.1);

- "Radio bearer reconfiguration" (subclause 8.2.2);

- "Radio bearer release" (subclause 8.2.3); or

- "Transport channel reconfiguration" (subclause 8.2.4).

If IE "Timing indication" has the value "maintain", UE shall initiate the Timing-maintained hard handover procedure by following the procedure indicated in the subclause relevant to the procedure chosen by the UTRAN. In this case UTRAN should not include the IE "Default DPCH Offset Value".

If the IE "Default DPCH Offset Value" is included, the UE shall:

1> ignore the IE "Default DPCH Offset Value".

Not included sections

8.5.15.2 Initialisation in CELL_DCH state at hard handover

When the UE is in CELL_DCH state and receives any of the messages causing the UE to perform a hard handover, the UE shall check the IE "Timing indication" in that message and:

1> if IE "Timing indication" has the value "initialise" (i.e. timing re-initialised hard handover):

2> read SFN on target cell identified by the first radio link listed in the IE "Downlink information per radio link list" included in that message;

2> set the CFN according to the following formula:

3> for FDD:

$$CFN = (SFN - (DOFF \ div \ 38400)) \ mod \ 256$$

where the formula gives the CFN of the downlink DPCH or F-DPCH frame which starts at the same time as or which starts during the PCCPCH frame with the given SFN.

3> for TDD:

$$CFN = (SFN - DOFF) \ mod \ 256.$$

1> if IE "Timing indication" has the value "maintain" (i.e. timing-maintained hard handover), the UE shall keep CFN with no change due to the hard handover, and only increase CFN (mod 256) by 1 every frame.

Not included sections

8.6.6.1 Frequency info

If, after completion of the procedure, the UE will be in CELL_DCH state, the UE shall:

1> if the IE "Frequency info" is included:

2> if the frequency is different from the currently used frequency:

3> store and use the frequency indicated by the IE "Frequency Info"; and

3> if the received message is used to perform a Timing-maintained hard handover (see subclause 8.3.5.2), and IE "Timing maintained Synchronization indicator" is included:

4> not perform any physical layer synchronisation procedure (FDD only);

3> else

4> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

2> if the frequency is the same as the currently used frequency:

3> continue to use the currently used frequency;

3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> if the IE "Frequency info" is not included and the UE has a currently used frequency:

2> continue to use the currently used frequency.

Not included sections

8.6.6.30 SRB delay, PC preamble (FDD only)

When the IE "SRB delay" and IE "PC preamble" is received in a message that results in a configuration of uplink DPCH and synchronisation procedure A is being used as specified in [29], the UE shall:

1> store the received IE "SRB delay" and IE "PC preamble" in the variable LATEST_CONFIGURED_SRB_DELAY_AND_PC_PREAMBLE;

1> after the establishment of the uplink physical channel, send DPCCH and no DPDCH according to [26] during the number of frames indicated in the IE "PC preamble"; and

1> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay".

Not included sections

10.3.6.18 Downlink DPCH info common for all RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Timing Indication	MP		Enumerated(Initialise, Maintain)	NOTE	
CFN-targetSFN frame offset	CV-*TimInd*		Integer(0..255)	In frame	
Timing maintained Synchronization indicator	CV-*Synch*		Enumerated (false)	FALSE indicates that no synchronisation procedure shall be	REL-6

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Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
				performed for timing maintained intra- and inter-frequency hard handover [29]. Absence of this element means that the synchronization procedure A shall be used.	
Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23		
MAC-d HFN initial value	CV-*Message*		Bit string(24)		REL-4
CHOICE *mode*	MP				
>FDD					
>>Power offset P $_{Pilot-DPDCH}$	MP		Integer(0..24)	Power offset equals P_{Pilot} - P_{DPDCH}, range 0..6 dB, in steps of 0.25 dB	
>>Downlink rate matching restriction information	OP		Downlink rate matching restriction information 10.3.6.31	If this IE is set to "absent", no Transport CH is restricted in TFI.	
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)		
>>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)		
>>TFCI existence	MP		Boolean	TRUE indicates that TFCI is used. When spreading factor is less than or equal to 64, FALSE indicates that TFCI is not used and therefore DTX is used in the TFCI field.	
>>CHOICE *SF*	MP				
>>>SF = 256					
>>>>Number of bits for Pilot bits	MP		Integer (2,4,8)	In bits	
>>>SF = 128					
>>>>Number of bits for Pilot bits	MP		Integer(4, 8)	In bits	
>>>Otherwise				(no data). In ASN.1 choice "Otherwise" is not explicitly available as all values are available, it is implied by the use of any value other than 128 or 256.	
>TDD				(no data)	

CHOICE SF	Condition under which the given SF is chosen
SF=128	"Spreading factor" is set to 128
SF=256	"Spreading factor" is set to 256
Otherwise	"Spreading factor" is set to a value distinct from 128 and 256

Condition	Explanation
TimInd	This IE is optional if the IE "Timing Indication" is set to "Initialise". Otherwise it is not needed.
Message	This IE is not needed if the IE "Downlink DPCH info common for all RL" is included in RRC CONNECTION SETUP or HANDOVER TO UTRAN COMMAND messages. Otherwise it is optional.
Synch	The IE is not needed in the CELL UPDATE CONFIRM, HANDOVER TO UTRAN COMMAND and the RRC CONNECTION SETUP messages or if the IE "Timing Indication" is set to "Initialise". Otherwise, it is optional.

NOTE: Within the HANDOVER TO UTRAN COMMAND message, only value "initialise" is applicable.

Not included sections

10.3.6.23oa Downlink F-DPCH info common for all RL

NOTE: For FDD only.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Timing Indication	MP		Enumerated (Initialise, Maintain)		REL-6
CFN-targetSFN frame offset	CV-TimInd		Integer(0..255)	In frame	REL-6
Timing maintained Synchronization indicator	CV-Synch		Enumerated (false)	FALSE indicates that no synchronisation procedure shall be performed for timing maintained intra- and inter-frequency hard handover [29]. Absence of this element means that the synchronization procedure A shall be used.	REL-6
Downlink F-DPCH power control information	OP		Downlink DPCH power control information 10.3.6.23		REL-6
TPC command error rate target	OP		Real (0.005..0.1 by step of 0.005)		REL-6

Condition	Explanation
TimInd	This IE is optional if the IE "Timing Indication" is set to "Initialise". Otherwise it is not needed.
Synch	The IE is not needed in the CELL UPDATE CONFIRM, HANDOVER TO UTRAN COMMAND and the RRC CONNECTION SETUP messages or if the IE "Timing Indication" is set to "Initialise". Otherwise, it is optional.

10.3.6.24 Downlink information common for all radio links

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE *DPCH info*	OP				REL-6
>Downlink DPCH info common for all RL	MP		Downlink DPCH info common for all RL 10.3.6.18		
>Downlink F-DPCH info common for all RL	MP		Downlink F-DPCH info common for all RL 10.3.6.23oa		REL-6
CHOICE *mode*	MP				
>FDD					
>>DPCH compressed mode info	OP		DPCH compressed mode info 10.3.6.33		
>>TX Diversity Mode	MD		TX Diversity Mode 10.3.6.86	Default value is the existing value of TX Diversity mode	
>>SSDT information	OP		SSDT information 10.3.6.77		
>TDD				(no data)	
>>CHOICE *TDD option*	MP				REL-4
>>>3.84 Mcps TDD				(no data)	REL-4
>>>1.28 Mcps TDD					REL-4
>>>>TSTD indicator	MP		TSTD indicator 10.3.6.85a		REL-4
Default DPCH Offset Value	OP		Default DPCH Offset Value, 10.3.6.16		
MAC-hs reset indicator	CV-*messageType*		Enumerated (true)	TRUE Indicates the MAC-hs entity needs to be reset.	REL-5

Condition	Explanation
MessageType	The IE is not needed in the HANDOVER TO UTRAN COMMAND and the RRC CONNECTION SETUP messages. Otherwise, it is optional.

