Title:　　　　**Agreed CRs (Release '99 and Rel-4 category A) to TS 25.331 (7)**

Source:　　　**TSG-RAN WG2**

Agenda item:　8.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-011380	agreed	25.331	896		R99	Correction to BurstModeParameters in IPDL	F	3.6.0	3.7.0
R2-011470	agreed	25.331	897		Rel-4	Correction to BurstModeParameters in IPDL	A	4.0.0	4.1.0
R2-011501	agreed	25.331	898	1	R99	Corrections on inconsistencies between Tabular and ASN.1	F	3.6.0	3.7.0
R2-011502	agreed	25.331	899		Rel-4	Corrections on inconsistencies between Tabular and ASN.1	A	4.0.0	4.1.0
R2-011392	agreed	25.331	900		R99	Naming of message abstract types in ASN.1	F	3.6.0	3.7.0
R2-011471	agreed	25.331	901		Rel-4	Naming of message abstract types in ASN.1	A	4.0.0	4.1.0
R2-011394	agreed	25.331	903		R99	Information elements outside the extension container	F	3.6.0	3.7.0
R2-011473	agreed	25.331	904		Rel-4	Information elements outside the extension container	A	4.0.0	4.1.0
R2-011476	agreed	25.331	905		R99	Correction concerning DRX cycle upon inter-RAT change towards UTRAN	F	3.6.0	3.7.0
R2-011477	agreed	25.331	906		Rel-4	Correction concerning DRX cycle upon inter-RAT change towards UTRAN	A	4.0.0	4.1.0

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **896** | ⌘ | ev | **-** | ⌘ | Current version: | **3.6.0** | ⌘ |

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

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

Title:	⌘	Correction to BurstModeParameters in IPDL
Source:	⌘	TSG-RAN WG2
Work item code: ⌘	TEI	***Date:*** ⌘ 23.5.2001

Category: ⌘	**F**	***Release:*** ⌘ R99

Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
F *(correction)*	*2* *(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96* *(Release 1996)*
B *(addition of feature),*	*R97* *(Release 1997)*
C *(functional modification of feature)*	*R98* *(Release 1998)*
D *(editorial modification)*	*R99* *(Release 1999)*
Detailed explanations of the above categories can	*REL-4* *(Release 4)*
be found in 3GPP <u>TR 21.900</u>.	*REL-5* *(Release 5)*

Reason for change: ⌘	In section 10.3.7.98 (UE positioning IPDL parameters) IE " Burst mode parameters " appears as OP in tabular while it has been implemented as MP in ASN.1.
Summary of change: ⌘	In section 11.3 of ASN.1 in IE "UE-Positioning-IPDL-Parameters", burstModeParameters is now shown to be OPTIONAL. Backwards Compatibility Ananlysis: The CR does not impact any other functionality and so can be considered backwards compatible
Consequences if not approved: ⌘	Inconsistency in the need of IE " Burst mode parameters " between tabular and ASN.1, leading to parameters being sent when they are not required.

Clauses affected:	⌘	11.3

Other specs Affected:	⌘	☐ Other core specifications ⌘	
		☐ Test specifications	
		☐ O&M Specifications	

Other comments:	⌘	

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://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.

10.3.7.98   UE positioning IPDL parameters

This IE contains parameters for the IPDL mode. The use of this parameters is described in [29].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
IP spacing	MP		Integer(5,7,10,15,20,30,40,50)	The IPs are repeated every IP spacing frame.
IP length	MP		Integer(5,10)	The length in symbols of the idle periods
IP offset	MP		Integer(0..9)	Relates the BFN and SFN, should be same as T_cell defined in [10]
Seed	MP		Integer(0..63)	Seed used to start the random number generator
Burst mode parameters	OP			
>Burst Start	MP		Integer(0..15)	The frame number where the 1st Idle Period Burst occurs within an SFN cycle. Scaling factor 256.
>Burst Length	MP		Integer(10..25)	Number of Idle Periods in a 'burst' of Idle Periods
>Burst freq	MP		Integer(1..16)	Number of 10ms frames between consecutive Idle Period bursts. Scaling factor 256.

11.3 Information element definitions

```
BurstModeParameters ::=           SEQUENCE {
    burstStart                        INTEGER (0..15),
    burstLength                       INTEGER (10..25),
    burstFreq                         INTEGER (1..16)
}


UE-Positioning-IPDL-Parameters ::=          SEQUENCE {
    ip-Spacing                        IP-Spacing,
    ip-Length                         IP-Length,
    ip-Offset                         INTEGER (0..9),
    seed                              INTEGER (0..63),
    burstModeParameters               BurstModeParameters     OPTIONAL
}
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331 CR 897** | ⌘ | ev | **-** | ⌘ | Current version: | **4.0.0** | ⌘ |

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

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

Title:	⌘	Correction BurstModeParameters in IPDL
Source:	⌘	TSG-RAN WG2
Work item code: ⌘	TEI	**Date:** ⌘ 23.5.2001

Category: ⌘ **A**

Use <u>one</u> 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 <u>TR 21.900</u>.

Release: ⌘ REL-4

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

Reason for change: ⌘	In section 10.3.7.98 (UE positioning IPDL parameters) IE " Burst mode parameters " appears as OP in tabular while it has been implemented as MP in ASN.1.
Summary of change: ⌘	In section 11.3 of ASN.1 in IE "UE-Positioning-IPDL-Parameters", burstModeParameters is now shown to be OPTIONAL. ~~Backwards Compatibility Ananlysis: The CR does not impact any other functionality and so can be considered backwards compatible~~
Consequences if not approved: ⌘	Inconsistency in the need of IE " Burst mode parameters " between tabular and ASN.1, leading to parameters being sent when they are not required.

Clauses affected: ⌘	11.3

Other specs Affected: ⌘	☐ Other core specifications ⌘	
	☐ Test specifications	
	☐ O&M Specifications	

Other comments: ⌘	

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10.3.7.98   UE positioning IPDL parameters

This IE contains parameters for the IPDL mode. The use of this parameters is described in [29].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
IP spacing	MP		Integer(5,7,10,15,20,30,40,50)	The IPs are repeated every IP spacing frame.
IP length	MP		Integer(5,10)	The length in symbols of the idle periods
IP offset	MP		Integer(0..9)	Relates the BFN and SFN, should be same as T_cell defined in [10]
Seed	MP		Integer(0..63)	Seed used to start the random number generator
Burst mode parameters	OP			
>Burst Start	MP		Integer(0..15)	The frame number where the 1st Idle Period Burst occurs within an SFN cycle. Scaling factor 256.
>Burst Length	MP		Integer(10..25)	Number of Idle Periods in a 'burst' of Idle Periods
>Burst freq	MP		Integer(1..16)	Number of 10ms frames between consecutive Idle Period bursts. Scaling factor 256.

11.3   Information element definitions

```
BurstModeParameters ::=             SEQUENCE {
    burstStart                      INTEGER (0..15),
    burstLength                     INTEGER (10..25),
    burstFreq                       INTEGER (1..16)
}


UE-Positioning-IPDL-Parameters ::=              SEQUENCE {
    ip-Spacing                      IP-Spacing,
    ip-Length                       IP-Length,
    ip-Offset                       INTEGER (0..9),
    seed                            INTEGER (0..63),
    burstModeParameters             BurstModeParameters     OPTIONAL
}
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **898** | ⌘ | ev | **r1** | ⌘ | Current version: | **3.6.0** | ⌘ |

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

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

Title:	⌘	Corrections on inconsistencies between tabular and ASN.1
Source:	⌘	TSG-RAN WG2
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-05-23

Category:	⌘ **F**	***Release:*** ⌘ R99

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

Reason for change:	⌘	A number of inconsistencies between the tabular format and the ASN.1 code needed to be corrected

Summary of change: ⌘		• HANDOVER TO UTRAN COMMAND

FDD/TDD: Readability of tabular format was improved with respect to FDD/TDD CHOICES and elements were put to the correct positions. (ambiguous because of differences between ASN.1 and tabular)
Correction to a function where the specification was :

  o Ambiguous or not sufficiently explicit.

Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
• Cell selection and re-selection info for SIB3/4
FDD/TDD: Corrects cell selection/reselection behaviour of UEs with respect to requirements on measurements on another RAT.
Presence values for Ssearch,RAT, Slimit,SearchRAT were erroneously MP instead of OP in ASN.1. For backward compatibility reasons it is proposed to change presence values in the tabular for consistency with ASN.1. Absence of Ssearch,RAT indicates that UEs are not required to perform measurements on the RAT in case the IE is missing. The CR proposes that the highest value for the IE is used to achieve the same functionality.
UEs not implementing this CR would in some cases (own cell is very good) perform measurements that are not required. This cannot be avoided for Ues not implementing this change.
  • PUSCH CAPACITY REQUEST
TDD: Shared channel operation
Condition on requirements for inclusion of IE "Protocol error information" are clarified (conditional IE). Name of IE "trafficVolume" aligned with ASN.1.
Correction to a function where the specification was :

  o Ambiguous or not sufficiently explicit.

Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

- RB information to reconfigure
  FDD/TDD: Lossless relocation
  Inconsistency between tabular and ASN.1 with respect to IE "PDCP SN info". This CR aligns ASN.1 with tabular. Duplicated IE "PDCP SN info" removed by replacing IE name by "dummy". This solution allows independent inclusion of IE "PDCP info" and "PDCP SN info". However, it results in some overhead due to the unused IE "dummy".
  UE and UTRAN may be implemented using the IE which was changed to "dummy" instead of the valid one (according to this CR). This could result in problems with lossless relocation. (same problem if UE implements the change and UTRAN not or vice versa)

Correction to a function where the specification was :

   o   Ambiguous or not sufficiently explicit.

Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

- Downlink DPCH info for each RL
  TDD: DPCH configuration
  Range for UL CCTrCH TPC List aligned to ASN.1. Change only relevant for TDD. Should not change any behaviour in UE or UTRAN.
  Correction to a function where the specification was :

     o   Ambiguous or not sufficiently explicit.

Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

- PDSCH info
  TDD: Shared channel configuration
  Tabular erroneously shows a list for PDSCH timeslots and codes. However, only one instance is needed (correct in ASN.1). No change in behaviour expected by UE or UTRAN.
  Correction to a function where the specification was :

     o   Ambiguous or not sufficiently explicit.

Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

- TDD open loop power control
  TDD open loop power control
  Presence of three IEs was erroneously OP instead of MP in tabular. This was corrected. Change backwards incompatible. Receiver would not be able to decode message if not both sender and receiver implement the change

- UL-TransportChannelType
  TDD: Shared channel configuration
  Transport channel identity was missing for USCH. This was corrected.
  If CR is not implemented both in UE or UTRAN USCH configuration does not work (receiver is not able to decode message).
- UL-CommonTransChInfo
  TDD: Common Transport channel configuration
  One instance of duplicated element ul-TFCS removed.
  If CR is not implemented both in UE or UTRAN USCH configuration does not work (receiver is not able to decode message).
- PRACH-RACH-Info
  TDD: Common Transport channel configuration
  Element prach-Midamble was erroneously OPTIONAL in ASN.1. This leads to an backwards incompatible change for TDD.
  If CR is not implemented both in UE or UTRAN USCH configuration does not work (receiver is not able to decode message).

		• CellMeasuredResults TDD: Measurement reporting Missing element pathloss added. If CR is not implemented both in UE or UTRAN USCH configuration does not work (receiver is not able to decode message).
Consequences if not approved:	⌘	Inconsistencies between tabular and ASN.1 leading to ambiguities

Clauses affected:	⌘	10.2.12, 10.2.26, 10.3.2.3, 10.3.4.18, 10.3.6.21, 10.3.6.44, 10.3.6.79, 11
Other specs affected:	⌘	Other core specifications ⌘ Test specifications O&M Specifications
Other comments:	⌘	

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10.2.12 HANDOVER TO UTRAN COMMAND

This message is sent to the UE via other system to make a handover to UTRAN.

RLC-SAP: N/A (Sent through a different RAT)

Logical channel: N/A (Sent through a different RAT)

Direction: UTRAN $\rightarrow$ UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
New U-RNTI	MP		U-RNTI Short 10.3.3.48	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
Ciphering algorithm	OP		Ciphering algorithm 10.3.3.4	
CHOICE specification mode	MP			
>Complete specification				
UE information elements				
RB information elements				
>>Signalling RB information to setup list	MP	1 to <maxSRBsetup>		For each signalling radio bearer established
>>>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
>>RAB information to setup list	OP	1 to <maxRABsetup>		For each RAB established
>>>RAB information for setup	MP		RAB information for setup 10.3.4.10	
Uplink transport channels				
>>UL Transport channel information common for all transport channels	MP		UL Transport channel information common for all transport channels 10.3.5.24	
>>Added or Reconfigured TrCH information	MP	1 to <maxTrCH>		
>>>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
Downlink transport channels				
>>DL Transport channel information common for all transport channels	MP		DL Transport channel information common for all transport channels 10.3.5.6	
>>Added or Reconfigured TrCH information	MP	1 to <maxTrCH>		
>>>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
Uplink radio resources				
>>Uplink DPCH info	MP		Uplink DPCH info 10.3.6.88	
>>CHOICE *mode*	MP			
>>>FDD				

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>CPCH SET Info	OP		CPCH SET Info 10.3.6.13	
Downlink radio resources				
>>>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>>>TDD				(no data)
>>Downlink information common for all radio links	MP		Downlink information common for all radio links 10.3.6.24	
>>Downlink information per radio link	MP	1 to <maxRL>		
>>>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	
>Preconfiguration				
>>CHOICE Preconfiguration mode	MP			
>>>Predefined configuration	MP		Predefined configuration identity 10.3.4.5	
>>>Default configuration				
>>>>Default configuration mode	MP		Enumerated (FDD, TDD)	Indicates whether the FDD or TDD version of the default configuration shall be used
>>>>Default configuration identity	MP		Default configuration identity 10.3.4.0	
>>RAB info	OP		RAB info Post 10.3.4.9	One RAB is established
>>Uplink DPCH info	MP		Uplink DPCH info Post 10.3.6.89	
Downlink radio resources				
>>CHOICE *mode*				
>>>FDD				
>>>>Downlink information common for all radio links			Downlink information common for all radio links Post 10.3.6.25	
>>>TDD				(no data)
>>Downlink information per radio link	MP	1 to <maxRL>		Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.
>>>Downlink information for each radio link	MP		Downlink information for each radio link Post 10.3.6.28	
>>CHOICE mode	MP			
>>>FDD				(no data)
>>>TDD				

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>Primary CCPCH Tx Power	MP		Primary CCPCH Tx Power 10.3.6.59	
Frequency info	MP		Frequency info 10.3.6.36	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	
CHOICE mode	MP			
>FDD				(no data)
>TDD				
>>Primary CCPCH Tx Power	MP		Primary CCPCH Tx Power 10.3.6.59	

10.2.26 PUSCH CAPACITY REQUEST

NOTE: Only for TDD.

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

Direction: UE → UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
C-RNTI	OP		C-RNTI 10.3.3.8	
RRC transaction identifier	CV-*ProtErr*		RRC transaction identifier 10.3.3.36	
Traffic Volume	OP		Traffic Volume, measured results list 10.3.7.67	
Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot number 10.3.6.84	
>Timeslot ISCP	MP		Timeslot ISCP info 10.3.7.65	
Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
CHOICE Allocation confirmation	OP			
>PDSCH Confirmation	MP		Integer(1..Hi PDSCHIdent ities)	
>PUSCH Confirmation	MP		Integer(1..Hi PUSCHIdent ities)	
Protocol error indicator	MD		Protocol error indicator 10.3.3.27	Default value is FALSE
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.12	

Condition	Explanation
ProtErr	This IE is mandatory l-if the IE "Protocol error indicator" has the value "TRUE". Otherwise it is not needed.

10.3.2.3 Cell selection and re-selection info for SIB3/4

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mapping Info	MD		Mapping info 10.3.2.5	Contains mapping function for quality measurements. Default is an implicit mapping: $Q_{map} = Q_{meas,LEV}$, [4].
Cell_selection_and_reselection_ quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH RSCP)	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q for FDD cells.
CHOICE mode	MP			
>FDD				
>>$S_{intrasearch}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>$S_{intersearch}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>$S_{searchHCS}$	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxOtherRAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>$S_{search,RAT}$	MP		Integer (-~~105~~32..~~91~~20 by step of 2)	In case the value 20 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>$S_{HCS,RAT}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>$S_{limit,SsearchRAT}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>TDD				
>>$S_{intrasearch}$	OP		Integer (-105..91 by step of 2)	[4] [dB]

>>S$_{intersearch}$	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>S$_{searchHCS}$	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>RAT List	OP	1 to \<maxOtherRAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S$_{search,RAT}$	~~O~~MP		Integer (-105..91 by step of 2)	In case the value 91 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>S$_{HCS,RAT}$	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>S$_{limit,SsearchRAT}$	~~O~~MP		Integer (-105..91 by step of 2)	[4] [dB]
Qhyst1$_s$	MP		Integer (0..40 by step of 2)	[4]
Qhyst2$_s$	CV-*FDD-Quality-Measure*		Integer (0..40 by step of 2)	Default value is Qhist1$_s$ [4]
Treselection$_s$	MP		Integer (0..31)	[s]
HCS Serving cell Information	OP		HCS Serving cell information 10.3.7.12	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4].
CHOICE *mode*	MP			
>FDD				
>>Qqualmin	MP		Integer (-20..0)	Ec/N0, [dB]
>>Qrxlevmin	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
>TDD				
>>Qrxlevmin	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]

Condition	Explanation
CV-FDD-Quality-Measure	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

10.3.4.18   RB information to reconfigure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP info	OP		PDCP info 10.3.4.2	
PDCP SN info	~~C PDCP~~OP		PDCP SN info 10.3.4.3	PDCP sequence number info from the network. Present only in case of lossless SRNS relocation.
CHOICE *RLC info type*	OP			
>RLC info			RLC info 10.3.4.23	
>Same as RB			RB identity 10.3.4.16	Identity of RB with exactly the same values for IE "RLC info"
RB mapping info	OP		RB mapping info 10.3.4.21	
RB stop/continue	OP		Enumerated(stop, continue)	

~~Condition~~	~~Explanation~~
~~PDCP~~	~~This IE is optional only if "PDCP info" is present. Otherwise it is absent.~~

Condition	Explanation
TimInd	This IE is OPTIONAL if the IE "Timing Indication" is set to "Initialise". Otherwise it is absent.

10.3.6.21 Downlink DPCH info for each RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>DPCH frame offset	MP		Integer(0..38144 by step of 256)	Offset (in number of chips) between the beginning of the P-CCPCH frame and the beginning of the DPCH frame This is called $\tau_{DPCH,n}$ in [26]
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	
>>DL channelisation code	MP	1 to <maxDPCH-DLchan>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
>>>CHOICE *Spreading factor*	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512-AndCodenumber with "code number" in ASN.1
>>>Code number	MP		Integer(0..Spreading factor - 1)	
>>>Scrambling code change	CH SF/2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
>>TPC combination index	MP		TPC combination index 10.3.6.85	
>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.76	
>>Closed loop timing adjustment mode	CH TxDiversity Mode		Integer(1, 2)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Value in slots
>TDD				
>>DL CCTrCh List	MP	1..<maxCCTrCH>		
>>>TFCS ID	MD		Integer(1..8)	Identity of this CCTrCh. Default value is 1
>>>Time info	MP		Time Info 10.3.6.83	
>>>Downlink DPCH timeslots and codes	MD		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.
>>>UL CCTrCH TPC List	MD	0~1..<maxCCTrCH>		UL CCTrCH identities for TPC commands associated with this DL CCTrCH. Default is previous list or all defined UL CCTrCHs
>>>>UL TPC TFCS Identity	MP		Transport Format Combination	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			Set Identity 10.3.5.21	

Condition	Explanation
SF/2	The information element is mandatory if the UE has an active compressed mode pattern sequence, which is using compressed mode method "SF/2". Otherwise the IE is not needed.
TxDiversity Mode	This IE is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Otherwise the IE is not needed.

10.3.6.44 PDSCH info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer(1..8)	TFCS to be used. Default value is 1.
Common timeslot info	OP		Common timeslot info 10.3.6.10	
PDSCH timeslots and codes	OP	1 to <maxTS>	Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.

10.3.6.79 TDD open loop power control

This information element contains parameters for open loop power control setting for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CCPCH Tx Power	OMP		Primary CCPCH Tx Power 10.3.6.59	For path loss calculation
Alpha	OP		Alpha 10.3.6.5	
PRACH Constant Value	OMP		Constant Value 10.3.6.11	Operator controlled PRACH Margin
DPCH Constant Value	OMP		Constant Value 10.3.6.11	Operator controlled UL DPCH Margin
PUSCH Constant Value	OP		Constant Value 10.3.6.11	Operator controlled PUSCH Margin

11.2   PDU definitions

```
--*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- **************************************************

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        c-RNTI                          C-RNTI                          OPTIONAL,
    -- Measurement IEs
        trafficVolumeMeasuredResultsList
                                        TrafficVolumeMeasuredResultsList    OPTIONAL,
        timeslotListWithISCP            TimeslotListWithISCP            OPTIONAL,
        primaryCCPCH-RSCP               PrimaryCCPCH-RSCP               OPTIONAL,
        allocationConfirmation          CHOICE {
            pdschConfirmation               PDSCH-Identity,
            puschConfirmation               PUSCH-Identity
        }                                                               OPTIONAL,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}


PDCP-InfoReconfig ::=               SEQUENCE {
    pdcp-Info                          PDCP-Info,
-- dummy is not used in this version of the protocol
    pdcp-SN-Infodummy                  INTEGER (0..65535)PDCP-SN-Info
}


UL-TransportChannelType ::=         CHOICE {
    dch                                TransportChannelIdentity,
    rach                               NULL,
    cpch                               NULL,
    usch                               TransportChannelIdentityNULL
}

UL-CommonTransChInfo ::=            SEQUENCE {
    tfc-Subset                         TFC-Subset                      OPTIONAL,
    prach-TFCS                         TFCS                            OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            ul-TFCS                            TFCS
        },
        tdd                                SEQUENCE {

            individualUL-CCTrCH-InfoList       IndividualUL-CCTrCH-InfoList
                                                                       OPTIONAL,
            ul-TFCS                            TFCS
        }
    }                                                                  OPTIONAL
}


PRACH-RACH-Info ::=                 SEQUENCE {
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            availableSignatures                AvailableSignatures,
            availableSF                        SF-PRACH,
            preambleScramblingCodeWordNumber   PreambleScramblingCodeWordNumber,
```

```
            puncturingLimit                    PuncturingLimit,
            availableSubChannelNumbers         AvailableSubChannelNumbers
        },
        tdd                                SEQUENCE {
            timeslot                           TimeslotNumber,
            channelisationCodeList             TDD-PRACH-CCodeList,
            prach-Midamble                     PRACH-Midamble           OPTIONAL
        }
    }
}

CellMeasuredResults ::=             SEQUENCE {
    cellIdentity                       CellIdentity                     OPTIONAL,
    sfn-SFN-ObsTimeDifference          SFN-SFN-ObsTimeDifference        OPTIONAL,
    cellSynchronisationInfo            CellSynchronisationInfo          OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            primaryCPICH-Info                  PrimaryCPICH-Info,
            cpich-Ec-N0                        CPICH-Ec-N0              OPTIONAL,
            cpich-RSCP                         CPICH-RSCP              OPTIONAL,
            pathloss                           Pathloss               OPTIONAL
        },
        tdd                                SEQUENCE {
            cellParametersID                   CellParametersID,
            proposedTGSN                       TGSN                    OPTIONAL,
            primaryCCPCH-RSCP                  PrimaryCCPCH-RSCP       OPTIONAL,
            pathloss                           Pathloss               OPTIONAL,
            timeslotISCP-List                  TimeslotISCP-List       OPTIONAL
        }
    }
}
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **899** | ⌘ | ev | **-** | ⌘ | Current version: | **4.0.0** | ⌘ |

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

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

Title:	⌘	Corrections on inconsistencies between tabular and ASN.1
Source:	⌘	TSG-RAN WG2
Work item code: ⌘	TEI	*Date:* ⌘ 2001-05-30

Category:	⌘ **A**	*Release:* ⌘	REL-4

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

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

Reason for change: ⌘	A number of inconsistencies between the tabular format and the ASN.1 code needed to be corrected

Summary of change: ⌘	o HANDOVER TO UTRAN COMMAND
FDD/TDD: Readability of tabular format was improved with respect to FDD/TDD CHOICES and elements were put to the correct positions

• Cell selection and re-selection info for SIB3/4
FDD/TDD: Corrects cell selection/reselection behaviour of UEs with respect to requirements on measurements on another RAT.
Presence values for Ssearch,RAT, Slimit,SearchRAT were erroneously MP instead of OP in ASN.1. Absence of Ssearch,RAT indicates that UEs are not required to perform measurements on the RAT in case the IE is missing. The CR proposes that the highest value for the IE is used to achieve the same functionality.

• PUSCH CAPACITY REQUEST
TDD: Shared channel operation
Condition on requirements for inclusion of IE "Protocol error information" are clarified (conditional IE). Name of IE "trafficVolume" aligned with ASN.1.

• RB information to reconfigure
FDD/TDD: Lossless relocation
Inconsistency between tabular and ASN.1 with respect to IE "PDCP SN info". This CR aligns ASN.1 with tabular. Duplicated IE "PDCP SN info" removed by replacing IE name by "dummy". This solution allows independent inclusion of IE "PDCP info" and "PDCP SN info". However, it results in some overhead due to the unused IE "dummy".

• Downlink DPCH info for each RL
TDD: DPCH configuration
Range for UL CCTrCH TPC List aligned to ASN.1. Change only relevant for |

TDD.

- PDSCH info
  TDD: Shared channel configuration
  Tabular erroneously shows a list for PDSCH timeslots and codes. However, only one instance is needed (correct in ASN.1).

- TDD open loop power control
  TDD open loop power control
  Presence of three IEs was erroneously OP instead of MP in tabular. This was corrected.

- UL-TransportChannelType
  TDD: Shared channel configuration
  Transport channel identity was missing for USCH. This was corrected.

- UL-CommonTransChInfo
  TDD: Common Transport channel configuration
  One instance of duplicated element ul-TFCS removed.

- PRACH-RACH-Info
  TDD: Common Transport channel configuration
  Element prach-Midamble was erroneously OPTIONAL in ASN.1.

- CellMeasuredResults
  TDD: Measurement reporting
  Missing element pathloss added.

Consequences if not approved:	⌘	Inconsistencies between tabular and ASN.1 leading to ambiguities

Clauses affected:	⌘	10.2.12, 10.2.26, 10.3.2.3, 10.3.4.18, 10.3.6.21, 10.3.6.44, 10.3.6.79, 11		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

How to create CRs using this form:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://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.

10.2.12 HANDOVER TO UTRAN COMMAND

This message is sent to the UE via other system to make a handover to UTRAN.

RLC-SAP: N/A (Sent through a different RAT)

Logical channel: N/A (Sent through a different RAT)

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
New U-RNTI	MP		U-RNTI Short 10.3.3.48	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"
Ciphering algorithm	OP		Ciphering algorithm 10.3.3.4	
CHOICE specification mode	MP			
>Complete specification				
UE information elements				
RB information elements				
>>Signalling RB information to setup list	MP	1 to <maxSRBsetup>		For each signalling radio bearer established
>>>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24	
>>RAB information to setup list	OP	1 to <maxRABsetup>		For each RAB established
>>>RAB information for setup	MP		RAB information for setup 10.3.4.10	
Uplink transport channels				
>>UL Transport channel information common for all transport channels	MP		UL Transport channel information common for all transport channels 10.3.5.24	
>>Added or Reconfigured TrCH information	MP	1 to <maxTrCH >		
>>>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2	
Downlink transport channels				
>>DL Transport channel information common for all transport channels	MP		DL Transport channel information common for all transport channels 10.3.5.6	
>>Added or Reconfigured TrCH information	MP	1 to <maxTrCH >		
>>>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1	
Uplink radio resources				
>>Uplink DPCH info	MP		Uplink DPCH info 10.3.6.88	
>>CHOICE *mode*	MP			
>>>FDD				

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>CPCH SET Info	OP		CPCH SET Info 10.3.6.13	
Downlink radio resources				
>>>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30	
>>>TDD				(no data)
>>Downlink information common for all radio links	MP		Downlink information common for all radio links 10.3.6.24	
>>Downlink information per radio link	MP	1 to <maxRL>		
>>>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27	
>Preconfiguration				
>>CHOICE Preconfiguration mode	MP			
>>>Predefined configuration	MP		Predefined configuration identity 10.3.4.5	
>>>Default configuration				
>>>>Default configuration mode	MP		Enumerated (FDD, TDD)	Indicates whether the FDD or TDD version of the default configuration shall be used
>>>>Default configuration identity	MP		Default configuration identity 10.3.4.0	
>>RAB info	OP		RAB info Post 10.3.4.9	One RAB is established
>>Uplink DPCH info	MP		Uplink DPCH info Post 10.3.6.89	
Downlink radio resources				
>>CHOICE _mode_				
>>>FDD				
>>>>Downlink information common for all radio links			Downlink information common for all radio links Post 10.3.6.25	
>>>TDD				(no data)
>>Downlink information per radio link	MP	1 to <maxRL>		Send downlink information for each radio link to be set-up. In TDD MaxRL is 1.
>>>Downlink information for each radio link	MP		Downlink information for each radio link Post 10.3.6.28	
>>CHOICE mode	MP			
>>>FDD				(no data)
>>>TDD				

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>Primary CCPCH Tx Power	MP		Primary CCPCH Tx Power 10.3.6.59	
Frequency info	MP		Frequency info 10.3.6.36	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	
CHOICE mode	MP			
>FDD				(no data)
>TDD				
>>Primary CCPCH Tx Power	MP		Primary CCPCH Tx Power 10.3.6.59	

10.2.26 PUSCH CAPACITY REQUEST

NOTE: Only for TDD.

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

Direction: UE → UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
C-RNTI	OP		C-RNTI 10.3.3.8	
RRC transaction identifier	CV-*ProtErr*		RRC transaction identifier 10.3.3.36	
Traffic Volume	OP		Traffic Volume, measured results list 10.3.7.67	
Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot number 10.3.6.84	
>Timeslot ISCP	MP		Timeslot ISCP info 10.3.7.65	
Primary CCPCH RSCP	OP		Primary CCPCH RSCP info 10.3.7.54	
CHOICE Allocation confirmation	OP			
>PDSCH Confirmation	MP		Integer(1..Hi PDSCHIdent ities)	
>PUSCH Confirmation	MP		Integer(1..Hi PUSCHIdent ities)	
Protocol error indicator	MD		Protocol error indicator 10.3.3.27	Default value is FALSE
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.12	

Condition	Explanation
ProtErr	This IE is mandatory lif the IE "Protocol error indicator" has the value "TRUE". Otherwise it is not needed.

10.3.2.3   Cell selection and re-selection info for SIB3/4

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Mapping Info	MD		Mapping info 10.3.2.5	Contains mapping function for quality measurements. Default is an implicit mapping: $Q_{map} = Q_{meas,LEV}$, [4].
Cell_selection_and_reselection_quality_measure	MP		Enumerated (CPICH Ec/N0, CPICH RSCP)	Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q for FDD cells.
CHOICE mode	MP			
>FDD				
>>$S_{intrasearch}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>$S_{intersearch}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>$S_{searchHCS}$	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxOtherRAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>$S_{search,RAT}$	MP		Integer (-~~105~~32..~~91~~20 by step of 2)	In case the value 20 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>$S_{HCS,RAT}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>>$S_{limit,SsearchRAT}$	OP		Integer (-32..20 by step of 2)	[4] [dB]
>TDD				
>>$S_{intrasearch}$	OP		Integer (-105..91 by step of 2)	[4] [dB]

>>S~intersearch~	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>S~searchHCS~	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>RAT List	OP	1 to <maxOther RAT>		
>>>RAT identifier	MP		Enumerated (GSM, cdma2000)	
>>>S~search,RAT~	~~O~~MP		Integer (-105..91 by step of 2)	In case the value 91 is received the UE shall consider this IE as if it was absent according to [4] [dB]
>>>S~HCS,RAT~	OP		Integer (-105..91 by step of 2)	[4] [dB]
>>>S~limit,ShearchRAT~	~~O~~MP		Integer (-105..91 by step of 2)	[4] [dB]
Qhyst1~s~	MP		Integer (0..40 by step of 2)	[4]
Qhyst2~s~	CV-*FDD-Quality-Measure*		Integer (0..40 by step of 2)	Default value is Qhist1~s~ [4]
Treselection~s~	MP		Integer (0..31)	[s]
HCS Serving cell Information	OP		HCS Serving cell information 10.3.7.12	
Maximum allowed UL TX power	MP		Maximum allowed UL TX power 10.3.6.39	[dBm] UE_TXPWR_MAX_RACH in [4].
CHOICE *mode*	MP			
>FDD				
>>Qqualmin	MP		Integer (-20..0)	Ec/N0, [dB]
>>Qrxlevmin	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]
>TDD				
>>Qrxlevmin	MP		Integer (-115..-25 by step of 2)	RSCP, [dBm]

Condition	Explanation
CV-FDD-Quality-Measure	Presence is not allowed if the IE "Cell_selection_and_reselection_quality_measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.

10.3.4.18 RB information to reconfigure

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RB identity	MP		RB identity 10.3.4.16	
PDCP info	OP		PDCP info 10.3.4.2	
PDCP SN info	~~C PDCP~~OP		PDCP SN info 10.3.4.3	PDCP sequence number info from the network. Present only in case of lossless SRNS relocation.
CHOICE *RLC info type*	OP			
>RLC info			RLC info 10.3.4.23	
>Same as RB			RB identity 10.3.4.16	Identity of RB with exactly the same values for IE "RLC info"
RB mapping info	OP		RB mapping info 10.3.4.21	
RB stop/continue	OP		Enumerated(stop, continue)	

~~Condition~~	~~Explanation~~
~~PDCP~~	~~This IE is optional only if "PDCP info" is present. Otherwise it is absent.~~

Condition	Explanation
TimInd	This IE is OPTIONAL if the IE "Timing Indication" is set to "Initialise". Otherwise it is absent.

10.3.6.21 Downlink DPCH info for each RL

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH usage for channel estimation	MP		Primary CPICH usage for channel estimation 10.3.6.62	
>>DPCH frame offset	MP		Integer(0..38144 by step of 256)	Offset (in number of chips) between the beginning of the P-CCPCH frame and the beginning of the DPCH frame This is called $\tau_{DPCH,n}$ in [26]
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.73	
>>DL channelisation code	MP	1 to <maxDPCH-DLchan>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.74	Default is the same scrambling code as for the Primary CPICH
>>>CHOICE *Spreading factor*	MP		Integer(4, 8, 16, 32, 64, 128, 256, 512)	Defined in CHOICE SF512-AndCodenumber with "code number" in ASN.1
>>>Code number	MP		Integer(0..Spreading factor - 1)	
>>>Scrambling code change	CH SF/2		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
>>TPC combination index	MP		TPC combination index 10.3.6.85	
>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.76	
>>Closed loop timing adjustment mode	CH TxDiversity Mode		Integer(1, 2)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Value in slots
>TDD				
>>DL CCTrCh List	MP	1..<maxCCTrCH>		
>>>TFCS ID	MD		Integer(1..8)	Identity of this CCTrCh. Default value is 1
>>>Time info	MP		Time Info 10.3.6.83	
>>>Downlink DPCH timeslots and codes	MD		Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.
>>>UL CCTrCH TPC List	MD	01..<maxCCTrCH>		UL CCTrCH identities for TPC commands associated with this DL CCTrCH. Default is previous list or all defined UL CCTrCHs
>>>>UL TPC TFCS Identity	MP		Transport Format Combination	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			Set Identity 10.3.5.21	

Condition	Explanation
SF/2	The information element is mandatory if the UE has an active compressed mode pattern sequence, which is using compressed mode method "SF/2". Otherwise the IE is not needed.
TxDiversity Mode	This IE is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2". Otherwise the IE is not needed.

10.3.6.44 PDSCH info

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCS ID	MD		Integer(1..8)	TFCS to be used. Default value is 1.
Common timeslot info	OP		Common timeslot info 10.3.6.10	
PDSCH timeslots and codes	OP	1 to <maxTS>	Downlink Timeslots and Codes 10.3.6.32	Default is to use the old timeslots and codes.

10.3.6.79 TDD open loop power control

This information element contains parameters for open loop power control setting for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Primary CCPCH Tx Power	OMP		Primary CCPCH Tx Power 10.3.6.59	For path loss calculation	
CHOICE TDD option	MP				REL-4
>3.84 Mcps TDD					REL-4
>>Alpha	OP		Alpha 10.3.6.5		
>>PRACH Constant Value	OMP		Constant Value 10.3.6.11	Operator controlled PRACH Margin	
>>DPCH Constant Value	OMP		Constant Value 10.3.6.11	Operator controlled UL DPCH Margin	
>>PUSCH Constant Value	OP		Constant Value 10.3.6.11	Operator controlled PUSCH Margin	
>>UE positioning related parameters	CV-*IPDLs*				REL-4
>>>IPDL-Alpha	MP		Alpha 10.3.6.5		REL-4
>>>Max power increase	MP		Integer (0..3)	In db	REL-4
>1.28 Mcps TDD				(no data)	REL-4

Condition	Explanation
IPDLs	This IE is present only if idle periods are applied

## 11.2	PDU definitions

