Title: **Agreed CRs to TS 25.331 (6)**

Source: **TSG-RAN WG2**

Agenda item: 5.2.3

Doc-1st-	Status-	Spec	CR	Rev	Subject	Cat	Version	Versio
R2-001183	agreed	25.331	398	1	NAS Routing	F	3.2.0	3.3.0
R2-001116	agreed	25.331	399		DPCCH power control preamble	C	3.2.0	3.3.0
R2-001271	agreed	25.331	400	2	Modifications of Assisted GPS Messages	C	3.2.0	3.3.0
R2-001118	agreed	25.331	401		Choice of Initial UE Identity	F	3.2.0	3.3.0
R2-001119	agreed	25.331	402		ANSI-41 information elements	F	3.2.0	3.3.0
R2-001243	agreed	25.331	404	1	RLC value ranges	F	3.2.0	3.3.0
R2-001277	agreed	25.331	408	1	HFN Reset	C	3.2.0	3.3.0
R2-001278	agreed	25.331	409	1	Clarification on ciphering parameters and integrity protection procedure in case of SRNS relocation	B	3.2.0	3.3.0
R2-001256	agreed	25.331	410	1	Clarification of compressed mode activation and configuration failure	C	3.2.0	3.3.0
R2-001263	agreed	25.331	412	1	Modification of the RLC Size IE	C	3.2.0	3.3.0
R2-001233	agreed	25.331	414		CPCH DL Power control	F	3.2.0	3.3.0
R2-001282	agreed	25.331	415	1	SFN measurements in TDD	F	3.2.0	3.3.0

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331 CR **398r1**   Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

For submission to:	**TSG-RAN #8**	for approval	**X**		strategic		*(for SMG*
list expected approval meeting # here ↑		for information			non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio **X**   Core Network ☐
(at least one should be marked with an X)

Source:	TSG-RAN WG2		**Date:**	May 22, 2000

Subject: NAS Routing

Work item:

Category:	F	Correction	**X**	**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature			Release 97	
shall be marked	C	Functional modification of feature			Release 98	
with an X)	D	Editorial modification			Release 99	**X**
					Release 00	

Reason for change:	• The term "signalling session" is modified to "signalling flow". • The choice of RB identity i.e. RB 2 to use to transmit the Initial Direct message was missing. • Miscellaneous editorial corrections. • Increased number of flow identifiers to 64 to account for number of parallel flows possible per Service descriptor.

Clauses affected: 8.1.8, 8.1.9, 8.1.10, 10.2.10, 10.2.59, 10.3.1.4. 10.3.1.17, 11.3.1

Other specs affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

## 8.1.8   Initial Direct transfer
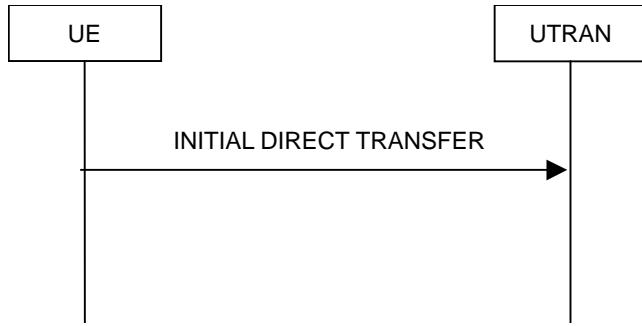
Figure 13: Initial Direct transfer in the uplink, normal flow

8.1.8.1   General

The initial direct transfer procedure is used in the uplink to establish signalling ~~sessions and signalling~~ connections and signalling flows. It is also used to carry the initial higher layer (NAS) messages over the radio interface.

A signalling connection comprises one or several signalling ~~sessions~~flows. This procedure requests the establishment of a new ~~session~~flow, and triggers, depending on the routing and if no signalling connection exists for the chosen route for the ~~session~~flow, the establishment of a signalling connection.

8.1.8.2   Initiation of Initial direct transfer procedure in the UE

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request the initialisation of a new ~~session~~flow. This request also includes a request for the transfer of a NAS message. When not stated otherwise elsewhere, the UE may also initiate the initial direct transfer procedure ~~also~~ when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected. The UE shall transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC~~.~~ on RB 2.

The System Information Block Type 1 and 13 may contain CN NAS information which the upper layers in the UE can use in choosing the value to set the IE "CN Domain Identity" to. If available the UE shall use this CN NAS information as well as user preference and subscription information in setting the value of IE "CN Domain Identity" to indicate which CN node the NAS message is destined to. If the upper layers in the UE have not set a value for the IE "CN Domain Identity" RRC shall set it to the value "don't care". In addition the UE shall set the IE "Service Descriptor" and the IE "Flow Identifier" to ~~a~~ the value allocated by the UE for that particular ~~session~~flow.

~~If the INITIAL DIRECT TRANSFER message is in response to a Paging Type 1 message, the upper layers in the UE shall set the IE "CN Domain Identity" to the value indicated in the corresponding paging message. The UE shall also set the IE "Service Descriptor" and IE "Flow Identifier" to a value allocated for that particular session.~~

In CELL_FACH state, the UE shall include IE "Measured results" on RACH into the INITIAL DIRECT TRANSFER message~~, if the message is sent to establish a signalling connection and~~ if RACH measurement reporting has been requested in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in system information block type 12.

When the transmission of the INITIAL DIRECT TRANSFER message has been confirmed by RLC the procedure ends.

8.1.8.3   Reception of INITIAL DIRECT TRANSFER message by the UTRAN

On reception of the INITIAL DIRECT TRANSFER message the NAS message should be routed using the IE "CN Domain Identity" and the IE "Service Descriptor". The UTRAN should use the UE context to store the contents of the IE "Flow Identifier" for that particular ~~session~~flow.

If no signalling connection exists towards the chosen node, then a signalling connection is established.

If the IE "Measured results" is present in the message, the UTRAN ~~shall~~ should extract the contents to be used for radio resource control.

When the UTRAN receives an INITIAL DIRECT TRANSFER message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

8.1.9 Downlink Direct transfer

Figure 14a: Downlink Direct transfer, normal flow

8.1.9.1 General

The downlink direct transfer procedure is used in the downlink direction to carry higher layer (NAS) messages over the radio interface.

8.1.9.2 Initiation of downlink direct transfer procedure in the UTRAN

In the UTRAN, the direct transfer procedure is initiated when the upper layers request the transfer of a NAS message after the initial signalling connection is established. The UTRAN may also initiate the downlink direct transfer procedure also when another RRC procedure is ongoing, and in that case the state of the latter procedure shall not be affected. The UTRAN shall transmit the DOWNLINK DIRECT TRANSFER message on the downlink DCCH using AM RLC on RB 2 or RB 3. The UTRAN should select the RB according to the following:

- If the non-access stratum indicates "low priority" for this message, RB 3 should be selected, if available. Specifically, for a GSM-MAP based CN, RB 3 should, if available, be selected when "SAPI 3" is requested. RB 2 should be selected when RB 3 is not available.

- If the non-access stratum indicates "high priority" for this message, RB 2 should be selected. Specifically, for a GSM-MAP based CN, RB 2 should be selected when "SAPI 0" is requested.

The UTRAN sets the IE "CN Domain Identity" to indicate, which CN domain the NAS message is originated from.

8.1.9.3 Reception of a DOWNLINK DIRECT TRANSFER message by the UE

Upon reception of the DOWNLINK DIRECT TRANSFER message, the UE RRC shall, using the IE "CN Domain Identity", route the contents of the higher layer PDU and the value of the IE"CN Domain Identity", if any, to the correct higher layer entity.

When the UE receives a DOWNLINK DIRECT TRANSFER message, it shall not affect the state of any other ongoing RRC procedures when not stated otherwise elsewhere.

8.1.9.4 Invalid DOWNLINK DIRECT TRANSFER message

If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 16, the UE shall perform procedure specific error handling as follows:

- Transmit an RRC STATUS message on the uplink DCCH using AM RLC and include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

When the transmission of the RRC STATUS message has been confirmed by RLC, the UE shall resume normal operation as if the invalid DOWNLINK DIRECT TRANSFER message has not been received.

8.1.10   Uplink Direct transfer
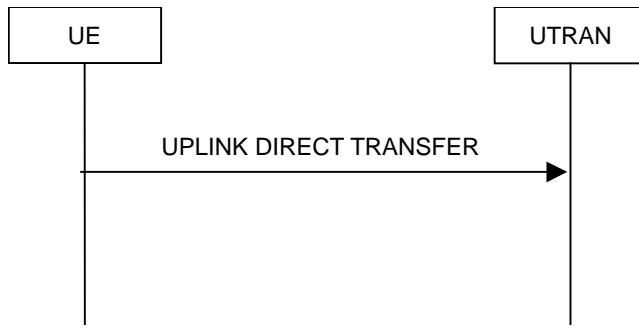
Figure 14b: Uplink Direct transfer, normal flow

8.1.10.1   General

The uplink direct transfer procedure is used in the uplink direction to carry all subsequent higher layer (NAS) messages over the radio interface.

8.1.10.2   Initiation of uplink direct transfer procedure in the UE

In the UE, the uplink direct transfer procedure shall be initiated when the upper layers request a transfer of a NAS message after the initial signalling connection is established and upper layer indication is provided indicating that the NAS message belongs to an on-going signalling flow. When not stated otherwise elsewhere, the UE may also initiate the uplink direct transfer procedure also when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected. The UE shall transmit the UPLINK DIRECT TRANSFER message on the uplink DCCH using AM RLC on RB 2 or RB 3. The UE shall select the RB according to the following:

- If the non-access stratum indicates "low priority" for this message, RB 3 shall be selected, if available. Specifically, for a GSM-MAP based CN, RB 3 shall, if available, be selected when "SAPI 3" is requested. RB 2 shall be selected when RB 3 is not available.

- If the non-access stratum indicates "high priority" for this message, RB 2 shall be selected. Specifically, for a GSM-MAP based CN, RB 2 shall be selected when "SAPI 0" is requested.

The UE shall set the IE "Flow Identifier" to the same value as that allocated to that particular ~~session~~ flow when transmitting the INITIAL DIRECT TRANSFER message for that ~~session~~flow.

8.1.10.3   Reception of UPLINK DIRECT TRANSFER message by the UTRAN

On reception of the UPLINK DIRECT TRANSFER message the NAS message should be routed using the value indicated in the IE "Flow Identifier".

If the IE "Measured results" is present in the message, the UTRAN ~~shall~~ should extract the contents to be used for radio resource control.

When the UTRAN receives an UPLINK DIRECT TRANSFER message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

10.2.10 INITIAL DIRECT TRANSFER

NOTE: Functional description of this message to be included here.

This message is used to initiate a signalling connection or to establish a new signalling flow based on indication from the upper layers, and to transfer NAS messages.

RLC-SAP: AM

    Logical channel: DCCH

    Direction: UE -> UTRAN

Information Element	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	
CN information elements				
Service Descriptor	MP		Service Descriptor 10.3.1.17	
Flow Identifier	MP		Flow Identifier 10.3.1.4	Allocated by UE for a particular sessionflow.
CN domain identity	MP		CN domain identity 10.3.1.1	
NAS message	MP		NAS message 10.3.1.8	
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	

10.2.59 UPLINK DIRECT TRANSFER

NOTE: ~~Functional description of this message to be included here.~~

This message is used to transfer NAS messages for an on-going signalling flow.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE ->UTRAN

Information Element	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	Integrity check info is included if integrity protection is applied
CN information elements				
Flow Identifier	MP		Flow Identifier 10.3.1.4	Allocated by UE for a particular ~~session~~flow.
NAS message	MP		NAS message 10.3.1.8	
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	

10.3.1.4   Flow Identifier

This IE is allocated by the UE for a particular ~~session~~signalling flow on an indication from the upper layers.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Flow Identifier	MP		Enumerated (0…63~~15~~)	

10.3.1.17   Service Descriptor

Identifies a service and/or a protocol entity in the core network.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Service descriptor type*	MP			
>Service Descriptor (GSM-MAP)			Bit string (4)	Protocol Discriminator [TS 24.007] The value of RR in the above reference ~~mentioned below~~ is reserved for paging response.
>Service Descriptor (ANSI-41)			Bit string(4)	TIA/EIA IS-834

CHOICE *Service descriptor type*	Condition under which the given *Service descriptor type* is chosen
Service descriptor (GSM-MAP)	PLMN is of type GSM-MAP
Service descriptor (ANSI-41)	PLMN is of type ANSI-41

11.3 Information element definitions

11.3.1 Core network information elements

```
CoreNetwork-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    DRX-CycleLengthCoefficient
FROM UserEquipment-IEs

    Min-P-REV,
    NAS-SystemInformationANSI-41,
    NID,
    P-REV,
    SID
FROM ANSI-41-IEs

    maxCNdomains,
    maxFlowID,
    maxNoCNdomains
FROM Constant-definitions;

CN-DomainIdentity ::=               ENUMERATED {
                                        cs-domain,
                                        ps-domain,
                                        not-important,
                                        spare1 }

CN-DomainInformation ::=            SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    cn-DomainSpecificNAS-Info           NAS-SystemInformationGSM-MAP
}

CN-DomainInformationList ::=        SEQUENCE (SIZE (1..maxNoCNdomains)) OF
                                        CN-DomainInformation

CN-DomainSysInfo ::=                SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    cn-Type                             CHOICE {
        gsm-MAP                             NAS-SystemInformationGSM-MAP,
        ansi-41                             NAS-SystemInformationANSI-41
    },
    cn-DRX-CycleLengthCoeff             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
}

Digit ::=                           INTEGER (0..9)

FlowIdentifier ::=                  INTEGER (0..1563)

IMEI ::=                            SEQUENCE (SIZE (15)) OF
                                        Digit
```

3GPP TSG RAN WG2#13
Oahu, Hawaii, US, May 22 – 26, 2000

Document **R2-001116**

e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	**399**	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #8	for approval	X		strategic		*(for SMG*
list expected approval meeting # here ↑		for information			non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐ ME **X** UTRAN / Radio **X** Core Network ☐
(at least one should be marked with an X)

Source:	TSG-RAN WG2	**Date:**	May 22, 2000

Subject:	DPCCH power control preamble

Work item:	

Category:	F	Correction		**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature			Release 97	
shall be marked	C	Functional modification of feature	X		Release 98	
with an X)	D	Editorial modification			Release 99	X
					Release 00	

Reason for change:	It is proposed to modify the number of slots of the DPCCH power control preamble from 8 to 15. It has been demonstrated via simulation that the searcher takes between 4-6 slots to acquire. This will leave only 2 slots for priming the power control loop which may not be sufficient. Hence it is proposed to replace the value of 8 slots with 15 slots so that the power control loop is stable before the start of data transmission. This will increase the probability of success for uplink DCH setup. The UE will transmit the preamble for up to 15 slots and the UTRAN will use the search time accordingly.

Clauses affected:	10.3.6.40, 10.3.6.67, 10.3.6.68, 11.3.6

Other specs affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	Matching CR to 25.214 to be proposed to RAN WG1 May22-26, 2000 Tokyo meeting.