Not included sections

11.2 PDU definitions

Not included parts of this section

```
-- ***************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION
```

```
--
-- **************************************************

PhysicalChannelReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            physicalChannelReconfiguration-v3a0ext     PhysicalChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                physicalChannelReconfiguration-r3-add-ext          BIT STRING      OPTIONAL,
                v4b0NonCriticalExtenstions          SEQUENCE {
                    physicalChannelReconfiguration-v4b0ext
                                                PhysicalChannelReconfiguration-v4b0ext-IEs,
                    v590NonCriticalExtenstions          SEQUENCE {
                        physicalChannelReconfiguration-v590ext
                                                    PhysicalChannelReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            physicalChannelReconfiguration-v6xyext
                                                    PhysicalChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions               SEQUENCE {} OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3               SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                physicalChannelReconfiguration-r4
                                                PhysicalChannelReconfiguration-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    physicalChannelReconfiguration-r4-add-ext      BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions           SEQUENCE {
                        physicalChannelReconfiguration-v590ext
                                                    PhysicalChannelReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions           SEQUENCE {
                            physicalChannelReconfiguration-v6xyext
                                                        PhysicalChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}    OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    physicalChannelReconfiguration-r5
                                                    PhysicalChannelReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    physicalChannelReconfiguration-r5-add-ext      BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        physicalChannelReconfiguration-v6xyext
                                                    PhysicalChannelReconfiguration-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
                    } OPTIONAL
                },
                criticalExtensions              CHOICE {
                    r6                              SEQUENCE {
                        physicalChannelReconfiguration-r6
                                                    PhysicalChannelReconfiguration-r6-IEs,
                        -- Container for adding non critical extensions after freezing REL-7
                        physicalChannelReconfiguration-r6-add-ext      BIT STRING      OPTIONAL,
                        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
                    },
                    criticalExtensions          SEQUENCE {}
                }
            }
        }
    }
}

PhysicalChannelReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
```

```
        integrityProtectionModeInfo    IntegrityProtectionModeInfo     OPTIONAL,
        cipheringModeInfo              CipheringModeInfo               OPTIONAL,
        activationTime                 ActivationTime                  OPTIONAL,
        new-U-RNTI                     U-RNTI                          OPTIONAL,
        new-C-RNTI                     C-RNTI                          OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo              OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                    OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo   OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                   OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power           OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        ul-ChannelRequirement          UL-ChannelRequirementWithCPCH-SetID   OPTIONAL,
        modeSpecificInfo               CHOICE {
            fdd                                SEQUENCE {
                dl-PDSCH-Information                DL-PDSCH-Information    OPTIONAL
            },
            tdd                                NULL
        },
        dl-CommonInformation           DL-CommonInformation            OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List        OPTIONAL
}

PhysicalChannelReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                   DSCH-RNTI                               OPTIONAL
}

PhysicalChannelReconfiguration-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                     SSDT-UL                         OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List             CellIdentity-PerRL-List         OPTIONAL
}

PhysicalChannelReconfiguration-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List   DL-TPC-PowerOffsetPerRL-List     OPTIONAL
}

PhysicalChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo     OPTIONAL,
        cipheringModeInfo              CipheringModeInfo               OPTIONAL,
        activationTime                 ActivationTime                  OPTIONAL,
        new-U-RNTI                     U-RNTI                          OPTIONAL,
        new-C-RNTI                     C-RNTI                          OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                       OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo              OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                    OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo   OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                   OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power           OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        ul-ChannelRequirement          UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
        modeSpecificInfo               CHOICE {
            fdd                                SEQUENCE {
                dl-PDSCH-Information                DL-PDSCH-Information    OPTIONAL
            },
            tdd                                NULL
        },
        dl-CommonInformation           DL-CommonInformation-r4         OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r4     OPTIONAL
```

```
}

PhysicalChannelReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                OPTIONAL,
        activationTime                 ActivationTime                   OPTIONAL,
        new-U-RNTI                     U-RNTI                           OPTIONAL,
        new-C-RNTI                     C-RNTI                           OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                        OPTIONAL,
        new-H-RNTI                     H-RNTI                           OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo               OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                     OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5 OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                    OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power            OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r5 contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        ul-ChannelRequirement          UL-ChannelRequirementWithCPCH-SetID-r5  OPTIONAL,
        modeSpecificInfo               CHOICE {
            fdd                            SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information      OPTIONAL
            },
            tdd                            NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information            OPTIONAL,
        dl-CommonInformation           DL-CommonInformation-r5          OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r5      OPTIONAL
}

PhysicalChannelReconfiguration-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                OPTIONAL,
        activationTime                 ActivationTime                   OPTIONAL,
        new-U-RNTI                     U-RNTI                           OPTIONAL,
        new-C-RNTI                     C-RNTI                           OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                        OPTIONAL,
        new-H-RNTI                     H-RNTI                           OPTIONAL,
        new-E-RNTI                     E-RNTI                           OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo               OPTIONAL,
        plmn-Identity                  PLMN-Identity                    OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                     OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5 OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                    OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power            OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r6 contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        ul-ChannelRequirement          UL-ChannelRequirementWithCPCH-SetID-r6  OPTIONAL,
        ul-EDCH-Information            UL-EDCH-Information-r6            OPTIONAL,
        modeSpecificInfo               CHOICE {
            fdd                            SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information      OPTIONAL
            },
            tdd                            NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information            OPTIONAL,
        dl-CommonInformation           DL-CommonInformation-r6          OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r6      OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo    MBMS-PL-ServiceRestrictInfo-r6
}

PhysicalChannelReconfiguration-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
        primary-plmn-Identity          PLMN-Identity                    OPTIONAL,
```

```
      -- Physical channel IEs
          harq-Preamble-Mode                   HARQ-Preamble-Mode                       OPTIONAL,
          beaconPLEst                          BEACON-PL-Est                            OPTIONAL,
          timingMaintainedSynchInd             ENUMERATED { false }                     OPTIONAL,
      -- MBMS IEs
          mbms-PL-ServiceRestrictInfo          MBMS-PL-ServiceRestrictInfo-r6           OPTIONAL
}
```