```
--*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- **************************************************
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- **************************************************

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        c-RNTI                          C-RNTI                          OPTIONAL,
    -- Measurement IEs
        trafficVolumeMeasuredResultsList
                                        TrafficVolumeMeasuredResultsList    OPTIONAL,
        timeslotListWithISCP            TimeslotListWithISCP            OPTIONAL,
        primaryCCPCH-RSCP               PrimaryCCPCH-RSCP               OPTIONAL,
        allocationConfirmation          CHOICE {
            pdschConfirmation               PDSCH-Identity,
            puschConfirmation               PUSCH-Identity
        }                                                               OPTIONAL,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}


PDCP-InfoReconfig ::=               SEQUENCE {
    pdcp-Info                           PDCP-Info,
-- dummy is not used in this version of the protocol
    pdcp-SN-Infodummy                   INTEGER (0..65535)PDCP-SN-Info
}


UL-TransportChannelType ::=         CHOICE {
    dch                                 TransportChannelIdentity,
    rach                                NULL,
    cpch                                NULL,
    usch                                TransportChannelIdentityNULL
}

UL-CommonTransChInfo ::=            SEQUENCE {
    tfc-Subset                          TFC-Subset                      OPTIONAL,
    prach-TFCS                          TFCS                            OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ul-TFCS                             TFCS
        },
        tdd                                 SEQUENCE {

            individualUL-CCTrCH-InfoList        IndividualUL-CCTrCH-InfoList
                                                                        OPTIONAL,
            ul-TFCS                             TFCS
        }
    }                                                                   OPTIONAL
}


PRACH-RACH-Info ::=                 SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            availableSignatures                 AvailableSignatures,
            availableSF                         SF-PRACH,
            preambleScramblingCodeWordNumber    PreambleScramblingCodeWordNumber,
```

```
            puncturingLimit                     PuncturingLimit,
            availableSubChannelNumbers          AvailableSubChannelNumbers
        },
        tdd                                  SEQUENCE {
            timeslot                            TimeslotNumber,
            channelisationCodeList              TDD-PRACH-CCodeList,
            prach-Midamble                      PRACH-Midamble              OPTIONAL
        }
    }
}

CellMeasuredResults ::=               SEQUENCE {
    cellIdentity                         CellIdentity                    OPTIONAL,
    sfn-SFN-ObsTimeDifference            SFN-SFN-ObsTimeDifference       OPTIONAL,
    cellSynchronisationInfo              CellSynchronisationInfo     OPTIONAL,
    modeSpecificInfo                     CHOICE {
        fdd                                  SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info,
            cpich-Ec-N0                         CPICH-Ec-N0                 OPTIONAL,
            cpich-RSCP                          CPICH-RSCP                  OPTIONAL,
            pathloss                            Pathloss                    OPTIONAL
        },
        tdd                                  SEQUENCE {
            cellParametersID                    CellParametersID,
            proposedTGSN                        TGSN                        OPTIONAL,
            primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP           OPTIONAL,
            pathloss                            Pathloss                    OPTIONAL,
            timeslotISCP-List                   TimeslotISCP-List           OPTIONAL
        }
    }
}
```

3GPP

<table>
<tr><td colspan="8">CR-Form-v4</td></tr>
<tr><td colspan="8" align="center"><h1>CHANGE REQUEST</h1></td></tr>
</table>

| ⌘ | **25.331** CR **900** | ⌘ rev | **-** | ⌘ | Current version: | **3.6.0** | ⌘ |

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

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

Title: ⌘	Naming of message abstract types in ASN.1	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-05-25

Category: ⌘ **F**

Use <u>one</u> 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.

Release: ⌘ R99

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

Reason for change: ⌘	Messages are not named in all places consistently in ASN.1
Summary of change: ⌘	Names of message types have been aligned according to CR018 to 25.921.
Consequences if not approved: ⌘	Different naming rules in different messages can cause confusion.

Clauses affected: ⌘	11.1, 11.2

Other specs affected: ⌘	☐ Other core specifications ⌘
	☐ Test specifications
	☐ O&M Specifications

Other comments: ⌘	Rules for the naming of the elements are specified in CR018 to 25.921. The same rules are applied for Release-4 in CR902 to 25.331 (REL-4). Backwards compatibility: Changes have no affect in the implementation, thus they are backwards compatible.

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

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

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

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

11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    ActiveSetUpdate-r3,
    ActiveSetUpdateComplete,
    ActiveSetUpdateFailure,
    AssistanceDataDelivery-r3,
    CellChangeOrderFromUTRAN-r3,
    CellChangeOrderFromUTRANFailure,
    CellUpdate,
    CellUpdateConfirm-CCCH-r3,
    CellUpdateConfirm-r3,
    CounterCheck-r3,
    CounterCheckResponse,
    DownlinkDirectTransfer-r3,
    HandoverToUTRANComplete,
    InitialDirectTransfer,
    HandoverFromUTRANCommand-GSM-r3,
    HandoverFromUTRANCommand-CDMA2000-r3,
    HandoverFromUTRANFailure,
    MeasurementControl-r3,
    MeasurementControlFailure,
    MeasurementReport,
    PagingType1,
    PagingType2,
    PhysicalChannelReconfiguration-r3,
    PhysicalChannelReconfigurationComplete,
    PhysicalChannelReconfigurationFailure,
    PhysicalSharedChannelAllocation-r3,
    PUSCHCapacityRequest,
    RadioBearerReconfiguration-r3,
    RadioBearerReconfigurationComplete,
    RadioBearerReconfigurationFailure,
    RadioBearerRelease-r3,
    RadioBearerReleaseComplete,
    RadioBearerReleaseFailure,
    RadioBearerSetup-r3,
    RadioBearerSetupComplete,
    RadioBearerSetupFailure,
    RRCConnectionReject-r3,
    RRCConnectionRelease-r3,
    RRCConnectionRelease-CCCH-r3,
    RRCConnectionReleaseComplete,
    RRCConnectionRequest,
    RRCConnectionSetup-r3,
    RRCConnectionSetupComplete,
    RRCStatus,
    SecurityModeCommand-r3,
    SecurityModeComplete,
    SecurityModeFailure,
    SignallingConnectionRelease-r3,
    SignallingConnectionReleaseRequest,
    SystemInformation-BCH,
    SystemInformation-FACH,
    SystemInformationChangeIndication,
    TransportChannelReconfiguration-r3,
    TransportChannelReconfigurationComplete,
    TransportChannelReconfigurationFailure,
    TransportFormatCombinationControl,
    TransportFormatCombinationControlFailure,
```

```
    UECapabilityEnquiry-r3,
    UECapabilityInformation,
    UECapabilityInformationConfirm-r3,
    UplinkDirectTransfer,
    UplinkPhysicalChannelControl-r3,
    URAUpdate,
    URAUpdateConfirm-r3,
    URAUpdateConfirm-CCCH-r3,
    UTRANMobilityInformation,
    UTRANMobilityInformationConfirm,
    UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
    IntegrityCheckInfo
FROM InformationElements;

--*************************************************************
--
-- Downlink DCCH messages
--
--*************************************************************

DL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 DL-DCCH-MessageType
}

DL-DCCH-MessageType ::= CHOICE {
    activeSetUpdate                 ActiveSetUpdate-r3,
    assistanceDataDelivery          AssistanceDataDelivery-r3,
    cellChangeOrderFromUTRAN        CellChangeOrderFromUTRAN-r3,
    cellUpdateConfirm               CellUpdateConfirm-r3,
    counterCheck                    CounterCheck-r3,
    downlinkDirectTransfer          DownlinkDirectTransfer-r3,
    handoverFromUTRANCommand-GSM    HandoverFromUTRANCommand-GSM-r3,
    handoverFromUTRANCommand-CDMA2000   HandoverFromUTRANCommand-CDMA2000-r3,
    measurementControl              MeasurementControl-r3,
    pagingType2                     PagingType2,
    physicalChannelReconfiguration  PhysicalChannelReconfiguration-r3,
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation-r3,
    radioBearerReconfiguration      RadioBearerReconfiguration-r3,
    radioBearerRelease              RadioBearerRelease-r3,
    radioBearerSetup                RadioBearerSetup-r3,
    rrcConnectionRelease            RRCConnectionRelease-r3,
    securityModeCommand             SecurityModeCommand-r3,
    signallingConnectionRelease     SignallingConnectionRelease-r3,
    transportChannelReconfiguration TransportChannelReconfiguration-r3,
    transportFormatCombinationControl   TransportFormatCombinationControl,
    ueCapabilityEnquiry             UECapabilityEnquiry-r3,
    ueCapabilityInformationConfirm  UECapabilityInformationConfirm-r3,
    uplinkPhysicalChannelControl    UplinkPhysicalChannelControl-r3,
    uraUpdateConfirm                URAUpdateConfirm-r3,
    utranMobilityInformation        UTRANMobilityInformation,
    extension                       NULL
}

--*************************************************************
--
-- Uplink DCCH messages
--
--*************************************************************

UL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 UL-DCCH-MessageType
}

UL-DCCH-MessageType ::= CHOICE {
    activeSetUpdateComplete         ActiveSetUpdateComplete,
    activeSetUpdateFailure          ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure CellChangeOrderFromUTRANFailure,
    counterCheckResponse            CounterCheckResponse,
    handoverToUTRANComplete         HandoverToUTRANComplete,
    initialDirectTransfer           InitialDirectTransfer,
    handoverFromUTRANFailure        HandoverFromUTRANFailure,
    measurementControlFailure       MeasurementControlFailure,
    measurementReport               MeasurementReport,
```

```
    physicalChannelReconfigurationComplete
                                        PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure
                                        PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete  RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure   RadioBearerReconfigurationFailure,
    radioBearerReleaseComplete          RadioBearerReleaseComplete,
    radioBearerReleaseFailure           RadioBearerReleaseFailure,
    radioBearerSetupComplete            RadioBearerSetupComplete,
    radioBearerSetupFailure             RadioBearerSetupFailure,
    rrcConnectionReleaseComplete        RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete          RRCConnectionSetupComplete,
    rrcStatus                           RRCStatus,
    securityModeComplete                SecurityModeComplete,
    securityModeFailure                 SecurityModeFailure,
    signallingConnectionReleaseRequest  SignallingConnectionReleaseRequest,
    transportChannelReconfigurationComplete
                                        TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure
                                        TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure
                                        TransportFormatCombinationControlFailure,
    ueCapabilityInformation             UECapabilityInformation,
    uplinkDirectTransfer                UplinkDirectTransfer,
    utranMobilityInformationConfirm     UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure     UTRANMobilityInformationFailure,
    extension                           NULL
}

--***********************************************************
--
-- Downlink CCCH messages
--
--***********************************************************

DL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 DL-CCCH-MessageType
}

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm                   CellUpdateConfirm-CCCH-r3,
    rrcConnectionReject                 RRCConnectionReject-r3,
    rrcConnectionRelease                RRCConnectionRelease-CCCH-r3,
    rrcConnectionSetup                  RRCConnectionSetup-r3,
    uraUpdateConfirm                    URAUpdateConfirm-CCCH-r3,
    extension                           NULL
}

--***********************************************************
--
-- Uplink CCCH messages
--
--***********************************************************

UL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 UL-CCCH-MessageType
}

UL-CCCH-MessageType ::= CHOICE {
    cellUpdate                          CellUpdate,
    rrcConnectionRequest                RRCConnectionRequest,
    uraUpdate                           URAUpdate,
    extension                           NULL
}

--***********************************************************
--
-- PCCH messages
--
--***********************************************************

PCCH-Message ::= SEQUENCE {
    message             PCCH-MessageType
}

PCCH-MessageType ::= CHOICE {
```

```
    pagingType1                      PagingType1,
    extension                        NULL
}

--*************************************************************
--
-- Downlink SHCCH messages
--
--*************************************************************

DL-SHCCH-Message ::= SEQUENCE {
    message              DL-SHCCH-MessageType
}

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation    PhysicalSharedChannelAllocation r3,
    extension                        NULL
}

--*************************************************************
--
-- Uplink SHCCH messages
--
--*************************************************************

UL-SHCCH-Message ::= SEQUENCE {
    message              UL-SHCCH-MessageType
}

UL-SHCCH-MessageType ::= CHOICE {
    puschCapacityRequest              PUSCHCapacityRequest,
    extension                        NULL
}


--*************************************************************
--
-- BCCH messages sent on FACH
--
--*************************************************************

BCCH-FACH-Message ::= SEQUENCE {
    message           BCCH-FACH-MessageType
}

BCCH-FACH-MessageType ::= CHOICE {
    systemInformation                SystemInformation-FACH,
    systemInformationChangeIndication  SystemInformationChangeIndication,
    extension                        NULL
}

--*************************************************************
--
-- BCCH messages sent on BCH
--
--*************************************************************

BCCH-BCH-Message ::= SEQUENCE {
    message           SystemInformation-BCH
}

END
```

11.2   PDU definitions

```
--*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN
```

```
--***********************************************************
--
-- IE parameter types from other modules
--
--***********************************************************

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    Rb-timer-indicator,
    Re-EstablishmentTimer,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-ConnTimersAndConstants,
    URA-UpdateCause,
    UTRAN-DRX-CycleLengthCoefficient,
    WaitTime,
-- Radio Bearer IEs :
    DefaultConfigIdentity,
    DefaultConfigMode,
    DL-CounterSynchronisationInfo,
    PredefinedConfigIdentity,
    RAB-Info,
    RAB-Info-Post,
    RAB-InformationList,
    RAB-InformationReconfigList,
    RAB-InformationSetupList,
    RB-ActivationTimeInfo,
    RB-ActivationTimeInfoList,
    RB-COUNT-C-InformationList,
    RB-COUNT-C-MSB-InformationList,
    RB-IdentityList,
    RB-InformationAffectedList,
    RB-InformationReconfigList,
    RB-InformationReleaseList,
    RB-InformationSetupList,
    RB-WithPDCP-InfoList,
    SRB-InformationSetupList,
    SRB-InformationSetupList2,
    UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
    CPCH-SetID,
    DL-AddReconfTransChInfo2List,
    DL-AddReconfTransChInfoList,
```

```
      DL-CommonTransChInfo,
      DL-DeletedTransChInfoList,
      DRAC-StaticInformationList,
      TFC-Subset,
      TFCS-Identity,
      UL-AddReconfTransChInfoList,
      UL-CommonTransChInfo,
      UL-DeletedTransChInfoList,
-- Physical Channel IEs :
      AllocationPeriodInfo,
      Alpha,
      CCTrCH-PowerControlInfo,
      ConstantValue,
      CPCH-SetInfo,
      DL-CommonInformation,
      DL-CommonInformationPost,
      DL-InformationPerRL,
      DL-InformationPerRL-List,
      DL-InformationPerRL-ListPostFDD,
      DL-InformationPerRL-PostTDD,
      DL-DPCH-PowerControlInfo,
      DL-PDSCH-Information,
      DPCH-CompressedModeStatusInfo,
      FrequencyInfo,
      FrequencyInfoFDD,
      FrequencyInfoTDD,
      IndividualTS-InterferenceList,
      MaxAllowedUL-TX-Power,
      PDSCH-CapacityAllocationInfo,
      PDSCH-Identity,
      PDSCH-Info,
      PRACH-RACH-Info,
      PrimaryCCPCH-TX-Power,
      PUSCH-CapacityAllocationInfo,
      PUSCH-Identity,
      RL-AdditionInformationList,
      RL-RemovalInformationList,
      SpecialBurstScheduling,
      SSDT-Information,
      TFC-ControlDuration,
      TimeslotList,
      TX-DiversityMode,
      UL-ChannelRequirement,
      UL-ChannelRequirementWithCPCH-SetID,
      UL-DPCH-Info,
      UL-DPCH-InfoPostFDD,
      UL-DPCH-InfoPostTDD,
      UL-TimingAdvance,
      UL-TimingAdvanceControl,
-- Measurement IEs :
      AdditionalMeasurementID-List,
      Band-Indicator,
      EventResults,
      InterRAT-TargetCellDescription,
      MeasuredResults,
      MeasuredResultsList,
      MeasuredResultsOnRACH,
      MeasurementCommand,
      MeasurementIdentity,
      MeasurementReportingMode,
      PrimaryCCPCH-RSCP,
      TimeslotListWithISCP,
      TrafficVolumeMeasuredResultsList,
      UE-Positioning-GPS-AssistanceData,
      UE-Positioning-OTDOA-AssistanceData,
-- Other IEs :
      BCCH-ModificationInfo,
      CDMA2000-MessageList,
      GSM-MessageList,
      InterRAT-ChangeFailureCause,
      InterRAT-HO-Failure,
      InterRAT-UE-RadioAccessCapabilityList,
      InterRAT-UE-SecurityCapList,
      InterRATMessage,
      IntraDomainNasNodeSelector,
      ProtocolErrorInformation,
      ProtocolErrorMoreInformation,
      Rplmn-Information,
      SegCount,
```

```
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg,
    maxSystemCapability
FROM Constant-definitions;

-- **************************************************
--
-- ACTIVE SET UPDATE (FDD only)
--
-- **************************************************

ActiveSetUpdate-r3 ::= CHOICE {
    r3                              SEQUENCE {
        activeSetUpdate-r3              ActiveSetUpdate-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions            SEQUENCE {}
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        newU-RNTI                       U-RNTI                              OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       OPTIONAL,
    -- Physical channel IEs
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        rl-AdditionInformationList      RL-AdditionInformationList          OPTIONAL,
        rl-RemovalInformationList       RL-RemovalInformationList           OPTIONAL,
        tx-DiversityMode                TX-DiversityMode                    OPTIONAL,
        ssdt-Information                SSDT-Information                    OPTIONAL
}

-- **************************************************
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- **************************************************

ActiveSetUpdateComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- **************************************************

ActiveSetUpdateFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- Assistance Data Delivery
```

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

AssistanceDataDelivery-r3 ::= CHOICE {
    r3                               SEQUENCE {
        assistanceDataDelivery-r3      AssistanceDataDelivery-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Measurement Information Elements
    ue-positioning-GPS-AssistanceData          UE-Positioning-GPS-AssistanceData
    OPTIONAL,
    ue-positioning-OTDOA-AssistanceData        UE-Positioning-OTDOA-AssistanceData        OPTIONAL
}

-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- **************************************************

CellChangeOrderFromUTRAN-r3 ::= CHOICE {
    r3                               SEQUENCE {
        cellChangeOrderFromUTRAN-IEs      CellChangeOrderFromUTRAN-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    integrityProtectionModeInfo     IntegrityProtectionModeInfo        OPTIONAL,
    activationTime                  ActivationTime                     OPTIONAL,
    rab-InformationList             RAB-InformationList                OPTIONAL,
    interRAT-TargetCellDescription  InterRAT-TargetCellDescription
}

-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- **************************************************

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                               SEQUENCE {
        r3-IEscellChangeOrderFromUTRANFailure-r3
                                        CellChangeOrderFromUTRANFailure-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    integrityProtectionModeInfo     IntegrityProtectionModeInfo        OPTIONAL,
    interRAT-ChangeFailureCause     InterRAT-ChangeFailureCause
}

-- **************************************************
--
-- CELL UPDATE
--
-- **************************************************

CellUpdate ::= SEQUENCE {
    -- User equipment IEs
    u-RNTI                          U-RNTI,
    startList           STARTList,
    am-RLC-ErrorIndicationRb2or3        BOOLEAN,
    am-RLC-ErrorIndicationRb4orAbove    BOOLEAN,
    cellUpdateCause                 CellUpdateCause,
```

```
            failureCause                   FailureCauseWithProtErrTrId        OPTIONAL,
            -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
            rb-timer-indicator             Rb-timer-indicator,
        -- Measurement IEs
            measuredResultsOnRACH          MeasuredResultsOnRACH              OPTIONAL,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions       SEQUENCE {} OPTIONAL
    }

    -- **************************************************
    --
    -- CELL UPDATE CONFIRM
    --
    -- **************************************************

CellUpdateConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        cellUpdateConfirm-r3        CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

CellUpdateConfirm-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,
        rlc-Re-establishIndicatorRb2or3 BOOLEAN,
        rlc-Re-establishIndicatorRb4orAbove BOOLEAN,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
        rb-InformationReleaseList       RB-InformationReleaseList         OPTIONAL,
        rb-InformationReconfigList      RB-InformationReconfigList        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
        },
        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
}

    -- **************************************************
    --
    -- CELL UPDATE CONFIRM for CCCH
    --
    -- **************************************************
```

```
CellUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                                SEQUENCE {
        -- User equipment IEs
            u-RNTI                        U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.

            cellUpdateConfirm-r3                CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions            SEQUENCE {}
}

-- **************************************************
--
-- COUNTER CHECK
--
-- **************************************************

CounterCheck-r3 ::= CHOICE {
    r3                                SEQUENCE {
        counterCheck-r3                CounterCheck-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions            SEQUENCE {}
}

CounterCheck-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Radio bearer IEs
        rb-COUNT-C-MSB-InformationList  RB-COUNT-C-MSB-InformationList
}

-- **************************************************
--
-- COUNTER CHECK RESPONSE
--
-- **************************************************

CounterCheckResponse ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Radio bearer IEs
        rb-COUNT-C-InformationList      RB-COUNT-C-InformationList       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- DOWNLINK DIRECT TRANSFER
--
-- **************************************************

DownlinkDirectTransfer-r3 ::= CHOICE {
    r3                                SEQUENCE {
        downlinkDirectTransfer-r3     DownlinkDirectTransfer-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions            SEQUENCE {}
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        nas-Message                     NAS-Message
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMMAND
--
-- **************************************************

HandoverToUTRANCommand-r3 ::= CHOICE {
```

```
    r3                             SEQUENCE {
        handoverToUTRANCommand-r3      HandoverToUTRANCommand-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI                     U-RNTI-Short,
        activationTime                 ActivationTime                            OPTIONAL,
        cipheringAlgorithm             CipheringAlgorithm             OPTIONAL,
    -- Radio bearer IEs
        rab-Info                       RAB-Info-Post,
    -- Specification mode information
        specificationMode          CHOICE {
            complete                   SEQUENCE {
                srb-InformationSetupList      SRB-InformationSetupList,
                rab-InformationSetupList      RAB-InformationSetupList          OPTIONAL,
                ul-CommonTransChInfo          UL-CommonTransChInfo,
                ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo          DL-CommonTransChInfo,
                dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList,
                ul-DPCH-Info                  UL-DPCH-Info,
                modeSpecificInfo          CHOICE {
                    fdd                           SEQUENCE {
                        dl-PDSCH-Information           DL-PDSCH-Information OPTIONAL,
                        cpch-SetInfo                  CPCH-SetInfo        OPTIONAL
                    },
                    tdd                           NULL
                },
                dl-CommonInformation          DL-CommonInformation,
                dl-InformationPerRL-List      DL-InformationPerRL-List,
                frequencyInfo                 FrequencyInfo
            },
            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
                    }
                },
                rab-Info                      RAB-Info-Post       OPTIONAL,
                modeSpecificInfo              CHOICE {
                    fdd                           SEQUENCE {
                        ul-DPCH-Info                  UL-DPCH-InfoPostFDD,
                        dl-CommonInformationPost      DL-CommonInformationPost,
                        dl-InformationPerRL-List      DL-InformationPerRL-ListPostFDD,
                        frequencyInfo                 FrequencyInfoFDD
                    },
                    tdd                           SEQUENCE {
                        ul-DPCH-Info                  UL-DPCH-InfoPostTDD,
                        dl-CommonInformationPost      DL-CommonInformationPost,
                        dl-InformationPerRL           DL-InformationPerRL-PostTDD,
                        frequencyInfo                 FrequencyInfoTDD,
                        primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power
                    }

                }
            }
        },
    -- Physical channel IEs
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMPLETE
--
-- **************************************************

HandoverToUTRANComplete ::= SEQUENCE {
    --TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
```

```
    -- TABULAR: the IE below is conditional on history.
        startList                         STARTList                         OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- INITIAL DIRECT TRANSFER
--
-- **************************************************

InitialDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity                 CN-DomainIdentity,
        intraDomainNasNodeSelector        IntraDomainNasNodeSelector,
        nas-Message                       NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH             MeasuredResultsOnRACH             OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- HANDOVER FROM UTRAN COMMAND
--
-- **************************************************

HandoverFromUTRANCommand-GSM-r3 ::= CHOICE {
    r3                                SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
                                          HandoverFromUTRANCommand-GSM-r3-IEs,
        nonCriticalExtensions             SEQUENCE {} OPTIONAL
    },
    criticalExtensions                SEQUENCE {}
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier         RRC-TransactionIdentifier,
        activationTime                    ActivationTime                   OPTIONAL,
    -- Radio bearer IEs
        remainingRAB-Info                 RAB-Info                         OPTIONAL,
    -- Measurement IEs
        band-Indicator                    Band-Indicator,
    -- Other IEs
        message-and-extension             CHOICE {
            gsm-Message                       SEQUENCE {},
            -- In this case, what follows the basic production is a variable length bit string
            -- with no length field, containing the GSM message including GSM padding up to end
            -- of container, to be analysed according to GSM specifications
            with-extension                    SEQUENCE {
                messages                          GSM-MessageList
            }
        }
}

HandoverFromUTRANCommand-CDMA2000-r3 ::= CHOICE {
    r3                                SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
                                          HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        nonCriticalExtensions             SEQUENCE {} OPTIONAL
    },
    criticalExtensions                SEQUENCE {}
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier         RRC-TransactionIdentifier,
        activationTime                    ActivationTime                   OPTIONAL,
    -- Radio bearer IEs
        remainingRAB-Info                 RAB-Info                         OPTIONAL,
    -- Other IEs
        cdma2000-MessageList              CDMA2000-MessageList
}

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

```
--
-- HANDOVER FROM UTRAN FAILURE
--
-- ***************************************************

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    -- Other IEs
        interRAT-HO-Failure         InterRAT-HO-Failure             OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}     OPTIONAL
}

-- ***************************************************
--
-- MEASUREMENT CONTROL
--
-- ***************************************************

MeasurementControl-r3 ::= CHOICE {
    r3                              SEQUENCE {
        measurementControl-r3             MeasurementControl-r3-IEs,
        nonCriticalExtensions             SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        measurementCommand                MeasurementCommand,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementReportingMode          MeasurementReportingMode        OPTIONAL,
        additionalMeasurementList         AdditionalMeasurementID-List     OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo   DPCH-CompressedModeStatusInfo    OPTIONAL
}

-- ***************************************************
--
-- MEASUREMENT CONTROL FAILURE
--
-- ***************************************************

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier         RRC-TransactionIdentifier,
        failureCause                      FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}     OPTIONAL
}

-- ***************************************************
--
-- MEASUREMENT REPORT
--
-- ***************************************************

MeasurementReport ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        measuredResults                   MeasuredResults                 OPTIONAL,
        measuredResultsOnRACH             MeasuredResultsOnRACH           OPTIONAL,
        additionalMeasuredResults         MeasuredResultsList             OPTIONAL,
        eventResults                      EventResults                    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}     OPTIONAL
}

-- ***************************************************
--
-- PAGING TYPE 1
--
-- ***************************************************
```

```
PagingType1 ::= SEQUENCE {
    -- User equipment IEs
        pagingRecordList                PagingRecordList               OPTIONAL,
    -- Other IEs
        bcch-ModificationInfo           BCCH-ModificationInfo          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- PAGING TYPE 2
--
-- **************************************************

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        pagingCause                     PagingCause,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        pagingRecordTypeID              PagingRecordTypeID,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

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

PhysicalChannelReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        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,
        ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID    OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        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
}

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

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```
PhysicalChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo     IntegrityProtActivationInfo        OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance               UL-TimingAdvance                   OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime         ActivationTime                     OPTIONAL,
        rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList          OPTIONAL,
        ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- ***************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- ***************************************************

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier          OPTIONAL,
        failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- ***************************************************
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- ***************************************************

PhysicalSharedChannelAllocation-r3 ::= CHOICE {
    r3                             SEQUENCE {
        physicalSharedChannelAllocation-r3
                                       PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                         C-RNTI                             OPTIONAL,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance               UL-TimingAdvanceControl            OPTIONAL,
        pusch-CapacityAllocationInfo   PUSCH-CapacityAllocationInfo       OPTIONAL,
        pdsch-CapacityAllocationInfo   PDSCH-CapacityAllocationInfo       OPTIONAL,
        confirmRequest                 ENUMERATED {
                                           confirmPDSCH, confirmPUSCH }   OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        trafficVolumeReportRequest     INTEGER (0..255)                   OPTIONAL,
        iscpTimeslotList               TimeslotList                       OPTIONAL
}

-- ***************************************************
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- ***************************************************

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        c-RNTI                         C-RNTI                             OPTIONAL,
    -- Measurement IEs
        trafficVolumeMeasuredResultsList
                                       TrafficVolumeMeasuredResultsList,
        timeslotListWithISCP           TimeslotListWithISCP               OPTIONAL,
        primaryCCPCH-RSCP              PrimaryCCPCH-RSCP                   OPTIONAL,
        allocationConfirmation         CHOICE {
            pdschConfirmation              PDSCH-Identity,
            puschConfirmation              PUSCH-Identity
```

```
    }                                                                    OPTIONAL,
        protocolErrorIndicator        ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

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

RadioBearerReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerReconfiguration-r3  RadioBearerReconfiguration-r3-IEs,
        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,
        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,
        dl-InformationPerRL-List      DL-InformationPerRL-List
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- **************************************************

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo    IntegrityProtActivationInfo      OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance              UL-TimingAdvance                 OPTIONAL,
```

```
    -- Radio bearer IEs
      count-C-ActivationTime          ActivationTime                      OPTIONAL,
      rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
      ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
      nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION FAILURE
--
-- **************************************************

RadioBearerReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
      rrc-TransactionIdentifier       RRC-TransactionIdentifier,
      failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
      potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non- release99 information
      nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

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

RadioBearerRelease-r3 ::= CHOICE {
    r3                              SEQUENCE {
      radioBearerRelease-r3          RadioBearerRelease-r3-IEs,
      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 {
```

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```
            dl-PDSCH-Information             DL-PDSCH-Information        OPTIONAL
        },
        tdd                        NULL
    },
    dl-CommonInformation             DL-CommonInformation         OPTIONAL,
    dl-InformationPerRL-List         DL-InformationPerRL-List      OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RELEASE COMPLETE
--
-- **************************************************

RadioBearerReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo      IntegrityProtActivationInfo       OPTIONAL,
    -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                UL-TimingAdvance                  OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime          ActivationTime                    OPTIONAL,
    rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList         OPTIONAL,
    ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo     OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions           SEQUENCE {}      OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RELEASE FAILURE
--
-- **************************************************

RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
    potentiallySuccesfulBearerList  RB-IdentityList                   OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions           SEQUENCE {}      OPTIONAL
}

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

RadioBearerSetup-r3 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerSetup-r3             RadioBearerSetup-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} 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
}

-- **************************************************
--
-- RADIO BEARER SETUP COMPLETE
--
-- **************************************************

RadioBearerSetupComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                    OPTIONAL,
        start-Value             START-Value                                 OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER SETUP FAILURE
--
-- **************************************************

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REJECT
--
-- **************************************************

RRCConnectionReject-r3 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionReject-r3          RRCConnectionReject-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}
```

```
RRCConnectionReject-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity          InitialUE-Identity,
        rrc-TransactionIdentifier   RRC-TransactionIdentifier,
        rejectionCause              RejectionCause,
        waitTime                    WaitTime,
        redirectionInfo             RedirectionInfo              OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE
--
-- **************************************************

RRCConnectionRelease-r3 ::= CHOICE {
    r3                          SEQUENCE {
        rrcConnectionRelease-r3     RRCConnectionRelease-r3-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
    },
    criticalExtensions          SEQUENCE {}
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier   RRC-TransactionIdentifier,
        n-308                       N-308                               OPTIONAL,
        -- The IE above is conditional on the UE state.
        releaseCause                ReleaseCause,
        rplmn-information           Rplmn-Information              OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE for CCCH
--
-- **************************************************

RRCConnectionRelease-CCCH-r3 ::= CHOICE {
    r3                          SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions          SEQUENCE {}
}

RRCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                      U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        rrcConnectionRelease        RRCConnectionRelease-r3-IEs
}

-- **************************************************
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- **************************************************

RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier   RRC-TransactionIdentifier,
        errorIndication             FailureCauseWithProtErr              OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions       SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REQUEST
--
-- **************************************************

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity          InitialUE-Identity,
```

```
            establishmentCause              EstablishmentCause,
            protocolErrorIndicator          ProtocolErrorIndicator,
            -- The IE above is MD, but for compactness reasons no default value
            -- has been assigned to it.
        -- Measurement IEs
            measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions        SEQUENCE {}    OPTIONAL
    }

    -- **************************************************
    --
    -- RRC CONNECTION SETUP
    --
    -- **************************************************

RRCConnectionSetup-r3 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionSetup-r3           RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI,
        new-c-RNTI                      C-RNTI                              OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient,
        capabilityUpdateRequirement     CapabilityUpdateRequirement         OPTIONAL,
        -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
        -- be used.
    -- Radio bearer IEs
        srb-InformationSetupList        SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo                OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement               OPTIONAL,
        dl-CommonInformation            DL-CommonInformation                OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List            OPTIONAL
}

    -- **************************************************
    --
    -- RRC CONNECTION SETUP COMPLETE
    --
    -- **************************************************

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        startList                       STARTList,
        ue-RadioAccessCapability        UE-RadioAccessCapability            OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions        SEQUENCE {}    OPTIONAL
}

    -- **************************************************
    --
    -- RRC STATUS
    --
    -- **************************************************

RRCStatus ::= SEQUENCE {
    -- Other IEs
```

```
        protocolErrorInformation        ProtocolErrorMoreInformation,
    -- TABULAR:  Identification of received message is nested in
    -- ProtocolErrorMoreInformation
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

SecurityModeCommand-r3 ::= CHOICE {
    r3                              SEQUENCE {
        securityModeCommand-r3          SecurityModeCommand-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

-- **************************************************
--
-- SECURITY MODE COMMAND
--
-- **************************************************

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        securityCapability              SecurityCapability,
        cipheringModeInfo               CipheringModeInfo                 OPTIONAL,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo       OPTIONAL,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
    -- Other IEs
        ue-SystemSpecificSecurityCap    InterRAT-UE-SecurityCapList       OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE COMPLETE
--
-- **************************************************

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.