10.3.6.40   Predefined PhyCH configuration

This information element concerns a pre- defined configuration of physical channel parameters.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Uplink radio resources				
Uplink DPCH info	MP		Uplink DPCH info 10.3.6.65	
>Uplink DPCH power control info	MP		Uplink DPCH power control info 10.3.6.67	
>>CHOICE mode	MP			
>>>FDD				
>>>>Maximum allowed UL DPCH TX power	CV		Maximum allowed UL DPCH TX power 10.3.6.27	
>>>>PC Preamble	CV		Enumerated(0,815)	
>>>>TFCI existence	MP		Boolean	TRUE means existence
>>>>Puncturing Limit	MP		Real(0.40 ..1 by step of 0.04)	
Downlink radio resources				
Downlink information common for all radio links				
>Downlink DPCH info common for all RL	OP		Downlink DPCH info common for all RL 10.3.6.14	
>Downlink DPCH power control information	OP		Downlink DPCH power control information 10.3.6.16	
>Spreading factor			Enumerated(4, 8, 16, 32, 64, 128, 256)	
>Fixed or Flexible Position	MP		Enumerated (Fixed, Flexible)	
>TFCI existence	MP		Boolean	TRUE means existence
>Number of bits for Pilot bits	OP		Enumerated (2,4,8)	In bits
>CHOICE mode	MP			
>>FDD				
>>>Default DPCH Offset Value	OP		Default DPCH Offset Value 10.3.6.13	

10.3.6.67   Uplink DPCH power control info

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control in FDD and parameters for uplink open loop power control in TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>DPCCH Power offset	MP		Enumerated(-164,..-6 by step of 2)	In dB
>>PC Preamble	CV		Enumerated (0, -815)	PC Preamble is absent in HANDOVER TO UTRAN COMMAND. Otherwise it is present. Number of power control preamble slots
>>Power Control Algorithm	MP		Enumerated (algorithm 1, algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>>TPC step size	CV algo		Enumerated (1, 2)	In dB
>TDD				
>>Maximum allowed UL DPCH TX power	MD		Maximum allowed UL TX power 10.3.6.27	Default value is according to power class (25.102).
>>UL target SIR	MP		Real (-11 .. 20 by step of 0.5dB)	In dB
>>Individual timeslot interference info	CH HO case	1 to...<TS Count>		
>>> Individual timeslot interference	MP		Individual timeslot interference 10.3.6.26	
>>DPCH Constant Value	CH HO case		Constant Value 10.3.6.9	Quality Margin

Condition	Explanation
algo	The IE is mandatory if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed
HO case	This IE shall be present in the case of handover

Multi Bound	Explanation
TS Count	Number of uplink timeslots used for this dedicated CCTrCH

10.3.6.68 Uplink DPCH power control info Short

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>DPCCH Power offset	MP		Enumerated(-164..-6 by step of 2)	In dB
>>PC Preamble	CV		Enumerated (0, ~~8~~15)	PC Preamble is absent in HANDOVER TO UTRAN COMMAND. Otherwise it is present. Number of power control preamble slots
>>Power Control Algorithm	MP		Enumerated (algorithm 1, algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>>TPC step size	CV algo		Enumerated (1dB, 2dB)	
>TDD				(no data)

Condition	Explanation
algo	The IE is mandatory if "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is not needed

11.3.6 Physical channel information elements

```
PhysicalChannel-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN


********************snip snip****************

PagingIndicatorLength ::=           ENUMERATED {
                                        pi2, pi4, pi8 }

PC-Preamble ::=                     ENUMERATED {
                                        pcp0, pcp8 pcp15 }

PC-PreambleSlotFormat ::=           ENUMERATED {
                                        slf0, slf1 }

PCM ::=                             ENUMERATED {
                                        pc-mode0, pc-mode1 }

PCP-Length ::=                      ENUMERATED {
                                        as0, as8 }

PCPCH-ChannelInfo ::=               SEQUENCE {
    pcpch-UL-ScramblingCode             INTEGER (0..255),
    pcpch-DL-ChannelisationCode         INTEGER (0..511),
    pcpch-DL-ScramblingCode             INTEGER (0..255),
    pcp-Length                          PCP-Length,
    ucsm-Info                           UCSM-Info                    OPTIONAL
}

PCPCH-ChannelInfoList ::=           SEQUENCE (SIZE (1..maxPCPCHs)) OF
                                        PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::=       ENUMERATED {
                                        mayBeUsed,
                                        shallNotBeUsed }

-- Here the value 0 represents "infinity" in the tabular notation.
PD ::=                              INTEGER (0..35)

PDSCH-ChannelisationCode ::=        ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

PDSCH-CodeInfo ::=                  SEQUENCE {
    spreadingFactor                     SF-PDSCH,
    codeNumber                          CodeNumberDSCH,
    multiCodeInfo                       MultiCodeInfo
}

PDSCH-CodeInfoList ::=              SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                        PDSCH-CodeInfo

PDSCH-CodeMap ::=                   SEQUENCE {
    spreadingFactor                     SF-PDSCH,
    multiCodeInfo                       MultiCodeInfo
}

PDSCH-CodeMapList ::=               SEQUENCE (SIZE (1..maxNoCodeGroups)) OF
                                        PDSCH-CodeMap

PDSCH-CodeMapping ::=               SEQUENCE {
    dl-ScramblingCode                   SecondaryScramblingCode,
    signallingMethod                    CHOICE {
        codeRange                           CodeRange,
        tfci-Range                          DSCH-MappingList,
        explicit                            PDSCH-CodeInfoList,
        replace                             ReplacedPDSCH-CodeInfoList
    }
}

PDSCH-Info ::=                      SEQUENCE {
```

```
    tfcs-Identity                       TFCS-Identity                       OPTIONAL,
    timeInfo                            TimeInfo,
    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    individualTimeslotInfoList          IndividualTS-InfoPDSCH-List         OPTIONAL
}

PDSCH-SHO-DCH-Info ::=              SEQUENCE {
    dsch-RadioLinkIdentifier            DSCH-RadioLinkIdentifier,
    tfci-CombiningSet                   TFCI-CombiningSet,
    rl-IdentifierList                   RL-IdentifierList                   OPTIONAL
}

PDSCH-SysInfo ::=                  SEQUENCE {
    pdsch-Info                          PDSCH-Info,
    dsch-TFS                            TransportFormatSet                  OPTIONAL
}

PDSCH-SysInfoList ::=              SEQUENCE (SIZE (1..maxPDSCHcount)) OF
                                       PDSCH-SysInfo

PersistenceScalingFactor ::=       ENUMERATED {
                                       psf0-9, psf0-8, psf0-7, psf0-6,
                                       psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::=   SEQUENCE (SIZE (1..6)) OF
                                       PersistenceScalingFactor

PI-CountPerFrame ::=               ENUMERATED {
                                       e18, e36, e72, e144 }
```

3GPP

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	**400r2**	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #8	for approval	X	strategic		(for SMG
list expected approval meeting # here ↑		for information	X	non-strategic		use only)

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM [ ]   ME [X]   UTRAN / Radio [X]   Core Network [ ]
(at least one should be marked with an X)

Source:	TSG-RAN WG2		**Date:**	22 May, 2000

Subject:	Modifications of Assisted GPS Messages

Work item:	

Category: F Correction
(only one category shall be marked with an X)
A Corresponds to a correction in an earlier release
B Addition of feature
C Functional modification of feature   [X]
D Editorial modification

Release:
Phase 2 [ ]
Release 96 [ ]
Release 97 [ ]
Release 98 [ ]
Release 99 [X]
Release 00 [ ]

Reason for change:
One of the aims of the LCS work within 3GPP has been to align the assisted GPS method with that used in GSM, as defined by ETSI and T1P1.5. At the ETSI SMG#31bis on 17th April 2000, a number of changes to the assisted GPS method for GSM Release 98 and 99 were approved (GSM 04.31 and GSM 04.35). This CR proposes to make corresponding changes to the 3GPP specifications in order to maintain alignment with the GSM specifications.

Clauses affected:
8.1.1.5.15, 10.2.49.4.1, 10.2.49.4.17, 10.3.7.45-48, 10.3.7.51, 10.3.7.54, 11.3.7, 14.12.1

Other specs affected:
Other 3G core specifications	[ ]	→ List of CRs:	
Other GSM core specifications	[ ]	→ List of CRs:	
MS test specifications	[ ]	→ List of CRs:	
BSS test specifications	[ ]	→ List of CRs:	
O&M specifications	[ ]	→ List of CRs:	

Other comments:

help.doc

<-------- double-click here for help and instructions on how to create a CR.

***** NEXT MODIFIED SECTION******

8.1.1.5.15   System Information Block type 15

~~The UE~~ If the UE is in idle or connected ~~corrected~~ mode, and supports GPS location services and/or OTDOA location services it should store all relevant IEs included in this system information block. ~~The ciphering IEs are applied SIB type 15.1, type 15.2, and type 15.3.~~ The UE shall also:

- if LCS GPS assistance for SIB is included, and the UE has a full or reduced complexity ~~capability~~ GPS receiver, the UE shall store the relevant information and apply ciphering as indicated in this IE (refer to 10.3.7.47 for details). The LCS GPS assistance SIB should be applied to SIB type 15.1, type 15.2 and type 15.3. If "Cipher On/Off" is included, it indicates whether ciphering is carried out or not.

    ~~if "Cipher parameters" is included, interpret a value of "1" to mean ciphering is on and a value of "0" to mean ciphering is off.~~

    ~~interpret "Ciphering Key Flag" as the instruction of whether to use current or next cipher key for deciphering the received broadcast message. The UE shall interpret this IE as follows:~~

    ~~**Ciphering Key Flag**(previous message) = **Ciphering Key Flag**(this message) => Deciphering Key not changed~~

    ~~**Ciphering Key Flag**(previous message) <> **Ciphering Key Flag**(this message) => Deciphering Key changed~~

    ~~If ciphering is on, it contains the serial number used in ciphering process of the broadcast message. The IE contains two octets, MSB part and LSB part. The serial number range is 0 – 65535.~~

- if LCS OTDOA assistance for SIB is included, it shall store the relevant information (refer to 10.3.7.61 for details).

8.1.1.5.15.1   System Information Block type 15.1

The UE should store all the relevant IEs included in this system information block . The UE shall also:

- interpret a value of "1" of "UTRAN Time Flag" to mean that UTRAN timing information value (SFN) is present, and "0" to mean that only the Reference GPS TOW field value is provided.

- interpret a value of "1" of "~~BTS~~NODE B Clock Drift Flag" to mean that ~~BTS~~NODE B Clock Drift information value is present, and "0" to mean that this IE value is not provided.

- if ~~BTS~~NODE B Clock Drift is included, the UE shall use it as an estimate of the drift rate of the ~~BTS~~NODE B clock relative to GPS time. If this IE is not included, the UE shall assume the value 0.

- use "Reference Location" as a prior knowledge of the approximate location of the UE.

- If SFN is included, the UE shall use it as the relationship between GPS time and air-interface timing of the ~~BTS~~NODE B transmission in the serving cell.

- use "Reference GPS TOW" as GPS Time of Week which is the start of the frame with SFN=0.

- use "Status/Health" to indicate the status of the differential corrections.

- act on "DGPS information" IEs in a similar manner as specified in [13] except that the scale factors for PRC and RRC are different. In addition, the DGPS information IEs also include Delta PRC2 and Delta RRC2. Delta PRC2 is the difference in the pseudorange correction between the satellite's ephemeris identified by IODE and the previous ephemeris two issues ago IODE –2. Delta RRC2 is the difference in the pseudorange rate-of-change correction between the satellite's ephemeris identified by IODE and IODE-2. These two additional IEs shall extend the life of the raw ephemeris data up to 6 hours.

8.1.1.5.15.2   System Information Block type 15.2

The UE should store all the relevant IEs included in this system information block . The UE shall also:

- interpret "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast.

- Interpret "SatID" as the satellite ID of the data from which this message was obtained.

- act on the rest of the IEs in a similar manner as specified in [12].

8.1.1.5.15.3 System Information Block type 15.3

The UE should store all the relevant IEs included in this system information block . The UE shall also:

- interpret "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast.

- interpret "SatMask" as the satellites that contain the pages being broadcast in this message.

- interpret "LSB TOW" as the least significant 8 bits of the TOW (Figure 20-2 of [12]).

- interpret "SFIO" as the least significant bit of the SubFrame(SF) ID for which the following word 3 through word 10 data applies. Zero indicates subframe ID = 4, and One indicates Subframe ID = 5.

- interpret "Data ID" as the Data ID field contained in the indicated subframe, word 3, most significant 2 bits, as defined by [12].

- interpret "Page No" as the Page ID of the indicated subframe for which the following Word 3 through Word 10 data applies.

- act on the rest of the IEs (Word 3 to Word 10) in a similar manner as specified in [12], excluding non-information bits, "Data ID" and "SV ID" from Word 3 (16 bits left), 2 bit "t" from Word 10 (22 bits left). Word 4 through Word 9 have 24 bits left.

***** NEXT MODIFIED SECTION******

10.2.49.4   System Information Blocks

10.2.49.4.1   SIB Content

SIB Segments are the result of the segmentation of a 'SIB Content' IE. The SIB content IE is developed hereafter:

Information Element	Need	Multi	Type and reference	Semantics description
CHOICE SIB type	MP			
>Master information block			10.2.49.4.2	
>System information block type 1			10.2.49.4.3	
>System information block type 2			10.2.49.4.4	
>System information block type 3			10.2.49.4.5	
>System information block type 4			10.2.49.4.6	
>System information block type 5			10.2.49.4.7	
>System information block type 6			10.2.49.4.8	
>System information block type 7			10.2.49.4.9	
>System information block type 8			10.2.49.4.10	
>System information block type 9			10.2.49.4.11	
>System information block type 10			10.2.49.4.12	
>System information block type 11			10.2.49.4.13	
>System information block type 12			10.2.49.4.14	
>System information block type 13			10.2.49.4.15	
>System information block type 13.1			10.2.49.4.15.1	
>System information block type 13.2			10.2.49.4.15.2	
>System information block type 13.3			10.2.49.4.15.3	
>System information block type 13.4			10.2.49.4.15.4	
>System information block type 14			10.2.49.4.16	
>System information block type 15			10.2.49.4.17	
>System information block type 16			10.2.49.4.18	

Condition	Explanation
SIB Type	The common value of the 'SIB type' field in the segment(s).

***** NEXT MODIFIED SECTION******

10.2.49.4.17   System Information Block type 15

The system information block type 15 contains information useful for LCS. In particular it allows the UE based method to perform localisation without dedicated signalling. For the UE assisted methods the signalling is reduced.

Information Element	Need	Multi	Type and Reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.10	
LCS GPS assistance for SIB	OP		LCS GPS assistance for SIB 10.3.7.47	
LCS OTDOA assistance for SIB	OP		LCS OTDOA assistance for SIB 10.3.7.61	

Multi Bound	Explanation
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.2.49.4.X System Information Block type 15.1

The system information block type 15.1 contains information useful for LCS DGPS Corrections. The DGPS Corrections message contents are based on a Type-1 message of version 2.2 of the RTCM-SC-104 recommendation for differential service. This format is a standard of the navigation industry and is supported by all DGPS receivers.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
UTRAN Time Flag	MP		Bitstring(1)	
Node BBTS Clock Drift Flag	MP		Bitstring(1)	
Node BBTS Clock Drift	OP		Enumerated(-0.1..0.1 by a proper step)	This IE provides an estimate of the drift rate of the Node B clock relative to GPS time. It has units of µsec/sec (ppm) and a range of ±0.1. This IE aids the UE in maintaining the relation between GPS and cell timing over a period of time. A positive value for Node BBTS Clock Drift indicates that the Node BBTS clock is running at a greater frequency than desired. If the field is not present the UE shall assume the value 0.
Reference Location	MP		As defined in TS23.032	Provides a prior knowledge of the approximate location of the UE
SFN	OP		Integer(0..4095)	The SFN that occurs atwhich the Reference GPS TOW time stamps
Reference GPS TOW	MP		Integer(0..6.047*10^{11})	GPS Time of Week with scaling factor of 1 usec. This field time-stamps the start of the frame with SFN=0.
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	This field indicates the status of the differential corrections.
DPGS information	CV-Status	1..MAX N_SAT		The following fields contain the DPGS corrections. If the Cipher information is included these fields are ciphered.
>SatID	MP		Integer(0..31)	The satellite ID number.
>IODE	MP		Integer(0..255)	This IE is the sequence number for the ephemeris for the particular satellite. The MS can use this IE to determine if new ephemeris is used for calculating the corrections that are provided in the broadcast message. This eight-bit IE is incremented for each new set of ephemeris for the satellite and may occupy the numerical range of [0, 239] during normal operations.
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	User Differential Range Error. This field provides an estimate of the uncertainty (1-σ) in the corrections for the particular satellite. The value in this field shall be multiplied by the UDRE Scale Factor in the Status field to determine the final UDRE estimate for the particular satellite.
>PRC	MP		Integer(-2047..2047)	Scaling factor 0.32 meters (different from [13])
>RRC	MP		Integer(-127..127)	Scaling factor 0.032 meters/sec (different from [13])
>Delta PRC2	MP		Integer(-127..127)	The difference in the pseudorange correction between the satellite's ephemeris identified by IODE and the previous ephemeris two issues ago IODE –2.
>Delta RRC2	MP		Integer(-7..7)	The difference in the pseudorange rate-

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
				of-change correction between the satellite's ephemeris identified by IODE and IODE-2.