Not included parts of this section

```
-- **************************************************
--
-- RADIO BEARER RECONFIGURATION
--
-- **************************************************

RadioBearerReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerReconfiguration-r3   RadioBearerReconfiguration-r3-IEs,
        -- Prefix "v3ao" is used (in one instance) to keep alignment with R99
        v3aoNonCriticalExtensions       SEQUENCE {
            radioBearerReconfiguration-v3a0ext   RadioBearerReconfiguration-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerReconfiguration-r3-add-ext      BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions               SEQUENCE {
                    radioBearerReconfiguration-v4b0ext
                                                       RadioBearerReconfiguration-v4b0ext-IEs,
                    v590NonCriticalExtensions               SEQUENCE {
                        radioBearerReconfiguration-v590ext
                                                           RadioBearerReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions               SEQUENCE {
                            radioBearerReconfiguration-v6xyext
                                                               RadioBearerReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions               SEQUENCE {} OPTIONAL
                        }  OPTIONAL
                    }  OPTIONAL
                }  OPTIONAL
            }  OPTIONAL
        }  OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                radioBearerReconfiguration-r4   RadioBearerReconfiguration-r4-IEs,
                v4d0NonCriticalExtensions       SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    radioBearerReconfiguration-r4-add-ext      BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions           SEQUENCE {
                        radioBearerReconfiguration-v590ext
                                                           RadioBearerReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions           SEQUENCE {
                            radioBearerReconfiguration-v6xyext
                                                               RadioBearerReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
                        }  OPTIONAL
                    }  OPTIONAL
                }  OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    radioBearerReconfiguration-r5       RadioBearerReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    radioBearerReconfiguration-r5-add-ext      BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        radioBearerReconfiguration-v6xyext
                                                           RadioBearerReconfiguration-v6xyext-IEs,
                        nonCriticalExtensions               SEQUENCE {}     OPTIONAL
                    }  OPTIONAL
                },
                criticalExtensions              CHOICE {
                    r6                              SEQUENCE {
                        radioBearerReconfiguration-r6       RadioBearerReconfiguration-r6-IEs,
                        -- Container for adding non critical extensions after freezing REL-7
```

```
                        radioBearerReconfiguration-r6-add-ext        BIT STRING      OPTIONAL,
                        nonCriticalExtensions                SEQUENCE {}     OPTIONAL
                    },
                    criticalExtensions              SEQUENCE {}
                }
            }
        }
    }
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier         RRC-TransactionIdentifier,
        integrityProtectionModeInfo       IntegrityProtectionModeInfo      OPTIONAL,
        cipheringModeInfo                 CipheringModeInfo                OPTIONAL,
        activationTime                    ActivationTime                   OPTIONAL,
        new-U-RNTI                        U-RNTI                           OPTIONAL,
        new-C-RNTI                        C-RNTI                           OPTIONAL,
        rrc-StateIndicator                RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
        cn-InformationInfo                CN-InformationInfo               OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                      URA-Identity                     OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList       RAB-InformationReconfigList      OPTIONAL,
        -- NOTE: IE rb-InformationReconfigList should be optional in later versions
        -- of this message
        rb-InformationReconfigList        RB-InformationReconfigList,
        rb-InformationAffectedList        RB-InformationAffectedList       OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo              UL-CommonTransChInfo             OPTIONAL,
        ul-deletedTransChInfoList         UL-DeletedTransChInfoList        OPTIONAL,
        ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList      OPTIONAL,
        modeSpecificTransChInfo           CHOICE {
            fdd                               SEQUENCE {
                cpch-SetID                        CPCH-SetID               OPTIONAL,
                addReconfTransChDRAC-Info         DRAC-StaticInformationList OPTIONAL
            },
            tdd                               NULL
        }                                                                  OPTIONAL,
        dl-CommonTransChInfo              DL-CommonTransChInfo             OPTIONAL,
        dl-DeletedTransChInfoList         DL-DeletedTransChInfoList        OPTIONAL,
        dl-AddReconfTransChInfoList       DL-AddReconfTransChInfo2List     OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                     FrequencyInfo                    OPTIONAL,
        maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power            OPTIONAL,
        ul-ChannelRequirement             UL-ChannelRequirement            OPTIONAL,
        modeSpecificPhysChInfo            CHOICE {
            fdd                               SEQUENCE {
                dl-PDSCH-Information               DL-PDSCH-Information      OPTIONAL
            },
            tdd                               NULL
        },
        dl-CommonInformation             DL-CommonInformation             OPTIONAL,
        -- NOTE: IE dl-InformationPerRL-List should be optional in later versions
        -- of this message
        dl-InformationPerRL-List         DL-InformationPerRL-List
}

RadioBearerReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                     DSCH-RNTI                            OPTIONAL
}

RadioBearerReconfiguration-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                        SSDT-UL                          OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List                CellIdentity-PerRL-List          OPTIONAL
}

RadioBearerReconfiguration-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List      DL-TPC-PowerOffsetPerRL-List     OPTIONAL
}
```

```
RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo       OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                 OPTIONAL,
        activationTime                 ActivationTime                    OPTIONAL,
        new-U-RNTI                     U-RNTI                            OPTIONAL,
        new-C-RNTI                     C-RNTI                            OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                         OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList    RAB-InformationReconfigList       OPTIONAL,
        rb-InformationReconfigList     RB-InformationReconfigList-r4     OPTIONAL,
        rb-InformationAffectedList     RB-InformationAffectedList        OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo           UL-CommonTransChInfo-r4           OPTIONAL,
        ul-deletedTransChInfoList      UL-DeletedTransChInfoList         OPTIONAL,
        ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList       OPTIONAL,
        modeSpecificTransChInfo        CHOICE {
            fdd                            SEQUENCE {
                cpch-SetID                     CPCH-SetID                OPTIONAL,
                addReconfTransChDRAC-Info      DRAC-StaticInformationList OPTIONAL
            },
            tdd                            NULL
        }                                                                OPTIONAL,
        dl-CommonTransChInfo           DL-CommonTransChInfo-r4           OPTIONAL,
        dl-DeletedTransChInfoList      DL-DeletedTransChInfoList         OPTIONAL,
        dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r4    OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                     OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power             OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirement-r4          OPTIONAL,
        modeSpecificPhysChInfo         CHOICE {
            fdd                            SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information       OPTIONAL
            },
            tdd                            NULL
        },
        dl-CommonInformation           DL-CommonInformation-r4           OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r4     OPTIONAL
}

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo       OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                 OPTIONAL,
        activationTime                 ActivationTime                    OPTIONAL,
        new-U-RNTI                     U-RNTI                            OPTIONAL,
        new-C-RNTI                     C-RNTI                            OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                         OPTIONAL,
        new-H-RNTI                     H-RNTI                            OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                      OPTIONAL,
    -- Specification mode information
        specificationMode              CHOICE {
            complete                       SEQUENCE {
            -- Radio bearer IEs
                rab-InformationReconfigList    RAB-InformationReconfigList       OPTIONAL,
                rb-InformationReconfigList     RB-InformationReconfigList-r5     OPTIONAL,
                rb-InformationAffectedList     RB-InformationAffectedList-r5     OPTIONAL,
                rb-PDCPContextRelocationList   RB-PDCPContextRelocationList      OPTIONAL,
            -- Transport channel IEs
                ul-CommonTransChInfo           UL-CommonTransChInfo-r4           OPTIONAL,
                ul-deletedTransChInfoList      UL-DeletedTransChInfoList         OPTIONAL,
                ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList       OPTIONAL,
                modeSpecificTransChInfo        CHOICE {
                    fdd                            SEQUENCE {
                        cpch-SetID                     CPCH-SetID                OPTIONAL,
                        addReconfTransChDRAC-Info      DRAC-StaticInformationList OPTIONAL
```

```
                    },
                    tdd                                 NULL
                }                                                               OPTIONAL,
                dl-CommonTransChInfo            DL-CommonTransChInfo-r4         OPTIONAL,
                dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5    OPTIONAL,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5  OPTIONAL
            },
            preconfiguration            SEQUENCE {
            -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
            -- one for the FDD only elements and one for the TDD only elements, so that one
            -- FDD/TDD choice in this level is sufficient.
                preConfigMode                   CHOICE {
                    predefinedConfigIdentity        PredefinedConfigIdentity,
                    defaultConfig                   SEQUENCE {
                        defaultConfigMode               DefaultConfigMode,
                        defaultConfigIdentity           DefaultConfigIdentity-r5
                    }
                }
            }
        },
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                   OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power           OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement-r5        OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information             DL-PDSCH-Information     OPTIONAL
            },
            tdd                             NULL
        },
        dl-HSPDSCH-Information           DL-HSPDSCH-Information           OPTIONAL,
        dl-CommonInformation            DL-CommonInformation-r5         OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5     OPTIONAL
}

RadioBearerReconfiguration-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo     IntegrityProtectionModeInfo     OPTIONAL,
        cipheringModeInfo               CipheringModeInfo               OPTIONAL,
        activationTime                  ActivationTime                  OPTIONAL,
        new-U-RNTI                      U-RNTI                          OPTIONAL,
        new-C-RNTI                      C-RNTI                          OPTIONAL,
        new-DSCH-RNTI                   DSCH-RNTI                       OPTIONAL,
        new-H-RNTI                      H-RNTI                          OPTIONAL,
        new-E-RNTI                      E-RNTI                          OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo              OPTIONAL,
        plmn-Identity                   PLMN-Identity                   OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                    OPTIONAL,
    -- Specification mode information
        specificationMode           CHOICE {
            complete                        SEQUENCE {
            -- Radio bearer IEs
                rab-InformationReconfigList     RAB-InformationReconfigList     OPTIONAL,
                rb-InformationReconfigList      RB-InformationReconfigList-r6   OPTIONAL,
                rb-InformationAffectedList      RB-InformationAffectedList-r6   OPTIONAL,
                rb-PDCPContextRelocationList    RB-PDCPContextRelocationList    OPTIONAL,
            -- Transport channel IEs
                ul-CommonTransChInfo            UL-CommonTransChInfo-r4         OPTIONAL,
                ul-deletedTransChInfoList       UL-DeletedTransChInfoList-r6    OPTIONAL,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList-r6  OPTIONAL,
                modeSpecificTransChInfo         CHOICE {
                    fdd                             SEQUENCE {
                        cpch-SetID                      CPCH-SetID                  OPTIONAL,
                        addReconfTransChDRAC-Info       DRAC-StaticInformationList  OPTIONAL
                    },
                    tdd                             NULL
                }                                                               OPTIONAL,
                dl-CommonTransChInfo            DL-CommonTransChInfo-r4         OPTIONAL,
                dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5    OPTIONAL,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5  OPTIONAL
            },
            preconfiguration            SEQUENCE {
            -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
            -- one for the FDD only elements and one for the TDD only elements, so that one
```

```
                    -- FDD/TDD choice in this level is sufficient.
                    preConfigMode                  CHOICE {
                        predefinedConfigIdentity       PredefinedConfigIdentity,
                        defaultConfig                  SEQUENCE {
                            defaultConfigMode              DefaultConfigMode,
                            defaultConfigIdentity          DefaultConfigIdentity-r5
                        }
                    }
                }
            },
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                          OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power                  OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirement-r6               OPTIONAL,
        ul-EDCH-Information            UL-EDCH-Information-r6                  OPTIONAL,
        modeSpecificPhysChInfo         CHOICE {
            fdd                            SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information      OPTIONAL
            },
            tdd                            NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information                 OPTIONAL,
        dl-CommonInformation           DL-CommonInformation-r6               OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r6           OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo    MBMS-PL-ServiceRestrictInfo-r6
}

RadioBearerReconfiguration-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
        primary-plmn-Identity          PLMN-Identity                          OPTIONAL,
    -- Physical channel IEs
        harq-Preamble-Mode             HARQ-Preamble-Mode                     OPTIONAL,
        beaconPLEst                    BEACON-PL-Est                          OPTIONAL,
        timingMaintainedSynchInd       ENUMERATED { false }                   OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo    MBMS-PL-ServiceRestrictInfo-r6         OPTIONAL
}
```