    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo       OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList         OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE FAILURE
--
-- **************************************************

SecurityModeFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE
--
-- **************************************************

SignallingConnectionRelease-r3 ::= CHOICE {
    r3                              SEQUENCE {
        signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
```

```
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE REQUEST
--
-- **************************************************

SignallingConnectionReleaseRequest ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- SYSTEM INFORMATION for BCH
--
-- **************************************************

SystemInformation-BCH ::= SEQUENCE {
    -- Other information elements
        sfn-Prime                       SFN-Prime,
        payload                         CHOICE {
            noSegment                       NULL,
            firstSegment                    FirstSegment,
            subsequentSegment               SubsequentSegment,
            lastSegmentShort                        LastSegmentShort,
            lastAndFirst                    SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                firstSegment                    FirstSegmentShort
            },
            lastAndComplete                 SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List
            },
            lastAndCompleteAndFirst         SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB-List                CompleteSIB-List,
            completeAndFirst                SEQUENCE {
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB                     CompleteSIB,
            lastSegment                     LastSegment
        }
}

-- **************************************************
--
-- SYSTEM INFORMATION for FACH
--
-- **************************************************

SystemInformation-FACH ::= SEQUENCE {
    -- Other information elements
        payload                         CHOICE {
            noSegment                       NULL,
            firstSegment                    FirstSegment,
            subsequentSegment               SubsequentSegment,
            lastSegmentShort                LastSegmentShort,
            lastAndFirst                    SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                firstSegment                    FirstSegmentShort
            },
            lastAndComplete                 SEQUENCE {
                lastSegmentShort                LastSegmentShort,
```

```
                    completeSIB-List               CompleteSIB-List
            },
            lastAndCompleteAndFirst        SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB-List               CompleteSIB-List,
            completeAndFirst               SEQUENCE {
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB                    CompleteSIB,
            lastSegment                    LastSegment
        }
}

-- **************************************************
--
-- First segment
--
-- **************************************************

FirstSegment ::=                 SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        seg-Count                       SegCount,
        sib-Data-fixed                  SIB-Data-fixed
}

-- **************************************************
--
-- First segment (short)
--
-- **************************************************

FirstSegmentShort ::=            SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        seg-Count                       SegCount,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- Subsequent segment
--
-- **************************************************

SubsequentSegment ::=            SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-fixed                  SIB-Data-fixed
}

-- **************************************************
--
-- Last segment
--
-- **************************************************

LastSegment ::=                  SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-fixed                  SIB-Data-fixed
    -- In case the SIB data is less than 222 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

LastSegmentShort ::=                     SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-variable               SIB-Data-variable
}
```

```
-- **************************************************
--
-- Complete SIB
--
-- **************************************************

CompleteSIB-List ::=                 SEQUENCE (SIZE (1..maxSIBperMsg)) OF
                                        CompleteSIBshort

CompleteSIB ::=                       SEQUENCE {
    -- Other information elements
        sib-Type                      SIB-Type,
        sib-Data-fixed                BIT STRING (SIZE (226))
    -- In case the SIB data is less than 226 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

CompleteSIBshort ::=                  SEQUENCE {
    -- Other information elements
        sib-Type                      SIB-Type,
        sib-Data-variable             SIB-Data-variable
}

-- **************************************************
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- **************************************************

SystemInformationChangeIndication ::=   SEQUENCE {
    -- Other IEs
        bcch-ModificationInfo             BCCH-ModificationInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}    OPTIONAL
}

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

TransportChannelReconfiguration-r3 ::= CHOICE {
    r3                                SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        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
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- **************************************************

TransportChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo       OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                  OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                    OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList         OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

TransportChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL
--
-- **************************************************

TransportFormatCombinationControl ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message when transmitting this
message
    -- on the transparent mode signalling DCCH.
        rrc-TransactionIdentifier       RRC-TransactionIdentifier         OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            tfcs-ID                             TFCS-Identity   OPTIONAL
        }
    },
    dpch-TFCS-InUplink                  TFC-Subset,
    activationTimeForTFCSubset          ActivationTime                    OPTIONAL,
    tfc-ControlDuration                 TFC-ControlDuration               OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

```
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- **************************************************

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY ENQUIRY
--
-- **************************************************

UECapabilityEnquiry-r3 ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityEnquiry-r3          UECapabilityEnquiry-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        capabilityUpdateRequirement     CapabilityUpdateRequirement
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION
--
-- **************************************************

UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier           OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability            OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList
    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- **************************************************

UECapabilityInformationConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityInformationConfirm-r3
                                        UECapabilityInformationConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier
}

-- **************************************************
--
-- UPLINK DIRECT TRANSFER
--
-- **************************************************

UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
```

```
        cn-DomainIdentity              CN-DomainIdentity,
        nas-Message                    NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH          MeasuredResultsOnRACH          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- **************************************************

UplinkPhysicalChannelControl-r3 ::= CHOICE {
    r3                             SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}


UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Physical channel IEs
        ccTrCH-PowerControlInfo        CCTrCH-PowerControlInfo        OPTIONAL,
        timingAdvance                  UL-TimingAdvanceControl        OPTIONAL,
        alpha                          Alpha                          OPTIONAL,
        specialBurstScheduling         SpecialBurstScheduling         OPTIONAL,
        prach-ConstantValue            ConstantValue                  OPTIONAL,
        pusch-ConstantValue            ConstantValue                  OPTIONAL
}

-- **************************************************
--
-- URA UPDATE
--
-- **************************************************

URAUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                         U-RNTI,
        ura-UpdateCause                URA-UpdateCause,
        protocolErrorIndicator         ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM
--
-- **************************************************

URAUpdateConfirm-r3 ::= CHOICE {
    r3                             SEQUENCE {
        uraUpdateConfirm-r3            URAUpdateConfirm-r3-IEs,
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}

URAUpdateConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
        cipheringModeInfo              CipheringModeInfo              OPTIONAL,
        new-U-RNTI                     U-RNTI                         OPTIONAL,
        new-C-RNTI                     C-RNTI                         OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- CN information elements
        cn-InformationInfo             CN-InformationInfo             OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                   OPTIONAL,
    -- Radio bearer IEs
```

```
            dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       OPTIONAL
    }

    -- **************************************************
    --
    -- URA UPDATE CONFIRM for CCCH
    --
    -- **************************************************

URAUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                              SEQUENCE {
        uraUpdateConfirm-CCCH-r3        URAUpdateConfirm-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

URAUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        uraUpdateConfirm                URAUpdateConfirm-r3-IEs
}

    -- **************************************************
    --
    -- UTRAN MOBILITY INFORMATION
    --
    -- **************************************************

UTRANMobilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        ue-ConnTimersAndConstants       UE-ConnTimersAndConstants           OPTIONAL,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

    -- **************************************************
    --
    -- UTRAN MOBILITY INFORMATION CONFIRM
    --
    -- **************************************************

UTRANMobilityInformationConfirm ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

    -- **************************************************
    --
    -- UTRAN MOBILITY INFORMATION FAILURE
    --
    -- **************************************************

UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
```

```
}
END
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **901** | ⌘ | ʳev | **-** | ⌘ | Current version: | **4.0.0** | ⌘ |

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

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

Title: ⌘	Naming of message abstract types in ASN.1	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-05-25

Category: ⌘	**A**	***Release:*** ⌘	REL-4

Use <u>one</u> 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 <u>TR 21.900</u>.

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

Reason for change: ⌘	Messages are not named in all places consistently in ASN.1
Summary of change: ⌘	Names of message types have been aligned according to CR018 to 25.921.
Consequences if not approved: ⌘	Different naming rules in different messages can cause confusion.

Clauses affected: ⌘	11.1, 11.2

Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications	

Other comments: ⌘	Rules for the naming of the elements are specified in CR018 to 25.921. The same rules are applied for Release-4 in CR902 to 25.331 (REL-4). Backwards compatibility: Changes have no affect in the implementation, thus they are backwards compatible. Corresponds to CR900 to 25.331 (release-99).

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

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

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

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

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    ActiveSetUpdate-r3,
    ActiveSetUpdate-r4,
    ActiveSetUpdateComplete,
    ActiveSetUpdateFailure,
    AssistanceDataDelivery-r3,
    CellChangeOrderFromUTRAN-r3,
    CellChangeOrderFromUTRANFailure,
    CellUpdate,
    CellUpdateConfirm-CCCH-r3,
    CellUpdateConfirm-CCCH-r4,
    CellUpdateConfirm-r3,
    CellUpdateConfirm-r4,
    CounterCheck-r3,
    CounterCheckResponse,
    DownlinkDirectTransfer-r3,
    HandoverToUTRANComplete,
    InitialDirectTransfer,
    HandoverFromUTRANCommand-GSM-r3,
    HandoverFromUTRANCommand-CDMA2000-r3,
    HandoverFromUTRANFailure,
    MeasurementControl-r3,
    MeasurementControl-r4,
    MeasurementControlFailure,
    MeasurementReport,
    MeasurementReport-r4,
    PagingType1,
    PagingType2,
    PhysicalChannelReconfiguration-r3,
    PhysicalChannelReconfiguration-r4,
    PhysicalChannelReconfigurationComplete,
    PhysicalChannelReconfigurationFailure,
    PhysicalSharedChannelAllocation-r3,
    PhysicalSharedChannelAllocation-r4,
    PUSCHCapacityRequest,
    RadioBearerReconfiguration-r3,
    RadioBearerReconfiguration-r4,
    RadioBearerReconfigurationComplete,
    RadioBearerReconfigurationFailure,
    RadioBearerRelease-r3,
    RadioBearerRelease-r4,
    RadioBearerReleaseComplete,
    RadioBearerReleaseFailure,
    RadioBearerSetup-r3,
    RadioBearerSetup-r4,
    RadioBearerSetupComplete,
    RadioBearerSetupFailure,
    RRCConnectionReject-r3,
    RRCConnectionRelease-r3,
    RRCConnectionRelease-r4,
    RRCConnectionRelease-CCCH-r3,
    RRCConnectionRelease-CCCH-r4,
    RRCConnectionReleaseComplete,
    RRCConnectionRequest,
    RRCConnectionSetup-r3,
    RRCConnectionSetup-r4,
    RRCConnectionSetupComplete,
    RRCStatus,
    SecurityModeCommand-r3,
    SecurityModeComplete,
    SecurityModeFailure,
    SignallingConnectionRelease-r3,
    SignallingConnectionReleaseRequest,
    SystemInformation-BCH,
    SystemInformation-FACH,
    SystemInformationChangeIndication,
    TransportChannelReconfiguration-r3,
    TransportChannelReconfiguration-r4,
    TransportChannelReconfigurationComplete,
```

```
        TransportChannelReconfigurationFailure,
        TransportFormatCombinationControl,
        TransportFormatCombinationControlFailure,
        UECapabilityEnquiry-r3,
        UECapabilityInformation,
        UECapabilityInformationConfirm-r3,
        UplinkDirectTransfer,
        UplinkPhysicalChannelControl-r3,
        UplinkPhysicalChannelControl-r4,
        URAUpdate,
        URAUpdateConfirm-r3,
        URAUpdateConfirm-CCCH-r3,
        UTRANMobilityInformation,
        UTRANMobilityInformationConfirm,
        UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
        IntegrityCheckInfo
FROM InformationElements;

--~*************************************************************
--
-- Downlink DCCH messages
--
--~*************************************************************

DL-DCCH-Message ::= SEQUENCE {
        integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
        message                 DL-DCCH-MessageType
}

DL-DCCH-MessageType ::= CHOICE {
        activeSetUpdate                     ActiveSetUpdate-r3,
        assistanceDataDelivery              AssistanceDataDelivery-r3,
        cellChangeOrderFromUTRAN            CellChangeOrderFromUTRAN-r3,
        cellUpdateConfirm                   CellUpdateConfirm-r3,
        counterCheck                        CounterCheck-r3,
        downlinkDirectTransfer              DownlinkDirectTransfer-r3,
        handoverFromUTRANCommand-GSM        HandoverFromUTRANCommand-GSM-r3,
        handoverFromUTRANCommand-CDMA2000   HandoverFromUTRANCommand-CDMA2000-r3,
        measurementControl                  MeasurementControl-r3,
        pagingType2                         PagingType2,
        physicalChannelReconfiguration      PhysicalChannelReconfiguration-r3,
        physicalSharedChannelAllocation     PhysicalSharedChannelAllocation-r3,
        radioBearerReconfiguration          RadioBearerReconfiguration-r3,
        radioBearerRelease                  RadioBearerRelease-r3,
        radioBearerSetup                    RadioBearerSetup-r3,
        rrcConnectionRelease                RRCConnectionRelease-r3,
        securityModeCommand                 SecurityModeCommand-r3,
        signallingConnectionRelease         SignallingConnectionRelease-r3,
        transportChannelReconfiguration     TransportChannelReconfiguration-r3,
        transportFormatCombinationControl   TransportFormatCombinationControl,
        ueCapabilityEnquiry                 UECapabilityEnquiry-r3,
        ueCapabilityInformationConfirm      UECapabilityInformationConfirm-r3,
        uplinkPhysicalChannelControl        UplinkPhysicalChannelControl-r3,
        uraUpdateConfirm                    URAUpdateConfirm-r3,
        utranMobilityInformation            UTRANMobilityInformation,
        extension                           NULL
}

DL-DCCH-MessageType-r4 ::= CHOICE {
        activeSetUpdate                     ActiveSetUpdate-r4,
        assistanceDataDelivery              AssistanceDataDelivery-r3,
        cellChangeOrderFromUTRAN            CellChangeOrderFromUTRAN-r3,
        cellUpdateConfirm                   CellUpdateConfirm-r4,
        counterCheck                        CounterCheck-r3,
        downlinkDirectTransfer              DownlinkDirectTransfer-r3,
        handoverFromUTRANCommand-GSM        HandoverFromUTRANCommand-GSM-r3,
        handoverFromUTRANCommand-CDMA2000   HandoverFromUTRANCommand-CDMA2000-r3,
        measurementControl                  MeasurementControl-r4,
        pagingType2                         PagingType2,
        physicalChannelReconfiguration      PhysicalChannelReconfiguration-r4,
        physicalSharedChannelAllocation     PhysicalSharedChannelAllocation-r4,
        radioBearerReconfiguration          RadioBearerReconfiguration-r4,
        radioBearerRelease                  RadioBearerRelease-r4,
        radioBearerSetup                    RadioBearerSetup-r4,
        rrcConnectionRelease                RRCConnectionRelease-r4,
```

```
    securityModeCommand              SecurityModeCommand r3,
    signallingConnectionRelease      SignallingConnectionRelease r3,
    transportChannelReconfiguration  TransportChannelReconfiguration-r4,
    transportFormatCombinationControl TransportFormatCombinationControl,
    ueCapabilityEnquiry              UECapabilityEnquiry r3,
    ueCapabilityInformationConfirm   UECapabilityInformationConfirm r3,
    uplinkPhysicalChannelControl     UplinkPhysicalChannelControl r4,
    uraUpdateConfirm                 URAUpdateConfirm-r3,
    utranMobilityInformation         UTRANMobilityInformation,
    extension                        NULL
}

--*********************************************************
--
-- Uplink DCCH messages
--
--*********************************************************

UL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 UL-DCCH-MessageType
}

UL-DCCH-MessageType ::= CHOICE {
    activeSetUpdateComplete           ActiveSetUpdateComplete,
    activeSetUpdateFailure            ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure   CellChangeOrderFromUTRANFailure,
    counterCheckResponse              CounterCheckResponse,
    handoverToUTRANComplete           HandoverToUTRANComplete,
    initialDirectTransfer             InitialDirectTransfer,
    handoverFromUTRANFailure          HandoverFromUTRANFailure,
    measurementControlFailure         MeasurementControlFailure,
    measurementReport                 MeasurementReport,
    physicalChannelReconfigurationComplete
                                      PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure
                                      PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete  RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure RadioBearerReconfigurationFailure,
    radioBearerReleaseComplete        RadioBearerReleaseComplete,
    radioBearerReleaseFailure         RadioBearerReleaseFailure,
    radioBearerSetupComplete          RadioBearerSetupComplete,
    radioBearerSetupFailure           RadioBearerSetupFailure,
    rrcConnectionReleaseComplete      RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete        RRCConnectionSetupComplete,
    rrcStatus                         RRCStatus,
    securityModeComplete              SecurityModeComplete,
    securityModeFailure               SecurityModeFailure,
    signallingConnectionReleaseRequest  SignallingConnectionReleaseRequest,
    transportChannelReconfigurationComplete
                                      TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure
                                      TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure
                                      TransportFormatCombinationControlFailure,
    ueCapabilityInformation           UECapabilityInformation,
    uplinkDirectTransfer              UplinkDirectTransfer,
    utranMobilityInformationConfirm   UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure   UTRANMobilityInformationFailure,
    extension                         NULL
}

UL-DCCH-MessageType r4 ::= CHOICE {
    activeSetUpdateComplete           ActiveSetUpdateComplete,
    activeSetUpdateFailure            ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure           CellChangeOrderFromUTRANFailure,
    counterCheckResponse              CounterCheckResponse,
    handoverToUTRANComplete           HandoverToUTRANComplete,
    initialDirectTransfer             InitialDirectTransfer,
    handoverFromUTRANFailure          HandoverFromUTRANFailure,
    measurementControlFailure         MeasurementControlFailure,
    measurementReport                 MeasurementReport r4,
    physicalChannelReconfigurationComplete
                                      PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure
                                      PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete  RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure RadioBearerReconfigurationFailure,
```

```
    radioBearerReleaseComplete        RadioBearerReleaseComplete,
    radioBearerReleaseFailure         RadioBearerReleaseFailure,
    radioBearerSetupComplete          RadioBearerSetupComplete,
    radioBearerSetupFailure           RadioBearerSetupFailure,
    rrcConnectionReleaseComplete      RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete        RRCConnectionSetupComplete,
    rrcStatus                         RRCStatus,
    securityModeComplete              SecurityModeComplete,
    securityModeFailure               SecurityModeFailure,
    signallingConnectionReleaseRequest  SignallingConnectionReleaseRequest,
    transportChannelReconfigurationComplete
                                      TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure
                                      TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure
                                      TransportFormatCombinationControlFailure,
    ueCapabilityInformation           UECapabilityInformation,
    uplinkDirectTransfer              UplinkDirectTransfer,
    utranMobilityInformationConfirm   UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure   UTRANMobilityInformationFailure,
    extension                         NULL
}

--***************************************************************
--
-- Downlink CCCH messages
--
--***************************************************************

DL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo     IntegrityCheckInfo      OPTIONAL,
    message                DL-CCCH-MessageType
}

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm             CellUpdateConfirm-CCCH-r3,
    rrcConnectionReject           RRCConnectionReject-r3,
    rrcConnectionRelease          RRCConnectionRelease-CCCH-r3,
    rrcConnectionSetup            RRCConnectionSetup-r3,
    uraUpdateConfirm              URAUpdateConfirm-CCCH-r3,
    extension                     NULL
}

DL-CCCH-MessageType-r4 ::= CHOICE {
    cellUpdateConfirm             CellUpdateConfirm-CCCH-r4,
    rrcConnectionReject           RRCConnectionReject-r3,
    rrcConnectionRelease          RRCConnectionRelease-CCCH-r4,
    rrcConnectionSetup            RRCConnectionSetup-r4,
    uraUpdateConfirm              URAUpdateConfirm-CCCH-r3,
    extension                     NULL
}

--***************************************************************
--
-- Uplink CCCH messages
--
--***************************************************************

UL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo     IntegrityCheckInfo      OPTIONAL,
    message                UL-CCCH-MessageType
}

UL-CCCH-MessageType ::= CHOICE {
    cellUpdate                    CellUpdate,
    rrcConnectionRequest          RRCConnectionRequest,
    uraUpdate                     URAUpdate,
    extension                     NULL
}

--***************************************************************
--
-- PCCH messages
--
--***************************************************************

PCCH-Message ::= SEQUENCE {
    message          PCCH-MessageType
```

```
}

PCCH-MessageType ::= CHOICE {
    pagingType1                         PagingType1,
    extension                           NULL
}

--***************************************************************
--
-- Downlink SHCCH messages
--
--***************************************************************

DL-SHCCH-Message ::= SEQUENCE {
    message                 DL-SHCCH-MessageType
}

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation     PhysicalSharedChannelAllocation-r3,
    extension                           NULL
}

DL-SHCCH-MessageType-r4 ::= CHOICE {
    physicalSharedChannelAllocation     PhysicalSharedChannelAllocation-r4,
    extension                           NULL
}

--***************************************************************
--
-- Uplink SHCCH messages
--
--***************************************************************

UL-SHCCH-Message ::= SEQUENCE {
    message                 UL-SHCCH-MessageType
}

UL-SHCCH-MessageType ::= CHOICE {
    puschCapacityRequest                PUSCHCapacityRequest,
    extension                           NULL
}


--***************************************************************
--
-- BCCH messages sent on FACH
--
--***************************************************************

BCCH-FACH-Message ::= SEQUENCE {
    message             BCCH-FACH-MessageType
}

BCCH-FACH-MessageType ::= CHOICE {
    systemInformation                   SystemInformation-FACH,
    systemInformationChangeIndication   SystemInformationChangeIndication,
    extension                           NULL
}

--***************************************************************
--
-- BCCH messages sent on BCH
--
--***************************************************************

BCCH-BCH-Message ::= SEQUENCE {
    message             SystemInformation-BCH
}

END
```

11.2   PDU definitions

```
--***************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
```

```
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*************************************************************
--
-- IE parameter types from other modules
--
--*************************************************************

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4Ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    Rb-timer-indicator,
    Re-EstablishmentTimer,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-r4ext,
    UE-ConnTimersAndConstants,
    URA-UpdateCause,
    UTRAN-DRX-CycleLengthCoefficient,
    WaitTime,
-- Radio Bearer IEs :
    DefaultConfigIdentity,
    DefaultConfigMode,
    DL-CounterSynchronisationInfo,
    PredefinedConfigIdentity,
    RAB-Info,
    RAB-Info-Post,
    RAB-InformationList,
    RAB-InformationReconfigList,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RB-ActivationTimeInfo,
    RB-ActivationTimeInfoList,
    RB-COUNT-C-InformationList,
    RB-COUNT-C-MSB-InformationList,
    RB-IdentityList,
```

```
        RB-InformationAffectedList,
        RB-InformationReconfigList,
        RB-InformationReconfigList-r4,
        RB-InformationReleaseList,
        RB-InformationSetupList,
        RB-InformationSetupList-r4,
        RB-WithPDCP-InfoList,
        SRB-InformationSetupList,
        SRB-InformationSetupList2,
        UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
        CPCH-SetID,
        DL-AddReconfTransChInfo2List,
        DL-AddReconfTransChInfoList,
        DL-CommonTransChInfo,
        DL-DeletedTransChInfoList,
        DRAC-StaticInformationList,
        TFC-Subset,
        TFCS-Identity,
        UL-AddReconfTransChInfoList,
        UL-CommonTransChInfo,
        UL-DeletedTransChInfoList,
-- Physical Channel IEs :
        AllocationPeriodInfo,
        Alpha,
        CCTrCH-PowerControlInfo,
        CCTrCH-PowerControlInfo-r4,
        ConstantValue,
        CPCH-SetInfo,
        DL-CommonInformation,
        DL-CommonInformation-r4,
        DL-CommonInformationPost,
        DL-InformationPerRL,
        DL-InformationPerRL-List,
        DL-InformationPerRL-List-r4,
        DL-InformationPerRL-ListPostFDD,
        DL-InformationPerRL-PostTDD,
        DL-InformationPerRL-PostTDD-LCR,
        DL-DPCH-PowerControlInfo,
        DL-PDSCH-Information,
        DPCH-CompressedModeStatusInfo,
        FrequencyInfo,
        FrequencyInfoFDD,
        FrequencyInfoTDD,
        IndividualTS-InterferenceList,
        MaxAllowedUL-TX-Power,
        OpenLoopPowerControl-IPDL-TDD,
        PDSCH-CapacityAllocationInfo,
        PDSCH-CapacityAllocationInfo-r4,
        PDSCH-Identity,
        PDSCH-Info,
        PDSCH-Info-r4,
        PRACH-RACH-Info,
        PrimaryCCPCH-TX-Power,
        PUSCH-CapacityAllocationInfo,
        PUSCH-CapacityAllocationInfo-r4,
        PUSCH-Identity,
        RL-AdditionInformationList,
        RL-RemovalInformationList,
        SpecialBurstScheduling,
        SSDT-Information,
        TFC-ControlDuration,
        SSDT-UL,                          -- REL-4
        TimeslotList,
        TimeslotList-r4,
        TX-DiversityMode,
        UL-ChannelRequirement,
        UL-ChannelRequirement-r4,
        UL-ChannelRequirementWithCPCH-SetID,
        UL-ChannelRequirementWithCPCH-SetID-r4,
        UL-DPCH-Info,
        UL-DPCH-Info-r4,
        UL-DPCH-InfoPostFDD,
        UL-DPCH-InfoPostTDD,
        UL-DPCH-InfoPostTDD-LCR,
        UL-SynchronisationParameters,
        UL-TimingAdvance,
        UL-TimingAdvanceControl,
```

```
        UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    Band-Indicator,
    EventResults,
    InterFreqEventResults-LCR,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResultsList,
    MeasuredResultsList-LCR,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    TimeslotListWithISCP,
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData,
    UP-IPDL-Parameters-TDD,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-Failure,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-SecurityCapList,
    InterRATMessage,
    IntraDomainNasNodeSelector,
    ProtocolErrorInformation,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg,
    maxSystemCapability
FROM Constant-definitions;

-- **************************************************
--
-- ACTIVE SET UPDATE (FDD only)
--
-- **************************************************

ActiveSetUpdate r3 ::= CHOICE {
    r3                              SEQUENCE {
        activeSetUpdate-r3              ActiveSetUpdate-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}

ActiveSetUpdate-r4 ::= CHOICE {
    r3                              SEQUENCE {
        activeSetUpdate-r3              ActiveSetUpdate-r3-IEs,
        nonCriticalExtensions          SEQUENCE {
            activeSetUpdate-r4-ext         ActiveSetUpdate-r4-IEs,
            nonCriticalExtensions          SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        newU-RNTI                       U-RNTI                              OPTIONAL,
```

```
        -- Core network IEs
            cn-InformationInfo              CN-InformationInfo              OPTIONAL,
        -- Radio bearer IEs
            dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo   OPTIONAL,
        -- Physical channel IEs
            maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power           OPTIONAL,
            rl-AdditionInformationList      RL-AdditionInformationList      OPTIONAL,
            rl-RemovalInformationList       RL-RemovalInformationList       OPTIONAL,
            tx-DiversityMode                TX-DiversityMode                OPTIONAL,
            ssdt-Information                SSDT-Information                OPTIONAL
    }

    ActiveSetUpdate-r4-IEs ::= SEQUENCE {
        -- Physical channel IEs
        -- The following IE extends SSDT-Information. FDD only.
            ssdt-UL                         SSDT-UL                         OPTIONAL
    }


    -- **************************************************
    --
    -- ACTIVE SET UPDATE COMPLETE (FDD only)
    --
    -- **************************************************

    ActiveSetUpdateComplete ::= SEQUENCE {
        -- User equipment IEs
            rrc-TransactionIdentifier       RRC-TransactionIdentifier,
            ul-IntegProtActivationInfo      IntegrityProtActivationInfo     OPTIONAL,
        -- Radio bearer IEs
            rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList       OPTIONAL,
            ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo   OPTIONAL,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
    }


    -- **************************************************
    --
    -- ACTIVE SET UPDATE FAILURE (FDD only)
    --
    -- **************************************************

    ActiveSetUpdateFailure ::= SEQUENCE {
        -- User equipment IEs
            rrc-TransactionIdentifier       RRC-TransactionIdentifier,
            failureCause                    FailureCauseWithProtErr,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
    }


    -- **************************************************
    --
    -- Assistance Data Delivery
    --
    -- **************************************************

    AssistanceDataDelivery-r3 ::= CHOICE {
        r3                              SEQUENCE {
            assistanceDataDelivery-r3       AssistanceDataDelivery-r3-IEs,
            nonCriticalExtensions           SEQUENCE {
            -- In case of TDD, the following IE is included instead of the IE
            -- up-IPDL-Parameters in up-OTDOA-AssistanceData
            up-Ipdl-Parameters-TDD          UP-IPDL-Parameters-TDD          OPTIONAL,
            -- Extension mechanism for non- release4 information
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }   OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
    }

    AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
        -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        -- Measurement Information Elements
        ue-positioning-GPS-AssistanceData               UE-Positioning-GPS-AssistanceData
        OPTIONAL,
        ue-positioning-OTDOA-AssistanceData             UE-Positioning-OTDOA-AssistanceData       OPTIONAL
    }
```

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```
-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- **************************************************

CellChangeOrderFromUTRAN-r3 ::= CHOICE {
    r3                              SEQUENCE {
        cellChangeOrderFromUTRAN-IEs        CellChangeOrderFromUTRAN-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        rab-InformationList             RAB-InformationList                 OPTIONAL,
        interRAT-TargetCellDescription  InterRAT-TargetCellDescription
}

-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- **************************************************

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                              SEQUENCE {
        r3-IEscellChangeOrderFromUTRANFailure-r3
                                        CellChangeOrderFromUTRANFailure-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        interRAT-ChangeFailureCause     InterRAT-ChangeFailureCause
}

-- **************************************************
--
-- CELL UPDATE
--
-- **************************************************

CellUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        startList       STARTList,
        am-RLC-ErrorIndicationRb2or3    BOOLEAN,
        am-RLC-ErrorIndicationRb4orAbove    BOOLEAN,
        cellUpdateCause                 CellUpdateCause,
        failureCause                    FailureCauseWithProtErrTrId         OPTIONAL,
        -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
        rb-timer-indicator              Rb-timer-indicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- CELL UPDATE CONFIRM
--
-- **************************************************

CellUpdateConfirm r3 ::= CHOICE {
    r3                              SEQUENCE {
        cellUpdateConfirm r3            CellUpdateConfirm r3 IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
```