Note: Each UDRE value shall be adjusted based on the operation of an Integrity Monitor (IM) function which exists at the network (SRNC, GPS server, or reference GPS receiver itself). Positioning errors derived at the IM which are excessive relative to DGPS expected accuracy levels shall be used to scale the UDRE values to produce consistency.

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

Condition	Explanation
Status/Health	This IE is mandatory if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed

10.2.49.4.Y   System Information Block type 15.2

The system information block type 15.2 contains information useful for ephemeris and clock corrections of a particular satellite. These IE fields are extracted from the subframes 1 to 3 of the GPS navigation message [12].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Transmission TOW	MP		Enumerated(0.19)	The approximate GPS time-of-week when the message is broadcast
SatID	MP		Enumerated(0..63)	Satellite ID
TLM Message	MP		Bit string(14)	
TLM Revd (C)	MP		Bit string(2)	
HOW	MP		Bit string(22)	
WN	MP		Bit string(10)	
C/A or P on L2	MP		Bit string(2)	
URA Index	MP		Bit string(4)	
SV Health	MP		Bit string(6)	
IODC	MP		Bit string(10[(1)])	
L2 P Data Flag	MP		Bit string(1)	
SF 1 Reserved	MP		Bit string(87)	
T_{GD}	MP		Bit string(8)	
t_{oc}	MP		Bit string(16[(1)])	
af_2	MP		Bit string(8)	
af_1	MP		Bit string(16)	
af_0	MP		Bit string(22)	
C_{rs}	MP		Bit string(16)	
Δn	MP		Bit string(16)	
M_0	MP		Bit string(32)	
C_{uc}	MP		Bit string(16)	
e	MP		Bit string(32[(1)])	
C_{us}	MP		Bit string(16)	
$(A)^{1/2}$	MP		Bit string(32[(1)])	
t_{oe}	MP		Bit string(16[(1)])	
Fit Interval Flag	MP		Bit string(1)	
AODO	MP		Bit string(5)	
C_{ic}	MP		Bit string(16)	
$OMEGA_0$	MP		Bit string(32)	
C_{is}	MP		Bit string(16)	
i_0	MP		Bit string(32)	
C_{rc}	MP		Bit string(16)	
ω	MP		Bit string(32)	
OMEGAdot	MP		Bit string(24)	
Idot	MP		Bit string(14)	
Spare/zero fill	MP		Bit string(20)	

10.2.49.4.Z   System Information Block type 15.3

The system information block type 15.2 contains information useful for ionospheric delay, UTC offset, and Almanac. These IE fileds are extracted from the subframes 4 and 5 of the GPS navigation message, excluding the parity bits and other redundant bits [12].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Transmission TOW	MP		Enumerated(0.19)	The approximate GPS time-of-week when the message is broadcast
SatMask	MP		Enumerated(1..32)	indicates the satellites that contain the pages being broadcast in this data set
LSB TOW	MP		Bit string(8)	
GPS Info	MP	1 to <Max_Dat_rep>		
>SFIO 0	MP		Bit string(1)	
>Data ID	MP		Bit string(2)	
>Page No.	MP		Bit string(6)	
>Word 3	MP		Bit string(16)	Each repetition corresponds to a different page no. as described in the table below
>Word 4	MP		Bit string(24)	
>Word 5	MP		Bit string(24)	
>Word 6	MP		Bit string(24)	
>Word 7	MP		Bit string(24)	
>Word 8	MP		Bit string(24)	
>Word 9	MP		Bit string(24)	
>Word 10	MP		Bit string(22)	
Spare/zero fill	MP		Bit string(5)	

Mapping of Almanac, Health, Iono, and UTC Data to Subframe Number and Page Number

Data Type	Subframe	Page(s)
Almanac Data (SV1 – 24)	5	1 - 24
Almanac Data (SV25 – 32)	4	2, 3, 4, 5, 7, 8, 9, 10
SV Health (SV1 – 24)	5	25
SV Health (SV25 – 32)	4	25
Iono/UTC Corrections	4	18

Multi Bound	Explanation
Max_Dat_rep	Maximum number of repeats=3

***** NEXT MODIFIED SECTION******

10.3.7.45   LCS GPS almanac

These fields specify the coarse, long-term model of the satellite positions and clocks. With one exception (δi), these parameters are a subset of the ephemeris and clock correction parameters in the Navigation Model, although with reduced resolution and accuracy. The almanac model is useful for receiver tasks that require coarse accuracy, such as determining satellite visibility. The model is valid for up to one year, typically. Since it is a long-term model, the field should be provided for all satellites in the GPS constellation.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
WN_a	MP		Bit string(8)	
Satellite information	MP	1 to <MAX_N_SAT>		
>SatID	MP		Enumerated(0..63)	Satellite ID
>e	MP		Bit string(16)	
>t_{oa}	MP		Bit string(8)	
>δi	MP		Bit string(16)	
>e	MP		Bit string(16)	
>M_0	MP		Bit string(24)	
>OMEGADOT	MP		Bit string(16)	
>SV Health	MP		Bit string(8)	
>$A^{1/2}$	MP		Bit string(24)	
>$OMEGA_0$	MP		Bit string(24)	
>OMEGADOT	MP		Bit string(16)	
>M_0	MP		Bit string(24)	
>ω	MP		Bit string(24)	
>af_0	MP		Bit string(11)	
>af_1	MP		Bit string(11)	

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=32

10.3.7.46   LCS GPS assistance data

The GPS Assistance Data element contains a single GPS assistance message that supports both UE-assisted and UE-based GPS methods. An Integrity Monitor (IM) shall detect unhealthy (e.g., failed/failing) satellites and also shall inform users of measurement quality in DGPS modes when satellites are healthy. Excessively large pseudo range errors, as evidenced by the magnitude of the corresponding DGPS correction, shall be used to detect failed satellites. Unhealthy satellites should be detected within 10 seconds of the occurrence of the satellite failure. When unhealthy (e.g., failed/failing) satellites are detected, the assistance and/or DGPS correction data shall not be supplied for these satellites. When the error in the IM computed position is excessive for solutions based upon healthy satellites only, DGPS users shall be informed of measurement quality through the supplied UDRE values.

Note that certain types of GPS Assistance data may be derived, wholly or partially, from other types of GPS Assistance data.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
LCS GPS reference time	OP		LCS GPS reference time 10.3.7.53	
LCS GPS reference location	OP		Ellipsoid point with altitude defined in 23.032	The Reference Location field contains a 3-D location without uncertainty specified as per 23.032. The purpose of this field is to provide the UE with a priori knowledge of its location in order to improve GPS receiver performance.
LCS GPS DGPS corrections	OP		LCS GPS DGPS corrections 10.3.7.48	
LCS GPS navigation model	OP		LCS GPS navigation model 10.3.7.51	
LCS GPS ionospheric model	OP		LCS GPS ionospheric model 10.3.7.49	
LCS GPS UTC model	OP		LCS GPS UTC model 10.3.7.54	
LCS GPS almanac	OP		LCS GPS almanac 10.3.7.45	
LCS GPS acquisition assistance	OP		LCS GPS acquisition assistance 10.3.7.44	
LCS GPS real-time integrity	OP		LCS GPS real-time integrity 10.3.7.52	

10.3.7.47   LCS GPS assistance for SIB

The LCS GPS Assistance for SIB IE contains ciphering information for GPS differential corrections, ephemeris and clock corrections, as well as Almanac and other data.

The message contents are based on a Type 1 message of version 2.2 of the RTCM SC 104 recommendation for differential service. This format is a standard of the navigation industry and is supported by all DGPS receivers.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Cipher On/Offparameters	OP			Determines if DGPS correction fields are ciphered
>Ciphering Key Flag	MP		Bitstring(1)	See note 1
>Ciphering Serial Number	MOP		Integer(0..65535)	The serial number used in the DES ciphering algorithm
Reference GPS TOW	MP		Integer(0..6.047*10^11)	GPS Time of Week with scaling factor of 1 usec. This field time-stamps the start of the frame with SFN=0.
Status	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	This field indicates the status of the differential corrections.
BTS Clock Drift	OP		Enumerated(-0.05..-0.003125 by step of 0.003125, 0.003125..0.05 by step of 0.003125)	This IE provides an estimate of the drift rate of the Node B clock relative to GPS time. It has units of μsec/sec (ppm) and a range of ±0.05. This IE aids the UE in maintaining the relation between GPS and cell timing over a period of time. A positive value for BTS Clock Drift indicates that the BTS clock is running at a greater frequency than desired. If the field is not present the UE shall assume the value 0.
Time Offset (ΔT)	CV-status		Integer(0..4095)	Scaling factor 0.25. This IE indicates how old the measurements are when the IE is transmitted.
IODD	CV-status		Integer(0..255)	This IE is a cyclical counter that indicates the sequence number of the correction data. The value of IODD is initialised to zero when the IODE IE for one or more satellites has changed, or when the visible constellation changes. IODD is incremented each time new differential corrections are issued for the same visible constellation having the same set of IODE values.
DPGS information	CV-Status	1..MAX_N_SAT		The following fields contain the DPGS corrections. If the Cipher information is included these fields are ciphered.
>SatID	MP		Integer(0..31)	The satellite ID number.
>IODE	MP		Integer(0..255)	This IE is the sequence number for the ephemeris for the particular satellite. The MS can use this IE to determine if new ephemeris is used for calculating the corrections that are provided in the broadcast message. This eight-bit IE is incremented for each new set of ephemeris for the satellite and may occupy the numerical range of [0, 239] during normal operations.
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	User Differential Range Error. This field provides an estimate of the uncertainty (1-σ) in the corrections for the particular satellite. The value in this field shall be multiplied by the UDRE Scale Factor in the Status field to determine the final UDRE estimate for the particular satellite.
>Scale factor	MP		Enumerated(0.02 for	The scaling factor for the PRC and

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
			PRC and 0.002 for RRC, 0.32 for PRC and 0.032 for RRC)	RRC fields
>PRC	MP		Integer(-32767..32767)	Scaling given by the scale factor field.
>RRC	MP		Integer(-127..127)	Scaling given by the scale factor field.

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

Condition	Explanation
Status	This IE is mandatory if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed

NOTE 1:   The UE always receives two (2) cipher keys during the location update procedure. One of the keys is time-stamped to be current one and the other is time-stamped to be the next one. Thus, the UE always has two cipher keys in memory. The Cipher Key Change Indicator in this broadcast message instructs the UE whether to use current or next cipher key for deciphering the received broadcast message. The UE shall interpret this IE as follows:

-   **Ciphering Key Flag**(previous message) = **Ciphering Key Flag**(this message) => Deciphering Key not changed

-   **Ciphering Key Flag**(previous message) <> **Ciphering Key Flag**(this message) => Deciphering Key changed

10.3.7.48   LCS GPS DGPS corrections

These fields specify the DGPS corrections to be used by the UE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
GPS TOW	MP		Integer(0..604799)	Seconds. This field indicates the baseline time for which the corrections are valid.
Status/Health	MP		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	This field indicates the status of the differential corrections
Satellite information	MP	1 to <MAX_N_SAT>		
>SatID	MP		Enumerated(0..63)	Satellite ID
>IODE	MP		Bit string(8)	This IE is the sequence number for the ephemeris for the particular satellite. The UE can use this IE to determine if new ephemeris is used for calculating the corrections that are provided in the broadcast message. This eight-bit IE is incremented for each new set of ephemeris for the satellite and may occupy the numerical range of [0, 239] during normal operations. See [13] for details
>UDRE	MP		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	User Differential Range Error. This field provides an estimate of the uncertainty (1-σ) in the corrections for the particular satellite. The value in this field shall be multiplied by the UDRE Scale Factor in the common Corrections Status/Health field to determine the final UDRE estimate for the particular satellite. See [13] for details
>PRC	MP		Integer(-2047~8~..2047~8~)	Scaling factor 0.32 meters (different from [13])~See [13] for details~
>RRC	MP		Integer(-127~5~..-127~5~)	Scaling factor 0.032 meters/sec (different from [13]).~ See [13] for details~
>Delta PRC2	MP		Integer(-127..127)	Meters. ~See [13] for details~ The difference in the pseudorange correction between the satellite's ephemeris identified by IODE and the previous ephemeris two issues ago IODE −2.
>Delta RRC2	MP		Integer(-7..7)	Scaling factor 0.032 meters/sec. ~See [13] for details~ The difference in the rate of the change of the pseudorange correction between the satellite's ephemeris identified by IODE and the previous ephemeris two issues ago IODE −2.
>Delta PRC3	MP		Enumerated(-127..127)	Meters. ~See [13] for details~ The difference in the pseudorange correction between the satellite's ephemeris identified by IODE and the previous ephemeris three issues ago IODE −3.
>Delta RRC3	MP		Integer(-7..7)	Scaling factor 0.032 meters/sec. ~See [13] for details~ The difference in the

				rate of the change of the pseudorange correction between the satellite's ephemeris identified by IODE and the previous ephemeris three issues ago IODE –3.

Note: Each UDRE value shall be adjusted based on the operation of an Integrity Monitor (IM) function which exists at the network (SRNC, GPS server, or reference GPS receiver itself). Positioning errors derived at the IM which are excessive relative to DGPS expected accuracy levels shall be used to scale the UDRE values to produce consistency.

Multi Bound	Explanation
MAX_N_SAT	Maximum number of satellites included in the IE=16

***** NEXT MODIFIED SECTION******

10.3.7.51   LCS GPS navigation model

This IE contain information required to manage the transfer of precise navigation data to the GPS-capable UE. This information includes control bit fields as well as satellite ephemeris and clock corrections.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
N_SAT	MP		Enumerated(1..16)	The number of satellites included in this IE
Satellite information	MP	1 to <MAX_N_SAT>		
>SatID	MP		Enumerated(0..63)	Satellite ID
>Satellite Status	MP		Enumerated(NS_NN~~U~~ ES_SN ES_NN~~U~~ REVD~~ES_NN_C~~)	See note 1
~~>CHOICE Compressed~~	~~CV-Satellite Status~~			
~~>>uncompressed~~				~~Standard formats as defined in [12]~~
>C/A or P on L2	MP		Bit string(2)	Standard formats as defined in [12]
>URA Index	MP		Bit string(4)	
>SV Health	MP		Bit string(6)	
>IODC	MP		Bit string(10)[(1)]	
>L2 P Data Flag	MP		Bit string(1)	
>SF 1 Reserved	MP		Bit string(87)	
>T_{GD}	MP		Bit string(8)	
>t_{oc}	MP		Bit string(16)[(1)]	
>af_2	MP		Bit string(8)	
>af_1	MP		Bit string(16)	
>af_0	MP		Bit string(22)	
>C_{rs}	MP		Bit string(16)	
>Δn	MP		Bit string(16)	
>M_0	MP		Bit string(32)	
>C_{uc}	MP		Bit string(16)	
>e	MP		Bit string(32)[(1)]	
>C_{us}	MP		Bit string(16)	
>$(A)^{1/2}$	MP		Bit string(32)[(1)]	
>t_{oe}	MP		Bit string(16)[(1)]	
>Fit Interval Flag	MP		Bit string(1)	
>AODO	MP		Bit string(5)	
>C_{ic}	MP		Bit string(16)	
>$OMEGA_0$	MP		Bit string(32)	
>C_{is}	MP		Bit string(16)	
>i_0	MP		Bit string(32)	
>C_{rc}	MP		Bit string(16)	
>ω	MP		Bit string(32)	
>OMEGAdot	MP		Bit string(24)	
>Idot	MP		Bit string(14)	
~~>>>IODE~~	~~MP~~		~~Bit string(8)[(1)]~~	
~~>>>t_{oe}~~	~~MP~~		~~Bit string(16)[(1)]~~	
~~>>>C_{rc}~~	~~MP~~		~~Bit string(16)~~	
~~>>>C_{rs}~~	~~MP~~		~~Bit string(16)~~	
~~>>>C_{ic}~~	~~MP~~		~~Bit string(16)~~	
~~>>>C_{is}~~	~~MP~~		~~Bit string(16)~~	
~~>>>C_{uc}~~	~~MP~~		~~Bit string(16)~~	
~~>>>C_{us}~~	~~MP~~		~~Bit string(16)~~	
~~>>>e~~	~~MP~~		~~Bit string(32)[(1)]~~	
~~>>>M_0~~	~~MP~~		~~Bit string(32)~~	
~~>>>$(A)^{1/2}$~~	~~MP~~		~~Bit string(32)[(1)]~~	
~~>>>Δn~~	~~MP~~		~~Bit string(16)~~	
~~>>>$OMEGA_0$~~	~~MP~~		~~Bit string(32)~~	
~~>>>OMEGAdot~~	~~MP~~		~~Bit string(24)~~	
~~>>>i_0~~	~~MP~~		~~Bit string(32)~~	
~~>>>Idot~~	~~MP~~		~~Bit string(14)~~	
~~>>>ω~~	~~MP~~		~~Bit string(32)~~	
~~>>>t_{oc}~~	~~MP~~		~~Bit string(16)[(1)]~~	
~~>>>Af_0~~	~~MP~~		~~Bit string(22)~~	
~~>>>Af_1~~	~~MP~~		~~Bit string(16)~~	

>>>Af$_2$	MP		Bit string(8)	
>>compressed				Compressed format as defined in 14.11.1
>>>IODE	MP		Bit string(4)	
>>>t$_{oe}$	MP		Bit string(7)	
>>>C$_{rc}$	MP		Bit string(12)	
>>>C$_{rs}$	MP		Bit string(12)	
>>>C$_{ic}$	MP		Bit string(9)	
>>>C$_{is}$	MP		Bit string(9)	
>>>C$_{uc}$	MP		Bit string(11)	
>>>C$_{us}$	MP		Bit string(11)	
>>>e	MP		Bit string(16)	
>>>M$_0$	MP		Bit string(22)	
>>>(A)$^{1/2}$	MP		Bit string(13)	
>>>Δn	MP		Bit string(11)	
>>>OMEGA$_0$	MP		Bit string(14)	
>>>OMEGAdot	MP		Bit string(12)	
>>>I$_0$	MP		Bit string(15)	
>>>Idot	MP		Bit string(11)	
>>>ω	MP		Bit string(21)	
>>>t$_{oc}$	MP		Bit string(7)	
>>>Af$_0$	MP		Bit string(7)	
>>>Af$_1$	MP		Bit string(3)	
>>>Af$_2$	MP		Bit string(1)	

NOTE 1: The UE shall interpret enumerated symbols as follows.