<div style="text-align:center; background-color:#ffffcc">Not included parts of this section</div>

```
-- **************************************************
--
-- RADIO BEARER RELEASE
--
-- **************************************************

RadioBearerRelease ::= CHOICE {
    r3                             SEQUENCE {
        radioBearerRelease-r3          RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions      SEQUENCE {
            radioBearerRelease-v3a0ext     RadioBearerRelease-v3a0ext,
        laterNonCriticalExtensions     SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerRelease-r3-add-ext      BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions          SEQUENCE {
                    radioBearerRelease-v4b0ext         RadioBearerRelease-v4b0ext-IEs,
                    v590NonCriticalExtensions          SEQUENCE {
                        radioBearerRelease-v590ext         RadioBearerRelease-v590ext-IEs,
                        v6xyNonCriticalExtensions          SEQUENCE {
                            radioBearerRelease-v6xyext         RadioBearerRelease-v6xyext-IEs,
                            nonCriticalExtensions              SEQUENCE {} OPTIONAL
                        }          OPTIONAL
                    }          OPTIONAL
                }          OPTIONAL
            }          OPTIONAL
        }          OPTIONAL
    },
    later-than-r3                  SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions             CHOICE {
            r4                             SEQUENCE {
                radioBearerRelease-r4          RadioBearerRelease-r4-IEs,
                v4d0NonCriticalExtensions          SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
```

```
                        radioBearerRelease-r4-add-ext         BIT STRING        OPTIONAL,
                        v590NonCriticalExtensions        SEQUENCE {
                            radioBearerRelease-v590ext       RadioBearerRelease-v590ext-IEs,
                            v6xyNonCriticalExtensions        SEQUENCE {
                                radioBearerRelease-v6xyext       RadioBearerRelease-v6xyext-IEs,
                                nonCriticalExtensions            SEQUENCE {}    OPTIONAL
                            } OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                },
                criticalExtensions               CHOICE {
                    r5                           SEQUENCE {
                        radioBearerRelease-r5          RadioBearerRelease-r5-IEs,
                        -- Container for adding non critical extensions after freezing REL-6
                        radioBearerRelease-r5-add-ext  BIT STRING      OPTIONAL,
                        v6xyNonCriticalExtensions        SEQUENCE {
                            radioBearerRelease-v6xyext       RadioBearerRelease-v6xyext-IEs,
                            nonCriticalExtensions            SEQUENCE {}    OPTIONAL
                        } OPTIONAL
                    },
                    criticalExtensions               CHOICE {
                        r6                           SEQUENCE {
                            radioBearerRelease-r6          RadioBearerRelease-r6-IEs,
                            -- Container for adding non critical extensions after freezing REL-7
                            radioBearerRelease-r6-add-ext  BIT STRING      OPTIONAL,
                            nonCriticalExtensions            SEQUENCE {}    OPTIONAL
                        },
                        criticalExtensions               SEQUENCE {}
                    }
                }
            }
        }
    }
}


RadioBearerRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    integrityProtectionModeInfo    IntegrityProtectionModeInfo        OPTIONAL,
    cipheringModeInfo              CipheringModeInfo                  OPTIONAL,
    activationTime                 ActivationTime                     OPTIONAL,
    new-U-RNTI                     U-RNTI                             OPTIONAL,
    new-C-RNTI                     C-RNTI                             OPTIONAL,
    rrc-StateIndicator             RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- Core network IEs
    cn-InformationInfo             CN-InformationInfo                 OPTIONAL,
    signallingConnectionRelIndication   CN-DomainIdentity             OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                   URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList    RAB-InformationReconfigList        OPTIONAL,
    rb-InformationReleaseList      RB-InformationReleaseList,
    rb-InformationAffectedList     RB-InformationAffectedList         OPTIONAL,
    dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo      OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo           UL-CommonTransChInfo               OPTIONAL,
    ul-deletedTransChInfoList      UL-DeletedTransChInfoList          OPTIONAL,
    ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList        OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                            SEQUENCE {
            cpch-SetID                     CPCH-SetID                 OPTIONAL,
            addReconfTransChDRAC-Info      DRAC-StaticInformationList OPTIONAL
        },
        tdd                            NULL
    }                                                                 OPTIONAL,
    dl-CommonTransChInfo           DL-CommonTransChInfo               OPTIONAL,
    dl-DeletedTransChInfoList      DL-DeletedTransChInfoList          OPTIONAL,
    dl-AddReconfTransChInfoList    DL-AddReconfTransChInfo2List       OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                  FrequencyInfo                      OPTIONAL,
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power              OPTIONAL,
    ul-ChannelRequirement          UL-ChannelRequirement              OPTIONAL,
    modeSpecificPhysChInfo         CHOICE {
        fdd                            SEQUENCE {
            dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
        },
        tdd                            NULL
    },
```

```
            dl-CommonInformation           DL-CommonInformation            OPTIONAL,
            dl-InformationPerRL-List       DL-InformationPerRL-List        OPTIONAL
}

RadioBearerRelease-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                  DSCH-RNTI                            OPTIONAL
}

RadioBearerRelease-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- IE ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                     SSDT-UL                              OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        --  in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List             CellIdentity-PerRL-List          OPTIONAL
}

RadioBearerRelease-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List   DL-TPC-PowerOffsetPerRL-List      OPTIONAL
}

RadioBearerRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo       OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                 OPTIONAL,
        activationTime                 ActivationTime                    OPTIONAL,
        new-U-RNTI                     U-RNTI                            OPTIONAL,
        new-C-RNTI                     C-RNTI                            OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                         OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo                OPTIONAL,
        signallingConnectionRelIndication   CN-DomainIdentity            OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList    RAB-InformationReconfigList       OPTIONAL,
        rb-InformationReleaseList      RB-InformationReleaseList,
        rb-InformationAffectedList     RB-InformationAffectedList        OPTIONAL,
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo     OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo           UL-CommonTransChInfo-r4           OPTIONAL,
        ul-deletedTransChInfoList      UL-DeletedTransChInfoList         OPTIONAL,
        ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList       OPTIONAL,
        modeSpecificTransChInfo        CHOICE {
            fdd                            SEQUENCE {
                cpch-SetID                     CPCH-SetID                OPTIONAL,
                addReconfTransChDRAC-Info      DRAC-StaticInformationList OPTIONAL
            },
            tdd                            NULL
        }                                                                OPTIONAL,
        dl-CommonTransChInfo           DL-CommonTransChInfo-r4           OPTIONAL,
        dl-DeletedTransChInfoList      DL-DeletedTransChInfoList         OPTIONAL,
        dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r4    OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                     OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power             OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirement-r4          OPTIONAL,
        modeSpecificPhysChInfo         CHOICE {
            fdd                            SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information       OPTIONAL
            },
            tdd                            NULL
        },
        dl-CommonInformation           DL-CommonInformation-r4           OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r4       OPTIONAL
}

RadioBearerRelease-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo       OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                 OPTIONAL,
        activationTime                 ActivationTime                    OPTIONAL,
        new-U-RNTI                     U-RNTI                            OPTIONAL,
        new-C-RNTI                     C-RNTI                            OPTIONAL,
```