```
    },
    criticalExtensions          SEQUENCE {}
}

CellUpdateConfirm r4 ::= CHOICE {
    r3                              SEQUENCE {
        cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            cellUpdateConfirm-r4-ext        CellUpdateConfirm-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }        OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            cellUpdateConfirm-r4            CellUpdateConfirm-r4-IEs,
            nonCriticalExtensions           SEQUENCE {}    OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
    }
}
CellUpdateConfirm-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,
        rlc-Re-establishIndicatorRb2or3 BOOLEAN,
        rlc-Re-establishIndicatorRb4orAbove BOOLEAN,
 -- CN information elements
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        rb-InformationReleaseList       RB-InformationReleaseList           OPTIONAL,
        rb-InformationReconfigList      RB-InformationReconfigList          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
        },
        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
}

CellUpdateConfirm-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                             SSDT-UL                             OPTIONAL
}

CellUpdateConfirm-r4-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,
        rlc-ResetIndicatorC-Plane       BOOLEAN,
        rlc-ResetIndicatorU-Plane       BOOLEAN,
 -- CN information elements
        cn-InformationInfo              CN-InformationInfo                 OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
        rb-InformationReleaseList       RB-InformationReleaseList          OPTIONAL,
        rb-InformationReconfigList      RB-InformationReconfigList-r4        OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList         OPTIONAL,
        rb-WithPDCP-InfoList            RB-WithPDCP-InfoList               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
        },
        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-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
}

-- **************************************************
--
-- CELL UPDATE CONFIRM for CCCH
--
-- **************************************************

CellUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                              SEQUENCE {
        -- User equipment IEs
        u-RNTI                          U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.

        cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

CellUpdateConfirm-CCCH-r4 ::= CHOICE {
    r3                              SEQUENCE {
        -- User equipment IEs
        u-RNTI                          U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.
        cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            cellUpdateConfirm-r4-ext        CellUpdateConfirm-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
```

```
            -- User equipment IEs
               u-RNTI                     U-RNTI,
            -- The rest of the message is identical to the one sent on DCCH.
            cellUpdateConfirm-r4        CellUpdateConfirm-r4-IEs,
            nonCriticalExtensions       SEQUENCE {}    OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
    }
}

-- **************************************************
--
-- COUNTER CHECK
--
-- **************************************************

CounterCheck-r3 ::= CHOICE {
    r3                             SEQUENCE {
        counterCheck-r3                CounterCheck-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}

CounterCheck-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Radio bearer IEs
        rb-COUNT-C-MSB-InformationList  RB-COUNT-C-MSB-InformationList
}

-- **************************************************
--
-- COUNTER CHECK RESPONSE
--
-- **************************************************

CounterCheckResponse ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Radio bearer IEs
        rb-COUNT-C-InformationList      RB-COUNT-C-InformationList          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- DOWNLINK DIRECT TRANSFER
--
-- **************************************************

DownlinkDirectTransfer-r3 ::= CHOICE {
    r3                             SEQUENCE {
        downlinkDirectTransfer-r3      DownlinkDirectTransfer-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Core network IEs
        cn-DomainIdentity              CN-DomainIdentity,
        nas-Message                    NAS-Message
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMMAND
--
-- **************************************************


HandoverToUTRANCommand-r3 ::= CHOICE {
    r3                             SEQUENCE {
        handoverToUTRANCommand-r3      HandoverToUTRANCommand-r3-IEs,
```

```
            nonCriticalExtensions          SEQUENCE {} OPTIONAL
        },
    criticalExtensions              SEQUENCE {}
}

HandoverToUTRANCommand-r4 ::= CHOICE {
    r3                                  SEQUENCE {
        handoverToUTRANCommand-r3       HandoverToUTRANCommand-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            handoverToUTRANCommand-r4-ext   HandoverToUTRANCommand-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions                  CHOICE {
        r4                              SEQUENCE {
            handoverToUTRANCommand-r4       HandoverToUTRANCommand-r4-IEs,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
    }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI                      U-RNTI-Short,
        activationTime                  ActivationTime                          OPTIONAL,
        cipheringAlgorithm              CipheringAlgorithm                      OPTIONAL,
    -- Radio bearer IEs
        rab-Info                        RAB-Info-Post,
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
                srb-InformationSetupList        SRB-InformationSetupList,
                rab-InformationSetupList        RAB-InformationSetupList            OPTIONAL,
                ul-CommonTransChInfo            UL-CommonTransChInfo,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo            DL-CommonTransChInfo,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
                ul-DPCH-Info                    UL-DPCH-Info,
                modeSpecificInfo                CHOICE {
                    fdd                             SEQUENCE {
                        dl-PDSCH-Information             DL-PDSCH-Information OPTIONAL,
                        cpch-SetInfo                    CPCH-SetInfo        OPTIONAL
                    },
                    tdd                             NULL
                },
                dl-CommonInformation            DL-CommonInformation,
                dl-InformationPerRL-List        DL-InformationPerRL-List,
                frequencyInfo                   FrequencyInfo
            },
            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
                    }
                },
                rab-Info                        RAB-Info-Post       OPTIONAL,
                modeSpecificInfo                CHOICE {
                    fdd                             SEQUENCE {
                        ul-DPCH-Info                    UL-DPCH-InfoPostFDD,
                        dl-CommonInformationPost        DL-CommonInformationPost,
                        dl-InformationPerRL-List        DL-InformationPerRL-ListPostFDD,
                        frequencyInfo                   FrequencyInfoFDD
                    },
                    tdd                             SEQUENCE {
                        ul-DPCH-Info                    UL-DPCH-InfoPostTDD,
                        dl-CommonInformationPost        DL-CommonInformationPost,
                        dl-InformationPerRL             DL-InformationPerRL-PostTDD,
                        frequencyInfo                   FrequencyInfoTDD,
                        primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power
                    }

                }
```

```
        }
    },
-- Physical channel IEs
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                        SSDT-UL                        OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    new-U-RNTI                     U-RNTI-Short,
    activationTime                 ActivationTime                 OPTIONAL,
    cipheringAlgorithm             CipheringAlgorithm             OPTIONAL,
    -- Radio bearer IEs
    rab-Info                       RAB-Info-Post,
    -- Specification mode information
    specificationMode              CHOICE {
        complete                       SEQUENCE {
            srb-InformationSetupList       SRB-InformationSetupList,
            rab-InformationSetupList       RAB-InformationSetupList-r4        OPTIONAL,
            ul-CommonTransChInfo           UL-CommonTransChInfo,
            ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList,
            dl-CommonTransChInfo           DL-CommonTransChInfo,
            dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList,
            ul-DPCH-Info                   UL-DPCH-Info-r4,
            modeSpecificInfo               CHOICE {
                fdd                            SEQUENCE {
                    dl-PDSCH-Information            DL-PDSCH-Information OPTIONAL,
                    cpch-SetInfo                   CPCH-SetInfo        OPTIONAL
                },
                tdd                            NULL
            },
            dl-CommonInformation           DL-CommonInformation-r4,
            dl-InformationPerRL-List       DL-InformationPerRL-List-r4,
            frequencyInfo                  FrequencyInfo
        },
        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.
            predefinedConfigIdentity       PredefinedConfigIdentity,
            rab-Info                       RAB-Info-Post       OPTIONAL,
            modeSpecificInfo               CHOICE {
                fdd                            SEQUENCE {
                    ul-DPCH-Info                   UL-DPCH-InfoPostFDD,
                    dl-CommonInformationPost        DL-CommonInformationPost,
                    dl-InformationPerRL-List       DL-InformationPerRL-ListPostFDD,
                    frequencyInfo                  FrequencyInfoFDD
                },
                tdd                            CHOICE {
                    tdd384                         SEQUENCE {
                        ul-DPCH-Info                   UL-DPCH-InfoPostTDD,
                        dl-InformationPerRL            DL-InformationPerRL-PostTDD,
                        frequencyInfo                  FrequencyInfoTDD,
                        primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power
                    },
                    tdd128                         SEQUENCE {
                        ul-DPCH-Info                   UL-DPCH-InfoPostTDD-LCR,
                        dl-InformationPerRL            DL-InformationPerRL-PostTDD-LCR,
                        frequencyInfo                  FrequencyInfoTDD,
                        primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power
                    }
                }
            }
        }
    },
    -- Physical channel IEs
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMPLETE
```

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

HandoverToUTRANComplete ::= SEQUENCE {
    --TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    -- TABULAR: the IE below is conditional on history.
        startList                       STARTList                   OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- INITIAL DIRECT TRANSFER
--
-- **************************************************

InitialDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        intraDomainNasNodeSelector      IntraDomainNasNodeSelector,
        nas-Message                     NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH           OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- HANDOVER FROM UTRAN COMMAND
--
-- **************************************************

HandoverFromUTRANCommand-GSM-r3 ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
                                        HandoverFromUTRANCommand-GSM-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                  OPTIONAL,
    -- Radio bearer IEs
        remainingRAB-Info               RAB-Info                        OPTIONAL,
    -- Measurement IEs
        band-Indicator                  Band-Indicator,
    -- Other IEs
        message-and-extension           CHOICE {
            gsm-Message                     SEQUENCE {},
            -- In this case, what follows the basic production is a variable length bit string
            -- with no length field, containing the GSM message including GSM padding up to end
            -- of container, to be analysed according to GSM specifications
            with-extension                  SEQUENCE {
                messages                        GSM-MessageList
            }
        }
}

HandoverFromUTRANCommand-CDMA2000-r3 ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
                                        HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                  OPTIONAL,
    -- Radio bearer IEs
```

```
        remainingRAB-Info              RAB-Info                              OPTIONAL,
    -- Other IEs
        cdma2000-MessageList           CDMA2000-MessageList
}


-- **************************************************
--
-- HANDOVER FROM UTRAN FAILURE
--
-- **************************************************

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Other IEs
        interRAT-HO-Failure            InterRAT-HO-Failure           OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}


-- **************************************************
--
-- MEASUREMENT CONTROL
--
-- **************************************************

MeasurementControl-r3 ::= CHOICE {
    r3                                 SEQUENCE {
        measurementControl r3          MeasurementControl r3 IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions                 SEQUENCE {}
}

MeasurementControl-r4 ::= CHOICE {
    r3                                 SEQUENCE {
        measurementControl-r3          MeasurementControl-r3-IEs,
        nonCriticalExtensions          SEQUENCE {
            -- In case of TDD, the following IE is included instead of the IE
            -- up-IPDL-Parameters in up-OTDOA-AssistanceData
            up-Ipdl-Parameters-TDD         UP-IPDL-Parameters-TDD        OPTIONAL,
            -- Extension mechanism for non- release4 information
            nonCriticalExtensions          SEQUENCE {}                   OPTIONAL
        }                                                                OPTIONAL
    },
    criticalExtensions                 CHOICE {
        r4                             SEQUENCE {
            measurementControl-r4          MeasurementControl-r4-IEs,
            nonCriticalExtensions          SEQUENCE {}    OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
    }
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        measurementCommand             MeasurementCommand,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementReportingMode       MeasurementReportingMode          OPTIONAL,
        additionalMeasurementList      AdditionalMeasurementID-List      OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo     OPTIONAL
}

MeasurementControl-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        measurementCommand             MeasurementCommand-r4,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementReportingMode       MeasurementReportingMode          OPTIONAL,
        additionalMeasurementList      AdditionalMeasurementID-List      OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo     OPTIONAL
```

```
}

-- **************************************************
--
-- MEASUREMENT CONTROL FAILURE
--
-- **************************************************

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        failureCause                     FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MEASUREMENT REPORT
--
-- **************************************************

MeasurementReport ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentity      MeasurementIdentity,
        measuredResults                  MeasuredResults                        OPTIONAL,
        measuredResultsOnRACH            MeasuredResultsOnRACH                  OPTIONAL,
        additionalMeasuredResults        MeasuredResultsList                    OPTIONAL,
        eventResults                     EventResults                           OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

MeasurementReport-r4 ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentity      MeasurementIdentity,
        measuredResults                  MeasuredResults                        OPTIONAL,
        measuredResultsOnRACH            MeasuredResultsOnRACH                  OPTIONAL,
        additionalMeasuredResults        MeasuredResultsList                    OPTIONAL,
        eventResults                     EventResults                           OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {
            interFreqEventResults-LCR        InterFreqEventResults-LCR          OPTIONAL,
            additionalMeasuredResults-LCR    MeasuredResultsList-LCR            OPTIONAL,
            nonCriticalExtensions            SEQUENCE {}                        OPTIONAL
        }                                                                       OPTIONAL
}

-- **************************************************
--
-- PAGING TYPE 1
--
-- **************************************************

PagingType1 ::= SEQUENCE {
    -- User equipment IEs
        pagingRecordList                 PagingRecordList                       OPTIONAL,
    -- Other IEs
        bcch-ModificationInfo            BCCH-ModificationInfo                  OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- PAGING TYPE 2
--
-- **************************************************

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        pagingCause                      PagingCause,
    -- Core network IEs
        cn-DomainIdentity                CN-DomainIdentity,
        pagingRecordTypeID               PagingRecordTypeID,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
```

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```
    }

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

PhysicalChannelReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

PhysicalChannelReconfiguration-r4 ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            physicalChannelReconfiguration-r4-ext   PhysicalChannelReconfiguration-r4-ext-IEs,
            nonCriticalExtensions                   SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            physicalChannelReconfiguration-r4
                                            PhysicalChannelReconfiguration-r4-IEs,
            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,
        ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID    OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        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-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                             SSDT-UL                             OPTIONAL
}

PhysicalChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
```

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```
            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
            rb-WithPDCP-InfoList            RB-WithPDCP-InfoList              OPTIONAL,
        -- Physical channel IEs
            frequencyInfo                   FrequencyInfo                     OPTIONAL,
            maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power             OPTIONAL,
            ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
            -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
            -- between UL DPCH info, CPCH SET info and CPCH set ID.
            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
}

-- **************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
--
-- **************************************************

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo       OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                  OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                    OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList         OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}   OPTIONAL
}

-- **************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier         OPTIONAL,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}   OPTIONAL
}

-- **************************************************
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- **************************************************

PhysicalSharedChannelAllocation-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        physicalSharedChannelAllocation-r3
                                            PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions               SEQUENCE {} OPTIONAL
    },
    criticalExtensions                  SEQUENCE {}
}
```

```
PhysicalSharedChannelAllocation-r4 ::= CHOICE {
    r3                                SEQUENCE {
        physicalSharedChannelAllocation-r3
                                      PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions                CHOICE {
        r4                            SEQUENCE {
            physicalSharedChannelAllocation-r4
                                      PhysicalSharedChannelAllocation-r4-IEs,
            nonCriticalExtensions     SEQUENCE {}    OPTIONAL
        },
        criticalExtensions            SEQUENCE {}
    }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                        C-RNTI                         OPTIONAL,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance              UL-TimingAdvanceControl        OPTIONAL,
        pusch-CapacityAllocationInfo  PUSCH-CapacityAllocationInfo   OPTIONAL,
        pdsch-CapacityAllocationInfo  PDSCH-CapacityAllocationInfo   OPTIONAL,
        confirmRequest                ENUMERATED {
                                          confirmPDSCH, confirmPUSCH }   OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        trafficVolumeReportRequest    INTEGER (0..255)               OPTIONAL,
        iscpTimeslotList              TimeslotList                   OPTIONAL
}

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                        C-RNTI                         OPTIONAL,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance              UL-TimingAdvanceControl-r4     OPTIONAL,
        pusch-CapacityAllocationInfo  PUSCH-CapacityAllocationInfo-r4   OPTIONAL,
        pdsch-CapacityAllocationInfo  PDSCH-CapacityAllocationInfo-r4   OPTIONAL,
        confirmRequest                ENUMERATED {
                                          confirmPDSCH, confirmPUSCH }   OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        iscpTimeslotList              TimeslotList-r4                OPTIONAL
}

-- **************************************************
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- **************************************************

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        c-RNTI                        C-RNTI                         OPTIONAL,
    -- Measurement IEs
        trafficVolumeMeasuredResultsList
                                      TrafficVolumeMeasuredResultsList,
        timeslotListWithISCP          TimeslotListWithISCP           OPTIONAL,
        primaryCCPCH-RSCP             PrimaryCCPCH-RSCP              OPTIONAL,
        allocationConfirmation        CHOICE {
            pdschConfirmation             PDSCH-Identity,
            puschConfirmation             PUSCH-Identity
        }                                                            OPTIONAL,
        protocolErrorIndicator        ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

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

```
RadioBearerReconfiguration r3 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerReconfiguration-r3    RadioBearerReconfiguration-r3-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

RadioBearerReconfiguration-r4 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerReconfiguration-r3    RadioBearerReconfiguration-r3-IEs,
        nonCriticalExtensions            SEQUENCE {
            radioBearerReconfiguration-r4-ext    RadioBearerReconfiguration-r4-ext-IEs,
            nonCriticalExtensions                SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            radioBearerReconfiguration-r4    RadioBearerReconfiguration-r4-IEs,
            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,
        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,
        dl-InformationPerRL-List        DL-InformationPerRL-List
}

RadioBearerReconfiguration-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                         SSDT-UL                            OPTIONAL
}
```

```
RadioBearerReconfiguration-r4-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,
        rb-InformationReconfigList    RB-InformationReconfigList-r4,
        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-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
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- **************************************************

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo    IntegrityProtActivationInfo        OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance              UL-TimingAdvance                   OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime        ActivationTime                     OPTIONAL,
        rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList          OPTIONAL,
        ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION FAILURE
--
-- **************************************************

RadioBearerReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        failureCause                  FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList RB-IdentityList                   OPTIONAL,
```

```
      -- Extension mechanism for non- release99 information
          nonCriticalExtensions             SEQUENCE {} OPTIONAL
}

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

RadioBearerRelease-r3 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerRelease-r3           RadioBearerRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

RadioBearerRelease-r4 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerRelease-r3           RadioBearerRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            radioBearerRelease-r4-ext       RadioBearerRelease-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            radioBearerRelease-r4           RadioBearerRelease-r4-IEs,
            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-r4-ext-IEs ::= SEQUENCE {
        -- Physical channel IEs
        -- The following IE extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL                           SSDT-UL                           OPTIONAL
}

RadioBearerRelease-r4-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,
        rb-WithPDCP-InfoList              RB-WithPDCP-InfoList              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-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
}

-- **************************************************
--
-- RADIO BEARER RELEASE COMPLETE
--
-- **************************************************

RadioBearerReleaseComplete ::= SEQUENCE {
        -- User equipment IEs
        rrc-TransactionIdentifier         RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo        IntegrityProtActivationInfo       OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                  UL-TimingAdvance                  OPTIONAL,
        -- Radio bearer IEs
        count-C-ActivationTime            ActivationTime                    OPTIONAL,
        rb-UL-CiphActivationTimeInfo      RB-ActivationTimeInfoList         OPTIONAL,
        ul-CounterSynchronisationInfo     UL-CounterSynchronisationInfo     OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions             SEQUENCE {}      OPTIONAL
```

```
    }

-- **************************************************
--
-- RADIO BEARER RELEASE FAILURE
--
-- **************************************************

RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        failureCause                     FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
}

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

RadioBearerSetup-r3 ::= CHOICE {
    r3                               SEQUENCE {
        radioBearerSetup-r3              RadioBearerSetup-r3-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    },
    criticalExtensions               SEQUENCE {}
}

RadioBearerSetup-r4 ::= CHOICE {
    r3                               SEQUENCE {
        radioBearerSetup-r3              RadioBearerSetup-r3-IEs,
        nonCriticalExtensions            SEQUENCE {
            radioBearerSetup-r4-ext          RadioBearerSetup-r4-ext-IEs,
            nonCriticalExtensions            SEQUENCE {} OPTIONAL
        }  OPTIONAL
    },
    criticalExtensions               CHOICE {
        r4                               SEQUENCE {
            radioBearerSetup-r4              RadioBearerSetup-r4-IEs,
            nonCriticalExtensions            SEQUENCE {}    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-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
        ssdt-UL                         SSDT-UL                        OPTIONAL
}

RadioBearerSetup-r4-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-r4    OPTIONAL,
        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-AddReconfTransChInfoList    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
}

-- **************************************************
--
-- RADIO BEARER SETUP COMPLETE
--
-- **************************************************

RadioBearerSetupComplete ::= SEQUENCE {
```

```
        -- User equipment IEs
          rrc-TransactionIdentifier         RRC-TransactionIdentifier,
          ul-IntegProtActivationInfo        IntegrityProtActivationInfo        OPTIONAL,
          -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
          ul-TimingAdvance                  UL-TimingAdvance                   OPTIONAL,
          start-Value              START-Value                                OPTIONAL,
        -- Radio bearer IEs
          count-C-ActivationTime            ActivationTime                     OPTIONAL,
          rb-UL-CiphActivationTimeInfo      RB-ActivationTimeInfoList          OPTIONAL,
          ul-CounterSynchronisationInfo     UL-CounterSynchronisationInfo      OPTIONAL,
        -- Extension mechanism for non- release99 information
          nonCriticalExtensions             SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER SETUP FAILURE
--
-- **************************************************

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
      rrc-TransactionIdentifier         RRC-TransactionIdentifier,
      failureCause                      FailureCauseWithProtErr,
    -- Radio bearer IEs
      potentiallySuccesfulBearerList  RB-IdentityList                          OPTIONAL,
    -- Extension mechanism for non- release99 information
      nonCriticalExtensions             SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REJECT
--
-- **************************************************

RRCConnectionReject-r3 ::= CHOICE {
    r3                                SEQUENCE {
      rrcConnectionReject-r3            RRCConnectionReject-r3-IEs,
      nonCriticalExtensions             SEQUENCE {} OPTIONAL
    },
    criticalExtensions                SEQUENCE {}
}

RRCConnectionReject-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
      initialUE-Identity                InitialUE-Identity,
      rrc-TransactionIdentifier         RRC-TransactionIdentifier,
      rejectionCause                    RejectionCause,
      waitTime                          WaitTime,
      redirectionInfo                   RedirectionInfo                        OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE
--
-- **************************************************

RRCConnectionRelease-r3 ::= CHOICE {
    r3                                SEQUENCE {
      rrcConnectionRelease-r3           RRCConnectionRelease-r3-IEs,
      nonCriticalExtensions             SEQUENCE {} OPTIONAL
    },
    criticalExtensions                SEQUENCE {}
}

RRCConnectionRelease-r4 ::= CHOICE {
    r3                                SEQUENCE {
      rrcConnectionRelease-r3           RRCConnectionRelease-r3-IEs,
      nonCriticalExtensions             SEQUENCE {} OPTIONAL
    },
    criticalExtensions                CHOICE {
      r4                                SEQUENCE {
        rrcConnectionRelease-r4           RRCConnectionRelease-r4-IEs,
        nonCriticalExtensions             SEQUENCE {}    OPTIONAL
      },
```

```
        criticalExtensions          SEQUENCE {}
    }
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        n-308                         N-308                            OPTIONAL,
        -- The IE above is conditional on the UE state.
        releaseCause                  ReleaseCause,
        rplmn-information             Rplmn-Information                OPTIONAL
}

RRCConnectionRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        n-308                         N-308                            OPTIONAL,
        -- The IE above is conditional on the UE state.
        releaseCause                  ReleaseCause,
        rplmn-information             Rplmn-Information-r4             OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE for CCCH
--
-- **************************************************

RRCConnectionRelease-CCCH-r3 ::= CHOICE {
    r3                            SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

RRCConnectionRelease-CCCH-r4 ::= CHOICE {
    r3                            SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                            SEQUENCE {
            rrcConnectionRelease-CCCH-r4    RRCConnectionRelease-CCCH-r4-IEs,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
    }
}

RRCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                        U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        rrcConnectionRelease          RRCConnectionRelease-r3-IEs
}

RRCConnectionRelease-CCCH-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                        U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        rrcConnectionRelease          RRCConnectionRelease-r4-IEs
}

-- **************************************************
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- **************************************************

RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        errorIndication               FailureCauseWithProtErr          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {}     OPTIONAL
}
```

```
-- *************************************************
--
-- RRC CONNECTION REQUEST
--
-- *************************************************

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        establishmentCause              EstablishmentCause,
        protocolErrorIndicator          ProtocolErrorIndicator,
        -- The IE above is MD, but for compactness reasons no default value
        -- has been assigned to it.
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH           OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- *************************************************
--
-- RRC CONNECTION SETUP
--
-- *************************************************

RRCConnectionSetup-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        rrcConnectionSetup-r3           RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions                  SEQUENCE {}
}

RRCConnectionSetup-r4 ::= CHOICE {
    r3                                  SEQUENCE {
        rrcConnectionSetup-r3           RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            rrcConnectionSetup-r4Ext    RRCConnectionSetup-r4Ext-IEs,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions               SEQUENCE {}                 OPTIONAL
        }   OPTIONAL
    },
    criticalExtensions                  CHOICE {
        r4                              SEQUENCE {
            rrcConnectionSetup-r4       RRCConnectionSetup-r4-IEs,
            nonCriticalExtensions       SEQUENCE {}     OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
    }
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                          OPTIONAL,
        new-U-RNTI                      U-RNTI,
        new-c-RNTI                      C-RNTI                                  OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient,
        capabilityUpdateRequirement     CapabilityUpdateRequirement     OPTIONAL,
        -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
        -- be used.
    -- Radio bearer IEs
        srb-InformationSetupList        SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo                    OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo            DL-CommonTransChInfo                    OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                          OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power                  OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement                  OPTIONAL,
        dl-CommonInformation            DL-CommonInformation                   OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List               OPTIONAL
```

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```
}

RRCConnectionSetup-r4Ext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4Ext  CapabilityUpdateRequirement-r4Ext   OPTIONAL,
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                            SSDT-UL                             OPTIONAL
}

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity             InitialUE-Identity,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        activationTime                 ActivationTime                     OPTIONAL,
        new-U-RNTI                     U-RNTI,
        new-c-RNTI                     C-RNTI                             OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient,
        capabilityUpdateRequirement    CapabilityUpdateRequirement-r4     OPTIONAL,
        -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
        -- be used.
    -- Radio bearer IEs
        srb-InformationSetupList       SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo           UL-CommonTransChInfo               OPTIONAL,
        ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo           DL-CommonTransChInfo               OPTIONAL,
        dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                      OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power              OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirement-r4           OPTIONAL,
        dl-CommonInformation           DL-CommonInformation-r4            OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List-r4        OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION SETUP COMPLETE
--
-- **************************************************

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        startList                      STARTList,
        ue-RadioAccessCapability       UE-RadioAccessCapability           OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability       InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions-r3       SEQUENCE {
            rrcConnectionSetupComplete-r4ext RRCConnectionSetupComplete-r4ext,
            nonCriticalExtensions-r4       SEQUENCE {}     OPTIONAL
        }        OPTIONAL
}

RRCConnectionSetupComplete-r4ext ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-r4ext     UE-RadioAccessCapability-r4ext     OPTIONAL
}

-- **************************************************
--
-- RRC STATUS
--
-- **************************************************

RRCStatus ::= SEQUENCE {
    -- Other IEs
        protocolErrorInformation       ProtocolErrorMoreInformation,
    -- TABULAR:  Identification of received message is nested in
    -- ProtocolErrorMoreInformation
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}     OPTIONAL
}
```

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```
SecurityModeCommand-r3 ::= CHOICE {
    r3                              SEQUENCE {
        securityModeCommand-r3          SecurityModeCommand-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

-- **************************************************
--
-- SECURITY MODE COMMAND
--
-- **************************************************

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        securityCapability              SecurityCapability,
        cipheringModeInfo               CipheringModeInfo               OPTIONAL,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo     OPTIONAL,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
    -- Other IEs
        ue-SystemSpecificSecurityCap    InterRAT-UE-SecurityCapList     OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE COMPLETE
--
-- **************************************************

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.

    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo     OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE FAILURE
--
-- **************************************************

SecurityModeFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE
--
-- **************************************************

SignallingConnectionRelease-r3 ::= CHOICE {
    r3                              SEQUENCE {
        signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Core network IEs
```

```
        cn-DomainIdentity              CN-DomainIdentity
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE REQUEST
--
-- **************************************************

SignallingConnectionReleaseRequest ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity              CN-DomainIdentity,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SYSTEM INFORMATION for BCH
--
-- **************************************************

SystemInformation-BCH ::= SEQUENCE {
    -- Other information elements
        sfn-Prime                      SFN-Prime,
        payload                        CHOICE {
            noSegment                      NULL,
            firstSegment                   FirstSegment,
            subsequentSegment              SubsequentSegment,
            lastSegmentShort                   LastSegmentShort,
            lastAndFirst                   SEQUENCE {
                lastSegmentShort               LastSegmentShort,
                firstSegment                   FirstSegmentShort
            },
            lastAndComplete                SEQUENCE {
                lastSegmentShort               LastSegmentShort,
                completeSIB-List               CompleteSIB-List
            },
            lastAndCompleteAndFirst        SEQUENCE {
                lastSegmentShort               LastSegmentShort,
                completeSIB-List               CompleteSIB-List,
                firstSegment                   FirstSegmentShort
            },
            completeSIB-List               CompleteSIB-List,
            completeAndFirst               SEQUENCE {
                completeSIB-List               CompleteSIB-List,
                firstSegment                   FirstSegmentShort
            },
            completeSIB                    CompleteSIB,
            lastSegment                    LastSegment
        }
}

-- **************************************************
--
-- SYSTEM INFORMATION for FACH
--
-- **************************************************

SystemInformation-FACH ::= SEQUENCE {
    -- Other information elements
        payload                        CHOICE {
            noSegment                      NULL,
            firstSegment                   FirstSegment,
            subsequentSegment              SubsequentSegment,
            lastSegmentShort               LastSegmentShort,
            lastAndFirst                   SEQUENCE {
                lastSegmentShort               LastSegmentShort,
                firstSegment                   FirstSegmentShort
            },
            lastAndComplete                SEQUENCE {
                lastSegmentShort               LastSegmentShort,
                completeSIB-List               CompleteSIB-List
            },
            lastAndCompleteAndFirst        SEQUENCE {
                lastSegmentShort               LastSegmentShort,
                completeSIB-List               CompleteSIB-List,
                firstSegment                   FirstSegmentShort
```

```
        },
        completeSIB-List              CompleteSIB-List,
        completeAndFirst              SEQUENCE {
            completeSIB-List             CompleteSIB-List,
            firstSegment                 FirstSegmentShort
        },
        completeSIB                   CompleteSIB,
        lastSegment                   LastSegment
    }
}

-- **************************************************
--
-- First segment
--
-- **************************************************

FirstSegment ::=               SEQUENCE {
    -- Other information elements
        sib-Type                     SIB-Type,
        seg-Count                    SegCount,
        sib-Data-fixed               SIB-Data-fixed
}

-- **************************************************
--
-- First segment (short)
--
-- **************************************************

FirstSegmentShort ::=          SEQUENCE {
    -- Other information elements
        sib-Type                     SIB-Type,
        seg-Count                    SegCount,
        sib-Data-variable            SIB-Data-variable
}

-- **************************************************
--
-- Subsequent segment
--
-- **************************************************

SubsequentSegment ::=          SEQUENCE {
    -- Other information elements
        sib-Type                     SIB-Type,
        segmentIndex                 SegmentIndex,
        sib-Data-fixed               SIB-Data-fixed
}

-- **************************************************
--
-- Last segment
--
-- **************************************************

LastSegment ::=                SEQUENCE {
    -- Other information elements
        sib-Type                     SIB-Type,
        segmentIndex                 SegmentIndex,
        sib-Data-fixed               SIB-Data-fixed
    -- In case the SIB data is less than 222 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

LastSegmentShort ::=                  SEQUENCE {
    -- Other information elements
        sib-Type                     SIB-Type,
        segmentIndex                 SegmentIndex,
        sib-Data-variable            SIB-Data-variable
}

-- **************************************************
--
-- Complete SIB
--
-- **************************************************
```

```
CompleteSIB-List ::=                    SEQUENCE (SIZE (1..maxSIBperMsg)) OF
                                            CompleteSIBshort

CompleteSIB ::=                         SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        sib-Data-fixed                  BIT STRING (SIZE (226))
    -- In case the SIB data is less than 226 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

CompleteSIBshort ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- **************************************************

SystemInformationChangeIndication ::=   SEQUENCE {
    -- Other IEs
        bcch-ModificationInfo           BCCH-ModificationInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

TransportChannelReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

TransportChannelReconfiguration-r4 ::= CHOICE {
    r3                              SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            transportChannelReconfiguration-r4-ext  TransportChannelReconfiguration-r4-ext-IEs,
            nonCriticalExtensions                   SEQUENCE {} OPTIONAL
        }       OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                          SEQUENCE {
            transportChannelReconfiguration-r4
                                        TransportChannelReconfiguration-r4-IEs,
            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,
```

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```
        -- 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-r4-ext-IEs ::= SEQUENCE {
        -- Physical channel IEs
        -- The following IE extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
            ssdt-UL                        SSDT-UL                          OPTIONAL
    }

    TransportChannelReconfiguration-r4-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
            rb-WithPDCP-InfoList           RB-WithPDCP-InfoList             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-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
    }

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

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

TransportChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo     IntegrityProtActivationInfo       OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance               UL-TimingAdvance                  OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime         ActivationTime                    OPTIONAL,
        rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList         OPTIONAL,
        ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

TransportChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL
--
-- **************************************************

TransportFormatCombinationControl ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message when transmitting this
message
    -- on the transparent mode signalling DCCH.
        rrc-TransactionIdentifier      RRC-TransactionIdentifier         OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH
    modeSpecificInfo                   CHOICE {
        fdd                                NULL,
        tdd                                SEQUENCE {
            tfcs-ID                            TFCS-Identity   OPTIONAL
            }
    },
    dpch-TFCS-InUplink                 TFC-Subset,
    activationTimeForTFCSubset         ActivationTime                    OPTIONAL,
    tfc-ControlDuration                TFC-ControlDuration               OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- **************************************************

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY ENQUIRY
```

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

UECapabilityEnquiry-r3 ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityEnquiry-r3          UECapabilityEnquiry-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            ueCapabilityEnquiry-r4ext       UECapabilityEnquiry-r4Ext-IEs,
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }           OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        capabilityUpdateRequirement     CapabilityUpdateRequirement
}