Symbol	Interpretation
NS_NN_U	New satellite, new Navigation Model - uncompressed
ES_SN	Existing satellite, same Navigation Model
ES_NN_U	Existing satellite, new Navigation Model - uncompressed
REVDES_NN_C	ReservedExisting satellite, new Navigation Model - compressed

CHOICE *Compression*	Explanation
Uncompressed	The parameters are not compressed. This is standard GPS format, as specified in [12].
Compressed	The parameters are compressed with the algorithm in the 14.11.1.

Condition	Explanation
status	Group Included unless status is ES_SN

Multi Bound	Explanation
N_SAT	Number of satellites included in the IE

***** NEXT MODIFIED SECTION******

10.3.7.54   LCS GPS UTC model

The UTC Model field contains a set of parameters needed to relate GPS time to Universal Time Coordinate (UTC).

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
~~A_0~~	~~MP~~		~~Bit string(32)~~	
A_1	MP		Bit string(24)	
A_0	MP		Bit string(32)	
~~Δt_{LS}~~	~~MP~~		~~Bit string(8)~~	
t_{ot}	MP		Bit string(8)	
WN_t	MP		Bit string(8)	
Δt_{LS}	MP		Bit string(8)	
WN_{LSF}	MP		Bit string(8)	
DN	MP		Bit string(8)	
Δt_{LSF}	MP		Bit string(8)	