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    new-DSCH-RNTI                       DSCH-RNTI                           OPTIONAL,
    new-H-RNTI                          H-RNTI                              OPTIONAL,
    rrc-StateIndicator                  RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
    cn-InformationInfo                  CN-InformationInfo                  OPTIONAL,
    signallingConnectionRelIndication   CN-DomainIdentity                   OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                        URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList         RAB-InformationReconfigList         OPTIONAL,
    rb-InformationReleaseList           RB-InformationReleaseList,
    rb-InformationAffectedList          RB-InformationAffectedList-r5       OPTIONAL,
    dl-CounterSynchronisationInfo       DL-CounterSynchronisationInfo-r5    OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo                UL-CommonTransChInfo-r4             OPTIONAL,
    ul-deletedTransChInfoList           UL-DeletedTransChInfoList           OPTIONAL,
    ul-AddReconfTransChInfoList         UL-AddReconfTransChInfoList         OPTIONAL,
    modeSpecificTransChInfo             CHOICE {
        fdd                                 SEQUENCE {
            cpch-SetID                          CPCH-SetID                  OPTIONAL,
            addReconfTransChDRAC-Info           DRAC-StaticInformationList  OPTIONAL
        },
        tdd                                 NULL
    }                                                                       OPTIONAL,
    dl-CommonTransChInfo                DL-CommonTransChInfo-r4            OPTIONAL,
    dl-DeletedTransChInfoList           DL-DeletedTransChInfoList-r5       OPTIONAL,
    dl-AddReconfTransChInfoList         DL-AddReconfTransChInfoList-r5     OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                       FrequencyInfo                      OPTIONAL,
    maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power              OPTIONAL,
    ul-ChannelRequirement               UL-ChannelRequirement-r5           OPTIONAL,
    modeSpecificPhysChInfo              CHOICE {
        fdd                                 SEQUENCE {
            dl-PDSCH-Information                 DL-PDSCH-Information        OPTIONAL
        },
        tdd                                 NULL
    },
    dl-HSPDSCH-Information               DL-HSPDSCH-Information              OPTIONAL,
    dl-CommonInformation                DL-CommonInformation-r5            OPTIONAL,
    dl-InformationPerRL-List            DL-InformationPerRL-List-r5        OPTIONAL
}

RadioBearerRelease-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
    primary-plmn-Identity               PLMN-Identity                      OPTIONAL,
    -- Physical channel IEs
    harq-Preamble-Mode                  HARQ-Preamble-Mode                 OPTIONAL,
    beaconPLEst                         BEACON-PL-Est                      OPTIONAL,
    timingMaintainedSynchInd            ENUMERATED { false }               OPTIONAL,
    -- MBMS IEs
    mbms-PL-ServiceRestrictInfo         MBMS-PL-ServiceRestrictInfo-r6     OPTIONAL,
    mbms-RB-ListReleasedToChangeTransferMode
                                        RB-InformationReleaseList          OPTIONAL
}

RadioBearerRelease-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo         IntegrityProtectionModeInfo        OPTIONAL,
    cipheringModeInfo                   CipheringModeInfo                  OPTIONAL,
    activationTime                      ActivationTime                     OPTIONAL,
    new-U-RNTI                          U-RNTI                             OPTIONAL,
    new-C-RNTI                          C-RNTI                             OPTIONAL,
    new-DSCH-RNTI                       DSCH-RNTI                          OPTIONAL,
    new-H-RNTI                          H-RNTI                             OPTIONAL,
    new-E-RNTI                          E-RNTI                             OPTIONAL,
    rrc-StateIndicator                  RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- Core network IEs
    cn-InformationInfo                  CN-InformationInfo                 OPTIONAL,
    plmn-Identity                       PLMN-Identity                      OPTIONAL,
    signallingConnectionRelIndication   CN-DomainIdentity                  OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                        URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList         RAB-InformationReconfigList        OPTIONAL,
    rb-InformationReleaseList           RB-InformationReleaseList,
    rb-InformationAffectedList          RB-InformationAffectedList-r6      OPTIONAL,
```

```
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5    OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4             OPTIONAL,
        ul-deletedTransChInfoList       UL-DeletedTransChInfoList-r6       OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList-r6     OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                 OPTIONAL,
                addReconfTransChDRAC-Info       DRAC-StaticInformationList OPTIONAL
            },
            tdd                             NULL
        }                                                                  OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4            OPTIONAL,
        dl-DeletedTransChInfoList      DL-DeletedTransChInfoList-r5       OPTIONAL,
        dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r5     OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                      OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power              OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirement-r6           OPTIONAL,
        ul-EDCH-Information            UL-EDCH-Information-r6              OPTIONAL,
        modeSpecificPhysChInfo         CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information             DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information             OPTIONAL,
        dl-CommonInformation           DL-CommonInformation-r65                   OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r6       OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo    MBMS-PL-ServiceRestrictInfo-r6,
        mbms-RB-ListReleasedToChangeTransferMode
                                       RB-InformationReleaseList          OPTIONAL
}
```

Not included parts of this section

```
-- **************************************************
--
-- RADIO BEARER SETUP
--
-- **************************************************

RadioBearerSetup ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerSetup-r3             RadioBearerSetup-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            radioBearerSetup-v3a0ext        RadioBearerSetup-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerSetup-r3-add-ext     BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    radioBearerSetup-v4b0ext        RadioBearerSetup-v4b0ext-IEs,
                    v590NonCriticalExtensions       SEQUENCE {
                        radioBearerSetup-v590ext        RadioBearerSetup-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            radioBearerSetup-v6xyext        RadioBearerSetup-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {} OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                radioBearerSetup-r4             RadioBearerSetup-r4-IEs,
                v4d0NonCriticalExtensions       SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    radioBearerSetup-r4-add-ext     BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions       SEQUENCE {
                        radioBearerSetup-v590ext        RadioBearerSetup-v590ext-IEs,
```

```
                        v6xyNonCriticalExtensions          SEQUENCE {
                            radioBearerSetup-v6xyext        RadioBearerSetup-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}    OPTIONAL
                        }    OPTIONAL
                    }    OPTIONAL
                },
                criticalExtensions            CHOICE {
                    r5                            SEQUENCE {
                        radioBearerSetup-r5           RadioBearerSetup-r5-IEs,
                        -- Container for adding non critical extensions after freezing REL-6
                        radioBearerSetup-r5-add-ext   BIT STRING       OPTIONAL,
                        v6xyNonCriticalExtensions     SEQUENCE {
                            radioBearerSetup-v6xyext        RadioBearerSetup-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}    OPTIONAL
                        }    OPTIONAL
                    },
                    criticalExtensions            SEQUENCE {}
                }
            }
        }
    }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                  OPTIONAL,
        activationTime                  ActivationTime                     OPTIONAL,
        new-U-RNTI                      U-RNTI                             OPTIONAL,
        new-C-RNTI                      C-RNTI                             OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                       OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                 OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupList        SRB-InformationSetupList           OPTIONAL,
        rab-InformationSetupList        RAB-InformationSetupList           OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList         OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo      OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo               OPTIONAL,
        ul-deletedTransChInfoList       UL-DeletedTransChInfoList          OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList        OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                 OPTIONAL,
                addReconfTransChDRAC-Info       DRAC-StaticInformationList OPTIONAL
            },
            tdd                             NULL
        }                                                                  OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo               OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList          OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList        OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                      OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power              OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement              OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information             DL-PDSCH-Information       OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation               OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List           OPTIONAL
}

RadioBearerSetup-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                       DSCH-RNTI                          OPTIONAL
}

RadioBearerSetup-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
```

```
        ssdt-UL-r4                        SSDT-UL                           OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List                CellIdentity-PerRL-List           OPTIONAL
}

RadioBearerSetup-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-List        OPTIONAL
}

RadioBearerSetup-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                  OPTIONAL,
        activationTime                 ActivationTime                     OPTIONAL,
        new-U-RNTI                     U-RNTI                             OPTIONAL,
        new-C-RNTI                     C-RNTI                             OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                          OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                       OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo                 OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupList       SRB-InformationSetupList           OPTIONAL,
        rab-InformationSetupList       RAB-InformationSetupList-r4        OPTIONAL,
        rb-InformationAffectedList     RB-InformationAffectedList         OPTIONAL,
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo      OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo           UL-CommonTransChInfo-r4            OPTIONAL,
        ul-deletedTransChInfoList      UL-DeletedTransChInfoList          OPTIONAL,
        ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList        OPTIONAL,
        modeSpecificTransChInfo        CHOICE {
            fdd                            SEQUENCE {
                cpch-SetID                     CPCH-SetID                 OPTIONAL,
                addReconfTransChDRAC-Info      DRAC-StaticInformationList OPTIONAL
            },
            tdd                            NULL
        }                                                                 OPTIONAL,
        dl-CommonTransChInfo           DL-CommonTransChInfo-r4            OPTIONAL,
        dl-DeletedTransChInfoList      DL-DeletedTransChInfoList          OPTIONAL,
        dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r4     OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                      OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power              OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirement-r4           OPTIONAL,
        modeSpecificPhysChInfo         CHOICE {
            fdd                            SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                            NULL
        },
        dl-CommonInformation           DL-CommonInformation-r4           OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r4       OPTIONAL
}