UECapabilityEnquiry-r4Ext-IEs ::= SEQUENCE {
        capabilityUpdateRequirement-r4Ext   CapabilityUpdateRequirement-r4Ext
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION
--
-- **************************************************

UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier           OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability            OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList
    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions-r3        SEQUENCE {
            ueCapabilityInformation-r4ext   UECapabilityInformation-r4ext,
            nonCriticalExtensions-r4        SEQUENCE {}     OPTIONAL
        }           OPTIONAL
}

UECapabilityInformation-r4ext ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-r4ext      UE-RadioAccessCapability-r4ext      OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- **************************************************

UECapabilityInformationConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityInformationConfirm-r3
                                        UECapabilityInformationConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier
}

-- **************************************************
--
-- UPLINK DIRECT TRANSFER
--
-- **************************************************

UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
```

```
        nas-Message                      NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH            MeasuredResultsOnRACH            OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}   OPTIONAL
}

-- **************************************************
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- **************************************************

UplinkPhysicalChannelControl-r3 ::= CHOICE {
    r3                               SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
    },
    criticalExtensions               SEQUENCE {}
}


UplinkPhysicalChannelControl-r4 ::= CHOICE {
    r3                               SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        nonCriticalExtensions            SEQUENCE {
            -- In case of TDD, the following IE is included instead of the IE
            -- up-IPDL-Parameters in up-OTDOA-AssistanceData
            openLoopPowerControl-IPDL-TDD   OpenLoopPowerControl-IPDL-TDD   OPTIONAL,
            -- Extension mechanism for non- release4 information
            noncriticalExtensions            SEQUENCE {}                OPTIONAL
        }                                                               OPTIONAL
    },
    criticalExtensions               CHOICE {
        r4                               SEQUENCE {
            uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
            nonCriticalExtensions            SEQUENCE {} OPTIONAL
        },
        criticalExtensions               SEQUENCE {}
    }
}

UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Physical channel IEs
        ccTrCH-PowerControlInfo          CCTrCH-PowerControlInfo          OPTIONAL,
        timingAdvance                    UL-TimingAdvanceControl          OPTIONAL,
        alpha                            Alpha                            OPTIONAL,
        specialBurstScheduling           SpecialBurstScheduling           OPTIONAL,
        prach-ConstantValue              ConstantValue                    OPTIONAL,
        pusch-ConstantValue              ConstantValue                    OPTIONAL
}

UplinkPhysicalChannelControl-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Physical channel IEs
        ccTrCH-PowerControlInfo          CCTrCH-PowerControlInfo-r4       OPTIONAL,
        tddOption                        CHOICE {
            tdd384                           SEQUENCE {
                timingAdvance                    UL-TimingAdvanceControl-r4  OPTIONAL,
                alpha                            Alpha                       OPTIONAL,
                prach-ConstantValue              ConstantValue               OPTIONAL,
                pusch-ConstantValue              ConstantValue               OPTIONAL,
                openLoopPowerControl-IPDL-TDD    OpenLoopPowerControl-IPDL-TDD   OPTIONAL
            },
            tdd128                           SEQUENCE {
                ul-SynchronisationParameters     UL-SynchronisationParameters   OPTIONAL
            }
        }
}

-- **************************************************
--
-- URA UPDATE
--
-- **************************************************
```

```
URAUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                        U-RNTI,
        ura-UpdateCause               URA-UpdateCause,
        protocolErrorIndicator        ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM
--
-- **************************************************

URAUpdateConfirm-r3 ::= CHOICE {
    r3                                SEQUENCE {
        uraUpdateConfirm-r3           URAUpdateConfirm-r3-IEs,
        nonCriticalExtensions         SEQUENCE {}    OPTIONAL
    },
    criticalExtensions                SEQUENCE {}
}

URAUpdateConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        integrityProtectionModeInfo   IntegrityProtectionModeInfo       OPTIONAL,
        cipheringModeInfo             CipheringModeInfo                 OPTIONAL,
        new-U-RNTI                    U-RNTI                            OPTIONAL,
        new-C-RNTI                    C-RNTI                            OPTIONAL,
        rrc-StateIndicator            RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- CN information elements
        cn-InformationInfo            CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                  URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo     OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM for CCCH
--
-- **************************************************

URAUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                                SEQUENCE {
        uraUpdateConfirm-CCCH-r3      URAUpdateConfirm-CCCH-r3-IEs,
        nonCriticalExtensions         SEQUENCE {}    OPTIONAL
    },
    criticalExtensions                SEQUENCE {}
}

URAUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                        U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        uraUpdateConfirm              URAUpdateConfirm-r3-IEs
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION
--
-- **************************************************

UTRANMobilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        integrityProtectionModeInfo   IntegrityProtectionModeInfo       OPTIONAL,
        cipheringModeInfo             CipheringModeInfo                 OPTIONAL,
        new-U-RNTI                    U-RNTI                            OPTIONAL,
        new-C-RNTI                    C-RNTI                            OPTIONAL,
        ue-ConnTimersAndConstants     UE-ConnTimersAndConstants         OPTIONAL,
    -- CN information elements
        cn-InformationInfo            CN-InformationInfo                OPTIONAL,
```

```
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- **************************************************

UTRANMobilityInformationConfirm ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- **************************************************

UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

END
```

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR 903**   ⌘ ev **-** ⌘   Current version: **3.6.0** ⌘

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

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

Title: ⌘	Information elements outside the extension container	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-05-25
Category: ⌘	**F**	***Release:*** ⌘ R99

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

Reason for change: ⌘	In several downlink RRC messages, there is an information element "RRC transaction identifier", which is used in order to distinguish simultaneous transactions. In case of an error, the UE shall include the "RRC transaction identifier" of the message that caused the error in the failure reply message, according to the error handling procedures. In case the error is caused by the inclusion of an unexpected critical extension in the downlink message (as described in clause 9.3b in 25.331), the UE should still be able to read the "RRC transaction identifier", in order to report which message caused the error. In the current message definition in 25.331 this is not possible, because in case of a critical extension a different message structure will be used for the message in ASN.1, which can not be known in an old UE. A similar problem arises for messages sent on the CCCH or on the SHCCH. For such messages, the UE shall reply with a failure message in case of an error, if the UE is being addressed by the message. The addressing is done in the message with an UE-identity information element (U-RNTI, C-RNTI etc.), and will not be understood if it is included in an unexpected critical extension part of a message. In those cases it will not be possible for the UE to decide whether to send a failure reply or not, as it will not know whether it is being addressed by the message or not.
Summary of change: ⌘	In the criticalExtension part of the message, the important elements that have to be comprehended independent of the release (i.e. the Transaction Identifier in downlink DCCH or CCCH messages, and the UE identity in downlink CCCH messages) have been defined to be the first elements. Any critical extension goes directly after these elements, so that a UE can read them, even if the network send a newer version of that message.
Consequences if not approved: ⌘	It will be not possible for the UE to react to CCCH messages addressed to that UE containing critical extensions. The RRC Transaction Identifier concept will not work if the downlink message contains critical extensions.

Clauses affected:	⌘	11.2

Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	

Other comments:	⌘	**Backwards Compatibility Analysis:** **Functionality not working:** Replying to CCCH messages containing critical extensions directed to the UE. Setting the Transaction Identifier to a meaningful value, in case of a protocol error of type "Message extension not comprehended". (More details given in "Reason for change"). **Correction being brought:** Definition that in case of critical extensions, the UE Identity and the RRC Transaction Identifier will be included before the actual extension. (More details given in "Summary of change"). **Backwards compatibility:** The change is backwards compatible. The error is corrected for equipment that apply the specified changes, and the correction does not affect any other functionality.

How to create CRs using this form:

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

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

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

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

11.2　PDU definitions

```
--*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*************************************************************
--
-- IE parameter types from other modules
--
--*************************************************************

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    Rb-timer-indicator,
    Re-EstablishmentTimer,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-ConnTimersAndConstants,
    URA-UpdateCause,
    UTRAN-DRX-CycleLengthCoefficient,
    WaitTime,
-- Radio Bearer IEs :
    DefaultConfigIdentity,
    DefaultConfigMode,
    DL-CounterSynchronisationInfo,
    PredefinedConfigIdentity,
    RAB-Info,
    RAB-Info-Post,
    RAB-InformationList,
    RAB-InformationReconfigList,
    RAB-InformationSetupList,
    RB-ActivationTimeInfo,
```

```
    RB-ActivationTimeInfoList,
    RB-COUNT-C-InformationList,
    RB-COUNT-C-MSB-InformationList,
    RB-IdentityList,
    RB-InformationAffectedList,
    RB-InformationReconfigList,
    RB-InformationReleaseList,
    RB-InformationSetupList,
    RB-WithPDCP-InfoList,
    SRB-InformationSetupList,
    SRB-InformationSetupList2,
    UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
    CPCH-SetID,
    DL-AddReconfTransChInfo2List,
    DL-AddReconfTransChInfoList,
    DL-CommonTransChInfo,
    DL-DeletedTransChInfoList,
    DRAC-StaticInformationList,
    TFC-Subset,
    TFCS-Identity,
    UL-AddReconfTransChInfoList,
    UL-CommonTransChInfo,
    UL-DeletedTransChInfoList,
-- Physical Channel IEs :
    AllocationPeriodInfo,
    Alpha,
    CCTrCH-PowerControlInfo,
    ConstantValue,
    CPCH-SetInfo,
    DL-CommonInformation,
    DL-CommonInformationPost,
    DL-InformationPerRL,
    DL-InformationPerRL-List,
    DL-InformationPerRL-ListPostFDD,
    DL-InformationPerRL-PostTDD,
    DL-DPCH-PowerControlInfo,
    DL-PDSCH-Information,
    DPCH-CompressedModeStatusInfo,
    FrequencyInfo,
    FrequencyInfoFDD,
    FrequencyInfoTDD,
    IndividualTS-InterferenceList,
    MaxAllowedUL-TX-Power,
    PDSCH-CapacityAllocationInfo,
    PDSCH-Identity,
    PDSCH-Info,
    PRACH-RACH-Info,
    PrimaryCCPCH-TX-Power,
    PUSCH-CapacityAllocationInfo,
    PUSCH-Identity,
    RL-AdditionInformationList,
    RL-RemovalInformationList,
    SpecialBurstScheduling,
    SSDT-Information,
    TFC-ControlDuration,
    TimeslotList,
    TX-DiversityMode,
    UL-ChannelRequirement,
    UL-ChannelRequirementWithCPCH-SetID,
    UL-DPCH-Info,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    Band-Indicator,
    EventResults,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResultsList,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    TimeslotListWithISCP,
```

```
        TrafficVolumeMeasuredResultsList,
        UE-Positioning-GPS-AssistanceData,
        UE-Positioning-OTDOA-AssistanceData,
-- Other IEs :
        BCCH-ModificationInfo,
        CDMA2000-MessageList,
        GSM-MessageList,
        InterRAT-ChangeFailureCause,
        InterRAT-HO-Failure,
        InterRAT-UE-RadioAccessCapabilityList,
        InterRAT-UE-SecurityCapList,
        InterRATMessage,
        IntraDomainNasNodeSelector,
        ProtocolErrorInformation,
        ProtocolErrorMoreInformation,
        Rplmn-Information,
        SegCount,
        SegmentIndex,
        SFN-Prime,
        SIB-Data-fixed,
        SIB-Data-variable,
        SIB-Type
FROM InformationElements

        maxSIBperMsg,
        maxSystemCapability
FROM Constant-definitions;

-- **************************************************
--
-- ACTIVE SET UPDATE (FDD only)
--
-- **************************************************

ActiveSetUpdate-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        activeSetUpdate-r3                  ActiveSetUpdate-r3-IEs,
        nonCriticalExtensions              SEQUENCE {} OPTIONAL
    },
    criticalExtensions                  SEQUENCE {}
    later-than-r3                       SEQUENCE {
        rrc-TransactionIdentifier          RRC-TransactionIdentifier,
        criticalExtensions                 SEQUENCE {}
    }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier          RRC-TransactionIdentifier,
        integrityProtectionModeInfo        IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo                  CipheringModeInfo                  OPTIONAL,
        activationTime                     ActivationTime                     OPTIONAL,
        newU-RNTI                          U-RNTI                             OPTIONAL,
    -- Core network IEs
        cn-InformationInfo                 CN-InformationInfo                 OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo      DL-CounterSynchronisationInfo      OPTIONAL,
    -- Physical channel IEs
        maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power              OPTIONAL,
        rl-AdditionInformationList         RL-AdditionInformationList         OPTIONAL,
        rl-RemovalInformationList          RL-RemovalInformationList          OPTIONAL,
        tx-DiversityMode                   TX-DiversityMode                   OPTIONAL,
        ssdt-Information                   SSDT-Information                   OPTIONAL
}

-- **************************************************
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- **************************************************

ActiveSetUpdateComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier          RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo         IntegrityProtActivationInfo        OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo       RB-ActivationTimeInfoList          OPTIONAL,
        ul-CounterSynchronisationInfo      UL-CounterSynchronisationInfo      OPTIONAL,
    -- Extension mechanism for non- release99 information
```

```
            nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- **************************************************

ActiveSetUpdateFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- Assistance Data Delivery
--
-- **************************************************

AssistanceDataDelivery-r3 ::= CHOICE {
    r3                              SEQUENCE {
        assistanceDataDelivery-r3     AssistanceDataDelivery-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Measurement Information Elements
    ue-positioning-GPS-AssistanceData           UE-Positioning-GPS-AssistanceData
    OPTIONAL,
    ue-positioning-OTDOA-AssistanceData          UE-Positioning-OTDOA-AssistanceData        OPTIONAL
}

-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- **************************************************

CellChangeOrderFromUTRAN-r3 ::= CHOICE {
    r3                              SEQUENCE {
        cellChangeOrderFromUTRAN-IEs      CellChangeOrderFromUTRAN-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo            OPTIONAL,
        activationTime                  ActivationTime                         OPTIONAL,
        rab-InformationList             RAB-InformationList                    OPTIONAL,
        interRAT-TargetCellDescription  InterRAT-TargetCellDescription
}

-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- **************************************************

CellChangeOrderFromUTRANFailure ::= CHOICE {
```

```
    r3                              SEQUENCE {
        r3-IEs                          CellChangeOrderFromUTRANFailure-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        interRAT-ChangeFailureCause     InterRAT-ChangeFailureCause
}

-- **************************************************
--
-- CELL UPDATE
--
-- **************************************************

CellUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        startList        STARTList,
        am-RLC-ErrorIndicationRb2or3    BOOLEAN,
        am-RLC-ErrorIndicationRb4orAbove    BOOLEAN,
        cellUpdateCause                 CellUpdateCause,
        failureCause                    FailureCauseWithProtErrTrId         OPTIONAL,
        -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
        rb-timer-indicator              Rb-timer-indicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- CELL UPDATE CONFIRM
--
-- **************************************************

CellUpdateConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

CellUpdateConfirm-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,
        rlc-Re-establishIndicatorRb2or3 BOOLEAN,
        rlc-Re-establishIndicatorRb4orAbove BOOLEAN,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        rb-InformationReleaseList       RB-InformationReleaseList           OPTIONAL,
        rb-InformationReconfigList      RB-InformationReconfigList          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
            },
            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
}

-- **************************************************
--
-- CELL UPDATE CONFIRM for CCCH
--
-- **************************************************

CellUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                            SEQUENCE {
        -- User equipment IEs
            u-RNTI                    U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.

            cellUpdateConfirm-r3              CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
    },
    later-than-r3                 SEQUENCE {
        u-RNTI                        U-RNTI,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions            SEQUENCE {}
}

-- **************************************************
--
-- COUNTER CHECK
--
-- **************************************************

CounterCheck-r3 ::= CHOICE {
    r3                            SEQUENCE {
        counterCheck-r3               CounterCheck-r3-IEs,
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
    },
    later-than-r3                 SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions            SEQUENCE {}
}

CounterCheck-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    -- Radio bearer IEs
        rb-COUNT-C-MSB-InformationList  RB-COUNT-C-MSB-InformationList
}

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

```
--
-- COUNTER CHECK RESPONSE
--
-- **************************************************

CounterCheckResponse ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Radio bearer IEs
        rb-COUNT-C-InformationList      RB-COUNT-C-InformationList          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- DOWNLINK DIRECT TRANSFER
--
-- **************************************************

DownlinkDirectTransfer-r3 ::= CHOICE {
    r3                              SEQUENCE {
        downlinkDirectTransfer-r3       DownlinkDirectTransfer-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        nas-Message                     NAS-Message
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMMAND
--
-- **************************************************


HandoverToUTRANCommand-r3 ::= CHOICE {
    r3                              SEQUENCE {
        handoverToUTRANCommand-r3       HandoverToUTRANCommand-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI                      U-RNTI-Short,
        activationTime                  ActivationTime                      OPTIONAL,
        cipheringAlgorithm              CipheringAlgorithm                  OPTIONAL,
    -- Radio bearer IEs
        rab-Info                        RAB-Info-Post,
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
                srb-InformationSetupList        SRB-InformationSetupList,
                rab-InformationSetupList        RAB-InformationSetupList            OPTIONAL,
                ul-CommonTransChInfo            UL-CommonTransChInfo,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo            DL-CommonTransChInfo,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
                ul-DPCH-Info                    UL-DPCH-Info,
                modeSpecificInfo                CHOICE {
                    fdd                             SEQUENCE {
                        dl-PDSCH-Information             DL-PDSCH-Information OPTIONAL,
                        cpch-SetInfo                    CPCH-SetInfo        OPTIONAL
                    },
                    tdd                             NULL
```

```
                },
                dl-CommonInformation          DL-CommonInformation,
                dl-InformationPerRL-List      DL-InformationPerRL-List,
                frequencyInfo                 FrequencyInfo
            },
            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
                    }
                },
                rab-Info                       RAB-Info-Post      OPTIONAL,
                modeSpecificInfo               CHOICE {
                    fdd                           SEQUENCE {
                        ul-DPCH-Info                UL-DPCH-InfoPostFDD,
                        dl-CommonInformationPost    DL-CommonInformationPost,
                        dl-InformationPerRL-List    DL-InformationPerRL-ListPostFDD,
                        frequencyInfo               FrequencyInfoFDD
                    },
                    tdd                           SEQUENCE {
                        ul-DPCH-Info                UL-DPCH-InfoPostTDD,
                        dl-CommonInformationPost    DL-CommonInformationPost,
                        dl-InformationPerRL         DL-InformationPerRL-PostTDD,
                        frequencyInfo               FrequencyInfoTDD,
                        primaryCCPCH-TX-Power       PrimaryCCPCH-TX-Power
                    }

                }
            }
        },
    -- Physical channel IEs
        maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMPLETE
--
-- **************************************************

HandoverToUTRANComplete ::= SEQUENCE {
    --TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    -- TABULAR: the IE below is conditional on history.
        startList                     STARTList                          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- INITIAL DIRECT TRANSFER
--
-- **************************************************

InitialDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity             CN-DomainIdentity,
        intraDomainNasNodeSelector    IntraDomainNasNodeSelector,
        nas-Message                   NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH         MeasuredResultsOnRACH              OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- HANDOVER FROM UTRAN COMMAND
--
-- **************************************************

HandoverFromUTRANCommand-GSM-r3 ::= CHOICE {
```

```
    r3                              SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
                                        HandoverFromUTRANCommand-GSM-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions          SEQUENCE {}
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                      OPTIONAL,
    -- Radio bearer IEs
        remainingRAB-Info               RAB-Info                            OPTIONAL,
    -- Measurement IEs
        band-Indicator                  Band-Indicator,
    -- Other IEs
        message-and-extension           CHOICE {
            gsm-Message                     SEQUENCE {},
            -- In this case, what follows the basic production is a variable length bit string
            -- with no length field, containing the GSM message including GSM padding up to end
            -- of container, to be analysed according to GSM specifications
            with-extension                  SEQUENCE {
                messages                        GSM-MessageList
            }
        }
}

HandoverFromUTRANCommand-CDMA2000-r3 ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
                                        HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions          SEQUENCE {}
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                      OPTIONAL,
    -- Radio bearer IEs
        remainingRAB-Info               RAB-Info                            OPTIONAL,
    -- Other IEs
        cdma2000-MessageList            CDMA2000-MessageList
}

-- **************************************************
--
-- HANDOVER FROM UTRAN FAILURE
--
-- **************************************************

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Other IEs
        interRAT-HO-Failure             InterRAT-HO-Failure                 OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- MEASUREMENT CONTROL
--
-- **************************************************

MeasurementControl-r3 ::= CHOICE {
    r3                              SEQUENCE {
```

```
        measurementControl-r3            MeasurementControl-r3-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        measurementCommand              MeasurementCommand,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementReportingMode        MeasurementReportingMode        OPTIONAL,
        additionalMeasurementList       AdditionalMeasurementID-List    OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo   DPCH-CompressedModeStatusInfo   OPTIONAL
}

-- **************************************************
--
-- MEASUREMENT CONTROL FAILURE
--
-- **************************************************

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- MEASUREMENT REPORT
--
-- **************************************************

MeasurementReport ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        measuredResults                 MeasuredResults                 OPTIONAL,
        measuredResultsOnRACH           MeasuredResultsOnRACH           OPTIONAL,
        additionalMeasuredResults       MeasuredResultsList             OPTIONAL,
        eventResults                    EventResults                    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- PAGING TYPE 1
--
-- **************************************************

PagingType1 ::= SEQUENCE {
    -- User equipment IEs
        pagingRecordList                PagingRecordList                OPTIONAL,
    -- Other IEs
        bcch-ModificationInfo           BCCH-ModificationInfo           OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- PAGING TYPE 2
--
-- **************************************************

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        pagingCause                     PagingCause,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        pagingRecordTypeID              PagingRecordTypeID,
```

```
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

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

PhysicalChannelReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    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,
        ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID     OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        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
}

-- **************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
--
-- **************************************************

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

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

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

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier        OPTIONAL,
        failureCause                  FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- **************************************************

PhysicalSharedChannelAllocation-r3 ::= CHOICE {
    r3                            SEQUENCE {
        physicalSharedChannelAllocation-r3
                                      PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    later-than-r3                 SEQUENCE {
        c-RNTI                        C-RNTI                           OPTIONAL,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions            SEQUENCE {}
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                        C-RNTI                           OPTIONAL,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance              UL-TimingAdvanceControl          OPTIONAL,
        pusch-CapacityAllocationInfo  PUSCH-CapacityAllocationInfo     OPTIONAL,
        pdsch-CapacityAllocationInfo  PDSCH-CapacityAllocationInfo     OPTIONAL,
        confirmRequest                ENUMERATED {
                                          confirmPDSCH, confirmPUSCH }    OPTIONAL,
    -- TABULAR: If the above value is not present, the default value "No Confirm"
    -- shall be used as specified in 10.2.25.
        trafficVolumeReportRequest    INTEGER (0..255)                 OPTIONAL,
        iscpTimeslotList              TimeslotList                     OPTIONAL
}

-- **************************************************
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- **************************************************

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        c-RNTI                        C-RNTI                           OPTIONAL,
    -- Measurement IEs
        trafficVolumeMeasuredResultsList
                                      TrafficVolumeMeasuredResultsList,
        timeslotListWithISCP          TimeslotListWithISCP             OPTIONAL,
        primaryCCPCH-RSCP             PrimaryCCPCH-RSCP                OPTIONAL,
        allocationConfirmation        CHOICE {
            pdschConfirmation             PDSCH-Identity,
            puschConfirmation             PUSCH-Identity
        }                                                              OPTIONAL,
        protocolErrorIndicator        ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

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

RadioBearerReconfiguration-r3 ::= CHOICE {
```

```
    r3                                  SEQUENCE {
        radioBearerReconfiguration-r3   RadioBearerReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    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,
        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,
        dl-InformationPerRL-List        DL-InformationPerRL-List
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- **************************************************

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

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

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

RadioBearerReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

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

RadioBearerRelease-r3 ::= CHOICE {
    r3                          SEQUENCE {
        radioBearerRelease-r3       RadioBearerRelease-r3-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
    },
    later-than-r3               SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    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
}

-- **************************************************
--
-- RADIO BEARER RELEASE COMPLETE
--
-- **************************************************

RadioBearerReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RELEASE FAILURE
--
-- **************************************************

RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

RadioBearerSetup-r3 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerSetup-r3             RadioBearerSetup-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    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
}

-- **************************************************
--
-- RADIO BEARER SETUP COMPLETE
--
-- **************************************************

RadioBearerSetupComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo       IntegrityProtActivationInfo          OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                 UL-TimingAdvance                     OPTIONAL,
        start-Value              START-Value                                  OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime           ActivationTime                       OPTIONAL,
        rb-UL-CiphActivationTimeInfo     RB-ActivationTimeInfoList            OPTIONAL,
        ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo        OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER SETUP FAILURE
--
-- **************************************************

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        failureCause                     FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REJECT
--
-- **************************************************

RRCConnectionReject-r3 ::= CHOICE {
    r3                               SEQUENCE {
        rrcConnectionReject-r3           RRCConnectionReject-r3-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    },
    later-than-r3                    SEQUENCE {
        initialUE-Identity               InitialUE-Identity,
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        criticalExtensions               SEQUENCE {}
```

```
    }
    criticalExtensions                  SEQUENCE {}
}

RRCConnectionReject-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        rejectionCause                  RejectionCause,
        waitTime                        WaitTime,
        redirectionInfo                 RedirectionInfo                 OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE
--
-- **************************************************

RRCConnectionRelease-r3 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-r3         RRCConnectionRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions                  SEQUENCE {}
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        n-308                           N-308                           OPTIONAL,
        -- The IE above is conditional on the UE state.
        releaseCause                    ReleaseCause,
        rplmn-information               Rplmn-Information               OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE for CCCH
--
-- **************************************************

RRCConnectionRelease-CCCH-r3 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                          U-RNTI,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions                  SEQUENCE {}
}

RRCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        rrcConnectionRelease            RRCConnectionRelease-r3-IEs
}

-- **************************************************
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- **************************************************

RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        errorIndication                 FailureCauseWithProtErr         OPTIONAL,
    -- Extension mechanism for non- release99 information
```

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```
            nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REQUEST
--
-- **************************************************

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        establishmentCause              EstablishmentCause,
        protocolErrorIndicator          ProtocolErrorIndicator,
        -- The IE above is MD, but for compactness reasons no default value
        -- has been assigned to it.
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION SETUP
--
-- **************************************************

RRCConnectionSetup-r3 ::= CHOICE {
    r3                            SEQUENCE {
        rrcConnectionSetup-r3         RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    later-than-r3                 SEQUENCE {
        initialUE-Identity            InitialUE-Identity,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions            SEQUENCE {}
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity            InitialUE-Identity,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        activationTime                ActivationTime                       OPTIONAL,
        new-U-RNTI                    U-RNTI,
        new-c-RNTI                    C-RNTI                               OPTIONAL,
        rrc-StateIndicator            RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient,
        capabilityUpdateRequirement   CapabilityUpdateRequirement          OPTIONAL,
        -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
        -- be used.
    -- Radio bearer IEs
        srb-InformationSetupList      SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo          UL-CommonTransChInfo                 OPTIONAL,
        ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo          DL-CommonTransChInfo                 OPTIONAL,
        dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo                 FrequencyInfo                        OPTIONAL,
        maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power                OPTIONAL,
        ul-ChannelRequirement         UL-ChannelRequirement                OPTIONAL,
        dl-CommonInformation          DL-CommonInformation                 OPTIONAL,
        dl-InformationPerRL-List      DL-InformationPerRL-List             OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION SETUP COMPLETE
--
-- **************************************************

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
```

```
    -- User equipment IEs
       rrc-TransactionIdentifier       RRC-TransactionIdentifier,
       startList                       STARTList,
       ue-RadioAccessCapability        UE-RadioAccessCapability        OPTIONAL,
    -- Other IEs
       ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- Extension mechanism for non- release99 information
       nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- RRC STATUS
--
-- **************************************************

RRCStatus ::= SEQUENCE {
    -- Other IEs
       protocolErrorInformation        ProtocolErrorMoreInformation,
    -- TABULAR:  Identification of received message is nested in
    -- ProtocolErrorMoreInformation
    -- Extension mechanism for non- release99 information
       nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

SecurityModeCommand-r3 ::= CHOICE {
    r3                              SEQUENCE {
       securityModeCommand-r3          SecurityModeCommand-r3-IEs,
       nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    later-than-r3                   SEQUENCE {
       rrc-TransactionIdentifier       RRC-TransactionIdentifier,
       criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

-- **************************************************
--
-- SECURITY MODE COMMAND
--
-- **************************************************

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
    -- User equipment IEs
       rrc-TransactionIdentifier       RRC-TransactionIdentifier,
       securityCapability              SecurityCapability,
       cipheringModeInfo               CipheringModeInfo               OPTIONAL,
       integrityProtectionModeInfo     IntegrityProtectionModeInfo     OPTIONAL,
    -- Core network IEs
       cn-DomainIdentity               CN-DomainIdentity,
    -- Other IEs
       ue-SystemSpecificSecurityCap    InterRAT-UE-SecurityCapList     OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE COMPLETE
--
-- **************************************************

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.

    -- User equipment IEs
       rrc-TransactionIdentifier       RRC-TransactionIdentifier,
       ul-IntegProtActivationInfo      IntegrityProtActivationInfo     OPTIONAL,
    -- Radio bearer IEs
       rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList       OPTIONAL,
    -- Extension mechanism for non- release99 information
       nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE FAILURE
--
```

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

SecurityModeFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        failureCause                     FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE
--
-- **************************************************

SignallingConnectionRelease-r3 ::= CHOICE {
    r3                               SEQUENCE {
        signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
    },
    later-than-r3                    SEQUENCE {
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        criticalExtensions               SEQUENCE {}
    }
    criticalExtensions               SEQUENCE {}
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Core network IEs
        cn-DomainIdentity                CN-DomainIdentity
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE REQUEST
--
-- **************************************************

SignallingConnectionReleaseRequest ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity                CN-DomainIdentity,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- SYSTEM INFORMATION for BCH
--
-- **************************************************

SystemInformation-BCH ::= SEQUENCE {
    -- Other information elements
        sfn-Prime                        SFN-Prime,
        payload                          CHOICE {
            noSegment                        NULL,
            firstSegment                     FirstSegment,
            subsequentSegment                SubsequentSegment,
            lastSegmentShort                     LastSegmentShort,
            lastAndFirst                     SEQUENCE {
                lastSegmentShort                 LastSegmentShort,
                firstSegment                     FirstSegmentShort
            },
            lastAndComplete                  SEQUENCE {
                lastSegmentShort                 LastSegmentShort,
                completeSIB-List                 CompleteSIB-List
            },
            lastAndCompleteAndFirst          SEQUENCE {
                lastSegmentShort                 LastSegmentShort,
                completeSIB-List                 CompleteSIB-List,
                firstSegment                     FirstSegmentShort
            },
            completeSIB-List                 CompleteSIB-List,
            completeAndFirst                 SEQUENCE {
                completeSIB-List                 CompleteSIB-List,
```

```
                firstSegment                            FirstSegmentShort
            },
            completeSIB                     CompleteSIB,
            lastSegment                     LastSegment
        }
}

-- **************************************************
--
-- SYSTEM INFORMATION for FACH
--
-- **************************************************

SystemInformation-FACH ::= SEQUENCE {
    -- Other information elements
        payload                         CHOICE {
            noSegment                       NULL,
            firstSegment                    FirstSegment,
            subsequentSegment               SubsequentSegment,
            lastSegmentShort                LastSegmentShort,
            lastAndFirst                    SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                firstSegment                    FirstSegmentShort
            },
            lastAndComplete                 SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List
            },
            lastAndCompleteAndFirst         SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB-List                CompleteSIB-List,
            completeAndFirst                SEQUENCE {
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB                     CompleteSIB,
            lastSegment                     LastSegment
        }
}

-- **************************************************
--
-- First segment
--
-- **************************************************

FirstSegment ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        seg-Count                       SegCount,
        sib-Data-fixed                  SIB-Data-fixed
}

-- **************************************************
--
-- First segment (short)
--
-- **************************************************

FirstSegmentShort ::=               SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        seg-Count                       SegCount,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- Subsequent segment
--
-- **************************************************

SubsequentSegment ::=               SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
```

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```
            segmentIndex                    SegmentIndex,
            sib-Data-fixed                  SIB-Data-fixed
}

-- **************************************************
--
-- Last segment
--
-- **************************************************

LastSegment ::=                     SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-fixed                  SIB-Data-fixed
    -- In case the SIB data is less than 222 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

LastSegmentShort ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- Complete SIB
--
-- **************************************************

CompleteSIB-List ::=                SEQUENCE (SIZE (1..maxSIBperMsg)) OF
                                        CompleteSIBshort

CompleteSIB ::=                     SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        sib-Data-fixed                  BIT STRING (SIZE (226))
    -- In case the SIB data is less than 226 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

CompleteSIBshort ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- **************************************************

SystemInformationChangeIndication ::=   SEQUENCE {
    -- Other IEs
        bcch-ModificationInfo           BCCH-ModificationInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

TransportChannelReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
```

```
        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
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- **************************************************

TransportChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

TransportChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}
```

```
-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL
--
-- **************************************************

TransportFormatCombinationControl ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message when transmitting this
message
    -- on the transparent mode signalling DCCH.
        rrc-TransactionIdentifier        RRC-TransactionIdentifier          OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH
    modeSpecificInfo                     CHOICE {
        fdd                                  NULL,
        tdd                                  SEQUENCE {
            tfcs-ID                              TFCS-Identity   OPTIONAL
            }
    },
    dpch-TFCS-InUplink                   TFC-Subset,
    activationTimeForTFCSubset           ActivationTime                     OPTIONAL,
    tfc-ControlDuration                  TFC-ControlDuration                OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- **************************************************

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        failureCause                     FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY ENQUIRY
--
-- **************************************************

UECapabilityEnquiry-r3 ::= CHOICE {
    r3                                   SEQUENCE {
        ueCapabilityEnquiry-r3               UECapabilityEnquiry-r3-IEs,
        nonCriticalExtensions                SEQUENCE {}     OPTIONAL
    },
    later-than-r3                        SEQUENCE {
        rrc-TransactionIdentifier            RRC-TransactionIdentifier,
        criticalExtensions                   SEQUENCE {}
    }
    criticalExtensions                   SEQUENCE {}
}

UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        capabilityUpdateRequirement      CapabilityUpdateRequirement
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION
--
-- **************************************************

UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier          OPTIONAL,
        ue-RadioAccessCapability         UE-RadioAccessCapability           OPTIONAL,
    -- Other IEs
```

```
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList
    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- **************************************************

UECapabilityInformationConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityInformationConfirm-r3
                                        UECapabilityInformationConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier
}

-- **************************************************
--
-- UPLINK DIRECT TRANSFER
--
-- **************************************************

UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        nas-Message                     NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- **************************************************

UplinkPhysicalChannelControl-r3 ::= CHOICE {
    r3                              SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}


UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Physical channel IEs
        ccTrCH-PowerControlInfo         CCTrCH-PowerControlInfo             OPTIONAL,
        timingAdvance                   UL-TimingAdvanceControl             OPTIONAL,
        alpha                           Alpha                              OPTIONAL,
        specialBurstScheduling          SpecialBurstScheduling             OPTIONAL,
        prach-ConstantValue             ConstantValue                      OPTIONAL,
        pusch-ConstantValue             ConstantValue                      OPTIONAL
}

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

```
--
-- URA UPDATE
--
-- **************************************************

URAUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        ura-UpdateCause                 URA-UpdateCause,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM
--
-- **************************************************

URAUpdateConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        uraUpdateConfirm-r3             URAUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

URAUpdateConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                  OPTIONAL,
        new-U-RNTI                      U-RNTI                             OPTIONAL,
        new-C-RNTI                      C-RNTI                             OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfo                 OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo      OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM for CCCH
--
-- **************************************************

URAUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                              SEQUENCE {
        uraUpdateConfirm-CCCH-r3        URAUpdateConfirm-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                          U-RNTI,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

URAUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        uraUpdateConfirm                URAUpdateConfirm-r3-IEs
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION
```

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

UTRANMobilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        ue-ConnTimersAndConstants       UE-ConnTimersAndConstants           OPTIONAL,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- **************************************************

UTRANMobilityInformationConfirm ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- **************************************************

UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

END
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331 CR 904** | ⌘ | ev | **-** | ⌘ | Current version: | **4.0.0** | ⌘ |

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

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

Title:	⌘	Information elements outside the extension container
Source:	⌘	TSG-RAN WG2
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-05-25

Category:	⌘	**A**	***Release:*** ⌘	REL-4

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

Reason for change:	⌘	In several downlink RRC messages, there is an information element "RRC transaction identifier", which is used in order to distinguish simultaneous transactions. In case of an error, the UE shall include the "RRC transaction identifier" of the message that caused the error in the failure reply message, according to the error handling procedures. In case the error is caused by the inclusion of an unexpected critical extension in the downlink message (as described in clause 9.3b in 25.331), the UE should still be able to read the "RRC transaction identifier", in order to report which message caused the error. In the current message definition in 25.331 this is not possible, because in case of a critical extension a different message structure will be used for the message in ASN.1, which can not be known in an old UE.
		A similar problem arises for messages sent on the CCCH or on the SHCCH. For such messages, the UE shall reply with a failure message in case of an error, if the UE is being addressed by the message. The addressing is done in the message with an UE-identity information element (U-RNTI, C-RNTI etc.), and will not be understood if it is included in an unexpected critical extension part of a message. In those cases it will not be possible for the UE to decide whether to send a failure reply or not, as it will not know whether it is being addressed by the message or not.
Summary of change: ⌘		In the criticalExtension part of the message, the important elements that have to be comprehended independent of the release (i.e. the Transaction Identifier in downlink DCCH or CCCH messages, and the UE identity in downlink CCCH messages) have been defined to be the first elements. Any critical extension goes directly after these elements, so that a UE can read them, even if the network send a newer version of that message.
Consequences if not approved:	⌘	It will be not possible for the UE to react to CCCH messages addressed to that UE containing critical extensions. The RRC Transaction Identifier concept will not work if the downlink message contains critical extensions.