***** NEXT MODIFIED SECTION******

11.3.7   Measurement information elements

```
Measurement-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    CellIdentity
FROM UTRANMobility-IEs

    DRX-CycleLengthCoefficient
FROM UserEquipment-IEs

    RB-Identity
FROM RadioBearer-IEs

    TransportChannelIdentity
FROM TransportChannel-IEs

    FrequencyInfo,
    MaxAllowedUL-TX-Power,
    PrimaryCCPCH-Info,
    PrimaryCCPCH-TX-Power,
    PrimaryCPICH-Info,
    PrimaryCPICH-TX-Power,
    Timeslot
FROM PhysicalChannel-IEs

    BSIC
FROM Other-IEs

    maxAdditionalMeas,
    maxAddRLcount,
    maxBLER,
    maxCCTrCHcount,
    maxCellCount,
    maxCellsForbidden,
    maxDelRLcount,
    maxEventCount,
    maxFreqCount,
    maxInterCells,
    maxInterRAT,
    maxInterSys,
    maxInterSysCells,
    maxIntraCells,
    maxN-BadSAT,
    maxN-SAT,
    maxNoCells,
    maxNonUsedFrequency,
    maxNumFreq,
    maxTraf,
    maxTrCHcount,
    maxTSperCCTrCHcount,
    maxTStoMeasureCount,
    maxUsedRLcount,
    maxUsedUplTScount
FROM Constant-definitions;

AcquisitionSatInfo ::=              SEQUENCE {
    satID                              INTEGER (0..63),
    doppler0thOrder                    INTEGER (-2048..2047),
    extraDopplerInfo                   ExtraDopplerInfo                 OPTIONAL,
    codePhase                          INTEGER (0..1022),
    integerCodePhase                   INTEGER (0..19),
    gps-BitNumber                      INTEGER (0..3),
    codePhaseSearchWindow              CodePhaseSearchWindow,
    azimuthAndElevation                AzimuthAndElevation              OPTIONAL
}

AcquisitionSatInfoList ::=         SEQUENCE (SIZE (1..maxN-SAT)) OF
                                       AcquisitionSatInfo

ActiveSetCellReport ::=            ENUMERATED {
                                       includeAll,
                                       excludeAll,
```

```
                                        other }

-- **TODO**, definition to be checked from TS 09.31
AdditionalAssistanceData ::=        SEQUENCE {
}

AdditionalMeasurementID-List ::=    SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                        MeasurementIdentityNumber


Almanac ::= SEQUENCE {
    wn-a                            BIT STRING {SIZE {8}},
    almanacList                     AlmanacSatInfo
}

AlmanacSatInfo ::=                  SEQUENCE {
    satID                           INTEGER (0..63),
    deltaI                          BIT STRING (SIZE (16)),
    e                               BIT STRING (SIZE (16)),
    t-oa                            BIT STRING {SIZE {8}},
    deltaI                          BIT STRING {SIZE {16}},
    omegaDot                        BIT STRING (SIZE (16)),
    satHealth                       BIT STRING {SIZE {8}},
    m0                              BIT STRING (SIZE (24)),
    a-Sqrt                          BIT STRING (SIZE (24)),
    omega0                          BIT STRING (SIZE (24)),
    omegaDot                        BIT STRING (SIZE (16)),
    m0                              BIT STRING (SIZE (24)),
    omega                           BIT STRING (SIZE (24)),
    af0                             BIT STRING (SIZE (11)),
    af1                             BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::=              SEQUENCE (SIZE (1..maxN-SAT)) OF
                                        AlmanacSatInfo

AverageRLC-BufferPayload ::=        ENUMERATED {
                                        pla0, pla4, pla8, pla16, pla32,
                                        pla64, pla128, pla256, pla512,
                                        pla1024, pla2k, pla4k, pla8k, pla16k }

AzimuthAndElevation ::=             SEQUENCE {
    azimuth                         INTEGER (0..31),
    elevation                       INTEGER (0..7)
}

BadSatList ::=                      SEQUENCE (SIZE (1..maxN-BadSAT)) OF
                                        INTEGER (0..63)

BCCH-ARFCN ::=                      INTEGER (0..1023)

BLER-MeasurementResults ::=         SEQUENCE {
    transportChannelIdentity        TransportChannelIdentity,
    dl-TransportChannelBLER         DL-TransportChannelBLER         OPTIONAL
}

BLER-MeasurementResultsList ::=     SEQUENCE (SIZE(1..maxBLER)) OF
                                        BLER-MeasurementResults

BLER-TransChIdList ::=              SEQUENCE (SIZE (1..maxBLER)) OF
                                        TransportChannelIdentity

-- IE value 0 = true value -0.05, IE value 16 = true value -0.003125,
--  IE value 17 = true value 0.003125, IE value 32 = true value 0.05
BTS-ClockDrift ::=                  INTEGER (0..1531)

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

CCTrCH-Timeslot ::=                 SEQUENCE {
    iscp                            DL-TimeslotISCP                 OPTIONAL,
    rscp                            RSCP                            OPTIONAL
}

CCTrCH-TimeslotList ::=             SEQUENCE (SIZE(1..maxTSperCCTrCHcount)) OF
                                        CCTrCH-Timeslot

CellDCH-ReportCriteria ::=          CHOICE {
    intraFreqReportingCriteria      IntraFreqReportingCriteria,
```

```
        periodicalReportingCriteria         PeriodicalReportingCriteria
}

-- Actual value = IE value * 0.5
CellIndividualOffset ::=                INTEGER (-20..20)

CellInfo ::=                            SEQUENCE {
    cellIndividualOffset                    CellIndividualOffset                DEFAULT 1,
    referenceTimeDifferenceToCell           ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                       PrimaryCPICH-Info               OPTIONAL,
            primaryCPICH-TX-Power                   PrimaryCPICH-TX-Power           OPTIONAL,
            readSFN-Indicator                       BOOLEAN,
            tx-DiversityIndicator                   BOOLEAN
        },
        tdd                                     SEQUENCE {
            primaryCCPCH-Info                       PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power                   PrimaryCCPCH-TX-Power,
            dl-CCTrCH-Info                          DL-CCTrCH-Info                  OPTIONAL,
            dl-TimeslotInfo                         DL-TimeslotInfo                 OPTIONAL
        }
    }
}

CellInfoSI ::=                          SEQUENCE {
    cellIndividualOffset                    CellIndividualOffset                DEFAULT 1,
    referenceTimeDifferenceToCell           ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                       PrimaryCPICH-Info               OPTIONAL,
            primaryCPICH-TX-Power                   PrimaryCPICH-TX-Power           OPTIONAL,
            readSFN-Indicator                       BOOLEAN,
            tx-DiversityIndicator                   BOOLEAN
        },
        tdd                                     SEQUENCE {
            primaryCCPCH-Info                       PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power                   PrimaryCCPCH-TX-Power,
            dl-CCTrCH-Info                          DL-CCTrCH-Info                  OPTIONAL,
            dl-TimeslotInfo                         DL-TimeslotInfo                 OPTIONAL
        }
    },
    cellSelectionReselectionInfo            CellSelectionReselectionInfo,
    signallingOption                        SignallingOption
}

CellMeasuredResults ::=                 SEQUENCE {
    cellIdentity                            CellIdentity                        OPTIONAL,
    sfn-SFN-ObsTimeDifference               SFN-SFN-ObsTimeDifference           OPTIONAL,
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                       PrimaryCPICH-Info,
            cpich-Ec-N0                             CPICH-Ec-N0                     OPTIONAL,
            cpich-RSCP                              CPICH-RSCP                      OPTIONAL,
            cpich-SIR                               CPICH-SIR                       OPTIONAL,
            pathloss                                Pathloss                        OPTIONAL,
            cfn-SFN-ObsTimeDifference               CFN-SFN-ObsTimeDifference       OPTIONAL
        },
        tdd                                     SEQUENCE {
            primaryCCPCH-Info                       PrimaryCCPCH-Info,
            dl-CCTrCH-SIR-List                      DL-CCTrCH-SIR-List              OPTIONAL,
            dl-TimeslotISCP-List                    DL-TimeslotISCP-List            OPTIONAL
        }
    }
}

CellMeasurementEventResults ::=         CHOICE {
    fdd                                     SEQUENCE (SIZE (1..maxCellCount)) OF
                                                PrimaryCPICH-Info,
    tdd                                     SEQUENCE (SIZE (1..maxCellCount)) OF
                                                PrimaryCCPCH-Info
}

CellPosition ::=                        SEQUENCE {
    relativeNorth                           INTEGER (-32767..32767),
    relativeEast                            INTEGER (-32767..32767),
    relativeAltitude                        INTEGER (-4095..4095)
}

CellReportingQuantities ::=             SEQUENCE {
    sfn-SFN-OTD-Type                        SFN-SFN-OTD-Type,
```

```
    cellIdentity                    CellIdentity,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            cpich-Ec-N0                     BOOLEAN,
            cpich-RSCP                      BOOLEAN,
            cpich-SIR                       BOOLEAN,
            pathloss                        BOOLEAN,
            cfn-SFN-ObsTimeDifference       BOOLEAN
        },
        tdd                             SEQUENCE {
            dl-CCTrCH-SIR                   BOOLEAN,
            timeslotISCP                    BOOLEAN,
            primaryCCPCH-RSCP               BOOLEAN,
            pathloss                        BOOLEAN
        }
    }
}

CellSelectionReselectionInfo ::=    SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             Qmin-FDD,
        tdd                             Qmin-TDD
    }                                                       OPTIONAL,
    maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power   OPTIONAL,
    signallingOption                SignallingOption
}

CellToMeasure ::=                   SEQUENCE {
    sfn-sfn-Drift                       INTEGER (0..30)             OPTIONAL,
    primaryCPICH-Info                   PrimaryCPICH-Info,
    frequencyInfo                       FrequencyInfo               OPTIONAL,
    sfn-SFN-ObservedTimeDifference      SFN-SFN-ObsTimeDifference1,
    fineSFN-SFN                         FineSFN-SFN,
    cellPosition                        CellPosition                OPTIONAL
}

CellToMeasureInfoList ::=           SEQUENCE (SIZE (1..maxNoCells)) OF
                                        CellToMeasure

CellToReport ::=                    SEQUENCE {
    frequency                           Frequency,
    bsic                                BSIC
}

CellToReportList ::=                SEQUENCE (SIZE (1..maxCellCount)) OF
                                        CellToReport

CFN-SFN-ObsTimeDifference ::=       INTEGER (0..9830399)

CodePhaseSearchWindow ::=           ENUMERATED {
                                        w1023, w1, w2, w3, w4, w6, w8,
                                        w12, w16, w24, w32, w48, w64,
                                        w96, w128, w192 }
```

```
CompressedNavModel ::=              SEQUENCE {
    iode                                BIT STRING (SIZE (4)),
    t-oe                                BIT STRING (SIZE (7)),
    c-rc                                BIT STRING (SIZE (12)),
    c-rs                                BIT STRING (SIZE (12)),
    c-ic                                BIT STRING (SIZE (9)),
    c-is                                BIT STRING (SIZE (9)),
    c-uc                                BIT STRING (SIZE (11)),
    c-us                                BIT STRING (SIZE (11)),
    e                                   BIT STRING (SIZE (16)),
    m0                                  BIT STRING (SIZE (22)),
    a-Sqrt                              BIT STRING (SIZE (13)),
    delta-n                             BIT STRING (SIZE (11)),
    omega0                              BIT STRING (SIZE (14)),
    omegaDot                            BIT STRING (SIZE (12)),
    i0                                  BIT STRING (SIZE (15)),
    iDot                                BIT STRING (SIZE (11)),
    omega                               BIT STRING (SIZE (21)),
    t-oc                                BIT STRING (SIZE (7)),
    af0                                 BIT STRING (SIZE (7)),
    af1                                 BIT STRING (SIZE (3)),
    af2                                 BIT STRING (SIZE (1))
}
```

```
CPICH-Ec-N0 ::=                     INTEGER (-20..0)

-- IE value 0 = <-24 dB, 1 = between -24 and -23 and so on
```

```
CPICH-Ec-N0-OTDOA ::=                INTEGER (0..26)

CPICH-RSCP ::=                       INTEGER (-115..-40)

CPICH-SIR ::=                        INTEGER (-10..20)

DeltaPRC2 ::=                        INTEGER (-127..127)

DeltaRRC2 ::=                        INTEGER (-7..7)

DeltaPRC3 ::=                        INTEGER (-127..127)

DeltaRRC3 ::=                        INTEGER (-7..7)

DGPS-CorrectionSatInfo ::=           SEQUENCE {
    satID                                INTEGER (0..63),
    iode                                 BIT STRING (SIZE (8)),
    udre                                 UDRE,
    prc                                  PRCINTEGER (-2048..2048),
    rrc                                  RRCINTEGER (-125..125),
    deltaPRC2                            DeltaPRC2INTEGER (-127..127),
    deltaRRC2                            DeltaRRC2INTEGER (-7..7),
    deltaPRC3                            DeltaPRC3INTEGER (-127..127),
    deltaRRC3                            DeltaRRC3INTEGER (-7..7)
}

DGPS-CorrectionSatInfoList ::=       SEQUENCE (SIZE (1..maxN-SAT)) OF
                                         DGPS-CorrectionSatInfo

DGPS-Information ::=                 SEQUENCE {
    satID                                SatID,
    iode                                 IODE,
    udre                                 UDRE,
    scaleFactor                          ScaleFactor,
    prc                                  PRC,
    rrc                                  RRC,
    deltaPRC2                            DeltaPRC2,
    deltaRRC2                            deltaRRC2
}

DGPS-InformationList ::=             SEQUENCE (SIZE (1..maxN-SAT)) OF
                                         DGPS-Information

DiffCorrectionStatus ::=            ENUMERATED {
                                         udre-1-0, udre-0-75, udre-0-5, udre-0-3,
                                         udre-0-2, udre-0-1, noData, invalidData }

-- **TODO**, not defined yet
DL-CCTrCH-Info ::=                   SEQUENCE {
}

DL-CCTrCH-SIR ::=                    SEQUENCE {
    ccTrCH-TimeslotList                  CCTrCH-TimeslotList
}

DL-CCTrCH-SIR-List ::=              SEQUENCE (SIZE(1..maxCCTrCHcount)) OF
                                         DL-CCTrCH-SIR

-- Actual value = IE value * 0.02
DL-PhysicalChannelBER ::=            INTEGER (0..255)

-- **TODO**, not defined yet
DL-TimeslotInfo ::=                  SEQUENCE {
}

-- **TODO**, not defined yet
DL-TimeslotISCP ::=                  SEQUENCE {
}

DL-TimeslotISCP-List ::=            SEQUENCE (SIZE(1..maxTStoMeasureCount)) OF
                                         DL-TimeslotISCP

-- Actual value = IE value * 0.02
DL-TransportChannelBLER ::=          INTEGER (0..255)

DopplerUncertainty ::=              ENUMERATED {
                                         hz12-5, hz25, hz50, hz100, hz200 }

EnvironmentCharacterization ::=     ENUMERATED {
                                         possibleHeavyMultipathNLOS,
                                         lightMultipathLOS,
```

```
                                     notDefined }

Event1a ::=                         SEQUENCE {
    triggeringCondition                 TriggeringCondition,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList,
    w                                   W,
    hysteresis                          Hysteresis                 OPTIONAL,
    reportDeactivationThreshold         ReportDeactivationThreshold
}

Event1b ::=                         SEQUENCE {
    triggeringCondition                 TriggeringCondition,
    reportingRange                      ReportingRange,
    forbiddenAffectCellList             ForbiddenAffectCellList,
    w                                   W,
    hysteresis                          Hysteresis                 OPTIONAL
}

Event1c ::=                         SEQUENCE {
    hysteresis                          Hysteresis                 OPTIONAL,
    replacementActivationThreshold      ReplacementActivationThreshold
}

Event2a ::=                         SEQUENCE {
    usedFreqThreshold                   Threshold,
    usedFreqW                           W,
    hysteresis                          HysteresisInterFreq,
    timeToTrigger                       TimeToTrigger,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval,
    nonUsedFreqParameterList            NonUsedFreqParameterList   OPTIONAL
}

Event2b ::=                         SEQUENCE {
    usedFreqThreshold                   Threshold,
    usedFreqW                           W,
    hysteresis                          HysteresisInterFreq,
    timeToTrigger                       TimeToTrigger,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval,
    nonUsedFreqParameterList            NonUsedFreqParameterList   OPTIONAL
}

Event2c ::=                         SEQUENCE {
    hysteresis                          HysteresisInterFreq,
    timeToTrigger                       TimeToTrigger,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval,
    nonUsedFreqParameterList            NonUsedFreqParameterList   OPTIONAL
}

Event2d ::=                         SEQUENCE {
    usedFreqThreshold                   Threshold,
    usedFreqW                           W,
    hysteresis                          HysteresisInterFreq,
    timeToTrigger                       TimeToTrigger,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

Event2e ::=                         SEQUENCE {
    hysteresis                          HysteresisInterFreq,
    timeToTrigger                       TimeToTrigger,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval,
    nonUsedFreqParameterList            NonUsedFreqParameterList   OPTIONAL
}

Event2f ::=                         SEQUENCE {
    usedFreqThreshold                   Threshold,
    usedFreqW                           W,
    hysteresis                          HysteresisInterFreq,
    timeToTrigger                       TimeToTrigger,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

Event3a ::=                         SEQUENCE {
    thresholdOwnSystem                  Threshold,
    w                                   W,
```

```
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3b ::=                     SEQUENCE {
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3c ::=                     SEQUENCE {
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3d ::=                     SEQUENCE {
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

EventIDInterFreq ::=            ENUMERATED {
                                    e2a, e2b, e2c, e2d, e2e, e2f }

EventIDInterSystem ::=          ENUMERATED {
                                    e3a, e3b, e3c, e3d }

EventIDIntraFreq ::=            ENUMERATED {
                                    e1a, e1b, e1c, e1d, e1e,
                                    e1f, e1g, e1h, e1i, e1j }

EventIDTrafficVolume ::=        ENUMERATED {
                                    e4a, e4b }

EventResults ::=                CHOICE {
    intraFreqEventResults           IntraFreqEventResults,
    interFreqEventResults           InterFreqEventResults,
    interSystemEventResults         InterSystemEventResults,
    trafficVolumeEventResults       TrafficVolumeEventResults,
    qualityEventResults             QualityEventResults,
    ue-InternalEventResults         UE-InternalEventResults,
    lcs-MeasurementEventResults     LCS-MeasurementEventResults
}

ExtraDopplerInfo ::=            SEQUENCE {
    doppler1stOrder                 INTEGER (-42..21),
    dopplerUncertainty              DopplerUncertainty
}

FACH-MeasurementOccasionInfo ::= SEQUENCE {
    k-UTRA                          DRX-CycleLengthCoefficient,
    otherRAT-InSysInfoList          OtherRAT-InSysInfoList
}

FilterCoefficient ::=           ENUMERATED {
                                    fc1, fc2, fc3, fc4, fc6, fc8,
                                    fc12, fc16, fc24, fc32, fc64,
                                    fc128, fc256, fc512, fc1024,
                                    spare1 }

FineSFN-SFN ::=                 ENUMERATED {
                                    fs0, fs0-25, fs0-5, fs0-75 }

ForbiddenAffectCell ::=         SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            primaryCPICH-Info               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            primaryCCPCH-Info               PrimaryCCPCH-Info
        }
    }
}
```

```
}

ForbiddenAffectCellList ::=        SEQUENCE (SIZE(1..maxCellsForbidden)) OF
                                        ForbiddenAffectCell