RadioBearerSetup-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo    IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                  OPTIONAL,
        activationTime                 ActivationTime                     OPTIONAL,
        new-U-RNTI                     U-RNTI                             OPTIONAL,
        new-C-RNTI                     C-RNTI                             OPTIONAL,
        new-DSCH-RNTI                  DSCH-RNTI                          OPTIONAL,
        new-H-RNTI                     H-RNTI                             OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                       OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo                 OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupList       SRB-InformationSetupList-r5        OPTIONAL,
        rab-InformationSetupList       RAB-InformationSetupList-r5        OPTIONAL,
        rb-InformationAffectedList     RB-InformationAffectedList-r5      OPTIONAL,
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5   OPTIONAL,
```

```
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4            OPTIONAL,
        ul-deletedTransChInfoList       UL-DeletedTransChInfoList          OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList        OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                         SEQUENCE {
                cpch-SetID                  CPCH-SetID                OPTIONAL,
                addReconfTransChDRAC-Info   DRAC-StaticInformationList OPTIONAL
            },
            tdd                         NULL
        }                                                                 OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4            OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5       OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5     OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                     OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power             OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement-r5          OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                         SEQUENCE {
                dl-PDSCH-Information         DL-PDSCH-Information       OPTIONAL
            },
            tdd                         NULL
        },
        dl-HSPDSCH-Information           DL-HSPDSCH-Information            OPTIONAL,
        dl-CommonInformation            DL-CommonInformation-r5           OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5       OPTIONAL
}

RadioBearerSetup-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
        plmn-Identity                   PLMN-Identity                     OPTIONAL,
    -- Physical channel IEs
        harq-Preamble-Mode              HARQ-Preamble-Mode                OPTIONAL,
        timingMaintainedSynchInd        ENUMERATED { false }              OPTIONAL,
    -- Radio bearer IEs
        rab-InformationSetupList        RAB-InformationSetupList-r6-ext   OPTIONAL,
    -- MBMS IEs
        mbms-FLCApplicabilityInfo       MBMS-FLCApplicabilityInfo-r6
}
```

```
-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- **************************************************

TransportChannelReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            transportChannelReconfiguration-v3a0ext
                                        TransportChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                transportChannelReconfiguration-r3-add-ext     BIT STRING     OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    transportChannelReconfiguration-v4b0ext
                                        TransportChannelReconfiguration-v4b0ext-IEs,
                    v590NonCriticalExtensions       SEQUENCE {
                        transportChannelReconfiguration-v590ext
                                        TransportChannelReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            transportChannelReconfiguration-v6xyext
                                        TransportChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }           OPTIONAL
                    }           OPTIONAL
                }           OPTIONAL
            }           OPTIONAL
        }           OPTIONAL
    },
```

```
        later-than-r3                  SEQUENCE {
            rrc-TransactionIdentifier      RRC-TransactionIdentifier,
            criticalExtensions             CHOICE {
                r4                             SEQUENCE {
                    transportChannelReconfiguration-r4
                                                   TransportChannelReconfiguration-r4-IEs,
                        v4d0NonCriticalExtensions          SEQUENCE {
                        -- Container for adding non critical extensions after freezing REL-5
                        transportChannelReconfiguration-r4-add-ext     BIT STRING     OPTIONAL,
                        v590NonCriticalExtensions      SEQUENCE {
                            transportChannelReconfiguration-v590ext
                                                       TransportChannelReconfiguration-v590ext-IEs,
                            v6xyNonCriticalExtensions      SEQUENCE {
                                transportChannelReconfiguration-v6xyext
                                                           TransportChannelReconfiguration-v6xyext-IEs,
                                nonCriticalExtensions          SEQUENCE {}    OPTIONAL
                            } OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                },
                criticalExtensions             CHOICE {
                    r5                             SEQUENCE {
                        transportChannelReconfiguration-r5
                                                       TransportChannelReconfiguration-r5-IEs,
                        -- Container for adding non critical extensions after freezing REL-6
                        transportChannelReconfiguration-r5-add-ext     BIT STRING     OPTIONAL,
                        v6xyNonCriticalExtensions      SEQUENCE {
                            transportChannelReconfiguration-v6xyext
                                                       TransportChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions          SEQUENCE {}    OPTIONAL
                        } OPTIONAL
                    },
                    criticalExtensions             CHOICE {
                        r6                             SEQUENCE {
                            transportChannelReconfiguration-r6
                                                           TransportChannelReconfiguration-r6-IEs,
                            -- Container for adding non critical extensions after freezing REL-7
                            transportChannelReconfiguration-r6-add-ext     BIT STRING     OPTIONAL,
                            nonCriticalExtensions          SEQUENCE {}    OPTIONAL
                        },
                        criticalExtensions             SEQUENCE {}
                    }
                }
            }
        }
    }
}

TransportChannelReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    integrityProtectionModeInfo    IntegrityProtectionModeInfo         OPTIONAL,
    cipheringModeInfo              CipheringModeInfo                   OPTIONAL,
    activationTime                 ActivationTime                      OPTIONAL,
    new-U-RNTI                     U-RNTI                              OPTIONAL,
    new-C-RNTI                     C-RNTI                              OPTIONAL,
    rrc-StateIndicator             RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
    cn-InformationInfo             CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                   URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
    dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo       OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo           UL-CommonTransChInfo                OPTIONAL,
    ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList         OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                            SEQUENCE {
            cpch-SetID                     CPCH-SetID                  OPTIONAL,
            addReconfTransChDRAC-Info      DRAC-StaticInformationList  OPTIONAL
        },
        tdd                            NULL
    }                                                                  OPTIONAL,
    dl-CommonTransChInfo           DL-CommonTransChInfo                OPTIONAL,
    dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList         OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                  FrequencyInfo                       OPTIONAL,
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power               OPTIONAL,
```

```
        ul-ChannelRequirement         UL-ChannelRequirement              OPTIONAL,
        modeSpecificPhysChInfo        CHOICE {
            fdd                           SEQUENCE {
                dl-PDSCH-Information           DL-PDSCH-Information        OPTIONAL
            },
            tdd                           NULL
        },
        dl-CommonInformation          DL-CommonInformation               OPTIONAL,
        dl-InformationPerRL-List      DL-InformationPerRL-List           OPTIONAL
}

TransportChannelReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                     DSCH-RNTI                          OPTIONAL
}

TransportChannelReconfiguration-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                    SSDT-UL                            OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List            CellIdentity-PerRL-List            OPTIONAL
}

TransportChannelReconfiguration-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List  DL-TPC-PowerOffsetPerRL-List       OPTIONAL
}

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo   IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo             CipheringModeInfo                  OPTIONAL,
        activationTime                ActivationTime                     OPTIONAL,
        new-U-RNTI                    U-RNTI                             OPTIONAL,
        new-C-RNTI                    C-RNTI                             OPTIONAL,
        new-DSCH-RNTI                 DSCH-RNTI                          OPTIONAL,
        rrc-StateIndicator            RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- Core network IEs
        cn-InformationInfo            CN-InformationInfo                 OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                  URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo      OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo          UL-CommonTransChInfo-r4            OPTIONAL,
        ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList        OPTIONAL,
        modeSpecificTransChInfo       CHOICE {
            fdd                           SEQUENCE {
                cpch-SetID                    CPCH-SetID                 OPTIONAL,
                addReconfTransChDRAC-Info     DRAC-StaticInformationList OPTIONAL
            },
            tdd                           NULL
        }                                                                OPTIONAL,
        dl-CommonTransChInfo          DL-CommonTransChInfo-r4           OPTIONAL,
        dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList-r4    OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                 FrequencyInfo                      OPTIONAL,
        maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power              OPTIONAL,
        ul-ChannelRequirement         UL-ChannelRequirement-r4           OPTIONAL,
        modeSpecificPhysChInfo        CHOICE {
            fdd                           SEQUENCE {
                dl-PDSCH-Information           DL-PDSCH-Information        OPTIONAL
            },
            tdd                           NULL
        },
        dl-CommonInformation          DL-CommonInformation-r4            OPTIONAL,
        dl-InformationPerRL-List      DL-InformationPerRL-List-r4        OPTIONAL
}