Clauses affected:	⌘	11.2	

Other specs affected:	⌘	☐ Other core specifications	⌘	
		☐ Test specifications		
		☐ O&M Specifications		

Other comments:	⌘	Corresponds to CR903 to 25.331 (release-99)

How to create CRs using this form:

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

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

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

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

11.2 PDU definitions

```
--*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*************************************************************
--
-- IE parameter types from other modules
--
--*************************************************************

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4Ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    Rb-timer-indicator,
    Re-EstablishmentTimer,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-r4ext,
    UE-ConnTimersAndConstants,
    URA-UpdateCause,
    UTRAN-DRX-CycleLengthCoefficient,
    WaitTime,
-- Radio Bearer IEs :
    DefaultConfigIdentity,
    DefaultConfigMode,
    DL-CounterSynchronisationInfo,
    PredefinedConfigIdentity,
    RAB-Info,
    RAB-Info-Post,
    RAB-InformationList,
```

```
    RAB-InformationReconfigList,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RB-ActivationTimeInfo,
    RB-ActivationTimeInfoList,
    RB-COUNT-C-InformationList,
    RB-COUNT-C-MSB-InformationList,
    RB-IdentityList,
    RB-InformationAffectedList,
    RB-InformationReconfigList,
    RB-InformationReconfigList-r4,
    RB-InformationReleaseList,
    RB-InformationSetupList,
    RB-InformationSetupList-r4,
    RB-WithPDCP-InfoList,
    SRB-InformationSetupList,
    SRB-InformationSetupList2,
    UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
    CPCH-SetID,
    DL-AddReconfTransChInfo2List,
    DL-AddReconfTransChInfoList,
    DL-CommonTransChInfo,
    DL-DeletedTransChInfoList,
    DRAC-StaticInformationList,
    TFC-Subset,
    TFCS-Identity,
    UL-AddReconfTransChInfoList,
    UL-CommonTransChInfo,
    UL-DeletedTransChInfoList,
-- Physical Channel IEs :
    AllocationPeriodInfo,
    Alpha,
    CCTrCH-PowerControlInfo,
    CCTrCH-PowerControlInfo-r4,
    ConstantValue,
    CPCH-SetInfo,
    DL-CommonInformation,
    DL-CommonInformation-r4,
    DL-CommonInformationPost,
    DL-InformationPerRL,
    DL-InformationPerRL-List,
    DL-InformationPerRL-List-r4,
    DL-InformationPerRL-ListPostFDD,
    DL-InformationPerRL-PostTDD,
    DL-InformationPerRL-PostTDD-LCR,
    DL-DPCH-PowerControlInfo,
    DL-PDSCH-Information,
    DPCH-CompressedModeStatusInfo,
    FrequencyInfo,
    FrequencyInfoFDD,
    FrequencyInfoTDD,
    IndividualTS-InterferenceList,
    MaxAllowedUL-TX-Power,
    OpenLoopPowerControl-IPDL-TDD,
    PDSCH-CapacityAllocationInfo,
    PDSCH-CapacityAllocationInfo-r4,
    PDSCH-Identity,
    PDSCH-Info,
    PDSCH-Info-r4,
    PRACH-RACH-Info,
    PrimaryCCPCH-TX-Power,
    PUSCH-CapacityAllocationInfo,
    PUSCH-CapacityAllocationInfo-r4,
    PUSCH-Identity,
    RL-AdditionInformationList,
    RL-RemovalInformationList,
    SpecialBurstScheduling,
    SSDT-Information,
    TFC-ControlDuration,
    SSDT-UL,                         -- REL-4
    TimeslotList,
    TimeslotList-r4,
    TX-DiversityMode,
    UL-ChannelRequirement,
    UL-ChannelRequirement-r4,
    UL-ChannelRequirementWithCPCH-SetID,
    UL-ChannelRequirementWithCPCH-SetID-r4,
```

```
    UL-DPCH-Info,
    UL-DPCH-Info-r4,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-DPCH-InfoPostTDD-LCR,
    UL-SynchronisationParameters,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
    UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    Band-Indicator,
    EventResults,
    InterFreqEventResults-LCR,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResultsList,
    MeasuredResultsList-LCR,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    TimeslotListWithISCP,
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData,
    UP-IPDL-Parameters-TDD,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-Failure,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-SecurityCapList,
    InterRATMessage,
    IntraDomainNasNodeSelector,
    ProtocolErrorInformation,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg,
    maxSystemCapability
FROM Constant-definitions;

-- **************************************************
--
-- ACTIVE SET UPDATE (FDD only)
--
-- **************************************************

ActiveSetUpdate-r3 ::= CHOICE {
    r3                              SEQUENCE {
        activeSetUpdate-r3              ActiveSetUpdate-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

ActiveSetUpdate-r4 ::= CHOICE {
    r3                              SEQUENCE {
        activeSetUpdate-r3              ActiveSetUpdate-r3-IEs,
        nonCriticalExtensions          SEQUENCE {
            activeSetUpdate-r4-ext          ActiveSetUpdate-r4-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
```

```
        } OPTIONAL
    },
    later-than-r3                  SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions             SEQUENCE {}
    }
    criticalExtensions             SEQUENCE {}
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
        cipheringModeInfo              CipheringModeInfo              OPTIONAL,
        activationTime                 ActivationTime                 OPTIONAL,
        newU-RNTI                      U-RNTI                         OPTIONAL,
    -- Core network IEs
        cn-InformationInfo             CN-InformationInfo             OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
    -- Physical channel IEs
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power          OPTIONAL,
        rl-AdditionInformationList     RL-AdditionInformationList     OPTIONAL,
        rl-RemovalInformationList      RL-RemovalInformationList      OPTIONAL,
        tx-DiversityMode               TX-DiversityMode               OPTIONAL,
        ssdt-Information               SSDT-Information               OPTIONAL
}

ActiveSetUpdate-r4-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information. FDD only.
    ssdt-UL                            SSDT-UL                        OPTIONAL
}


-- **************************************************
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- **************************************************

ActiveSetUpdateComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo     IntegrityProtActivationInfo    OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList      OPTIONAL,
        ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- **************************************************

ActiveSetUpdateFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- Assistance Data Delivery
--
-- **************************************************

AssistanceDataDelivery-r3 ::= CHOICE {
    r3                             SEQUENCE {
        assistanceDataDelivery-r3      AssistanceDataDelivery-r3-IEs,
        nonCriticalExtensions          SEQUENCE {
        -- In case of TDD, the following IE is included instead of the IE
        -- up-IPDL-Parameters in up-OTDOA-AssistanceData
```

```
            up-Ipdl-Parameters-TDD          UP-IPDL-Parameters-TDD          OPTIONAL,
            -- Extension mechanism for non- release4 information
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Measurement Information Elements
    ue-positioning-GPS-AssistanceData           UE-Positioning-GPS-AssistanceData
    OPTIONAL,
    ue-positioning-OTDOA-AssistanceData         UE-Positioning-OTDOA-AssistanceData         OPTIONAL
}

-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- **************************************************

CellChangeOrderFromUTRAN-r3 ::= CHOICE {
    r3                              SEQUENCE {
        cellChangeOrderFromUTRAN-IEs        CellChangeOrderFromUTRAN-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        rab-InformationList             RAB-InformationList                 OPTIONAL,
        interRAT-TargetCellDescription  InterRAT-TargetCellDescription
}

-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- **************************************************

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                              SEQUENCE {
        r3-IEs                          CellChangeOrderFromUTRANFailure-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        interRAT-ChangeFailureCause     InterRAT-ChangeFailureCause
}

-- **************************************************
--
-- CELL UPDATE
--
-- **************************************************
```

```
CellUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        startList        STARTList,
        am-RLC-ErrorIndicationRb2or3    BOOLEAN,
        am-RLC-ErrorIndicationRb4orAbove    BOOLEAN,
        cellUpdateCause                 CellUpdateCause,
        failureCause                    FailureCauseWithProtErrTrId    OPTIONAL,
        -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
        rb-timer-indicator              Rb-timer-indicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- CELL UPDATE CONFIRM
--
-- **************************************************

CellUpdateConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

CellUpdateConfirm-r4 ::= CHOICE {
    r3                              SEQUENCE {
        cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            cellUpdateConfirm-r4-ext        CellUpdateConfirm-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }       OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                cellUpdateConfirm-r4            CellUpdateConfirm-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}    OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}
CellUpdateConfirm-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,
        rlc-Re-establishIndicatorRb2or3 BOOLEAN,
        rlc-Re-establishIndicatorRb4orAbove BOOLEAN,
 -- CN information elements
        cn-InformationInfo              CN-InformationInfo             OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                   OPTIONAL,
    -- Radio bearer IEs
        rb-InformationReleaseList       RB-InformationReleaseList      OPTIONAL,
        rb-InformationReconfigList      RB-InformationReconfigList     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
        },
        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
}

CellUpdateConfirm-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
        ssdt-UL                           SSDT-UL                           OPTIONAL
}

CellUpdateConfirm-r4-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,
        rlc-ResetIndicatorC-Plane         BOOLEAN,
        rlc-ResetIndicatorU-Plane         BOOLEAN,
 -- CN information elements
        cn-InformationInfo                CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                      URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
        rb-InformationReleaseList         RB-InformationReleaseList         OPTIONAL,
        rb-InformationReconfigList        RB-InformationReconfigList-r4         OPTIONAL,
        rb-InformationAffectedList        RB-InformationAffectedList        OPTIONAL,
        rb-WithPDCP-InfoList              RB-WithPDCP-InfoList              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
        },
        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-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
}

-- **************************************************
--
-- CELL UPDATE CONFIRM for CCCH
--
-- **************************************************

CellUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                              SEQUENCE {
        -- User equipment IEs
        u-RNTI                      U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.

        cellUpdateConfirm-r3        CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
    },
    later-than-r3               SEQUENCE {
        u-RNTI                      U-RNTI,
        rrc-TransactionIdentifier   RRC-TransactionIdentifier,
        criticalExtensions          SEQUENCE {}
    }
    criticalExtensions          SEQUENCE {}
}

CellUpdateConfirm-CCCH-r4 ::= CHOICE {
    r3                              SEQUENCE {
        -- User equipment IEs
        u-RNTI                      U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.
        cellUpdateConfirm-r3        CellUpdateConfirm-r3-IEs,
        nonCriticalExtensions       SEQUENCE {
        cellUpdateConfirm-r4-ext    CellUpdateConfirm-r4-ext-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3               SEQUENCE {
        u-RNTI                      U-RNTI,
        rrc-TransactionIdentifier   RRC-TransactionIdentifier,
        criticalExtensions          CHOICE {
            r4                          SEQUENCE {
                User equipment IEs
                u-RNTI                      U-RNTI,
                -- The rest of the message is identical to the one sent on DCCH.
                cellUpdateConfirm-r4        CellUpdateConfirm-r4-IEs,
                nonCriticalExtensions       SEQUENCE {}    OPTIONAL
            },
            criticalExtensions          SEQUENCE {}
        }
    }
}

-- **************************************************
--
-- COUNTER CHECK
--
-- **************************************************

CounterCheck-r3 ::= CHOICE {
    r3                              SEQUENCE {
        counterCheck-r3             CounterCheck-r3-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
    },
    later-than-r3               SEQUENCE {
        rrc-TransactionIdentifier   RRC-TransactionIdentifier,
        criticalExtensions          SEQUENCE {}
    }
    criticalExtensions          SEQUENCE {}
}

CounterCheck-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier   RRC-TransactionIdentifier,
    -- Radio bearer IEs
    rb-COUNT-C-MSB-InformationList  RB-COUNT-C-MSB-InformationList
}
```

```
-- **************************************************
--
-- COUNTER CHECK RESPONSE
--
-- **************************************************

CounterCheckResponse ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Radio bearer IEs
        rb-COUNT-C-InformationList      RB-COUNT-C-InformationList        OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- DOWNLINK DIRECT TRANSFER
--
-- **************************************************

DownlinkDirectTransfer-r3 ::= CHOICE {
    r3                              SEQUENCE {
        downlinkDirectTransfer-r3       DownlinkDirectTransfer-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        nas-Message                     NAS-Message
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMMAND
--
-- **************************************************


HandoverToUTRANCommand-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        handoverToUTRANCommand-r3       HandoverToUTRANCommand-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

HandoverToUTRANCommand-r4 ::= CHOICE {
    r3                                  SEQUENCE {
        handoverToUTRANCommand-r3       HandoverToUTRANCommand-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            handoverToUTRANCommand-r4-ext   HandoverToUTRANCommand-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            handoverToUTRANCommand-r4       HandoverToUTRANCommand-r4-IEs,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
    }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI                      U-RNTI-Short,
        activationTime                  ActivationTime                           OPTIONAL,
        cipheringAlgorithm              CipheringAlgorithm                       OPTIONAL,
```

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```
    -- Radio bearer IEs
        rab-Info                        RAB-Info-Post,
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
                srb-InformationSetupList        SRB-InformationSetupList,
                rab-InformationSetupList        RAB-InformationSetupList            OPTIONAL,
                ul-CommonTransChInfo            UL-CommonTransChInfo,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo            DL-CommonTransChInfo,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
                ul-DPCH-Info                    UL-DPCH-Info,
                modeSpecificInfo                CHOICE {
                    fdd                             SEQUENCE {
                        dl-PDSCH-Information             DL-PDSCH-Information OPTIONAL,
                        cpch-SetInfo                    CPCH-SetInfo        OPTIONAL
                    },
                    tdd                             NULL
                },
                dl-CommonInformation            DL-CommonInformation,
                dl-InformationPerRL-List        DL-InformationPerRL-List,
                frequencyInfo                   FrequencyInfo
            },
            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
                    }
                },
                rab-Info                        RAB-Info-Post       OPTIONAL,
                modeSpecificInfo                CHOICE {
                    fdd                             SEQUENCE {
                        ul-DPCH-Info                    UL-DPCH-InfoPostFDD,
                        dl-CommonInformationPost        DL-CommonInformationPost,
                        dl-InformationPerRL-List        DL-InformationPerRL-ListPostFDD,
                        frequencyInfo                   FrequencyInfoFDD
                    },
                    tdd                             SEQUENCE {
                        ul-DPCH-Info                    UL-DPCH-InfoPostTDD,
                        dl-CommonInformationPost        DL-CommonInformationPost,
                        dl-InformationPerRL             DL-InformationPerRL-PostTDD,
                        frequencyInfo                   FrequencyInfoTDD,
                        primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power
                    }
                }
            }
        },
    -- Physical channel IEs
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                         SSDT-UL                                 OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI                      U-RNTI-Short,
        activationTime                  ActivationTime                          OPTIONAL,
        cipheringAlgorithm              CipheringAlgorithm                      OPTIONAL,
    -- Radio bearer IEs
        rab-Info                        RAB-Info-Post,
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
                srb-InformationSetupList        SRB-InformationSetupList,
                rab-InformationSetupList        RAB-InformationSetupList-r4             OPTIONAL,
                ul-CommonTransChInfo            UL-CommonTransChInfo,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
```

```
                    dl-CommonTransChInfo           DL-CommonTransChInfo,
                    dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList,
                    ul-DPCH-Info                   UL-DPCH-Info-r4,
                    modeSpecificInfo               CHOICE {
                        fdd                            SEQUENCE {
                            dl-PDSCH-Information            DL-PDSCH-Information OPTIONAL,
                            cpch-SetInfo                   CPCH-SetInfo        OPTIONAL
                        },
                        tdd                            NULL
                    },
                    dl-CommonInformation           DL-CommonInformation-r4,
                    dl-InformationPerRL-List       DL-InformationPerRL-List-r4,
                    frequencyInfo                  FrequencyInfo
                },
                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.
                    predefinedConfigIdentity       PredefinedConfigIdentity,
                    rab-Info                       RAB-Info-Post       OPTIONAL,
                    modeSpecificInfo               CHOICE {
                        fdd                            SEQUENCE {
                            ul-DPCH-Info                   UL-DPCH-InfoPostFDD,
                            dl-CommonInformationPost       DL-CommonInformationPost,
                            dl-InformationPerRL-List       DL-InformationPerRL-ListPostFDD,
                            frequencyInfo                  FrequencyInfoFDD
                        },
                        tdd                            CHOICE {
                            tdd384                         SEQUENCE {
                                ul-DPCH-Info                   UL-DPCH-InfoPostTDD,
                                dl-InformationPerRL            DL-InformationPerRL-PostTDD,
                                frequencyInfo                  FrequencyInfoTDD,
                                primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power
                            },
                            tdd128                         SEQUENCE {
                                ul-DPCH-Info                   UL-DPCH-InfoPostTDD-LCR,
                                dl-InformationPerRL            DL-InformationPerRL-PostTDD-LCR,
                                frequencyInfo                  FrequencyInfoTDD,
                                primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power
                            }
                        }
                    }
                }
            },
        -- Physical channel IEs
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power
}

-- **************************************************
--
-- HANDOVER TO UTRAN COMPLETE
--
-- **************************************************

HandoverToUTRANComplete ::= SEQUENCE {
    --TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    -- TABULAR: the IE below is conditional on history.
        startList                      STARTList                            OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- INITIAL DIRECT TRANSFER
--
-- **************************************************

InitialDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity              CN-DomainIdentity,
        intraDomainNasNodeSelector     IntraDomainNasNodeSelector,
        nas-Message                    NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH          MeasuredResultsOnRACH                OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}     OPTIONAL
```

```
    }
-- **************************************************
--
-- HANDOVER FROM UTRAN COMMAND
--
-- **************************************************

HandoverFromUTRANCommand-GSM-r3 ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
                                        HandoverFromUTRANCommand-GSM-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                      OPTIONAL,
    -- Radio bearer IEs
        remainingRAB-Info               RAB-Info                            OPTIONAL,
    -- Measurement IEs
        band-Indicator                  Band-Indicator,
    -- Other IEs
        message-and-extension           CHOICE {
            gsm-Message                     SEQUENCE {},
            -- In this case, what follows the basic production is a variable length bit string
            -- with no length field, containing the GSM message including GSM padding up to end
            -- of container, to be analysed according to GSM specifications
            with-extension                  SEQUENCE {
                messages                        GSM-MessageList
            }
        }
}

HandoverFromUTRANCommand-CDMA2000-r3 ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
                                        HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        activationTime                  ActivationTime                      OPTIONAL,
    -- Radio bearer IEs
        remainingRAB-Info               RAB-Info                            OPTIONAL,
    -- Other IEs
        cdma2000-MessageList            CDMA2000-MessageList
}

-- **************************************************
--
-- HANDOVER FROM UTRAN FAILURE
--
-- **************************************************

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentier         RRC-TransactionIdentifier,
    -- Other IEs
        interRAT-HO-Failure             InterRAT-HO-Failure                 OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}
```

```
-- **************************************************
--
-- MEASUREMENT CONTROL
--
-- **************************************************

MeasurementControl-r3 ::= CHOICE {
    r3                            SEQUENCE {
        measurementControl-r3         MeasurementControl-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions            SEQUENCE {}
}

MeasurementControl-r4 ::= CHOICE {
    r3                            SEQUENCE {
        measurementControl-r3         MeasurementControl-r3-IEs,
        nonCriticalExtensions         SEQUENCE {
            -- In case of TDD, the following IE is included instead of the IE
            -- up-IPDL-Parameters in up-OTDOA-AssistanceData
            up-Ipdl-Parameters-TDD        UP-IPDL-Parameters-TDD        OPTIONAL,
            -- Extension mechanism for non- release4 information
            nonCriticalExtensions         SEQUENCE {}                   OPTIONAL
        }                                                               OPTIONAL
    },
    criticalExtensions            CHOICE {
        r4                            SEQUENCE {
            measurementControl-r4         MeasurementControl-r4-IEs,
            nonCriticalExtensions         SEQUENCE {}    OPTIONAL
        },
        criticalExtensions            SEQUENCE {}
    }
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    -- Measurement IEs
    measurementIdentity     MeasurementIdentity,
    measurementCommand                MeasurementCommand,
    -- TABULAR: The measurement type is included in MeasurementCommand.
    measurementReportingMode          MeasurementReportingMode          OPTIONAL,
    additionalMeasurementList         AdditionalMeasurementID-List      OPTIONAL,
    -- Physical channel IEs
    dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo     OPTIONAL
}

MeasurementControl-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    -- Measurement IEs
    measurementIdentity     MeasurementIdentity,
    measurementCommand                MeasurementCommand-r4,
    -- TABULAR: The measurement type is included in MeasurementCommand.
    measurementReportingMode          MeasurementReportingMode          OPTIONAL,
    additionalMeasurementList         AdditionalMeasurementID-List      OPTIONAL,
    -- Physical channel IEs
    dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo     OPTIONAL
}

-- **************************************************
--
-- MEASUREMENT CONTROL FAILURE
--
-- **************************************************

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    failureCause                      FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions             SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- MEASUREMENT REPORT
```

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

MeasurementReport ::= SEQUENCE {
    -- Measurement IEs
     measurementIdentity    MeasurementIdentity,
     measuredResults                 MeasuredResults                     OPTIONAL,
     measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
     additionalMeasuredResults       MeasuredResultsList                 OPTIONAL,
     eventResults                    EventResults                        OPTIONAL,
    -- Extension mechanism for non- release99 information
     nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

MeasurementReport-r4 ::= SEQUENCE {
    -- Measurement IEs
     measurementIdentity    MeasurementIdentity,
     measuredResults                 MeasuredResults                     OPTIONAL,
     measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
     additionalMeasuredResults       MeasuredResultsList                 OPTIONAL,
     eventResults                    EventResults                        OPTIONAL,
    -- Extension mechanism for non- release99 information
     nonCriticalExtensions           SEQUENCE {
         interFreqEventResults-LCR       InterFreqEventResults-LCR       OPTIONAL,
         additionalMeasuredResults-LCR   MeasuredResultsList-LCR         OPTIONAL,
         nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
     }                                                                   OPTIONAL
}

-- **************************************************
--
-- PAGING TYPE 1
--
-- **************************************************

PagingType1 ::= SEQUENCE {
    -- User equipment IEs
     pagingRecordList                PagingRecordList                    OPTIONAL,
    -- Other IEs
     bcch-ModificationInfo           BCCH-ModificationInfo               OPTIONAL,
    -- Extension mechanism for non- release99 information
     nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- PAGING TYPE 2
--
-- **************************************************

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
     rrc-TransactionIdentifier       RRC-TransactionIdentifier,
     pagingCause                     PagingCause,
    -- Core network IEs
     cn-DomainIdentity               CN-DomainIdentity,
     pagingRecordTypeID              PagingRecordTypeID,
    -- Extension mechanism for non- release99 information
     nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

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

PhysicalChannelReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                    PhysicalChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
```

```
}

PhysicalChannelReconfiguration-r4 ::= CHOICE {
    r3                                  SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            physicalChannelReconfiguration-r4-ext    PhysicalChannelReconfiguration-r4-ext-IEs,
            nonCriticalExtensions                    SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                physicalChannelReconfiguration-r4
                                                PhysicalChannelReconfiguration-r4-IEs,
                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,
        ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID    OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        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-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                             SSDT-UL                             OPTIONAL
}

PhysicalChannelReconfiguration-r4-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
```

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```
        rb-WithPDCP-InfoList           RB-WithPDCP-InfoList                OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
        -- between UL DPCH info, CPCH SET info and CPCH set ID.
        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
}

-- **************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
--
-- **************************************************

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo     IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance               UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime         ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier           OPTIONAL,
        failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- **************************************************

PhysicalSharedChannelAllocation-r3 ::= CHOICE {
    r3                             SEQUENCE {
        physicalSharedChannelAllocation-r3
                                       PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3                  SEQUENCE {
        c-RNTI                         C-RNTI                              OPTIONAL,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions             SEQUENCE {}
    }
    criticalExtensions             SEQUENCE {}
}

PhysicalSharedChannelAllocation-r4 ::= CHOICE {
    r3                             SEQUENCE {
        physicalSharedChannelAllocation-r3
                                       PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    later-than-r3                  SEQUENCE {
```

```
        c-RNTI                          C-RNTI                          OPTIONAL,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    criticalExtensions                  CHOICE {
        r4                              SEQUENCE {
            physicalSharedChannelAllocation-r4
                                        PhysicalSharedChannelAllocation-r4-IEs,
            nonCriticalExtensions       SEQUENCE {}     OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
    }
    }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                          C-RNTI                          OPTIONAL,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance                UL-TimingAdvanceControl         OPTIONAL,
        pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo    OPTIONAL,
        pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo    OPTIONAL,
        confirmRequest                  ENUMERATED {
                                            confirmPDSCH, confirmPUSCH } OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        trafficVolumeReportRequest      INTEGER (0..255)                OPTIONAL,
        iscpTimeslotList                TimeslotList                    OPTIONAL
}

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                          C-RNTI                          OPTIONAL,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance                UL-TimingAdvanceControl-r4      OPTIONAL,
        pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo-r4 OPTIONAL,
        pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo-r4 OPTIONAL,
        confirmRequest                  ENUMERATED {
                                            confirmPDSCH, confirmPUSCH } OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        iscpTimeslotList                TimeslotList-r4                 OPTIONAL
}

-- **************************************************
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- **************************************************

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        c-RNTI                          C-RNTI                          OPTIONAL,
    -- Measurement IEs
        trafficVolumeMeasuredResultsList
                                        TrafficVolumeMeasuredResultsList,
        timeslotListWithISCP            TimeslotListWithISCP            OPTIONAL,
        primaryCCPCH-RSCP               PrimaryCCPCH-RSCP               OPTIONAL,
        allocationConfirmation          CHOICE {
            pdschConfirmation               PDSCH-Identity,
            puschConfirmation               PUSCH-Identity
        }                                                               OPTIONAL,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

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

RadioBearerReconfiguration-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        radioBearerReconfiguration-r3   RadioBearerReconfiguration-r3-IEs,
```

```
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        },
        later-than-r3                   SEQUENCE {
            rrc-TransactionIdentifier       RRC-TransactionIdentifier,
            criticalExtensions              SEQUENCE {}
        }
        criticalExtensions              SEQUENCE {}
}

RadioBearerReconfiguration-r4 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerReconfiguration-r3   RadioBearerReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            radioBearerReconfiguration-r4-ext   RadioBearerReconfiguration-r4-ext-IEs,
            nonCriticalExtensions               SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                radioBearerReconfiguration-r4   RadioBearerReconfiguration-r4-IEs,
                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,
        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,
        dl-InformationPerRL-List        DL-InformationPerRL-List
}

RadioBearerReconfiguration-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
```

```
    -- DL-CommonInformation. FDD only.
    ssdt-UL                         SSDT-UL                             OPTIONAL
}

RadioBearerReconfiguration-r4-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,
        rb-InformationReconfigList     RB-InformationReconfigList-r4,
        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-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
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- **************************************************

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo     IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance               UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime         ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RECONFIGURATION FAILURE
--
-- **************************************************

RadioBearerReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
```

```
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                         OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
}

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

RadioBearerRelease-r3 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerRelease-r3           RadioBearerRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

RadioBearerRelease-r4 ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerRelease-r3           RadioBearerRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            radioBearerRelease-r4-ext       RadioBearerRelease-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                radioBearerRelease-r4           RadioBearerRelease-r4-IEs,
                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-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
        ssdt-UL                            SSDT-UL                          OPTIONAL
}

RadioBearerRelease-r4-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,
        rb-WithPDCP-InfoList               RB-WithPDCP-InfoList             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-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
}

-- **************************************************
--
-- RADIO BEARER RELEASE COMPLETE
--
-- **************************************************

RadioBearerReleaseComplete ::= SEQUENCE {
```

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```
        -- User equipment IEs
          rrc-TransactionIdentifier        RRC-TransactionIdentifier,
          ul-IntegProtActivationInfo       IntegrityProtActivationInfo        OPTIONAL,
          -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
          ul-TimingAdvance                 UL-TimingAdvance                   OPTIONAL,
        -- Radio bearer IEs
          count-C-ActivationTime           ActivationTime                     OPTIONAL,
          rb-UL-CiphActivationTimeInfo     RB-ActivationTimeInfoList          OPTIONAL,
          ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo      OPTIONAL,
        -- Extension mechanism for non- release99 information
          nonCriticalExtensions            SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER RELEASE FAILURE
--
-- **************************************************

RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
      rrc-TransactionIdentifier        RRC-TransactionIdentifier,
      failureCause                     FailureCauseWithProtErr,
    -- Radio bearer IEs
      potentiallySuccesfulBearerList   RB-IdentityList                    OPTIONAL,
    -- Extension mechanism for non- release99 information
      nonCriticalExtensions            SEQUENCE {}    OPTIONAL
}

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

RadioBearerSetup-r3 ::= CHOICE {
    r3                              SEQUENCE {
      radioBearerSetup-r3             RadioBearerSetup-r3-IEs,
      nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
      rrc-TransactionIdentifier       RRC-TransactionIdentifier,
      criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

RadioBearerSetup-r4 ::= CHOICE {
    r3                              SEQUENCE {
      radioBearerSetup-r3             RadioBearerSetup-r3-IEs,
      nonCriticalExtensions           SEQUENCE {
        radioBearerSetup-r4-ext         RadioBearerSetup-r4-ext-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
      } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
      rrc-TransactionIdentifier       RRC-TransactionIdentifier,
      criticalExtensions              CHOICE {
        r4                              SEQUENCE {
          radioBearerSetup-r4             RadioBearerSetup-r4-IEs,
          nonCriticalExtensions           SEQUENCE {}    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-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                          SSDT-UL                                  OPTIONAL
}

RadioBearerSetup-r4-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-r4          OPTIONAL,
        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-AddReconfTransChInfoList          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
}

-- **************************************************
--
-- RADIO BEARER SETUP COMPLETE
--
-- **************************************************

RadioBearerSetupComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo        OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                   OPTIONAL,
        start-Value             START-Value                                OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                     OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList          OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RADIO BEARER SETUP FAILURE
--
-- **************************************************

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION REJECT
--
-- **************************************************

RRCConnectionReject-r3 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionReject-r3          RRCConnectionReject-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

RRCConnectionReject-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        rejectionCause                  RejectionCause,
        waitTime                        WaitTime,
        redirectionInfo                 RedirectionInfo                    OPTIONAL
}

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