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
                                        cpich-Ec-N0,
                                        cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
                                        primaryCCPCH-RSCP }

-- **TODO**, not defined yet
Frequency ::=                      SEQUENCE {
}

GPS-MeasurementParam ::=           SEQUENCE {
    satelliteID                        INTEGER (0..63),
    c-N0                               INTEGER (0..63),
    doppler                            INTEGER (-32768..32768),
    wholeGPS-Chips                     INTEGER (0..1023),
    fractionalGPS-Chips                INTEGER (0..1023),
    multipathIndicator                 MultipathIndicator,
    pseudorangeRMS-Error               INTEGER (0..63)
}

GPS-MeasurementParamList ::=       SEQUENCE (SIZE (1..maxN-SAT)) OF
                                        GPS-MeasurementParam

GPS-TOW-1msec ::=                  INTEGER (0..604700000)

GPS-TOW-Assist ::=                 SEQUENCE {
    satID                              INTEGER (0..63),
    tlm-Message                        BIT STRING (SIZE (14)),
    antiSpoof                          BOOLEAN,
    alert                              BOOLEAN,
    tlm-Reserved                       BIT STRING (SIZE (2))
}

GPS-TOW-AssistList ::=             SEQUENCE (SIZE (1..maxN-SAT)) OF
                                        GPS-TOW-Assist

GPS-TOW-HighResolution ::=         INTEGER (0..999)

GSM-CarrierRSSI ::=                BIT STRING (SIZE (6))

-- **TODO**, not defined yet
GSM-OutputPower ::=                SEQUENCE {
}

HCS-CellReselectInformation ::=    SEQUENCE {
    penaltyTime                        PenaltyTime
}

HCS-NeighbouringCellInformation ::= SEQUENCE {
    hcs-PRIO                           HCS-PRIO                        OPTIONAL,
    q-HCS                              Q-HCS                           OPTIONAL,
    hcs-CellReselectInformation        HCS-CellReselectInformation     OPTIONAL
}

HCS-PRIO ::=                       INTEGER (0..7)

-- Actual value = IE value * 0.5
Hysteresis ::=                     INTEGER (0..15)

-- Actual value = IE value * 0.5
HysteresisInterFreq ::=            INTEGER (0..29)

InterFreqCell ::=                  SEQUENCE {
    frequencyInfo                      FrequencyInfo,
    nonFreqRelatedEventResults         CellMeasurementEventResults
}

InterFreqCellID ::=                INTEGER (0..maxInterCells)

InterFreqCellInfoList ::=          SEQUENCE {
    removedInterFreqCellList           RemovedInterFreqCellList        OPTIONAL,
    newInterFreqCellList               NewInterFreqCellList            OPTIONAL
}

InterFreqCellInfoSI-List ::=       SEQUENCE {
```

```
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List             OPTIONAL
}

InterFreqCellList ::=               SEQUENCE (SIZE (1..maxFreqCount)) OF
                                        InterFreqCell

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxInterCells)) OF
                                        CellMeasuredResults

InterFreqEvent ::=                  CHOICE {
    event2a                             Event2a,
    event2b                             Event2b,
    event2c                             Event2c,
    event2d                             Event2d,
    event2e                             Event2e,
    event2f                             Event2f
}

InterFreqEventList ::=              SEQUENCE (SIZE(1..maxEventCount)) OF
                                        InterFreqEvent

InterFreqEventResults ::=           SEQUENCE {
    eventID                             EventIDInterFreq,
    interFreqCellList                   InterFreqCellList
}

InterFreqMeasQuantity ::=           SEQUENCE {
    reportingCriteria                   CHOICE {
        intraFreqReportingCriteria          SEQUENCE {
            intraFreqMeasQuantity               IntraFreqMeasQuantity,
        },
        interFreqReportingCriteria          SEQUENCE {
            filterCoefficient                   FilterCoefficient,
            modeSpecificInfo                    CHOICE {
                fdd                                 SEQUENCE {
                    freqQualityEstimateQuantity-FDD     FreqQualityEstimateQuantity-FDD
                },
                tdd                                 SEQUENCE {
                    freqQualityEstimateQuantity-TDD     FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::=        SEQUENCE {
    frequencyInfo                       FrequencyInfo                      OPTIONAL,
    utra-CarrierRSSI                    UTRA-CarrierRSSI                   OPTIONAL,
    interFreqCellMeasuredResultsList    InterFreqCellMeasuredResultsList   OPTIONAL
}

InterFreqMeasuredResultsList ::=    SEQUENCE (SIZE (1..maxNumFreq)) OF
                                        InterFreqMeasuredResults

InterFreqMeasurementSysInfo ::=     SEQUENCE {
    interFreqMeasurementID              MeasurementIdentityNumber          OPTIONAL,
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List           OPTIONAL,
    interFreqMeasQuantity               InterFreqMeasQuantity              OPTIONAL
}

InterFreqReportCriteria ::=         CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria,
    interFreqReportingCriteria          InterFreqReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

InterFreqReportingCriteria ::=      SEQUENCE {
    interFreqEventList                  InterFreqEventList                 OPTIONAL
}

InterFreqReportingQuantity ::=      SEQUENCE {
    utra-Carrier-RSSI                   BOOLEAN,
    frequencyQualityEstimate            BOOLEAN,
    nonFreqRelatedQuantities            CellReportingQuantities
}

InterFreqSetUpdate ::=              SEQUENCE {
    ue-AutonomousUpdateMode             UE-AutonomousUpdateMode
}
```

```
InterFrequencyMeasurement ::=      SEQUENCE {
    interFreqCellInfoList             InterFreqCellInfoList,
    interFreqMeasQuantity             InterFreqMeasQuantity           OPTIONAL,
    interFreqReportingQuantity        InterFreqReportingQuantity      OPTIONAL,
    reportingCellStatus               ReportingCellStatus             OPTIONAL,
    measurementValidity               MeasurementValidity             OPTIONAL,
    interFreqSetUpdate                InterFreqSetUpdate              OPTIONAL,
    reportCriteria                    InterFreqReportCriteria
}

InterSystemCellID ::=              INTEGER (0..maxInterSysCells)

InterSystemCellInfoList ::=        SEQUENCE {
    removedInterSystemCellList        RemovedInterSystemCellList,
    newInterSystemCellList            NewInterSystemCellList
}

InterSystemEvent ::=               CHOICE {
    event3a                           Event3a,
    event3b                           Event3b,
    event3c                           Event3c,
    event3d                           Event3d
}

InterSystemEventList ::=           SEQUENCE (SIZE(1..maxEventCount)) OF
                                      InterSystemEvent

InterSystemEventResults ::=        SEQUENCE {
    eventID                           EventIDInterSystem,
    cellToReportList                  CellToReportList
}

InterSystemInfo ::=                ENUMERATED {
                                      gsm, spare1 }

InterSystemMeasQuantity ::=        SEQUENCE {
    measQuantityUTRAN-QualityEstimate    IntraFreqMeasQuantity,
    systemSpecificInfo                CHOICE {
        gsm                               SEQUENCE {
            measurementQuantity               MeasurementQuantityGSM,
            filterCoefficient                 FilterCoefficient,
            bsic-VerificationRequired         BOOLEAN
        },
        is-2000                           SEQUENCE {
            tadd-EcIo                         INTEGER (0..63),
            tcomp-EcIo                        INTEGER (0..15),
            softSlope                         INTEGER (0..63)         OPTIONAL,
            addIntercept                      INTEGER (0..63)         OPTIONAL
        }
    }
}

InterSystemMeasuredResults ::=     CHOICE {
    gsm                               SEQUENCE {
        frequency                         Frequency,
        gsm-CarrierRSSI                   GSM-CarrierRSSI            OPTIONAL,
        pathloss                          Pathloss                  OPTIONAL,
        bsic                              BSIC                      OPTIONAL,
        observedTimeDifferenceToGSM       ObservedTimeDifferenceToGSM  OPTIONAL
    },
    other                             NULL
}

InterSystemMeasuredResultsList ::= SEQUENCE (SIZE (1..maxInterSys)) OF
                                      InterSystemMeasuredResults

InterSystemMeasurement ::=         SEQUENCE {
    interSystemCellInfoList           InterSystemCellInfoList         OPTIONAL,
    interSystemMeasQuantity           InterSystemMeasQuantity         OPTIONAL,
    interSystemReportingQuantity      InterSystemReportingQuantity    OPTIONAL,
    reportingCellStatus               ReportingCellStatus             OPTIONAL,
    reportCriteria                    InterSystemReportCriteria
}

InterSystemMeasurementSysInfo ::=  SEQUENCE {
    interSystemMeasurementID          MeasurementIdentityNumber       OPTIONAL,
    interSystemCellInfoList           InterSystemCellInfoList         OPTIONAL,
    interSystemMeasQuantity           InterSystemMeasQuantity         OPTIONAL
}
```

```
InterSystemReportCriteria ::=       CHOICE {
    interSystemReportingCriteria        InterSystemReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

InterSystemReportingCriteria ::=    SEQUENCE {
    interSystemEventList                InterSystemEventList            OPTIONAL
}

InterSystemReportingQuantity ::=    SEQUENCE {
    utran-EstimatedQuality              BOOLEAN,
    systemSpecificInfo                  CHOICE {
        gsm                                 SEQUENCE {
            pathloss                            BOOLEAN,
            observedTimeDifferenceGSM           BOOLEAN,
            gsm-Carrier-RSSI                    BOOLEAN,
            bsic                                BOOLEAN
        },
        spare1                              SEQUENCE {}
    }
}

IntraFreqCellID ::=                 INTEGER (0..maxIntraCells)

IntraFreqCellInfoList ::=           SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList        OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellList            OPTIONAL
}

IntraFreqCellInfoSI ::=             SEQUENCE {
    cellInfo                            CellInfoSI
}

IntraFreqCellInfoSI-List ::=        SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList        OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List         OPTIONAL
}

IntraFreqEvent ::=                  CHOICE {
    e1a                                 Event1a,
    e1b                                 Event1b,
    e1c                                 Event1c,
    e1d                                 Hysteresis,
    e1e                                 TriggeringCondition,
    e1f                                 TriggeringCondition,
    e1g                                 Hysteresis,
    e1h                                 Hysteresis,
    e1i                                 Hysteresis,
    e1j                                 Hysteresis
}

IntraFreqEventCriteria ::=          SEQUENCE {
    event                               IntraFreqEvent,
    timeToTrigger                       TimeToTrigger,
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

IntraFreqEventCriteriaList ::=      SEQUENCE (SIZE(1..maxEventCount)) OF
                                        IntraFreqEventCriteria

IntraFreqEventResults ::=           SEQUENCE {
    eventID                             EventIDIntraFreq,
    cellMeasurementEventResults         CellMeasurementEventResults
}

IntraFreqMeasQuantity ::=           SEQUENCE {
    filterCoefficient                   FilterCoefficient,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            intraFreqMeasQuantity-FDD           IntraFreqMeasQuantity-FDD
        },
        tdd                                 SEQUENCE {
            intraFreqMeasQuantity-TDD           IntraFreqMeasQuantity-TDD
        }
    }
}

IntraFreqMeasQuantity-FDD ::=       ENUMERATED {
                                        cpich-Ec-NO,
```

```
                                       cpich-RSCP,
                                       cpich-SIR,
                                       pathloss,
                                       utra-CarrierRSSI }

IntraFreqMeasQuantity-TDD ::=          ENUMERATED {
                                       primaryCCPCH-RSCP,
                                       pathloss,
                                       timeslotISCP,
                                       utra-CarrierRSSI }

IntraFreqMeasuredResults ::=           SEQUENCE {
    cellMeasuredResults                    CellMeasuredResults
}

IntraFreqMeasuredResultsList ::=       SEQUENCE (SIZE (1..maxIntraCells)) OF
                                       IntraFreqMeasuredResults

IntraFreqMeasurementSysInfo ::=        SEQUENCE {
    intraFreqMeasurementID                 MeasurementIdentityNumber           OPTIONAL,
    intraFreqCellInfoSI-List               IntraFreqCellInfoSI-List            OPTIONAL,
    intraFreqMeasQuantity                  IntraFreqMeasQuantity               OPTIONAL,
    intraFreqReportingQuantityForRACH      IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH                  MaxReportedCellsOnRACH             OPTIONAL,
    reportingInfoForCellDCH                 ReportingInfoForCellDCH            OPTIONAL
}

IntraFreqReportCriteria ::=            CHOICE {
    intraFreqReportingCriteria             IntraFreqReportingCriteria,
    periodicalReportingCriteria            PeriodicalReportingCriteria,
    noReporting                            NULL
}

IntraFreqReportingCriteria ::=         SEQUENCE {
    eventCriteriaList                      IntraFreqEventCriteriaList
}

IntraFreqReportingQuantity ::=         SEQUENCE {
    activeSetReportingQuantities           CellReportingQuantities,
    monitoredSetReportingQuantities        CellReportingQuantities,
    unlistedSetReportingQuantities         CellReportingQuantities            OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-ObsTimeDifference              SFN-SFN-ObsTimeDifference,
    modeSpecificInfo                       CHOICE {
        fdd                                    SEQUENCE {
            intraFreqRepQuantityRACH-FDD           IntraFreqRepQuantityRACH-FDD
        },
        tdd                                    SEQUENCE {
            intraFreqRepQuantityRACH-TDD           IntraFreqRepQuantityRACH-TDD
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::=       ENUMERATED {
                                       cpich-EcN0, cpich-RSCP,
                                       cpich-SIR, pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::=       ENUMERATED {
                                       timeslotISCP,
                                       primaryCCPCH-RSCP,
                                       noReport }

IntraFrequencyMeasurement ::=          SEQUENCE {
    intraFreqCellInfoList                  IntraFreqCellInfoList              OPTIONAL,
    intraFreqMeasQuantity                  IntraFreqMeasQuantity             OPTIONAL,
    intraFreqReportingQuantity             IntraFreqReportingQuantity        OPTIONAL,
    reportingCellStatus                    ReportingCellStatus               OPTIONAL,
    measurementValidity                    MeasurementValidity               OPTIONAL,
    reportCriteria                         IntraFreqReportCriteria
}

IODD ::=                               INTEGER (0..255)

IODE ::=                               INTEGER (0..255)

IP-Length ::=                          ENUMERATED {
                                       ipl5, ipl10 }

IP-Spacing ::=                         ENUMERATED {
```

```
                                       e5, e7, e10, e15, e20,
                                       e30, e40, e50 }

IS-2000SpecificMeasInfo ::=            ENUMERATED {
                                       frequency, timeslot, colourcode,
                                       outputpower, pn-Offset }

K-InterRAT ::=                         INTEGER (0..12)

LCS-Accuracy ::=                       BIT STRING (SIZE (7))

--  For sfID=0 (sf4), pageNo=18, and sfID=0 & sfID=1 (sf4 & sf5), pageNo=25,
--  the IE fileds for word3 – word110 are the same as LCS-GPS-IonosphericModel
--  and LCS-GPS-UTC-Model. For the rest of the pages, they are the same as
--  LCS-GPS-Almanac.

LCS-Alma-SIB-Data ::=                  SEQUENCE {
    transmissiontTOW                   INGETER (0..1048575},
    satMask                            BIT STRING (SIZE (32)),
    lsbTOW                             BIT STRING (SIZE (8)),
    sfID                               INTEGER (0..1),
    dataID                             INTEGER (0..3),
    pageNo                             INTEGER (0..63),
    word3                              BIT STRING (SIZE (16)),
    word4                              BIT STRING (SIZE (24)),
    word5                              BIT STRING (SIZE (24)),
    word6                              BIT STRING (SIZE (24)),
    word7                              BIT STRING (SIZE (24)),
    word8                              BIT STRING (SIZE (24)),
    word9                              BIT STRING (SIZE (24)),
    word10                             BIT STRING (SIZE (22)),
    sfID                               INTEGER (0..1),
    dataID                             INTEGER (0..3),
    pageNo                             INTEGER (0..63),
    word3                              BIT STRING (SIZE (16)),
    word4                              BIT STRING (SIZE (24)),
    word5                              BIT STRING (SIZE (24)),
    word6                              BIT STRING (SIZE (24)),
    word7                              BIT STRING (SIZE (24)),
    word8                              BIT STRING (SIZE (24)),
    word9                              BIT STRING (SIZE (24)),
    word10                             BIT STRING (SIZE (22)),
    sfID                               INTEGER (0..1),
    dataID                             INTEGER (0..3),
    pageNo                             INTEGER (0..63),
    word3                              BIT STRING (SIZE (16)),
    word4                              BIT STRING (SIZE (24)),
    word5                              BIT STRING (SIZE (24)),
    word6                              BIT STRING (SIZE (24)),
    word7                              BIT STRING (SIZE (24)),
    word8                              BIT STRING (SIZE (24)),
    word9                              BIT STRING (SIZE (24)),
    word10                             BIT STRING (SIZE (22)),
}

LCS-CipherParameters ::=              SEQUENCE {
    cipheringKeyFlag                   BIT STRING (SIZE (1)),
    cipheringSerialNumber              INTEGER (0..65535)                    OPTIONAL
}

LCS-DGPS-SIB-Data ::=                 SEQUENCE {
    nodeBbtsClockDrift                     NodeBTS-ClockDrift                      OPTIONAL,
    referenceLocationforSIB            ReferenceLocationforSIB,
    referenceSFN                       ReferenceSFN                    OPTIONAL,
    referenceGPS-TOW                   ReferenceGPS-TOW,
    statusHealth                       DiffCorrectionStatus,
    dgps-InformationList               DGPS-InformationList
}

LCS-Ephe-SIB-Data ::=                 SEQUENCE {
    transmissiontTOW                   INGETER (0..1048575},
    satID                              INTEGER (0..63),
    tlmMessage                         BIT STRING (SIZE (14)),
    tlmRevd                            BIT STRING (SIZE (2)),
    how                                BIT STRING (SIZE (22)),
    wn                                 BIT STRING (SIZE (10)),
    navModel                           NavModel
}

LCS-Error ::=                         SEQUENCE {
    errorReason                        LCS-ErrorCause,
```

```
    additionalAssistanceData           AdditionalAssistanceData
    -- The IE above is defined in GSM 09.31, the actual definition
    -- will have to be checked
}

LCS-ErrorCause ::=                  ENUMERATED {
                                        notEnoughOTDOA-Cells,
                                        notEnoughGPS-Satellites,
                                        assistanceDataMissing,
                                        methodNotSupported,
                                        undefinedError,
                                        requestDeniedByUser,
                                        notProcessedAndTimeout }

LCS-EventID ::=                     ENUMERATED {
                                        e7a, e7b, e7c }

LCS-EventParam ::=                  SEQUENCE {
    eventID                             LCS-EventID,
    reportingAmount                     ReportingAmount,
    reportFirstFix                      BOOLEAN,
    measurementInterval                 LCS-MeasurementInterval,
    eventSpecificInfo                   LCS-EventSpecificInfo
}

LCS-EventParamList ::=              SEQUENCE (SIZE (1..maxEventCount)) OF
                                        LCS-EventParam

LCS-EventSpecificInfo ::=           CHOICE {
    e7a                                 ThresholdPositionChange,