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo   IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo             CipheringModeInfo                  OPTIONAL,
        activationTime                ActivationTime                     OPTIONAL,
        new-U-RNTI                    U-RNTI                             OPTIONAL,
```

```
            new-C-RNTI                     C-RNTI                              OPTIONAL,
            new-DSCH-RNTI                  DSCH-RNTI                           OPTIONAL,
            new-H-RNTI                     H-RNTI                              OPTIONAL,
            rrc-StateIndicator             RRC-StateIndicator,
            utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
        -- Core network IEs
            cn-InformationInfo             CN-InformationInfo                  OPTIONAL,
        -- UTRAN mobility IEs
            ura-Identity                   URA-Identity                        OPTIONAL,
        -- Radio bearer IEs
            dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5    OPTIONAL,
        -- Transport channel IEs
            ul-CommonTransChInfo           UL-CommonTransChInfo-r4             OPTIONAL,
            ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList         OPTIONAL,
            modeSpecificTransChInfo        CHOICE {
                fdd                            SEQUENCE {
                    cpch-SetID                     CPCH-SetID                  OPTIONAL,
                    addReconfTransChDRAC-Info      DRAC-StaticInformationList  OPTIONAL
                },
                tdd                            NULL
            }                                                                  OPTIONAL,
            dl-CommonTransChInfo           DL-CommonTransChInfo-r4             OPTIONAL,
            dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r5      OPTIONAL,
        -- Physical channel IEs
            frequencyInfo                  FrequencyInfo                       OPTIONAL,
            maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power               OPTIONAL,
            ul-ChannelRequirement          UL-ChannelRequirement-r5            OPTIONAL,
            modeSpecificPhysChInfo         CHOICE {
                fdd                            SEQUENCE {
                    dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
                },
                tdd                            NULL
            },
            dl-HSPDSCH-Information          DL-HSPDSCH-Information              OPTIONAL,
            dl-CommonInformation           DL-CommonInformation-r5             OPTIONAL,
            dl-InformationPerRL-List       DL-InformationPerRL-List-r5         OPTIONAL
}

TransportChannelReconfiguration-v6xyext-IEs ::= SEQUENCE {
        -- Core network IEs
            primary-plmn-Identity          PLMN-Identity                       OPTIONAL,
        -- Physical channel IEs
            harq-Preamble-Mode             HARQ-Preamble-Mode                  OPTIONAL,
            beaconPLEst                    BEACON-PL-Est                       OPTIONAL,
            timingMaintainedSynchInd       ENUMERATED { false }                OPTIONAL,
        -- MBMS IEs
            mbms-PL-ServiceRestrictInfo    MBMS-PL-ServiceRestrictInfo-r6      OPTIONAL
}

TransportChannelReconfiguration-r6-IEs ::= SEQUENCE {
        -- User equipment IEs
            integrityProtectionModeInfo    IntegrityProtectionModeInfo         OPTIONAL,
            cipheringModeInfo              CipheringModeInfo                   OPTIONAL,
            activationTime                 ActivationTime                      OPTIONAL,
            new-U-RNTI                     U-RNTI                              OPTIONAL,
            new-C-RNTI                     C-RNTI                              OPTIONAL,
            new-DSCH-RNTI                  DSCH-RNTI                           OPTIONAL,
            new-H-RNTI                     H-RNTI                              OPTIONAL,
            new-E-RNTI                     E-RNTI                              OPTIONAL,
            rrc-StateIndicator             RRC-StateIndicator,
            utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
        -- Core network IEs
            cn-InformationInfo             CN-InformationInfo                  OPTIONAL,
            plmn-Identity                  PLMN-Identity                       OPTIONAL,
        -- UTRAN mobility IEs
            ura-Identity                   URA-Identity                        OPTIONAL,
        -- Radio bearer IEs
            dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5    OPTIONAL,
        -- Transport channel IEs
            ul-CommonTransChInfo           UL-CommonTransChInfo-r4             OPTIONAL,
            ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList-r6      OPTIONAL,
            modeSpecificTransChInfo        CHOICE {
                fdd                            SEQUENCE {
                    cpch-SetID                     CPCH-SetID                  OPTIONAL,
                    addReconfTransChDRAC-Info      DRAC-StaticInformationList  OPTIONAL
                },
                tdd                            NULL
            }                                                                  OPTIONAL,
```

```
        dl-CommonTransChInfo              DL-CommonTransChInfo-r4          OPTIONAL,
        dl-AddReconfTransChInfoList       DL-AddReconfTransChInfoList-r5   OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                     FrequencyInfo                    OPTIONAL,
        maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power            OPTIONAL,
        ul-ChannelRequirement             UL-ChannelRequirement-r6         OPTIONAL,
        ul-EDCH-Information               UL-EDCH-Information-r6           OPTIONAL,
        modeSpecificPhysChInfo            CHOICE {
            fdd                               SEQUENCE {
                dl-PDSCH-Information               DL-PDSCH-Information     OPTIONAL
            },
            tdd                           NULL
        },
        dl-HSPDSCH-Information             DL-HSPDSCH-Information           OPTIONAL,
        dl-CommonInformation              DL-CommonInformation-r6          OPTIONAL,
        dl-InformationPerRL-List          DL-InformationPerRL-List-r6      OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo       MBMS-PL-ServiceRestrictInfo-r6
}
```

<div style="text-align:center">Not included parts of this section</div>

11.3   Information element definitions

<div style="text-align:center">Not included parts of this section</div>

```
-- **************************************************
--
--    PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- **************************************************
```

<div style="text-align:center">Not included parts of this section</div>

```
DL-CommonInformation ::=          SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommon          OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo           DPCH-CompressedModeInfo     OPTIONAL,
            tx-DiversityMode                  TX-DiversityMode            OPTIONAL,
            ssdt-Information                  SSDT-Information             OPTIONAL
        },
        tdd                               SEQUENCE {
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    }
}