```
--
-- RRC CONNECTION RELEASE
--
-- **************************************************

RRCConnectionRelease-r3 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-r3         RRCConnectionRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

RRCConnectionRelease-r4 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-r3         RRCConnectionRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                rrcConnectionRelease-r4         RRCConnectionRelease-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}      OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    n-308                           N-308                               OPTIONAL,
    -- The IE above is conditional on the UE state.
    releaseCause                    ReleaseCause,
    rplmn-information               Rplmn-Information                   OPTIONAL
}

RRCConnectionRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    n-308                           N-308                               OPTIONAL,
    -- The IE above is conditional on the UE state.
    releaseCause                    ReleaseCause,
    rplmn-information               Rplmn-Information-r4                 OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION RELEASE for CCCH
--
-- **************************************************

RRCConnectionRelease-CCCH-r3 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                          U-RNTI,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

RRCConnectionRelease-CCCH-r4 ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                          U-RNTI,
```

```
          rrc-TransactionIdentifier      RRC-TransactionIdentifier,
      criticalExtensions               CHOICE {
          r4                             SEQUENCE {
              rrcConnectionRelease-CCCH-r4   RRCConnectionRelease-CCCH-r4-IEs,
              nonCriticalExtensions          SEQUENCE {}    OPTIONAL
          },
          criticalExtensions             SEQUENCE {}
      }
   }
}

RRCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                        U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        rrcConnectionRelease          RRCConnectionRelease-r3-IEs
}

RRCConnectionRelease-CCCH-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                        U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        rrcConnectionRelease          RRCConnectionRelease-r4-IEs
}

-- *************************************************
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- *************************************************

RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        errorIndication               FailureCauseWithProtErr          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {}    OPTIONAL
}

-- *************************************************
--
-- RRC CONNECTION REQUEST
--
-- *************************************************

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity            InitialUE-Identity,
        establishmentCause            EstablishmentCause,
        protocolErrorIndicator        ProtocolErrorIndicator,
        -- The IE above is MD, but for compactness reasons no default value
        -- has been assigned to it.
    -- Measurement IEs
        measuredResultsOnRACH         MeasuredResultsOnRACH            OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions         SEQUENCE {}    OPTIONAL
}

-- *************************************************
--
-- RRC CONNECTION SETUP
--
-- *************************************************

RRCConnectionSetup-r3 ::= CHOICE {
    r3                            SEQUENCE {
        rrcConnectionSetup-r3         RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    later-than-r3                 SEQUENCE {
        initialUE-Identity            InitialUE-Identity,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions            SEQUENCE {}
}
```

```
RRCConnectionSetup-r4 ::= CHOICE {
    r3                                SEQUENCE {
        rrcConnectionSetup-r3         RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions         SEQUENCE {
            rrcConnectionSetup-r4Ext   RRCConnectionSetup-r4Ext-IEs,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions        SEQUENCE {}                 OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                  SEQUENCE {
        initialUE-Identity             InitialUE-Identity,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions            CHOICE {
            r4                            SEQUENCE {
                rrcConnectionSetup-r4         RRCConnectionSetup-r4-IEs,
                nonCriticalExtensions         SEQUENCE {}     OPTIONAL
            },
            criticalExtensions            SEQUENCE {}
        }
    }
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity             InitialUE-Identity,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        activationTime                 ActivationTime                      OPTIONAL,
        new-U-RNTI                     U-RNTI,
        new-c-RNTI                     C-RNTI                              OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient,
        capabilityUpdateRequirement    CapabilityUpdateRequirement        OPTIONAL,
        -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
        -- be used.
    -- Radio bearer IEs
        srb-InformationSetupList       SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo           UL-CommonTransChInfo                OPTIONAL,
        ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo           DL-CommonTransChInfo                OPTIONAL,
        dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo                  FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement          UL-ChannelRequirement               OPTIONAL,
        dl-CommonInformation           DL-CommonInformation                OPTIONAL,
        dl-InformationPerRL-List       DL-InformationPerRL-List            OPTIONAL
}

RRCConnectionSetup-r4Ext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4Ext  CapabilityUpdateRequirement-r4Ext  OPTIONAL,
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                            SSDT-UL                             OPTIONAL
}

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity             InitialUE-Identity,
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        activationTime                 ActivationTime                      OPTIONAL,
        new-U-RNTI                     U-RNTI,
        new-c-RNTI                     C-RNTI                              OPTIONAL,
        rrc-StateIndicator             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient,
        capabilityUpdateRequirement    CapabilityUpdateRequirement-r4      OPTIONAL,
        -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
        -- be used.
    -- Radio bearer IEs
        srb-InformationSetupList       SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo           UL-CommonTransChInfo                OPTIONAL,
        ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo           DL-CommonTransChInfo                OPTIONAL,
        dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList,
```

```
    -- Physical channel IEs
       frequencyInfo                      FrequencyInfo                         OPTIONAL,
       maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power                 OPTIONAL,
       ul-ChannelRequirement             UL-ChannelRequirement-r4              OPTIONAL,
       dl-CommonInformation              DL-CommonInformation-r4              OPTIONAL,
       dl-InformationPerRL-List          DL-InformationPerRL-List-r4          OPTIONAL
}

-- **************************************************
--
-- RRC CONNECTION SETUP COMPLETE
--
-- **************************************************

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
       rrc-TransactionIdentifier         RRC-TransactionIdentifier,
       startList                         STARTList,
       ue-RadioAccessCapability          UE-RadioAccessCapability              OPTIONAL,
    -- Other IEs
       ue-RATSpecificCapability          InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- Extension mechanism for non- release99 information
       nonCriticalExtensions-r3          SEQUENCE {
           rrcConnectionSetupComplete-r4ext RRCConnectionSetupComplete-r4ext,
           nonCriticalExtensions-r4          SEQUENCE {}      OPTIONAL
       }           OPTIONAL
}

RRCConnectionSetupComplete-r4ext ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-r4ext        UE-RadioAccessCapability-r4ext        OPTIONAL
}

-- **************************************************
--
-- RRC STATUS
--
-- **************************************************

RRCStatus ::= SEQUENCE {
    -- Other IEs
       protocolErrorInformation          ProtocolErrorMoreInformation,
    -- TABULAR:  Identification of received message is nested in
    -- ProtocolErrorMoreInformation
    -- Extension mechanism for non- release99 information
       nonCriticalExtensions             SEQUENCE {}      OPTIONAL
}

SecurityModeCommand-r3 ::= CHOICE {
    r3                                SEQUENCE {
       securityModeCommand-r3             SecurityModeCommand-r3-IEs,
       nonCriticalExtensions             SEQUENCE {}      OPTIONAL
    },
    later-than-r3                     SEQUENCE {
       rrc-TransactionIdentifier         RRC-TransactionIdentifier,
       criticalExtensions                SEQUENCE {}
    }
    criticalExtensions                SEQUENCE {}
}

-- **************************************************
--
-- SECURITY MODE COMMAND
--
-- **************************************************

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
    -- User equipment IEs
       rrc-TransactionIdentifier         RRC-TransactionIdentifier,
       securityCapability                SecurityCapability,
       cipheringModeInfo                 CipheringModeInfo                     OPTIONAL,
       integrityProtectionModeInfo       IntegrityProtectionModeInfo          OPTIONAL,
    -- Core network IEs
       cn-DomainIdentity                 CN-DomainIdentity,
    -- Other IEs
       ue-SystemSpecificSecurityCap      InterRAT-UE-SecurityCapList           OPTIONAL
```

```
}

-- **************************************************
--
-- SECURITY MODE COMPLETE
--
-- **************************************************

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.

    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo       IntegrityProtActivationInfo        OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo     RB-ActivationTimeInfoList          OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SECURITY MODE FAILURE
--
-- **************************************************

SecurityModeFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        failureCause                     FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE
--
-- **************************************************

SignallingConnectionRelease-r3 ::= CHOICE {
    r3                               SEQUENCE {
        signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    later-than-r3                    SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions               SEQUENCE {}
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Core network IEs
        cn-DomainIdentity                CN-DomainIdentity
}

-- **************************************************
--
-- SIGNALLING CONNECTION RELEASE REQUEST
--
-- **************************************************

SignallingConnectionReleaseRequest ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity                CN-DomainIdentity,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- SYSTEM INFORMATION for BCH
--
-- **************************************************
```

```
SystemInformation-BCH ::= SEQUENCE {
    -- Other information elements
        sfn-Prime                       SFN-Prime,
        payload                         CHOICE {
            noSegment                       NULL,
            firstSegment                    FirstSegment,
            subsequentSegment               SubsequentSegment,
            lastSegmentShort                    LastSegmentShort,
            lastAndFirst                    SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                firstSegment                    FirstSegmentShort
            },
            lastAndComplete                 SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List
            },
            lastAndCompleteAndFirst         SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB-List                CompleteSIB-List,
            completeAndFirst                SEQUENCE {
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB                     CompleteSIB,
            lastSegment                     LastSegment
        }
}

-- **************************************************
--
-- SYSTEM INFORMATION for FACH
--
-- **************************************************

SystemInformation-FACH ::= SEQUENCE {
    -- Other information elements
        payload                         CHOICE {
            noSegment                       NULL,
            firstSegment                    FirstSegment,
            subsequentSegment               SubsequentSegment,
            lastSegmentShort                LastSegmentShort,
            lastAndFirst                    SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                firstSegment                    FirstSegmentShort
            },
            lastAndComplete                 SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List
            },
            lastAndCompleteAndFirst         SEQUENCE {
                lastSegmentShort                LastSegmentShort,
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB-List                CompleteSIB-List,
            completeAndFirst                SEQUENCE {
                completeSIB-List                CompleteSIB-List,
                firstSegment                    FirstSegmentShort
            },
            completeSIB                     CompleteSIB,
            lastSegment                     LastSegment
        }
}

-- **************************************************
--
-- First segment
--
-- **************************************************

FirstSegment ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        seg-Count                       SegCount,
        sib-Data-fixed                  SIB-Data-fixed
```

```
}

-- **************************************************
--
-- First segment (short)
--
-- **************************************************

FirstSegmentShort ::=              SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        seg-Count                       SegCount,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- Subsequent segment
--
-- **************************************************

SubsequentSegment ::=              SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-fixed                  SIB-Data-fixed
}

-- **************************************************
--
-- Last segment
--
-- **************************************************

LastSegment ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-fixed                  SIB-Data-fixed
    -- In case the SIB data is less than 222 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

LastSegmentShort ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        segmentIndex                    SegmentIndex,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- Complete SIB
--
-- **************************************************

CompleteSIB-List ::=               SEQUENCE (SIZE (1..maxSIBperMsg)) OF
                                        CompleteSIBshort

CompleteSIB ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        sib-Data-fixed                  BIT STRING (SIZE (226))
    -- In case the SIB data is less than 226 bits, padding shall be used
    -- The same padding bits shall be used as defined in clause 12.1
}

CompleteSIBshort ::=                    SEQUENCE {
    -- Other information elements
        sib-Type                        SIB-Type,
        sib-Data-variable               SIB-Data-variable
}

-- **************************************************
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- **************************************************
```

```
SystemInformationChangeIndication ::=   SEQUENCE {
    -- Other IEs
        bcch-ModificationInfo               BCCH-ModificationInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
}

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

TransportChannelReconfiguration-r3 ::= CHOICE {
    r3                              SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}    OPTIONAL
    },
    later-than-r3               SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

TransportChannelReconfiguration-r4 ::= CHOICE {
    r3                              SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            transportChannelReconfiguration-r4-ext  TransportChannelReconfiguration-r4-ext-IEs,
            nonCriticalExtensions               SEQUENCE {} OPTIONAL
        }       OPTIONAL
    },
    later-than-r3               SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                transportChannelReconfiguration-r4
                                                TransportChannelReconfiguration-r4-IEs,
                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-r4-ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                            SSDT-UL                             OPTIONAL
}

TransportChannelReconfiguration-r4-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
    rb-WithPDCP-InfoList               RB-WithPDCP-InfoList                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-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
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- **************************************************

TransportChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo         IntegrityProtActivationInfo         OPTIONAL,
    -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                   UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime             ActivationTime                      OPTIONAL,
    rb-UL-CiphActivationTimeInfo       RB-ActivationTimeInfoList           OPTIONAL,
    ul-CounterSynchronisationInfo      UL-CounterSynchronisationInfo       OPTIONAL,
```

```
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- **************************************************

TransportChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL
--
-- **************************************************

TransportFormatCombinationControl ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message when transmitting this
message
    -- on the transparent mode signalling DCCH.
        rrc-TransactionIdentifier       RRC-TransactionIdentifier         OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            tfcs-ID                             TFCS-Identity    OPTIONAL
            }
    },
    dpch-TFCS-InUplink                  TFC-Subset,
    activationTimeForTFCSubset          ActivationTime                    OPTIONAL,
    tfc-ControlDuration                 TFC-ControlDuration               OPTIONAL,
    -- The information element is not included when transmitting the message
    -- on the transparent mode signalling DCCH and is optional otherwise
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- **************************************************

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY ENQUIRY
--
-- **************************************************

UECapabilityEnquiry-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        ueCapabilityEnquiry-r3          UECapabilityEnquiry-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            ueCapabilityEnquiry-r4ext       UECapabilityEnquiry-r4Ext-IEs,
            nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
        }         OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
```

```
    criticalExtensions            SEQUENCE {}
}

UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        capabilityUpdateRequirement     CapabilityUpdateRequirement
}

UECapabilityEnquiry-r4Ext-IEs ::= SEQUENCE {
        capabilityUpdateRequirement-r4Ext   CapabilityUpdateRequirement-r4Ext
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION
--
-- **************************************************

UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier       OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability        OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList
    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions-r3        SEQUENCE {
            ueCapabilityInformation-r4ext   UECapabilityInformation-r4ext,
            nonCriticalExtensions-r4        SEQUENCE {}     OPTIONAL
        }           OPTIONAL
}

UECapabilityInformation-r4ext ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-r4ext      UE-RadioAccessCapability-r4ext      OPTIONAL
}

-- **************************************************
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- **************************************************

UECapabilityInformationConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityInformationConfirm-r3
                                    UECapabilityInformationConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions            SEQUENCE {}
}

UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier
}

-- **************************************************
--
-- UPLINK DIRECT TRANSFER
--
-- **************************************************

UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        nas-Message                     NAS-Message,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH           OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}
```

```
-- **************************************************
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- **************************************************

UplinkPhysicalChannelControl-r3 ::= CHOICE {
    r3                              SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}


UplinkPhysicalChannelControl-r4 ::= CHOICE {
    r3                              SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            -- In case of TDD, the following IE is included instead of the IE
            -- up-IPDL-Parameters in up-OTDOA-AssistanceData
            openLoopPowerControl-IPDL-TDD   OpenLoopPowerControl-IPDL-TDD   OPTIONAL,
            -- Extension mechanism for non- release4 information
            noncriticalExtensions           SEQUENCE {}                     OPTIONAL
        }                                                                   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
                nonCriticalExtensions           SEQUENCE {} OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}

UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Physical channel IEs
        ccTrCH-PowerControlInfo         CCTrCH-PowerControlInfo             OPTIONAL,
        timingAdvance                   UL-TimingAdvanceControl             OPTIONAL,
        alpha                           Alpha                              OPTIONAL,
        specialBurstScheduling          SpecialBurstScheduling             OPTIONAL,
        prach-ConstantValue             ConstantValue                      OPTIONAL,
        pusch-ConstantValue             ConstantValue                      OPTIONAL
}

UplinkPhysicalChannelControl-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Physical channel IEs
        ccTrCH-PowerControlInfo         CCTrCH-PowerControlInfo-r4          OPTIONAL,
        tddOption                       CHOICE {
            tdd384                          SEQUENCE {
                timingAdvance                   UL-TimingAdvanceControl-r4  OPTIONAL,
                alpha                           Alpha                      OPTIONAL,
                prach-ConstantValue             ConstantValue              OPTIONAL,
                pusch-ConstantValue             ConstantValue              OPTIONAL,
                openLoopPowerControl-IPDL-TDD   OpenLoopPowerControl-IPDL-TDD   OPTIONAL
            },
            tdd128                          SEQUENCE {
                ul-SynchronisationParameters    UL-SynchronisationParameters   OPTIONAL
            }
        }
}

-- **************************************************
--
-- URA UPDATE
--
-- **************************************************
```

```
URAUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        ura-UpdateCause                 URA-UpdateCause,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}   OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM
--
-- **************************************************

URAUpdateConfirm-r3 ::= CHOICE {
    r3                              SEQUENCE {
        uraUpdateConfirm-r3             URAUpdateConfirm-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

URAUpdateConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                  OPTIONAL,
        new-U-RNTI                      U-RNTI                             OPTIONAL,
        new-C-RNTI                      C-RNTI                             OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfo                 OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo       OPTIONAL
}

-- **************************************************
--
-- URA UPDATE CONFIRM for CCCH
--
-- **************************************************

URAUpdateConfirm-CCCH-r3 ::= CHOICE {
    r3                              SEQUENCE {
        uraUpdateConfirm-CCCH-r3        URAUpdateConfirm-CCCH-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                          U-RNTI,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
    criticalExtensions              SEQUENCE {}
}

URAUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
        uraUpdateConfirm                URAUpdateConfirm-r3-IEs
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION
--
-- **************************************************

UTRANMobilityInformation ::= SEQUENCE {
```

```
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        integrityProtectionModeInfo    IntegrityProtectionModeInfo        OPTIONAL,
        cipheringModeInfo              CipheringModeInfo                  OPTIONAL,
        new-U-RNTI                     U-RNTI                             OPTIONAL,
        new-C-RNTI                     C-RNTI                             OPTIONAL,
        ue-ConnTimersAndConstants      UE-ConnTimersAndConstants          OPTIONAL,
    -- CN information elements
        cn-InformationInfo             CN-InformationInfo                 OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                   URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime         ActivationTime                     OPTIONAL,
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- **************************************************

UTRANMobilityInformationConfirm ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo     IntegrityProtActivationInfo        OPTIONAL,
    -- Radio bearer IEs
        rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList          OPTIONAL,
        ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- **************************************************

UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
}

END
```

CR-Form-v3

CHANGE REQUEST

| ⌘ | **25.331** CR **905** | ⌘ | rev | **-** | ⌘ | Current version: | **3.6.0** | ⌘ |

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

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

Title:	⌘	Corrections concerning CN DRX cycle transfer upon inter RAT change to UTRA
Source:	⌘	TSG-RAN WG2
Work item code:	⌘ TEI	***Date:*** ⌘ 2001-05-28
Category:	⌘ **F**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘	Rationale for original version of this CR:
	• The UE obtains IE "CN domain specific DRX cycle length coefficient" from system information block type 1/ 13, which the UE is required to read only in idle mode. Upon inter RAT handover the UE accesses UTRA without going via idle mode. As a result, when the UE is moved to CELL_PCH/ URA_PCH after having entered via inter RAT handover, CN originated paging, e.g. to receive an SMS, will not work properly
	• The ASN.1 mistakenly allows only the inclusion of non critical extensions within the UTRAN MOBILITY INFORMATION message
	A potential alternative solution would be to require that the UE acquires SIB 1 upon leaving CELL_DCH when having entered via an inter RAT handover. However, the UE moved to a cell controlled by another RNC, in which case it might acquire another CN DRX cycle value than broadcast in the cells controlled by the SRNC. Since this solution may not work in all cases, the proposal is to transfer the CN DRX cycle information by means of the UTRAN MOBILITY INFORMATION message instead
	Note: Currently the CN DRX cycle is not transferred upon SRNS relocation. This is corrected in another CR
Summary of change: ⌘	The following changes are proposed in the original version of this CR:
	• The UTRAN MOBILITY INFORMATION message has been re- defined within the ASN.1 to include the possibility to add critical extensions
	• IE "CN domain specific DRX cycle length coefficient" is added to the UTRAN MOBILITY INFORMATION message
	NOTE The proposal is to change the message in a non backwards compatible manner, since a non backwards compatible change is already required for

		the security (count-c activation time)

<u>Backwards compatibility</u>
This CR modifies the ASN.1 of the UTRAN MOBILITY INFORMATION message by adding the possibility to introduce critical extensions and by adding the CN DRX cycle length
- <u>Affected functions</u>: The UTRAN mobility information procedure as well as the inter RAT mobility procedures (handover, cell change order) are affected
- <u>Affected implementations</u>: it is unlikely that some implementations have assumed the missing behaviour to be as specified in this CR
- <u>Rationale</u>: The specification was incomplete; signalling parameters were missing

Consequences if not approved:	⌘	If the CR is not approved, the consequences are as follows: - After entering UTRA via an inter RAT handover AND - If upon completion of the CS domain service the UE has a low rate data service ongoing (so UTRAN does not move the UE to idle mode but to CELL_PCH/ URA_PCH) - CN originated paging will not work properly, meaning the UE will be unable to receive new CN initiated service requests e.g. SMS Moreover, it will not be possible to add critical extensions to the UTRAN MOBILITY INFORMATION message in future

Clauses affected:	⌘	10.2.62, 10.3.1.3a (new), 11.1, 11.2, 11.3

Other specs affected:	⌘	Other core specifications	⌘	
		Test specifications		
		O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:

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

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

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

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

10.2.62   UTRAN MOBILITY INFORMATION

This message is used by UTRAN to allocate a new RNTI and to convey other UTRAN mobility related information to a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements				
Integrity check info	CH		Integrity check info 10.3.3.16	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
UE Timers and constants in connected mode	OP		UE Timers and constants in connected mode 10.3.3.43	
CN Information Elements				
CN Information info	OP		CN Information info full 10.3.1.3a	
UTRAN Information Elements				
URA identity	OP		URA identity 10.3.2.6	
RB Information elements				
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxRBall RABs>		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	

10.3.1.3a   CN Information info full

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMN identity	OP		PLMN identity 10.3.1.11	
CN common GSM-MAP NAS system information	OP		NAS system information (GSM-MAP) 10.3.1.9	
CN domain related information	OP	1 to <maxCNdomains>		
>CN domain identity	MP		CN domain identity 10.3.1.1	
>CN domain specific GSM-MAP NAS system info	MP		NAS system information (GSM-MAP) 10.3.1.9	
>CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6	

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    ActiveSetUpdate-r3,
    ActiveSetUpdateComplete,
    ActiveSetUpdateFailure,
    AssistanceDataDelivery-r3,
    CellChangeOrderFromUTRAN-r3,
    CellChangeOrderFromUTRANFailure,
    CellUpdate,
    CellUpdateConfirm-CCCH-r3,
    CellUpdateConfirm-r3,
    CounterCheck-r3,
    CounterCheckResponse,
    DownlinkDirectTransfer-r3,
    HandoverToUTRANComplete,
    InitialDirectTransfer,
    HandoverFromUTRANCommand-GSM-r3,
    HandoverFromUTRANCommand-CDMA2000-r3,
    HandoverFromUTRANFailure,
    MeasurementControl-r3,
    MeasurementControlFailure,
    MeasurementReport,
    PagingType1,
    PagingType2,
    PhysicalChannelReconfiguration-r3,
    PhysicalChannelReconfigurationComplete,
    PhysicalChannelReconfigurationFailure,
    PhysicalSharedChannelAllocation-r3,
    PUSCHCapacityRequest,
    RadioBearerReconfiguration-r3,
    RadioBearerReconfigurationComplete,
    RadioBearerReconfigurationFailure,
    RadioBearerRelease-r3,
    RadioBearerReleaseComplete,
    RadioBearerReleaseFailure,
    RadioBearerSetup-r3,
    RadioBearerSetupComplete,
    RadioBearerSetupFailure,
    RRCConnectionReject-r3,
    RRCConnectionRelease-r3,
    RRCConnectionRelease-CCCH-r3,
    RRCConnectionReleaseComplete,
    RRCConnectionRequest,
    RRCConnectionSetup-r3,
    RRCConnectionSetupComplete,
    RRCStatus,
    SecurityModeCommand-r3,
    SecurityModeComplete,
    SecurityModeFailure,
    SignallingConnectionRelease-r3,
    SignallingConnectionReleaseRequest,
    SystemInformation-BCH,
    SystemInformation-FACH,
    SystemInformationChangeIndication,
    TransportChannelReconfiguration-r3,
    TransportChannelReconfigurationComplete,
    TransportChannelReconfigurationFailure,
    TransportFormatCombinationControl,
    TransportFormatCombinationControlFailure,
    UECapabilityEnquiry-r3,
    UECapabilityInformation,
    UECapabilityInformationConfirm-r3,
    UplinkDirectTransfer,
    UplinkPhysicalChannelControl-r3,
    URAUpdate,
    URAUpdateConfirm-r3,
    URAUpdateConfirm-CCCH-r3,
    UTRANMobilityInformation-r3,
    UTRANMobilityInformationConfirm,
    UTRANMobilityInformationFailure
```

```
        FROM PDU-definitions

    -- User Equipment IEs :
        IntegrityCheckInfo
    FROM InformationElements;

    --*************************************************************
    --
    -- Downlink DCCH messages
    --
    --*************************************************************

    DL-DCCH-Message ::= SEQUENCE {
        integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
        message                 DL-DCCH-MessageType
    }

    DL-DCCH-MessageType ::= CHOICE {
        activeSetUpdate                     ActiveSetUpdate-r3,
        assistanceDataDelivery              AssistanceDataDelivery-r3,
        cellChangeOrderFromUTRAN            CellChangeOrderFromUTRAN-r3,
        cellUpdateConfirm                   CellUpdateConfirm-r3,
        counterCheck                        CounterCheck-r3,
        downlinkDirectTransfer              DownlinkDirectTransfer-r3,
        handoverFromUTRANCommand-GSM        HandoverFromUTRANCommand-GSM-r3,
        handoverFromUTRANCommand-CDMA2000   HandoverFromUTRANCommand-CDMA2000-r3,
        measurementControl                  MeasurementControl-r3,
        pagingType2                         PagingType2,
        physicalChannelReconfiguration      PhysicalChannelReconfiguration-r3,
        physicalSharedChannelAllocation     PhysicalSharedChannelAllocation-r3,
        radioBearerReconfiguration          RadioBearerReconfiguration-r3,
        radioBearerRelease                  RadioBearerRelease-r3,
        radioBearerSetup                    RadioBearerSetup-r3,
        rrcConnectionRelease                RRCConnectionRelease-r3,
        securityModeCommand                 SecurityModeCommand-r3,
        signallingConnectionRelease         SignallingConnectionRelease-r3,
        transportChannelReconfiguration     TransportChannelReconfiguration-r3,
        transportFormatCombinationControl   TransportFormatCombinationControl,
        ueCapabilityEnquiry                 UECapabilityEnquiry-r3,
        ueCapabilityInformationConfirm      UECapabilityInformationConfirm-r3,
        uplinkPhysicalChannelControl        UplinkPhysicalChannelControl-r3,
        uraUpdateConfirm                    URAUpdateConfirm-r3,
        utranMobilityInformation            UTRANMobilityInformation-r3,
        extension                           NULL
    }

    --*************************************************************
    --
    -- Uplink DCCH messages
    --
    --*************************************************************

    UL-DCCH-Message ::= SEQUENCE {
        integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
        message                 UL-DCCH-MessageType
    }

    UL-DCCH-MessageType ::= CHOICE {
        activeSetUpdateComplete             ActiveSetUpdateComplete,
        activeSetUpdateFailure              ActiveSetUpdateFailure,
        cellChangeOrderFromUTRANFailure     CellChangeOrderFromUTRANFailure,
        counterCheckResponse                CounterCheckResponse,
        handoverToUTRANComplete             HandoverToUTRANComplete,
        initialDirectTransfer               InitialDirectTransfer,
        handoverFromUTRANFailure            HandoverFromUTRANFailure,
        measurementControlFailure           MeasurementControlFailure,
        measurementReport                   MeasurementReport,
        physicalChannelReconfigurationComplete
                                            PhysicalChannelReconfigurationComplete,
        physicalChannelReconfigurationFailure
                                            PhysicalChannelReconfigurationFailure,
        radioBearerReconfigurationComplete  RadioBearerReconfigurationComplete,
        radioBearerReconfigurationFailure   RadioBearerReconfigurationFailure,
        radioBearerReleaseComplete          RadioBearerReleaseComplete,
        radioBearerReleaseFailure           RadioBearerReleaseFailure,
        radioBearerSetupComplete            RadioBearerSetupComplete,
        radioBearerSetupFailure             RadioBearerSetupFailure,
        rrcConnectionReleaseComplete        RRCConnectionReleaseComplete,
```

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```
    rrcConnectionSetupComplete          RRCConnectionSetupComplete,
    rrcStatus                           RRCStatus,
    securityModeComplete                SecurityModeComplete,
    securityModeFailure                 SecurityModeFailure,
    signallingConnectionReleaseRequest  SignallingConnectionReleaseRequest,
    transportChannelReconfigurationComplete
                                        TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure
                                        TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure
                                        TransportFormatCombinationControlFailure,
    ueCapabilityInformation             UECapabilityInformation,
    uplinkDirectTransfer                UplinkDirectTransfer,
    utranMobilityInformationConfirm     UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure     UTRANMobilityInformationFailure,
    extension                           NULL
}

--*************************************************************
--
-- Downlink CCCH messages
--
--*************************************************************

DL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 DL-CCCH-MessageType
}

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm                   CellUpdateConfirm-CCCH-r3,
    rrcConnectionReject                 RRCConnectionReject-r3,
    rrcConnectionRelease                RRCConnectionRelease-CCCH-r3,
    rrcConnectionSetup                  RRCConnectionSetup-r3,
    uraUpdateConfirm                    URAUpdateConfirm-CCCH-r3,
    extension                           NULL
}

--*************************************************************
--
-- Uplink CCCH messages
--
--*************************************************************

UL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 UL-CCCH-MessageType
}

UL-CCCH-MessageType ::= CHOICE {
    cellUpdate                          CellUpdate,
    rrcConnectionRequest                RRCConnectionRequest,
    uraUpdate                           URAUpdate,
    extension                           NULL
}

--*************************************************************
--
-- PCCH messages
--
--*************************************************************

PCCH-Message ::= SEQUENCE {
    message             PCCH-MessageType
}

PCCH-MessageType ::= CHOICE {
    pagingType1                         PagingType1,
    extension                           NULL
}

--*************************************************************
--
-- Downlink SHCCH messages
--
--*************************************************************

DL-SHCCH-Message ::= SEQUENCE {
```

```
    message                      DL-SHCCH-MessageType
}

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation    PhysicalSharedChannelAllocation-r3,
    extension                          NULL
}

--*************************************************************
--
-- Uplink SHCCH messages
--
--*************************************************************

UL-SHCCH-Message ::= SEQUENCE {
    message                      UL-SHCCH-MessageType
}

UL-SHCCH-MessageType ::= CHOICE {
    puschCapacityRequest               PUSCHCapacityRequest,
    extension                          NULL
}


--*************************************************************
--
-- BCCH messages sent on FACH
--
--*************************************************************

BCCH-FACH-Message ::= SEQUENCE {
    message            BCCH-FACH-MessageType
}

BCCH-FACH-MessageType ::= CHOICE {
    systemInformation                  SystemInformation-FACH,
    systemInformationChangeIndication  SystemInformationChangeIndication,
    extension                          NULL
}

--*************************************************************
--
-- BCCH messages sent on BCH
--
--*************************************************************

BCCH-BCH-Message ::= SEQUENCE {
    message            SystemInformation-BCH
}

END
```

11.2 PDU definitions

```
--*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*************************************************************
--
-- IE parameter types from other modules
--
--*************************************************************

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    Rb-timer-indicator,
    Re-EstablishmentTimer,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-ConnTimersAndConstants,
    URA-UpdateCause,
    UTRAN-DRX-CycleLengthCoefficient,
    WaitTime,
-- Radio Bearer IEs :
    DefaultConfigIdentity,
    DefaultConfigMode,
    DL-CounterSynchronisationInfo,
    PredefinedConfigIdentity,
    RAB-Info,
    RAB-Info-Post,
    RAB-InformationList,
    RAB-InformationReconfigList,
    RAB-InformationSetupList,
```

```
        RB-ActivationTimeInfo,
        RB-ActivationTimeInfoList,
        RB-COUNT-C-InformationList,
        RB-COUNT-C-MSB-InformationList,
        RB-IdentityList,
        RB-InformationAffectedList,
        RB-InformationReconfigList,
        RB-InformationReleaseList,
        RB-InformationSetupList,
        RB-WithPDCP-InfoList,
        SRB-InformationSetupList,
        SRB-InformationSetupList2,
        UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
        CPCH-SetID,
        DL-AddReconfTransChInfo2List,
        DL-AddReconfTransChInfoList,
        DL-CommonTransChInfo,
        DL-DeletedTransChInfoList,
        DRAC-StaticInformationList,
        TFC-Subset,
        TFCS-Identity,
        UL-AddReconfTransChInfoList,
        UL-CommonTransChInfo,
        UL-DeletedTransChInfoList,
-- Physical Channel IEs :
        AllocationPeriodInfo,
        Alpha,
        CCTrCH-PowerControlInfo,
        ConstantValue,
        CPCH-SetInfo,
        DL-CommonInformation,
        DL-CommonInformationPost,
        DL-InformationPerRL,
        DL-InformationPerRL-List,
        DL-InformationPerRL-ListPostFDD,
        DL-InformationPerRL-PostTDD,
        DL-DPCH-PowerControlInfo,
        DL-PDSCH-Information,
        DPCH-CompressedModeStatusInfo,
        FrequencyInfo,
        FrequencyInfoFDD,
        FrequencyInfoTDD,
        IndividualTS-InterferenceList,
        MaxAllowedUL-TX-Power,
        PDSCH-CapacityAllocationInfo,
        PDSCH-Identity,
        PDSCH-Info,
        PRACH-RACH-Info,
        PrimaryCCPCH-TX-Power,
        PUSCH-CapacityAllocationInfo,
        PUSCH-Identity,
        RL-AdditionInformationList,
        RL-RemovalInformationList,
        SpecialBurstScheduling,
        SSDT-Information,
        TFC-ControlDuration,
        TimeslotList,
        TX-DiversityMode,
        UL-ChannelRequirement,
        UL-ChannelRequirementWithCPCH-SetID,
        UL-DPCH-Info,
        UL-DPCH-InfoPostFDD,
        UL-DPCH-InfoPostTDD,
        UL-TimingAdvance,
        UL-TimingAdvanceControl,
-- Measurement IEs :
        AdditionalMeasurementID-List,
        Band-Indicator,
        EventResults,
        InterRAT-TargetCellDescription,
        MeasuredResults,
        MeasuredResultsList,
        MeasuredResultsOnRACH,
        MeasurementCommand,
        MeasurementIdentity,
        MeasurementReportingMode,
        PrimaryCCPCH-RSCP,
```