    e7b                                 ThresholdSFN-SFN-Change,
    e7c                                 ThresholdSFN-GPS-TOW
}

LCS-GPS-AcquisitionAssistance ::=   SEQUENCE {
    referenceTime                       CHOICE {
        utran-ReferenceTime                 UTRAN-ReferenceTime,
        gps-ReferenceTimeOnly               INTEGER (0..604700000)
    },
    satelliteInformationList            AcquisitionSatInfoList
}

LCS-GPS-Almanac ::=                 SEQUENCE {
    almanacSatInfoList                  AlmanacSatInfoList
}

LCS-GPS-AssistanceSIB ::=           SEQUENCE {
    lcs-CipherParameters                LCS-CipherParameters            OPTIONAL,
    referenceGPS-TOW                    ReferenceGPS-TOW,
    status                              DiffCorrectionStatus,
    btsClockDrift                       BTS ClockDrift                  OPTIONAL,
    timeOffset                          LCS TimeOffset                  OPTIONAL,
    iodd                                IODD                            OPTIONAL,
    dgps InformationList                DGPS InformationList            OPTIONAL
}

LCS-GPS-AssistanceData ::=          SEQUENCE {
    lcs-GPS-ReferenceTime               LCS-GPS-ReferenceTime           OPTIONAL,
    lcs-GPS-ReferenceLocation           LCS-GPS-ReferenceLocation       OPTIONAL,
    lcs-GPS-DGPS-Corrections            LCS-GPS-DGPS-Corrections        OPTIONAL,
    lcs-GPS-NavigationModel             LCS-GPS-NavigationModel         OPTIONAL,
    lcs-GPS-IonosphericModel            LCS-GPS-IonosphericModel        OPTIONAL,
    lcs-GPS-UTC-Model                   LCS-GPS-UTC-Model               OPTIONAL,
    lcs-GPS-Almanac                     LCS-GPS-Almanac                 OPTIONAL,
    lcs-GPS-AcquisitionAssistance       LCS-GPS-AcquisitionAssistance   OPTIONAL,
    lcs-GPS-Real-timeIntegrity          LCS-GPS-Real-timeIntegrity      OPTIONAL
}

LCS-GPS-DGPS-Corrections ::=        SEQUENCE {
    gps-TOW                             INTEGER (0..604799),
    statusHealth                        DiffCorrectionStatus,
    dgps-CorrectionSatInfoList          DGPS-CorrectionSatInfoList
}

LCS-GPS-IonosphericModel ::=        SEQUENCE {
    alfa0                               BIT STRING (SIZE (8)),
    alfa1                               BIT STRING (SIZE (8)),
    alfa2                               BIT STRING (SIZE (8)),
    alfa3                               BIT STRING (SIZE (8)),
    beta0                               BIT STRING (SIZE (8)),
    beta1                               BIT STRING (SIZE (8)),
```

```
    beta2                              BIT STRING (SIZE (8)),
    beta3                              BIT STRING (SIZE (8))
}


LCS-GPS-Measurement ::=            SEQUENCE {
    referenceSFN                       ReferenceSFN                      OPTIONAL,
    gps-TOW-1msec                      GPS-TOW-1msec,
    gps-TOW-HighResolution             GPS-TOW-HighResolution           OPTIONAL,
    gps-MeasurementParamList           GPS-MeasurementParamList
}


LCS-GPS-NavigationModel ::=       SEQUENCE {
    n-SAT                              INTEGER (1..16),
    navigationModelSatInfoList         NavigationModelSatInfoList
}


-- **TODO**, definition in 23.032
LCS-GPS-ReferenceLocation ::=     SEQUENCE {
}


LCS-GPS-Real-timeIntegrity ::=    SEQUENCE {
    badSatList                         BadSatList
}


LCS-GPS-ReferenceTime ::=         SEQUENCE {
    gps-Week                           INTEGER (0..1023),
    gps-TOW                            INTEGER (0..604700000000),
    sfn                                INTEGER (0..4095),
    gps-TOW-AssistList                 GPS-TOW-AssistList               OPTIONAL
}


LCS-GPS-UTC-Model ::=             SEQUENCE {
    a0                                 BIT STRING (SIZE (32)),
    a1                                 BIT STRING (SIZE (24)),
    a0                                 BIT STRING (SIZE (32)),
    delta-t-LS                         BIT STRING (SIZE (8)),
    t-ot                               BIT STRING (SIZE (8)),
    wn-t                               BIT STRING (SIZE (8)),
    delta-t-LS                         BIT STRING (SIZE (8)),
    wn-lsf                             BIT STRING (SIZE (8)),
    dn                                 BIT STRING (SIZE (8)),
    delta-t-LSF                        BIT STRING (SIZE (8))
}


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


LCS-MeasuredResults ::=           SEQUENCE {
    lcs-MultipleSets                   LCS-MultipleSets                 OPTIONAL,
    lcs-ReferenceCellIdentity          PrimaryCPICH-Info                OPTIONAL,
    lcs-OTDOA-Measurement              LCS-OTDOA-Measurement            OPTIONAL,
    lcs-Position                       LCS-Position                     OPTIONAL,
    lcs-GPS-Measurement                LCS-GPS-Measurement              OPTIONAL,
    lcs-Error                          LCS-Error                        OPTIONAL
}


LCS-Measurement ::=               SEQUENCE {
    lcs-ReportingQuantity              LCS-ReportingQuantity,
    reportCriteria                     LCS-ReportCriteria,
    lcs-OTDOA-AssistanceData           LCS-OTDOA-AssistanceData         OPTIONAL,
    lcs-GPS-AssistanceData             LCS-GPS-AssistanceData           OPTIONAL
}


LCS-MeasurementEventResults ::=   SEQUENCE {
    event7a                            LCS-Position,
    event7b                            LCS-OTDOA-Measurement,
    event7c                            LCS-GPS-Measurement
}


LCS-MeasurementInterval ::=       ENUMERATED {
                                       e5, e15, e60, e300,
                                       e900, e1800, e3600, e7200 }


LCS-MethodType ::=                ENUMERATED {
                                       ue-Assisted,
                                       ue-Based,
```

```
                                             ue-BasedPreferred,
                                             ue-AssistedPreferred }

    LCS-MultipleSets ::=                SEQUENCE {
        numberOfOTDOA-IPDL-GPS-Sets         INTEGER (2..3),
        numberOfReferenceCells              INTEGER (1..3),
        referenceCellRelation               ReferenceCellRelation
    }

    LCS-OTDOA-AssistanceData ::=        SEQUENCE {
        lcs-OTDOA-ReferenceCell             LCS-OTDOA-ReferenceCell             OPTIONAL,
        lcs-OTDOA-MeasurementAssistDataList LCS-OTDOA-MeasurementAssistDataList OPTIONAL,
        lcs-IPDL-Parameters                 LCS-IPDL-Parameters                OPTIONAL
    }

    LCS-OTDOA-AssistanceSIB ::=         SEQUENCE {
        lcs-CipherParameters                LCS-CipherParameters               OPTIONAL,
        searchWindowSize                    OTDOA-SearchWindowSize,
        referenceCellPosition               ReferenceCellPosition,
        lcs-IPDL-Parameters                 LCS-IPDL-Parameters                OPTIONAL,
        cellToMeasureInfoList               CellToMeasureInfoList
    }

    LCS-OTDOA-Measurement ::=           SEQUENCE {
        sfn                                 INTEGER (0..4095),
        -- Actual value = IE value * 0.25 + 876
        ue-Rx-Tx-TimeDifference             INTEGER (0..1184),
        qualityType                         QualityType,
        qualityChoice                       CHOICE {
            std-10                              ReferenceQuality10,
            std-50                              ReferenceQuality50,
            cpich-EcN0                          CPICH-Ec-N0-OTDOA,
            defaultQuality                      ReferenceQuality
        },
        neighborList                        NeighborList                       OPTIONAL
    }

    LCS-OTDOA-MeasurementAssistData ::= SEQUENCE {
        primaryCPICH-Info                   PrimaryCPICH-Info,
        frequencyInfo                       FrequencyInfo                      OPTIONAL,
        sfn-SFN-ObsTimeDifference           SFN-SFN-ObsTimeDifference1,
        fineSFN-SFN                         FineSFN-SFN                        OPTIONAL,
        searchWindowSize                    OTDOA-SearchWindowSize,
        relativeNorth                       INTEGER (-20000..20000)            OPTIONAL,
        relativeEast                        INTEGER (-20000..20000)            OPTIONAL,
        relativeAltitude                    INTEGER (-4000..4000)              OPTIONAL
    }

    LCS-OTDOA-MeasurementAssistDataList ::= SEQUENCE (SIZE (1..15)) OF
                                        LCS-OTDOA-MeasurementAssistData

    LCS-OTDOA-ReferenceCell ::=         SEQUENCE {
        primaryCPICH-Info                   PrimaryCPICH-Info,
        frequencyInfo                       FrequencyInfo                      OPTIONAL,
        cellPosition                        ReferenceCellPosition              OPTIONAL
    }

    LCS-Position ::=                    SEQUENCE {
        referenceSFN                        ReferenceSFN,
        gps-TOW                             INTEGER (0..604700000000),
        positionEstimate                    PositionEstimate
    }

    LCS-ReportCriteria ::=              CHOICE {
        lcs-ReportingCriteria               LCS-ReportingCriteria,
        periodicalReportingCriteria         PeriodicalReportingCriteria,
        noReporting                         NULL
    }

    LCS-ReportingCriteria ::=           SEQUENCE {
        eventParameterList                  LCS-EventParamList                 OPTIONAL
    }

    LCS-ReportingQuantity ::=           SEQUENCE {
        methodType                          LCS-MethodType,
        positioningMethod                   PositioningMethod,
        responseTime                        LCS-ResponseTime,
        accuracy                            LCS-Accuracy                       OPTIONAL,
        gps-TimingOfCellWanted              BOOLEAN,
        multipleSets                        BOOLEAN,
        environmentCharacterization         EnvironmentCharacterization        OPTIONAL
```

```
}

LCS-ResponseTime ::=                ENUMERATED {
                                        s1, s2, s4, s8, s16,
                                        s32, s64, s128 }

LCS-TimeOffset ::=                  INTEGER (0..4095)

MaxNumberOfReportingCells ::=       ENUMERATED {
                                        mandatoryCellsOnly,
                                        mandatoryCellsPlus1,
                                        mandatoryCellsPlus2,
                                        mandatoryCellsPlus3,
                                        mandatoryCellsPlus4,
                                        mandatoryCellsPlus5,
                                        mandatoryCellsPlus6 }

MaxReportedCellsOnRACH ::=          ENUMERATED {
                                        noReport,
                                        currentCell,
                                        currentAnd-1-BestNeighbour,
                                        currentAnd-2-BestNeighbour,
                                        currentAnd-3-BestNeighbour,
                                        currentAnd-4-BestNeighbour,
                                        currentAnd-5-BestNeighbour,
                                        currentAnd-6-BestNeighbour }

MeasuredResults ::=                 CHOICE {
    intraFreqMeasuredResultsList        IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList        InterFreqMeasuredResultsList,
    interSystemMeasuredResultsList      InterSystemMeasuredResultsList,
    trafficVolumeMeasuredResultsList    TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults              QualityMeasuredResults,
    ue-InternalMeasuredResults          UE-InternalMeasuredResults,
    lcs-MeasuredResults                 LCS-MeasuredResults
}

MeasuredResultsList ::=             SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                        MeasuredResults

MeasuredResultsOnRACH ::=           SEQUENCE {
    currentCell                         SEQUENCE {
        modeSpecificInfo                    CHOICE {
            fdd                                 SEQUENCE {
                measurementQuantity                 CHOICE {
                    cpich-Ec-N0                         CPICH-Ec-N0,
                    cpich-RSCP                          CPICH-RSCP,
                    cpich-SIR                           CPICH-SIR,
                    pathloss                            Pathloss
                }
            },
            tdd                                 SEQUENCE {
                timeslotISCP                        TimeslotISCP,
                primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP
            }
        }
    },
    monitoredCells                      MonitoredCellRACH-List          OPTIONAL
}

MeasurementCommand ::=              CHOICE {
    setup                               MeasurementType,
    modify                              SEQUENCE {
        measurementType                     MeasurementType             OPTIONAL
    },
    release                             NULL
}

MeasurementControlSysInfo ::=       SEQUENCE {
    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo     OPTIONAL,
    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo     OPTIONAL,
    interSystemMeasurementSysInfo       InterSystemMeasurementSysInfo   OPTIONAL,
    trafficVolumeMeasSysInfo            TrafficVolumeMeasSysInfo        OPTIONAL,
    ue-InternalMeasurementSysInfo       UE-InternalMeasurementSysInfo   OPTIONAL
}

-- **TODO**, not defined yet
MeasurementIdentityNumber ::=       SEQUENCE {
}

MeasurementQuantityGSM ::=          ENUMERATED {
```

```
                                        gsm-CarrierRSSI,
                                        pathloss }

MeasurementReportingMode ::=       SEQUENCE {
    measurementReportTransferMode      TransferMode,
    periodicalOrEventTrigger           PeriodicalOrEventTrigger
}

MeasurementType ::=                CHOICE {
    intraFrequencyMeasurement          IntraFrequencyMeasurement,
    interFrequencyMeasurement          InterFrequencyMeasurement,
    interSystemMeasurement             InterSystemMeasurement,
    lcs-Measurement                    LCS-Measurement,
    trafficVolumeMeasurement           TrafficVolumeMeasurement,
    qualityMeasurement                 QualityMeasurement,
    ue-InternalMeasurement             UE-InternalMeasurement
}

MeasurementValidity ::=            SEQUENCE {
    resume-Release                     Resume-Release
}

MonitoredCellRACH-List ::=         SEQUENCE (SIZE(1..7)) OF
                                       MonitoredCellRACH-Result

MonitoredCellRACH-Result ::=       SEQUENCE {
    sfn-SFN-ObsTimeDifference          SFN-SFN-ObsTimeDifference       OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            primaryCPICH-Info                  PrimaryCPICH-Info,
            measurementQuantity                CHOICE {
                cpich-Ec-N0                        CPICH-Ec-N0,
                cpich-RSCP                         CPICH-RSCP,
                cpich-SIR                          CPICH-SIR,
                pathloss                           Pathloss
            }                                                                 OPTIONAL
        },
        tdd                                SEQUENCE {
            primaryCCPCH-Info                  PrimaryCCPCH-Info,
            primaryCCPCH-RSCP                  PrimaryCCPCH-RSCP              OPTIONAL
        }
    }
}

MonitoredSetCellReport ::=         ENUMERATED {
                                       excludeAll,
                                       other }

MultipathIndicator ::=             ENUMERATED {
                                       nm,
                                       low,
                                       medium,
                                       high }

NavModel ::=              SEQUENCE {

    codeOnL2                           BIT STRING (SIZE (2)),
    uraIndex                           BIT STRING (SIZE (4)),
    satHealth                          BIT STRING (SIZE (6}),
    iodc                               BIT STRING (SIZE (10)),
    l2Pflag                            BIT STRING (SIZE (1)),
    sf1Revd                            SubFrame1Reserved,
    t-GD                               BIT STRING (SIZE (8)),
    t-oc                               BIT STRING (SIZE (16)),
    af2                                BIT STRING (SIZE (8))
    af1                                BIT STRING (SIZE (16)),
    af0                                BIT STRING (SIZE (22)),
    c-rs                               BIT STRING (SIZE (16)),
    delta-n                            BIT STRING (SIZE (16)),
    m0                                 BIT STRING (SIZE (32)),
    c-uc                               BIT STRING (SIZE (16)),
    e                                  BIT STRING (SIZE (32)),
    c-us                               BIT STRING (SIZE (16)),
    a-Sqrt                             BIT STRING (SIZE (32)),
    t-oe                               BIT STRING (SIZE (16)),
    fitInterval                        BIT STRING {SIZE {1}},
    aodo                               BIT STRING {SIZE {5}},
    c-ic                               BIT STRING (SIZE (16)),
    omega0                             BIT STRING (SIZE (32)),
    c-is                               BIT STRING (SIZE (16)),
    i0                                 BIT STRING (SIZE (32)),
```

```
    c-rc                          BIT STRING (SIZE (16)),
    omega                         BIT STRING (SIZE (32)),
    omegaDot                      BIT STRING (SIZE (24)),
    iDot                          BIT STRING (SIZE (14)),
}

NavigationModelSatInfo ::=        SEQUENCE {
    satID                         INTEGER (0..63),
    satelliteStatus               SatelliteStatus,
    navModel                      NavModel
    compression                   CHOICE {
        uncompressed                  UncompressedNavModel,
        compressed                    CompressedNavModel
    }
}

NavigationModelSatInfoList ::=    SEQUENCE (SIZE (1..maxN-SAT)) OF
                                  NavigationModelSatInfo

Neighbor ::=                      SEQUENCE {
    neighborIdentity              PrimaryCPICH-Info               OPTIONAL,
    neignborQuantity              NeighborQuantity,
    sfn-SFN-ObsTimeDifference2    SFN-SFN-ObsTimeDifference2
}

NeighborList ::=                  SEQUENCE (SIZE (1..15)) OF
                                  Neighbor

-- **TODO**, to be defined fully
NeighborQuantity ::=              SEQUENCE {
}

NewInterFreqCell ::=              SEQUENCE {
    interFreqCellID               InterFreqCellID                 OPTIONAL,
    frequencyInfo                 FrequencyInfo                   OPTIONAL,
    cellInfo                      CellInfo
}

NewInterFreqCellList ::=          SEQUENCE (SIZE (1..maxInterCells)) OF
                                  NewInterFreqCell

NewInterFreqCellSI ::=            SEQUENCE {
    interFreqCellID               InterFreqCellID                 OPTIONAL,
    frequencyInfo                 FrequencyInfo                   OPTIONAL,
    cellInfo                      CellInfoSI
}

NewInterFreqCellSI-List ::=       SEQUENCE (SIZE (1..maxInterCells)) OF
                                  NewInterFreqCellSI

NewInterSystemCell ::=            SEQUENCE {
    technologySpecificInfo            CHOICE {
        gsm                               SEQUENCE {
            q-Offset                          Q-Offset                OPTIONAL,
            hcs-NeighbouringCellInformation   HCS-NeighbouringCellInformation
                                                                      OPTIONAL,
            q-Min                             Q-Min,
            maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power,
            bsic                              BSIC,
            bcch-ARFCN                        BCCH-ARFCN,
            gsm-OutputPower                   GSM-OutputPower         OPTIONAL
        },
        is-2000                           SEQUENCE {
            is-2000SpecificMeasInfo           IS-2000SpecificMeasInfo
        }
    }
}


NewInterSystemCellList ::=        SEQUENCE (SIZE (1..maxInterSysCells)) OF
                                  NewInterSystemCell

NewIntraFreqCell ::=              SEQUENCE {
    intraFreqCellID               IntraFreqCellID                 OPTIONAL,
    cellInfo                      CellInfo
}

NewIntraFreqCellList ::=          SEQUENCE (SIZE (1..maxIntraCells)) OF
                                  NewIntraFreqCell

NewIntraFreqCellSI ::=            SEQUENCE {
```

```
        intraFreqCellID                 IntraFreqCellID               OPTIONAL,
        cellInfo                        CellInfoSI
    }

    NewIntraFreqCellSI-List ::=         SEQUENCE (SIZE (1..maxIntraCells)) OF
                                            NewIntraFreqCell

    NodeB-ClockDrift ::=                INTEGER (0..15)

    NonUsedFreqParameter ::=            SEQUENCE {
        nonUsedFreqThreshold            Threshold,
        nonUsedFreqW                    W
    }

    NonUsedFreqParameterList ::=        SEQUENCE (SIZE (1..maxNonUsedFrequency)) OF
                                            NonUsedFreqParameter

    ObservedTimeDifferenceToGSM ::=     INTEGER (0..4095)

    OtherRAT-InSysInfo ::=              SEQUENCE {