DL-CommonInformation-r4 ::=       SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommon-r4       OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo           DPCH-CompressedModeInfo     OPTIONAL,
            tx-DiversityMode                  TX-DiversityMode            OPTIONAL,
            ssdt-Information                  SSDT-Information-r4          OPTIONAL
        },
        tdd                               SEQUENCE {
            tddOption                         CHOICE {
                tdd384                            NULL,
                tdd128                            SEQUENCE {
                    tstd-Indicator                    BOOLEAN
                }
            },
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
```

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```
        }
}


DL-CommonInformation-r5 ::=         SEQUENCE {
    dl-DPCH-InfoCommon                 DL-DPCH-InfoCommon-r4            OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            defaultDPCH-OffsetValue            DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo            DPCH-CompressedModeInfo      OPTIONAL,
            tx-DiversityMode                   TX-DiversityMode             OPTIONAL,
            ssdt-Information                   SSDT-Information-r4          OPTIONAL
        },
        tdd                                SEQUENCE {
            tddOption                          CHOICE {
                tdd384                             NULL,
                tdd128                             SEQUENCE {
                    tstd-Indicator                     BOOLEAN
                }
            },
            defaultDPCH-OffsetValue            DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    },
    mac-hsResetIndicator               ENUMERATED { true }        OPTIONAL
}

DL-CommonInformation-r6 ::=         SEQUENCE {
    dl-dpchInfoCommon                  CHOICE {
        dl-DPCH-InfoCommon                 DL-DPCH-InfoCommon-r64,
        dl-FDPCH-InfoCommon                DL-FDPCH-InfoCommon-r6
    }                                                              OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            defaultDPCH-OffsetValue            DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo            DPCH-CompressedModeInfo      OPTIONAL,
            tx-DiversityMode                   TX-DiversityMode             OPTIONAL,
            ssdt-Information                   SSDT-Information-r4          OPTIONAL
        },
        tdd                                SEQUENCE {
            tddOption                          CHOICE {
                tdd384                             NULL,
                tdd128                             SEQUENCE {
                    tstd-Indicator                     BOOLEAN
                }
            },
            defaultDPCH-OffsetValue            DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    },
    mac-hsResetIndicator               ENUMERATED { true }        OPTIONAL
}

DL-CommonInformationPost ::=        SEQUENCE {
    dl-DPCH-InfoCommon                 DL-DPCH-InfoCommonPost
}

DL-CommonInformationPredef ::=      SEQUENCE {
    dl-DPCH-InfoCommon                 DL-DPCH-InfoCommonPredef    OPTIONAL
}

DL-CompressedModeMethod ::=         ENUMERATED {
                                    puncturing, sf-2,
                                    higherLayerScheduling }

DL-DPCH-InfoCommon ::=              SEQUENCE {
    cfnHandling                        CHOICE {
        maintain                           NULL,
        initialise                         SEQUENCE {
            cfntargetsfnframeoffset            Cfntargetsfnframeoffset            OPTIONAL
        }
    },
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            dl-DPCH-PowerControlInfo           DL-DPCH-PowerControlInfo          OPTIONAL,
            powerOffsetPilot-pdpdch            PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction       Dl-rate-matching-restriction      OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot            SF512-AndPilot,
            positionFixedOrFlexible            PositionFixedOrFlexible,
```

```
                tfci-Existence                          BOOLEAN
        },
        tdd                                     SEQUENCE {
                dl-DPCH-PowerControlInfo                DL-DPCH-PowerControlInfo         OPTIONAL
        }
    }
}

DL-DPCH-InfoCommon-r4 ::=           SEQUENCE {
    cfnHandling                         CHOICE {
        maintain                            NULL,
        initialise                          SEQUENCE {
            cfntargetsfnframeoffset             Cfntargetsfnframeoffset         OPTIONAL
        }
    },
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo         OPTIONAL,
            powerOffsetPilot-pdpdch            PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction       Dl-rate-matching-restriction     OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot            SF512-AndPilot,
            positionFixedOrFlexible            PositionFixedOrFlexible,
            tfci-Existence                     BOOLEAN
        },
        tdd                                 SEQUENCE {
            dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo         OPTIONAL
        }
    },
-- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
-- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
-- if the IE is included, the general error handling for conditional IEs applies.
    mac-d-HFN-initial-value          MAC-d-HFN-initial-value            OPTIONAL
}

DL-DPCH-InfoCommon-r6 ::=           SEQUENCE {
    cfnHandling                         CHOICE {
        maintain                            SEQUENCE {
            timingmaintainedsynchind            TimingMaintainedSynchInd        OPTIONAL
        },
        initialise                          SEQUENCE {
            cfntargetsfnframeoffset             Cfntargetsfnframeoffset         OPTIONAL
        }
    },

    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo         OPTIONAL,
            powerOffsetPilot-pdpdch            PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction       Dl-rate-matching-restriction     OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot            SF512-AndPilot,
            positionFixedOrFlexible            PositionFixedOrFlexible,
            tfci-Existence                     BOOLEAN
        },
        tdd                                 SEQUENCE {
            dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo         OPTIONAL
        }
    },
-- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
-- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
-- if the IE is included, the general error handling for conditional IEs applies.
    mac-d-HFN-initial-value          MAC-d-HFN-initial-value            OPTIONAL
}

DL-DPCH-InfoCommonPost ::=          SEQUENCE {
    dl-DPCH-PowerControlInfo                DL-DPCH-PowerControlInfo             OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=        SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot            SF512-AndPilot,
            positionFixedOrFlexible            PositionFixedOrFlexible,
```

```
            tfci-Existence                    BOOLEAN
        },
        tdd                                   SEQUENCE {
            commonTimeslotInfo                    CommonTimeslotInfo
        }
    }
}

DL-DPCH-InfoPerRL ::=             CHOICE {
    fdd                              SEQUENCE {
        pCPICH-UsageForChannelEst        PCPICH-UsageForChannelEst,
        dpch-FrameOffset                 DPCH-FrameOffset,
        secondaryCPICH-Info              SecondaryCPICH-Info         OPTIONAL,
        dl-ChannelisationCodeList        DL-ChannelisationCodeList,
        tpc-CombinationIndex             TPC-CombinationIndex,
        ssdt-CellIdentity                SSDT-CellIdentity           OPTIONAL,
        closedLoopTimingAdjMode          ClosedLoopTimingAdjMode     OPTIONAL
    },
    tdd                              SEQUENCE {
        dl-CCTrChListToEstablish         DL-CCTrChList               OPTIONAL,
        dl-CCTrChListToRemove            DL-CCTrChListToRemove       OPTIONAL
    }
}

DL-DPCH-InfoPerRL-r4 ::=          CHOICE {
    fdd                              SEQUENCE {
        pCPICH-UsageForChannelEst        PCPICH-UsageForChannelEst,
        dpch-FrameOffset                 DPCH-FrameOffset,
        secondaryCPICH-Info              SecondaryCPICH-Info         OPTIONAL,
        dl-ChannelisationCodeList        DL-ChannelisationCodeList,
        tpc-CombinationIndex             TPC-CombinationIndex,
        ssdt-CellIdentity                SSDT-CellIdentity           OPTIONAL,
        closedLoopTimingAdjMode          ClosedLoopTimingAdjMode     OPTIONAL
    },
    tdd                              SEQUENCE {
        dl-CCTrChListToEstablish         DL-CCTrChList-r4            OPTIONAL,
        dl-CCTrChListToRemove            DL-CCTrChListToRemove       OPTIONAL
    }
}

DL-DPCH-InfoPerRL-r5 ::=          CHOICE {
    fdd                              SEQUENCE {
        pCPICH-UsageForChannelEst        PCPICH-UsageForChannelEst,
        dpch-FrameOffset                 DPCH-FrameOffset,
        secondaryCPICH-Info              SecondaryCPICH-Info         OPTIONAL,
        dl-ChannelisationCodeList        DL-ChannelisationCodeList,
        tpc-CombinationIndex             TPC-CombinationIndex,
        powerOffsetTPC-pdpdch            PowerOffsetTPC-pdpdch       OPTIONAL,
        ssdt-CellIdentity                SSDT-CellIdentity           OPTIONAL,
        closedLoopTimingAdjMode          ClosedLoopTimingAdjMode     OPTIONAL
    },
    tdd                              SEQUENCE {
        dl-CCTrChListToEstablish         DL-CCTrChList-r4            OPTIONAL,
        dl-CCTrChListToRemove            DL-CCTrChListToRemove       OPTIONAL
    }
}

DL-FDPCH-InfoPerRL-r6 ::=         SEQUENCE {
    pCPICH-UsageForChannelEst        PCPICH-UsageForChannelEst,
    fdpch-FrameOffset                DPCH-FrameOffset,
    secondaryCPICH-Info              SecondaryCPICH-Info         OPTIONAL,
    secondaryScramblingCode          SecondaryScramblingCode     OPTIONAL,
    dl-ChannelisationCode            INTEGER (0..255),
    tpc-CombinationIndex             TPC-CombinationIndex
}

DL-DPCH-InfoPerRL-PostFDD ::=                        SEQUENCE {
    pCPICH-UsageForChannelEst            PCPICH-UsageForChannelEst,
    dl-ChannelisationCode                DL-ChannelisationCode,
    tpc-CombinationIndex                 TPC-CombinationIndex
}

DL-DPCH-InfoPerRL-PostTDD ::=         SEQUENCE {
    dl-DPCH-TimeslotsCodes                DownlinkTimeslotsCodes
}

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=      SEQUENCE {
    dl-CCTrCH-TimeslotsCodes                  DownlinkTimeslotsCodes-LCR-r4
```

```
    }

DL-DPCH-PowerControlInfo ::=             SEQUENCE {
    modeSpecificInfo                         CHOICE {
        fdd                                      SEQUENCE {
            dpc-Mode                                 DPC-Mode
        },
        tdd                                      SEQUENCE {
            tpc-StepSizeTDD                          TPC-StepSizeTDD        OPTIONAL
        }
    }
}

DL-FDPCH-InfoCommon-r6 ::=           SEQUENCE {
    cfnHandling                             CHOICE {
        maintain                                SEQUENCE {
            timingmaintainedsynchind            TimingMaintainedSynchInd        OPTIONAL
        }NULL,
        initialise                              SEQUENCE {
            cfntargetsfnframeoffset                 Cfntargetsfnframeoffset        OPTIONAL
        }
    },
    dl-FDPCH-PowerControlInfo           DL-DPCH-PowerControlInfo            OPTIONAL,
-- Actual value dl-FDPCH-TPCcommandErrorRate = IE value * 0.005
-- dl-FDPCH-TPCcommandErrorRate values 21..32 are spare and shall not be used in this version of
-- the protocol
    dl-FDPCH-TPCcommandErrorRate        INTEGER (1..32)     OPTIONAL
}
```

Not included parts of this section

```
TimingMaintainedSynchInd ::=        ENUMERATED { false }
```