```
        TimeslotListWithISCP,
        TrafficVolumeMeasuredResultsList,
        UE-Positioning-GPS-AssistanceData,
        UE-Positioning-OTDOA-AssistanceData,
-- Other IEs :
        BCCH-ModificationInfo,
        CDMA2000-MessageList,
        GSM-MessageList,
        InterRAT-ChangeFailureCause,
        InterRAT-HO-Failure,
        InterRAT-UE-RadioAccessCapabilityList,
        InterRAT-UE-SecurityCapList,
        InterRATMessage,
        IntraDomainNasNodeSelector,
        ProtocolErrorInformation,
        ProtocolErrorMoreInformation,
        Rplmn-Information,
        SegCount,
        SegmentIndex,
        SFN-Prime,
        SIB-Data-fixed,
        SIB-Data-variable,
        SIB-Type
FROM InformationElements

        maxSIBperMsg,
        maxSystemCapability
FROM Constant-definitions;

<Cut until next change>

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION
--
-- **************************************************

UTRANMobilityInformation-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        utranMobilityInformation-r3     UTRANMobilityInformation-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions                  SEQUENCE {}
}

UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        ue-ConnTimersAndConstants       UE-ConnTimersAndConstants           OPTIONAL,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfoFull              OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}
```

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

-- **************************************************
--
--      CORE NETWORK INFORMATION ELEMENTS (10.3.1)
--
-- **************************************************

BEGIN

IMPORTS

    hiPDSCHidentities,
    hiPUSCHidentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,
    maxASCpersist,
    maxCCTrCH,
    maxCellMeas,
    maxCellMeas-1,
    maxCNdomains,
    maxCPCHsets,
    maxDPCH-DLchan,
    maxDPCHcodesPerTS,
    maxDPDCH-UL,
    maxDRACclasses,
    maxFACH,
    maxFreq,
    maxFrequencybands,
    maxInterSysMessages,
    maxLoCHperRLC,
    maxMeasEvent,
    maxMeasIntervals,
    maxMeasParEvent,
    maxNumCDMA2000Freqs,
    maxNumFDDFreqs,
    maxNumGSMFreqRanges,
    maxNumTDDFreqs,
    maxOtherRAT,
    maxPage1,
    maxPCPCH-APsig,
    maxPCPCH-APsubCh,
    maxPCPCH-CDsig,
    maxPCPCH-CDsubCh,
    maxPCPCH-SF,
    maxPCPCHs,
    maxPDCPAlgoType,
    maxPDSCH,
    maxPDSCH-TFCIgroups,
    maxPRACH,
    maxPUSCH,
    maxRABsetup,
    maxRAT,
    maxRB,
    maxRBallRABs,
    maxRBMuxOptions,
    maxRBperRAB,
    maxReportedGSMCells,
    maxSRBsetup,
    maxRL,
    maxRL-1,
    maxSCCPCH,
    maxSat,
    maxSIB,
    maxSIB-FACH,
    maxSig,
    maxSubCh,
    maxSystemCapability,
    maxTF,
    maxTF-CPCH,
    maxTFC,
    maxTFCI-2-Combs,
```

```
    maxTGPS,
    maxTrCH,
    maxTS,
    maxTS-1,
    maxURA
FROM Constant-definitions;

Ansi-41-IDNNS ::=                       BIT STRING (SIZE (14))

CN-DomainIdentity ::=           ENUMERATED {
                                    cs-domain,
                                    ps-domain }

CN-DomainInformation ::=        SEQUENCE {
    cn-DomainIdentity               CN-DomainIdentity,
    cn-DomainSpecificNAS-Info       NAS-SystemInformationGSM-MAP
}

CN-DomainInformationFull ::=        SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    cn-DomainSpecificNAS-Info           NAS-SystemInformationGSM-MAP,
    cn-DRX-CycleLengthCoeff             CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList ::=    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                    CN-DomainInformation

CN-DomainInformationListFull ::=    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CN-DomainInformationFull

CN-DomainSysInfo ::=            SEQUENCE {
    cn-DomainIdentity               CN-DomainIdentity,
    cn-Type                         CHOICE {
        gsm-MAP                         NAS-SystemInformationGSM-MAP,
        ansi-41                         NAS-SystemInformationANSI-41
    },
    cn-DRX-CycleLengthCoeff         CN-DRX-CycleLengthCoefficient
}

CN-DomainSysInfoList ::=        SEQUENCE (SIZE (1..maxCNdomains)) OF
                                    CN-DomainSysInfo

CN-InformationInfo ::=          SEQUENCE {
    plmn-Identity                   PLMN-Identity                   OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationList        CN-DomainInformationList        OPTIONAL
}

CN-InformationInfoFull ::=          SEQUENCE {
    plmn-Identity                       PLMN-Identity                   OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo        NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationListFull        CN-DomainInformationListFull    OPTIONAL
}
```

CR-Form-v3

CHANGE REQUEST

⌘ **25.331 CR 906** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

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

Title: ⌘	Corrections concerning CN DRX cycle transfer upon inter RAT change to UTRA	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-05-28
Category: ⌘ **A**		***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	Rationale for original version of this CR: • The UE obtains IE "CN domain specific DRX cycle length coefficient" from system information block type 1/ 13, which the UE is required to read only in idle mode. Upon inter RAT handover the UE accesses UTRA without going via idle mode. As a result, when the UE is moved to CELL_PCH/ URA_PCH after having entered via inter RAT handover, CN originated paging, e.g. to receive an SMS, will not work properly • The ASN.1 mistakenly allows only the inclusion of non critical extensions within the UTRAN MOBILITY INFORMATION message A potential alternative solution would be to require that the UE acquires SIB 1 upon leaving CELL_DCH when having entered via an inter RAT handover. However, the UE moved to a cell controlled by another RNC, in which case it might acquire another CN DRX cycle value than broadcast in the cells controlled by the SRNC. Since this solution may not work in all cases, the proposal is to transfer the CN DRX cycle information by means of the UTRAN MOBILITY INFORMATION message instead Note: Currently the CN DRX cycle is not transferred upon SRNS relocation. This is corrected in another CR
Summary of change: ⌘	The following changes are proposed in the original version of this CR: • The UTRAN MOBILITY INFORMATION message has been re- defined within the ASN.1 to include the possibility to add critical extensions • IE "CN domain specific DRX cycle length coefficient" is added to the UTRAN MOBILITY INFORMATION message *NOTE The proposal is to change the message in a non backwards compatible manner, since a non backwards compatible change is already required for*

		the security (count-c activation time)	

Backwards compatibility
This CR modifies the ASN.1 of the UTRAN MOBILITY INFORMATION message by adding the possibility to introduce critical extensions and by adding the CN DRX cycle length

- Affected functions: The UTRAN mobility information procedure as well as the inter RAT mobility procedures (handover, cell change order) are affected
- Affected implementations: it is unlikely that some implementations have assumed the missing behaviour to be as specified in this CR
- Rationale: The specification was incomplete; signalling parameters were missing

Consequences if not approved:	⌘	If the CR is not approved, the consequences are as follows: • After entering UTRA via an inter RAT handover AND • If upon completion of the CS domain service the UE has a low rate data service ongoing (so UTRAN does not move the UE to idle mode but to CELL_PCH/ URA_PCH) • CN originated paging will not work properly, meaning the UE will be unable to receive new CN initiated service requests e.g. SMS Moreover, it will not be possible to add critical extensions to the UTRAN MOBILITY INFORMATION message in future

Clauses affected:	⌘	10.2.62, 10.3.1.3a (new), 11.1, 11.2, 11.3		
Other specs affected:	⌘	Other core specifications Test specifications O&M Specifications	⌘	
Other comments:	⌘			

How to create CRs using this form:

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

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

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

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

10.2.62 UTRAN MOBILITY INFORMATION

This message is used by UTRAN to allocate a new RNTI and to convey other UTRAN mobility related information to a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE Information Elements				
Integrity check info	CH		Integrity check info 10.3.3.16	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	
New U-RNTI	OP		U-RNTI 10.3.3.47	
New C-RNTI	OP		C-RNTI 10.3.3.8	
UE Timers and constants in connected mode	OP		UE Timers and constants in connected mode 10.3.3.43	
CN Information Elements				
CN Information info	OP		CN Information info full 10.3.1.3a	
UTRAN Information Elements				
URA identity	OP		URA identity 10.3.2.6	
RB Information elements				
Downlink counter synchronisation info	OP			
>RB with PDCP information list	OP	1 to <maxRBall RABs>		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	

10.3.1.3a CN Information info full

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMN identity	OP		PLMN identity 10.3.1.11	
CN common GSM-MAP NAS system information	OP		NAS system information (GSM-MAP) 10.3.1.9	
CN domain related information	OP	1 to <maxCNdomains>		
>CN domain identity	MP		CN domain identity 10.3.1.1	
>CN domain specific GSM-MAP NAS system info	MP		NAS system information (GSM-MAP) 10.3.1.9	
>CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6	

11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    ActiveSetUpdate-r3,
    ActiveSetUpdate-r4,
    ActiveSetUpdateComplete,
    ActiveSetUpdateFailure,
    AssistanceDataDelivery-r3,
    CellChangeOrderFromUTRAN-r3,
    CellChangeOrderFromUTRANFailure,
    CellUpdate,
    CellUpdateConfirm-CCCH-r3,
    CellUpdateConfirm-CCCH-r4,
    CellUpdateConfirm-r3,
    CellUpdateConfirm-r4,
    CounterCheck-r3,
    CounterCheckResponse,
    DownlinkDirectTransfer-r3,
    HandoverToUTRANComplete,
    InitialDirectTransfer,
    HandoverFromUTRANCommand-GSM-r3,
    HandoverFromUTRANCommand-CDMA2000-r3,
    HandoverFromUTRANFailure,
    MeasurementControl-r3,
    MeasurementControl-r4,
    MeasurementControlFailure,
    MeasurementReport,
    MeasurementReport-r4,
    PagingType1,
    PagingType2,
    PhysicalChannelReconfiguration-r3,
    PhysicalChannelReconfiguration-r4,
    PhysicalChannelReconfigurationComplete,
    PhysicalChannelReconfigurationFailure,
    PhysicalSharedChannelAllocation-r3,
    PhysicalSharedChannelAllocation-r4,
    PUSCHCapacityRequest,
    RadioBearerReconfiguration-r3,
    RadioBearerReconfiguration-r4,
    RadioBearerReconfigurationComplete,
    RadioBearerReconfigurationFailure,
    RadioBearerRelease-r3,
    RadioBearerRelease-r4,
    RadioBearerReleaseComplete,
    RadioBearerReleaseFailure,
    RadioBearerSetup-r3,
    RadioBearerSetup-r4,
    RadioBearerSetupComplete,
    RadioBearerSetupFailure,
    RRCConnectionReject-r3,
    RRCConnectionRelease-r3,
    RRCConnectionRelease-r4,
    RRCConnectionRelease-CCCH-r3,
    RRCConnectionRelease-CCCH-r4,
    RRCConnectionReleaseComplete,
    RRCConnectionRequest,
    RRCConnectionSetup-r3,
    RRCConnectionSetup-r4,
    RRCConnectionSetupComplete,
    RRCStatus,
```

```
        SecurityModeCommand-r3,
        SecurityModeComplete,
        SecurityModeFailure,
        SignallingConnectionRelease-r3,
        SignallingConnectionReleaseRequest,
        SystemInformation-BCH,
        SystemInformation-FACH,
        SystemInformationChangeIndication,
        TransportChannelReconfiguration-r3,
        TransportChannelReconfiguration-r4,
        TransportChannelReconfigurationComplete,
        TransportChannelReconfigurationFailure,
        TransportFormatCombinationControl,
        TransportFormatCombinationControlFailure,
        UECapabilityEnquiry-r3,
        UECapabilityInformation,
        UECapabilityInformationConfirm-r3,
        UplinkDirectTransfer,
        UplinkPhysicalChannelControl-r3,
        UplinkPhysicalChannelControl-r4,
        URAUpdate,
        URAUpdateConfirm-r3,
        URAUpdateConfirm-CCCH-r3,
        UTRANMobilityInformation-r3,
        UTRANMobilityInformationConfirm,
        UTRANMobilityInformationFailure
    FROM PDU-definitions

    -- User Equipment IEs :
        IntegrityCheckInfo
    FROM InformationElements;

    --*************************************************************
    --
    -- Downlink DCCH messages
    --
    --*************************************************************

    DL-DCCH-Message ::= SEQUENCE {
        integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
        message                 DL-DCCH-MessageType
    }

    DL-DCCH-MessageType ::= CHOICE {
        activeSetUpdate                 ActiveSetUpdate-r3,
        assistanceDataDelivery          AssistanceDataDelivery-r3,
        cellChangeOrderFromUTRAN        CellChangeOrderFromUTRAN-r3,
        cellUpdateConfirm               CellUpdateConfirm-r3,
        counterCheck                    CounterCheck-r3,
        downlinkDirectTransfer          DownlinkDirectTransfer-r3,
        handoverFromUTRANCommand-GSM    HandoverFromUTRANCommand-GSM-r3,
        handoverFromUTRANCommand-CDMA2000   HandoverFromUTRANCommand-CDMA2000-r3,
        measurementControl              MeasurementControl-r3,
        pagingType2                     PagingType2,
        physicalChannelReconfiguration  PhysicalChannelReconfiguration-r3,
        physicalSharedChannelAllocation PhysicalSharedChannelAllocation-r3,
        radioBearerReconfiguration      RadioBearerReconfiguration-r3,
        radioBearerRelease              RadioBearerRelease-r3,
        radioBearerSetup                RadioBearerSetup-r3,
        rrcConnectionRelease            RRCConnectionRelease-r3,
        securityModeCommand             SecurityModeCommand-r3,
        signallingConnectionRelease     SignallingConnectionRelease-r3,
        transportChannelReconfiguration TransportChannelReconfiguration-r3,
        transportFormatCombinationControl TransportFormatCombinationControl,
        ueCapabilityEnquiry             UECapabilityEnquiry-r3,
        ueCapabilityInformationConfirm  UECapabilityInformationConfirm-r3,
        uplinkPhysicalChannelControl    UplinkPhysicalChannelControl-r3,
        uraUpdateConfirm                URAUpdateConfirm-r3,
        utranMobilityInformation        UTRANMobilityInformation-r3,
        extension                       NULL
    }

    DL-DCCH-MessageType-r4 ::= CHOICE {
        activeSetUpdate                 ActiveSetUpdate-r4,
        assistanceDataDelivery          AssistanceDataDelivery-r3,
        cellChangeOrderFromUTRAN        CellChangeOrderFromUTRAN-r3,
        cellUpdateConfirm               CellUpdateConfirm-r4,
        counterCheck                    CounterCheck-r3,
```

```
    downlinkDirectTransfer              DownlinkDirectTransfer-r3,
    handoverFromUTRANCommand-GSM        HandoverFromUTRANCommand-GSM-r3,
    handoverFromUTRANCommand-CDMA2000   HandoverFromUTRANCommand-CDMA2000-r3,
    measurementControl                  MeasurementControl-r4,
    pagingType2                         PagingType2,
    physicalChannelReconfiguration      PhysicalChannelReconfiguration-r4,
    physicalSharedChannelAllocation     PhysicalSharedChannelAllocation-r4,
    radioBearerReconfiguration          RadioBearerReconfiguration-r4,
    radioBearerRelease                  RadioBearerRelease-r4,
    radioBearerSetup                    RadioBearerSetup-r4,
    rrcConnectionRelease                RRCConnectionRelease-r4,
    securityModeCommand                 SecurityModeCommand-r3,
    signallingConnectionRelease         SignallingConnectionRelease-r3,
    transportChannelReconfiguration     TransportChannelReconfiguration-r4,
    transportFormatCombinationControl   TransportFormatCombinationControl,
    ueCapabilityEnquiry                 UECapabilityEnquiry-r3,
    ueCapabilityInformationConfirm      UECapabilityInformationConfirm-r3,
    uplinkPhysicalChannelControl        UplinkPhysicalChannelControl-r4,
    uraUpdateConfirm                    URAUpdateConfirm-r3,
    utranMobilityInformation            UTRANMobilityInformation,
    extension                           NULL
}

--***************************************************************
--
-- Uplink DCCH messages
--
--***************************************************************

UL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo     IntegrityCheckInfo       OPTIONAL,
    message                UL-DCCH-MessageType
}

UL-DCCH-MessageType ::= CHOICE {
    activeSetUpdateComplete             ActiveSetUpdateComplete,
    activeSetUpdateFailure              ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure     CellChangeOrderFromUTRANFailure,
    counterCheckResponse                CounterCheckResponse,
    handoverToUTRANComplete             HandoverToUTRANComplete,
    initialDirectTransfer               InitialDirectTransfer,
    handoverFromUTRANFailure            HandoverFromUTRANFailure,
    measurementControlFailure           MeasurementControlFailure,
    measurementReport                   MeasurementReport,
    physicalChannelReconfigurationComplete
                                        PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure
                                        PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete  RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure   RadioBearerReconfigurationFailure,
    radioBearerReleaseComplete          RadioBearerReleaseComplete,
    radioBearerReleaseFailure           RadioBearerReleaseFailure,
    radioBearerSetupComplete            RadioBearerSetupComplete,
    radioBearerSetupFailure             RadioBearerSetupFailure,
    rrcConnectionReleaseComplete        RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete          RRCConnectionSetupComplete,
    rrcStatus                           RRCStatus,
    securityModeComplete                SecurityModeComplete,
    securityModeFailure                 SecurityModeFailure,
    signallingConnectionReleaseRequest  SignallingConnectionReleaseRequest,
    transportChannelReconfigurationComplete
                                        TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure
                                        TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure
                                        TransportFormatCombinationControlFailure,
    ueCapabilityInformation             UECapabilityInformation,
    uplinkDirectTransfer                UplinkDirectTransfer,
    utranMobilityInformationConfirm     UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure     UTRANMobilityInformationFailure,
    extension                           NULL
}

UL-DCCH-MessageType-r4 ::= CHOICE {
    activeSetUpdateComplete             ActiveSetUpdateComplete,
    activeSetUpdateFailure              ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure             CellChangeOrderFromUTRANFailure,
    counterCheckResponse                CounterCheckResponse,
```

```
        handoverToUTRANComplete             HandoverToUTRANComplete,
        initialDirectTransfer               InitialDirectTransfer,
        handoverFromUTRANFailure            HandoverFromUTRANFailure,
        measurementControlFailure           MeasurementControlFailure,
        measurementReport                   MeasurementReport-r4,
        physicalChannelReconfigurationComplete
                                            PhysicalChannelReconfigurationComplete,
        physicalChannelReconfigurationFailure
                                            PhysicalChannelReconfigurationFailure,
        radioBearerReconfigurationComplete  RadioBearerReconfigurationComplete,
        radioBearerReconfigurationFailure   RadioBearerReconfigurationFailure,
        radioBearerReleaseComplete          RadioBearerReleaseComplete,
        radioBearerReleaseFailure           RadioBearerReleaseFailure,
        radioBearerSetupComplete            RadioBearerSetupComplete,
        radioBearerSetupFailure             RadioBearerSetupFailure,
        rrcConnectionReleaseComplete        RRCConnectionReleaseComplete,
        rrcConnectionSetupComplete          RRCConnectionSetupComplete,
        rrcStatus                           RRCStatus,
        securityModeComplete                SecurityModeComplete,
        securityModeFailure                 SecurityModeFailure,
        signallingConnectionReleaseRequest  SignallingConnectionReleaseRequest,
        transportChannelReconfigurationComplete
                                            TransportChannelReconfigurationComplete,
        transportChannelReconfigurationFailure
                                            TransportChannelReconfigurationFailure,
        transportFormatCombinationControlFailure
                                            TransportFormatCombinationControlFailure,
        ueCapabilityInformation             UECapabilityInformation,
        uplinkDirectTransfer                UplinkDirectTransfer,
        utranMobilityInformationConfirm     UTRANMobilityInformationConfirm,
        utranMobilityInformationFailure     UTRANMobilityInformationFailure,
        extension                           NULL
}

 --*********************************************************
--
-- Downlink CCCH messages
--
--*********************************************************

DL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 DL-CCCH-MessageType
}

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm               CellUpdateConfirm-CCCH-r3,
    rrcConnectionReject             RRCConnectionReject-r3,
    rrcConnectionRelease            RRCConnectionRelease-CCCH-r3,
    rrcConnectionSetup              RRCConnectionSetup-r3,
    uraUpdateConfirm                URAUpdateConfirm-CCCH-r3,
    extension                       NULL
}

DL-CCCH-MessageType-r4 ::= CHOICE {
    cellUpdateConfirm               CellUpdateConfirm-CCCH-r4,
    rrcConnectionReject             RRCConnectionReject-r3,
    rrcConnectionRelease            RRCConnectionRelease-CCCH-r4,
    rrcConnectionSetup              RRCConnectionSetup-r4,
    uraUpdateConfirm                URAUpdateConfirm-CCCH-r3,
    extension                       NULL
}

--*********************************************************
--
-- Uplink CCCH messages
--
--*********************************************************

UL-CCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                 UL-CCCH-MessageType
}

UL-CCCH-MessageType ::= CHOICE {
    cellUpdate                      CellUpdate,
    rrcConnectionRequest            RRCConnectionRequest,
    uraUpdate                       URAUpdate,
```

```
        extension                          NULL
    }

    --*************************************************************
    --
    -- PCCH messages
    --
    --*************************************************************

    PCCH-Message ::= SEQUENCE {
        message                 PCCH-MessageType
    }

    PCCH-MessageType ::= CHOICE {
        pagingType1                         PagingType1,
        extension                           NULL
    }

    --*************************************************************
    --
    -- Downlink SHCCH messages
    --
    --*************************************************************

    DL-SHCCH-Message ::= SEQUENCE {
        message                   DL-SHCCH-MessageType
    }

    DL-SHCCH-MessageType ::= CHOICE {
        physicalSharedChannelAllocation    PhysicalSharedChannelAllocation-r3,
        extension                           NULL
    }

    DL-SHCCH-MessageType-r4 ::= CHOICE {
        physicalSharedChannelAllocation    PhysicalSharedChannelAllocation-r4,
        extension                           NULL
    }

    --*************************************************************
    --
    -- Uplink SHCCH messages
    --
    --*************************************************************

    UL-SHCCH-Message ::= SEQUENCE {
        message                   UL-SHCCH-MessageType
    }

    UL-SHCCH-MessageType ::= CHOICE {
        puschCapacityRequest               PUSCHCapacityRequest,
        extension                           NULL
    }


    --*************************************************************
    --
    -- BCCH messages sent on FACH
    --
    --*************************************************************

    BCCH-FACH-Message ::= SEQUENCE {
        message             BCCH-FACH-MessageType
    }

    BCCH-FACH-MessageType ::= CHOICE {
        systemInformation                  SystemInformation-FACH,
        systemInformationChangeIndication  SystemInformationChangeIndication,
        extension                           NULL
    }

    --*************************************************************
    --
    -- BCCH messages sent on BCH
    --
    --*************************************************************

    BCCH-BCH-Message ::= SEQUENCE {
        message             SystemInformation-BCH
```

```
    }

END
```

11.2   PDU definitions

```
--~*************************************************************
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--~*************************************************************

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--~*************************************************************
--
-- IE parameter types from other modules
--
--~*************************************************************

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4Ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    Rb-timer-indicator,
    Re-EstablishmentTimer,
    RedirectionInfo,
    RejectionCause,
    ReleaseCause,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-r4ext,
    UE-ConnTimersAndConstants,
    URA-UpdateCause,
    UTRAN-DRX-CycleLengthCoefficient,
    WaitTime,
-- Radio Bearer IEs :
    DefaultConfigIdentity,
    DefaultConfigMode,
    DL-CounterSynchronisationInfo,
```

```
        PredefinedConfigIdentity,
        RAB-Info,
        RAB-Info-Post,
        RAB-InformationList,
        RAB-InformationReconfigList,
        RAB-InformationSetupList,
        RAB-InformationSetupList-r4,
        RB-ActivationTimeInfo,
        RB-ActivationTimeInfoList,
        RB-COUNT-C-InformationList,
        RB-COUNT-C-MSB-InformationList,
        RB-IdentityList,
        RB-InformationAffectedList,
        RB-InformationReconfigList,
        RB-InformationReconfigList-r4,
        RB-InformationReleaseList,
        RB-InformationSetupList,
        RB-InformationSetupList-r4,
        RB-WithPDCP-InfoList,
        SRB-InformationSetupList,
        SRB-InformationSetupList2,
        UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
        CPCH-SetID,
        DL-AddReconfTransChInfo2List,
        DL-AddReconfTransChInfoList,
        DL-CommonTransChInfo,
        DL-DeletedTransChInfoList,
        DRAC-StaticInformationList,
        TFC-Subset,
        TFCS-Identity,
        UL-AddReconfTransChInfoList,
        UL-CommonTransChInfo,
        UL-DeletedTransChInfoList,
-- Physical Channel IEs :
        AllocationPeriodInfo,
        Alpha,
        CCTrCH-PowerControlInfo,
        CCTrCH-PowerControlInfo-r4,
        ConstantValue,
        CPCH-SetInfo,
        DL-CommonInformation,
        DL-CommonInformation-r4,
        DL-CommonInformationPost,
        DL-InformationPerRL,
        DL-InformationPerRL-List,
        DL-InformationPerRL-List-r4,
        DL-InformationPerRL-ListPostFDD,
        DL-InformationPerRL-PostTDD,
        DL-InformationPerRL-PostTDD-LCR,
        DL-DPCH-PowerControlInfo,
        DL-PDSCH-Information,
        DPCH-CompressedModeStatusInfo,
        FrequencyInfo,
        FrequencyInfoFDD,
        FrequencyInfoTDD,
        IndividualTS-InterferenceList,
        MaxAllowedUL-TX-Power,
        OpenLoopPowerControl-IPDL-TDD,
        PDSCH-CapacityAllocationInfo,
        PDSCH-CapacityAllocationInfo-r4,
        PDSCH-Identity,
        PDSCH-Info,
        PDSCH-Info-r4,
        PRACH-RACH-Info,
        PrimaryCCPCH-TX-Power,
        PUSCH-CapacityAllocationInfo,
        PUSCH-CapacityAllocationInfo-r4,
        PUSCH-Identity,
        RL-AdditionInformationList,
        RL-RemovalInformationList,
        SpecialBurstScheduling,
        SSDT-Information,
        TFC-ControlDuration,
        SSDT-UL,                         -- REL-4
        TimeslotList,
        TimeslotList-r4,
        TX-DiversityMode,
```

```
        UL-ChannelRequirement,
        UL-ChannelRequirement-r4,
        UL-ChannelRequirementWithCPCH-SetID,
        UL-ChannelRequirementWithCPCH-SetID-r4,
        UL-DPCH-Info,
        UL-DPCH-Info-r4,
        UL-DPCH-InfoPostFDD,
        UL-DPCH-InfoPostTDD,
        UL-DPCH-InfoPostTDD-LCR,
        UL-SynchronisationParameters,
        UL-TimingAdvance,
        UL-TimingAdvanceControl,
        UL-TimingAdvanceControl-r4,
-- Measurement IEs :
        AdditionalMeasurementID-List,
        Band-Indicator,
        EventResults,
        InterFreqEventResults-LCR,
        InterRAT-TargetCellDescription,
        MeasuredResults,
        MeasuredResultsList,
        MeasuredResultsList-LCR,
        MeasuredResultsOnRACH,
        MeasurementCommand,
        MeasurementCommand-r4,
        MeasurementIdentity,
        MeasurementReportingMode,
        PrimaryCCPCH-RSCP,
        TimeslotListWithISCP,
        TrafficVolumeMeasuredResultsList,
        UE-Positioning-GPS-AssistanceData,
        UE-Positioning-OTDOA-AssistanceData,
        UP-IPDL-Parameters-TDD,
-- Other IEs :
        BCCH-ModificationInfo,
        CDMA2000-MessageList,
        GSM-MessageList,
        InterRAT-ChangeFailureCause,
        InterRAT-HO-Failure,
        InterRAT-UE-RadioAccessCapabilityList,
        InterRAT-UE-SecurityCapList,
        InterRATMessage,
        IntraDomainNasNodeSelector,
        ProtocolErrorInformation,
        ProtocolErrorMoreInformation,
        Rplmn-Information,
        Rplmn-Information-r4,
        SegCount,
        SegmentIndex,
        SFN-Prime,
        SIB-Data-fixed,
        SIB-Data-variable,
        SIB-Type
FROM InformationElements

        maxSIBperMsg,
        maxSystemCapability
FROM Constant-definitions;

<Cut until next change>

-- **************************************************
--
-- UTRAN MOBILITY INFORMATION
--
-- **************************************************

UTRANMobilityInformation-r3 ::= CHOICE {
    r3                               SEQUENCE {
        utranMobilityInformation-r3     UTRANMobilityInformation-r3-IEs,
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
    },
    criticalExtensions               SEQUENCE {}
}

UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
```

```
        cipheringModeInfo            CipheringModeInfo                 OPTIONAL,
        new-U-RNTI                   U-RNTI                            OPTIONAL,
        new-C-RNTI                   C-RNTI                            OPTIONAL,
        ue-ConnTimersAndConstants    UE-ConnTimersAndConstants         OPTIONAL,
    -- CN information elements
        cn-InformationInfo           CN-InformationInfoFull        ——————OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                 URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime       ActivationTime                    OPTIONAL,
        dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo   OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions        SEQUENCE {}      OPTIONAL
}
```

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

-- **************************************************
--
--      CORE NETWORK INFORMATION ELEMENTS (10.3.1)
--
-- **************************************************

BEGIN

IMPORTS

    hiPDSCHidentities,
    hiPUSCHidentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,
    maxASCpersist,
    maxCCTrCH,
    maxCellMeas,
    maxCellMeas-1,
    maxCNdomains,
    maxCPCHsets,
    maxDPCH-DLchan,
    maxDPCHcodesPerTS,
    maxDPDCH-UL,
    maxDRACclasses,
    maxFACH,
    maxFreq,
    maxFrequencybands,
    maxInterSysMessages,
    maxLoCHperRLC,
    maxMeasEvent,
    maxMeasIntervals,
    maxMeasParEvent,
    maxNumCDMA2000Freqs,
    maxNumFDDFreqs,
    maxNumGSMFreqRanges,
    maxNumTDDFreqs,
    maxOtherRAT,
    maxPage1,
    maxPCPCH-APsig,
    maxPCPCH-APsubCh,
    maxPCPCH-CDsig,
    maxPCPCH-CDsubCh,
    maxPCPCH-SF,
    maxPCPCHs,
    maxPDCPAlgoType,
    maxPDSCH,
    maxPDSCH-TFCIgroups,
    maxPRACH,
    maxPRACH-FPACH,
    maxPUSCH,
    maxRABsetup,
    maxRAT,
    maxRB,
    maxRBallRABs,
    maxRBMuxOptions,
    maxRBperRAB,
    maxReportedGSMCells,
    maxSRBsetup,
    maxRL,
    maxRL-1,
    maxROHC-PacketSizes,
    maxROHC-Profile,
    maxSCCPCH,
    maxSat,
    maxSIB,
    maxSIB-FACH,
    maxSig,
    maxSubCh,
    maxSystemCapability,
    maxTF,
```

```
        maxTF-CPCH,
        maxTFC,
        maxTFCI-2-Combs,
        maxTGPS,
        maxTrCH,
        maxTS,
        maxTS-1,
        maxTS-LCR,
        maxTS-LCR-1,
        maxURA
FROM Constant-definitions;

Ansi-41-IDNNS ::=                        BIT STRING (SIZE (14))

CN-DomainIdentity ::=           ENUMERATED {
                                    cs-domain,
                                    ps-domain }

CN-DomainInformation ::=        SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    cn-DomainSpecificNAS-Info           NAS-SystemInformationGSM-MAP
}

CN-DomainInformationFull ::=        SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    cn-DomainSpecificNAS-Info           NAS-SystemInformationGSM-MAP,
    cn-DRX-CycleLengthCoeff             CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList ::=    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                    CN-DomainInformation

CN-DomainInformationListFull ::=    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                    CN-DomainInformationFull

CN-DomainSysInfo ::=            SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    cn-Type                             CHOICE {
        gsm-MAP                             NAS-SystemInformationGSM-MAP,
        ansi-41                             NAS-SystemInformationANSI-41
    },
    cn-DRX-CycleLengthCoeff             CN-DRX-CycleLengthCoefficient
}

CN-DomainSysInfoList ::=        SEQUENCE (SIZE (1..maxCNdomains)) OF
                                    CN-DomainSysInfo

CN-InformationInfo ::=          SEQUENCE {
    plmn-Identity                       PLMN-Identity                   OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo        NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationList            CN-DomainInformationList        OPTIONAL
}

CN-InformationInfoFull ::=          SEQUENCE {
    plmn-Identity                       PLMN-Identity                   OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo        NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationListFull        CN-DomainInformationListFull    OPTIONAL
}
```