        rat-Type                        RAT-Type,
        k-InterRAT                      K-InterRAT
    }

    OtherRAT-InSysInfoList ::=          SEQUENCE (SIZE (1..maxInterRAT)) OF
                                            OtherRAT-InSysInfo

    OTDOA-SearchWindowSize ::=          ENUMERATED {
                                            c10, c20, c30, c40, c50,
                                            c60, c70, moreThan70 }

    Pathloss ::=                        INTEGER (46..158)

    PenaltyTime ::=                     CHOICE {
        notUsed                         NULL,
        pt10                            TemporaryOffset,
        pt20                            TemporaryOffset,
        pt30                            TemporaryOffset,
        pt40                            TemporaryOffset,
        pt50                            TemporaryOffset,
        pt60                            TemporaryOffset
    }

    PendingTimeAfterTrigger ::=         ENUMERATED {
                                            ptat0-25, ptat0-5, ptat1,
                                            ptat2, ptat4, ptat8, ptat16 }

    PeriodicalOrEventTrigger ::=        ENUMERATED {
                                            periodical,
                                            eventTrigger }

    PeriodicalReportingCriteria ::=     SEQUENCE {
        reportingAmount                 ReportingAmount               OPTIONAL,
        reportingInterval               ReportingIntervalLong         OPTIONAL
    }

    -- **TODO**, contents to be defined, source 23.032
    PositionEstimate ::=                CHOICE {
        ellipsoidPoint                  SEQUENCE {},
        ellipsoidPointUncertCircle      SEQUENCE {},
        ellipsoidPointUncertEllipse     SEQUENCE {},
        ellipsoidPointAltitude          SEQUENCE {},
        ellipsoidPointAltitudeEllipse   SEQUENCE {}
    }

    PositioningMethod ::=               ENUMERATED {
                                            otdoa,
                                            gps,
                                            otdoaOrGPS }

    PRC ::=                             INTEGER (-2047 32767..2047 32767)

    -- **TODO**, not defined yet
    PrimaryCCPCH-RSCP ::=               SEQUENCE {
    }

    Q-Accept-s-n ::=                    INTEGER (0..63)

    Q-HCS ::=                           INTEGER (0..99)

    Q-Offset ::=                        INTEGER (-50..50)
```

```
-- Actual value = IE value * 0.5
Q-OffsetS-N ::=                         INTEGER (-40..40)

-- **TODO**, not defined yet
Q-Min   ::=                             SEQUENCE {
}

Qmin-FDD ::=                            INTEGER (-20..0)

-- Actual value = IE value * 2 - 115
Qmin-TDD ::=                            INTEGER (0..45)

-- **TODO**, not defined yet
QualityEventResults ::=         SEQUENCE {
}

-- **TODO**, not defined yet
QualityMeasQuantity ::=         SEQUENCE {
}

QualityMeasuredResults ::=          SEQUENCE {
    blerMeasurementResultsList      BLER-MeasurementResultsList       OPTIONAL,
    dl-PhysicalChannelBER           DL-PhysicalChannelBER             OPTIONAL,
    sir                             SIR                               OPTIONAL
}

QualityMeasurement ::=              SEQUENCE {
    qualityMeasurementObject        QualityMeasurementObject          OPTIONAL,
    qualityMeasQuantity             QualityMeasQuantity               OPTIONAL,
    qualityReportingQuantity        QualityReportingQuantity          OPTIONAL,
    reportCriteria                  QualityReportCriteria
}

-- **TODO**, not defined yet
QualityMeasurementObject ::=    SEQUENCE {
}

QualityReportCriteria ::=           CHOICE {
    qualityReportingCriteria        QualityReportingCriteria,
    periodicalReportingCriteria     PeriodicalReportingCriteria,
    noReporting                     NULL
}

-- **TODO**, not defined yet
QualityReportingCriteria ::=    SEQUENCE {
}

QualityReportingQuantity ::=        SEQUENCE {
    dl-TransChBLER                  BOOLEAN,
    bler-TransChIdList              BLER-TransChIdList                OPTIONAL,
    sir                             BOOLEAN
}

QualityType ::=                     ENUMERATED {
                                    std-10, std-50, cpich-Ec-N0 }

RAT-Type ::=                        ENUMERATED {
                                    gsm, is2000, spare1, spare2,
                                    spare3, spare4, spare5, spare6,
                                    spare7, spare8, spare9, spare10,
                                    spare11, spare12, spare13, spare14 }

-- **TODO**, definition to be checked from 23.032
ReferenceCellPosition ::=          SEQUENCE {
}

ReferenceCellRelation ::=          ENUMERATED {
                                    first-12-second-3,
                                    first-13-second-2,
                                    first-1-second-23 }

ReferenceGPS-TOW ::=               INTEGER (0..604700000000)

-- As defined in 23.032 (2D with 24bits for each coordinate)
ReferenceLocationforSIB ::=          SEQUNCE {
    ellipsoidPoint
}

ReferenceQuality ::=               ENUMERATED {
                                    m0-19, m20-39, m40-79,
```

```
                                        m80-159, m160-319, m320-639,
                                        m640-1319, m1320Plus }

-- Actual value = IE value * 10
ReferenceQuality10 ::=              INTEGER (1..32)


-- Actual value = IE value * 50
ReferenceQuality50 ::=              INTEGER (1..32)


ReferenceSFN ::=                    INTEGER (0..4095)


-- Actual value = IE value * 512
ReferenceTimeDifferenceToCell ::=   CHOICE {
    -- Actual value = IE value * 40
    accuracy40                      INTEGER (0..960),
    -- Actual value = IE value * 256
    accuracy256                     INTEGER (0..150),
    -- Actual value = IE value * 2560
    accuracy2560                    INTEGER (0..15)
}

RemovedInterFreqCell :: =           SEQUENCE {
    interFreqCellID                 InterFreqCellID
}


RemovedInterFreqCellList ::=        SEQUENCE (SIZE (1..maxInterCells)) OF
                                        RemovedInterFreqCell

RemovedInterSystemCell ::=          SEQUENCE {
    interSystemCellID               InterSystemCellID
}


RemovedInterSystemCellList ::=      SEQUENCE (SIZE (1..maxInterSysCells)) OF
                                        RemovedInterSystemCell

RemovedIntraFreqCell ::=            SEQUENCE {
    intraFreqCellID                 IntraFreqCellID
}


RemovedIntraFreqCellList ::=        SEQUENCE (SIZE (1..maxIntraCells)) OF
                                        RemovedIntraFreqCell


ReplacementActivationThreshold ::=  ENUMERATED {
                                        notApplicable, t1, t2,
                                        t3, t4, t5, t6, t7 }


ReportDeactivationThreshold ::=     ENUMERATED {
                                        notApplicable, t1, t2,
                                        t3, t4, t5, t6, t7 }


ReportingAmount ::=                 ENUMERATED {
                                        ra1, ra2, ra4, ra8, ra16, ra32,
                                        ra64, ra-Infinity }

ReportingCellStatus ::=             SEQUENCE {
    maxNumberOfReportingCells        MaxNumberOfReportingCells,
    measurement                      CHOICE {
        intraFreq                        ReportingCellStatusIntraFreq,
        otherMeasurement                 NULL
    }
}

ReportingCellStatusIntraFreq ::=    SEQUENCE {
    activeSetCellReport              ActiveSetCellReport,
    monitoredSetCellReport           MonitoredSetCellReport
}

ReportingInfoForCellDCH ::=         SEQUENCE {
    intraFreqReportingQuantity       IntraFreqReportingQuantity,
    reportCriteria                   CellDCH-ReportCriteria
}

ReportingInterval ::=               ENUMERATED {
                                        noPeriodicalreporting, ri0-25,
                                        ri0-5, ri1, ri2, ri4, ri8, ri16 }


ReportingIntervalLong ::=           ENUMERATED {
                                        ril0, ril0-25, ril0-5, ril1,
                                        ril2, ril3, ril4, ril6, ril8,
                                        ril12, ril16, ril20, ril24,
                                        ril28, ril32, ril64 }
```

```
-- Actual value = IE value * 0.5
ReportingRange ::=                  INTEGER (0..29)

Resume-Release ::=                  CHOICE {
    resume                              UE-State,
    release                             NULL
}

RL-AdditionInfo ::=                 SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info
}

RL-AdditionInfoList ::=             SEQUENCE (SIZE(1..maxAddRLcount)) OF
                                        RL-AdditionInfo

RL-InformationLists ::=             SEQUENCE {
    rl-AdditionInfoList                 RL-AdditionInfoList                 OPTIONAL,
    rl-RemovalInfoList                  RL-RemovalInfoList                  OPTIONAL
}

RL-RemovalInfo ::=                  SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info
}

RL-RemovalInfoList ::=              SEQUENCE (SIZE(1..maxDelRLcount)) OF
                                        RL-RemovalInfo

RLC-BuffersPayload ::=              ENUMERATED {
                                        pl0, pl4, pl8, pl16, pl32, pl64, pl128,
                                        pl256, pl512, pl1024, pl2k, pl4k,
                                        pl8k, pl16k, pl32k, pl64k, pl128k,
                                        pl256k, pl512k, pl1024k }

RRC ::=                             INTEGER (-127..127)

-- **TODO**, not defined yet
RSCP ::=                            SEQUENCE {
}

SatelliteStatus ::=                 ENUMERATED {
                                        ns-NN-U,
                                        es-SN,
                                        es-NN-U,
                                        es-NN-C }

SatID ::=                           INTEGER (0..31)

ScaleFactor ::=                     ENUMERATED {
                                        prc0-02-rrc0-002,
                                        prc0-32-rrc0-032 }

SFN-SFN-ObsTimeDifference ::=       CHOICE {
    type1                               SFN-SFN-ObsTimeDifference1,
    -- Actual value for type2 = IE value * 0.25
    type2                               SFN-SFN-ObsTimeDifference2
}

SFN-SFN-ObsTimeDifference1 ::=      INTEGER (0..9830399)

SFN-SFN-ObsTimeDifference2 ::=      INTEGER (-5119..5120)

SFN-SFN-OTD-Type ::=                ENUMERATED {
                                        noReport,
                                        type1,
                                        type2 }

SignallingOption ::=                CHOICE {
    alternative1                        SEQUENCE {
        q-OffsetS-N                         Q-OffsetS-N                     OPTIONAL
    },
    alternative2                        NULL
}

SIR ::=                             INTEGER (-10..20)

-- Reserved bits in subframe 1 of the GPS navigation message
Subframe1Reserved ::= SEQUENCE {
    Reserved1       BIT STRING (SIZE (23)),
    Reserved2       BIT STRING (SIZE (24)),
    Reserved3       BIT STRING (SIZE (24)),
```

```
    Reserved4        BIT STRING (SIZE (16))
}

TemporaryOffset ::=                 ENUMERATED {
                                        to10, to20, to30, to40, to50,
                                        to60, to70, infinite }

-- **TODO**, not defined yet
Threshold ::=                       SEQUENCE {
}

ThresholdPositionChange ::=         ENUMERATED {
                                        pc10, pc20, pc30, pc40, pc50,
                                        pc100, pc200, pc300, pc500,
                                        pc1000, pc2000, pc5000, pc10000,
                                        pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=            ENUMERATED {
                                        ms1, ms2, ms3, ms5, ms10,
                                        ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=        ENUMERATED {
                                        c0-25, c0-5, c1, c2, c3, c4, c5,
                                        c10, c20, c50, c100, c200, c500,
                                        c1000, c2000, c5000 }

-- **TODO**, not defined yet
TimeslotISCP ::=                    SEQUENCE {
}

TimeslotListWithISCP ::=            SEQUENCE (SIZE (1..14)) OF
                                        TimeslotWithISCP

TimeslotWithISCP ::=                SEQUENCE {
    timeslot                            Timeslot,
    timeslotISCP                        TimeslotISCP
}

TimeToTrigger ::=                   ENUMERATED {
                                        ttt0, ttt10, ttt20, ttt40, ttt60,
                                        ttt80, ttt100, ttt120, ttt160,
                                        ttt200, ttt240, tt320, ttt640,
                                        ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=         SEQUENCE {
    eventID                             TrafficVolumeEventType,
    reportingThreshold                  TrafficVolumeThreshold
}

TrafficVolumeEventResults ::=       SEQUENCE {
    transportChannelCausingEvent        TransportChannelIdentity,
    trafficVolumeEventIdentity          EventIDTrafficVolume
}

TrafficVolumeEventType ::=          ENUMERATED {
                                        e4a,
                                        e4b }

TrafficVolumeMeasObject ::=         SEQUENCE {
    targetTransportChannelID            TransportChannelIdentity
}

TrafficVolumeMeasObjectList ::=     SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                        TrafficVolumeMeasObject

TrafficVolumeMeasQuantity ::=       ENUMERATED {
                                        rlc-BufferPayload,
                                        averageRLC-BufferPayload,
                                        varianceOfRLC-BufferPayload }

TrafficVolumeMeasSysInfo ::=        SEQUENCE {
    trafficVolumeMeasurementID          MeasurementIdentityNumber       OPTIONAL,
    trafficVolumeMeasObjectList         TrafficVolumeMeasObjectList     OPTIONAL,
    trafficVolumeMeasQuantity           TrafficVolumeMeasQuantity       OPTIONAL
}

TrafficVolumeMeasuredResults ::=    SEQUENCE {
    rb-Identity                         RB-Identity,
    rlc-BuffersPayload                  RLC-BuffersPayload              OPTIONAL,
    averageRLC-BufferPayload            AverageRLC-BufferPayload        OPTIONAL,
    varianceOfRLC-BufferPayload         VarianceOfRLC-BufferPayload     OPTIONAL
}
```

```
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxTraf)) OF
                                     TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::=        SEQUENCE {
    TrafficVolumeMeasurementObjectList  TrafficVolumeMeasurementObjectList  OPTIONAL,
    trafficVolumeMeasQuantity           TrafficVolumeMeasQuantity           OPTIONAL,
    trafficVolumeReportingQuantity      TrafficVolumeReportingQuantity      OPTIONAL,
    measurementValidity                 MeasurementValidity                 OPTIONAL,
    reportCriteria                      TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObject ::= SEQUENCE {
    targetTransportChannelID            TransportChannelIdentity
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                       TrafficVolumeMeasurementObject

TrafficVolumeReportCriteria ::=     CHOICE {
    trafficVolumeReportingCriteria      TrafficVolumeReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    transChCriteriaList                 TransChCriteriaList                 OPTIONAL,
    timeToTrigger                       TimeToTrigger                       OPTIONAL,
    pendingTimeAfterTrigger             PendingTimeAfterTrigger             OPTIONAL,
    tx-InterruptionAfterTrigger         TX-InterruptionAfterTrigger         OPTIONAL,
    reportingAmount                     ReportingAmount                     OPTIONAL,
    reportingInterval                   ReportingInterval                   OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload                BOOLEAN,
    rlc-RB-BufferPayloadAverage         BOOLEAN,
    rlc-RB-BufferPayloadVariance        BOOLEAN
}

TrafficVolumeThreshold ::=          ENUMERATED {
                                    th8, th16, th32, th64, th128,
                                    th256, th512, th1024, th1536,
                                    th2048, th3072, th4096, th6144,
                                    th8192 }

TransChCriteria ::=                 SEQUENCE {
    transportChannelID                  TransportChannelIdentity,
    eventSpecificParameters             SEQUENCE (SIZE (1..2)) OF
                                            TrafficVolumeEventParam         OPTIONAL
}

TransChCriteriaList :: =            SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                    TransChCriteria

TransferMode ::=                    ENUMERATED {
                                    acknowledgedModeRLC,
                                    unacknowledgedModeRLC }

TransmittedPowerThreshold ::=       INTEGER (-50..33)

TriggeringCondition ::=             ENUMERATED {
                                    activeSetCellsOnly,
                                    monitoredCellsOnly,
                                    activeSetAndMonitoredCells }

TX-InterruptionAfterTrigger ::=     ENUMERATED {
                                    txiat0-25, txiat0-5, txiat1,
                                    txiat2, txiat4, txiat8, txiat16 }

UDRE ::=                            ENUMERATED {
                                    lessThan1,
                                    between1-and-4,
                                    between4-and-8,
                                    over8 }

UE-6AB-Event ::=                    SEQUENCE {
    timeToTrigger                       TimeToTrigger,
    transmittedPowerThreshold           TransmittedPowerThreshold
}
```

```
UE-6FG-Event ::=                    SEQUENCE {
    timeToTrigger                       TimeToTrigger,
    ue-RX-TX-TimeDifferenceThreshold    UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::=         CHOICE {
    on                                  NULL,
    onWithNoReporting                   NULL,
    off                                 RL-InformationLists
}


UE-InternalEventParam ::=           CHOICE {
    event6a                             UE-6AB-Event,
    event6b                             UE-6AB-Event,
    event6c                             TimeToTrigger,
    event6d                             TimeToTrigger,
    event6e                             TimeToTrigger,
    event6f                             UE-6FG-Event,
    event6g                             UE-6FG-Event
}

UE-InternalEventParamList ::=       SEQUENCE (SIZE (1..maxEventCount)) OF
                                        UE-InternalEventParam

UE-InternalEventResults ::=         CHOICE {
    event6a                             NULL,
    event6b                             NULL,
    event6c                             NULL,
    event6d                             NULL,
    event6e                             NULL,
    event6f                             PrimaryCPICH-Info,
    event6g                             PrimaryCPICH-Info
}

UE-InternalMeasQuantity ::=         SEQUENCE {
    measurementQuantity                 UE-MeasurementQuantity,
    filterCoefficient                   FilterCoefficient
}

UE-InternalMeasuredResults ::=      SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ue-TransmittedPowerFDD              UE-TransmittedPowerFDD   OPTIONAL,
            ue-RX-TX-ReportEntryList           UE-RX-TX-ReportEntryList OPTIONAL
        },
        tdd                                 SEQUENCE {
            ue-TransmittedPowerTDD-List         UE-TransmittedPowerTDD-List OPTIONAL
        }
    }
}

UE-InternalMeasurement ::=          SEQUENCE {
    ue-InternalMeasQuantity             UE-InternalMeasQuantity           OPTIONAL,
    ue-InternalReportingQuantity        UE-InternalReportingQuantity      OPTIONAL,
    reportCriteria                      UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::=   SEQUENCE {
    ue-InternalMeasurementID            MeasurementIdentityNumber         OPTIONAL,
    ue-InternalMeasQuantity             UE-InternalMeasQuantity
}

UE-InternalReportCriteria ::=       CHOICE {
    ue-InternalReportingCriteria        UE-InternalReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

UE-InternalReportingCriteria ::=    SEQUENCE {
    ue-InternalEventParamList           UE-InternalEventParamList         OPTIONAL
}

UE-InternalReportingQuantity ::=    SEQUENCE {
    ue-TransmittedPower                 BOOLEAN,
    ue-RX-TX-TimeDifferece              BOOLEAN,
    ue-Position                         BOOLEAN
}

UE-MeasurementQuantity ::=          ENUMERATED {
```

```
                                      ue-TransmittedPower,
                                      utra-Carrier-RSSI,
                                      ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::=              SEQUENCE {
    primaryCPICH-Info                    PrimaryCPICH-Info,
    ue-RX-TX-TimeDifference              UE-RX-TX-TimeDifference
}

UE-RX-TX-ReportEntryList ::=         SEQUENCE (SIZE (1..maxUsedRLcount)) OF
                                         UE-RX-TX-ReportEntry

UE-RX-TX-TimeDifference ::=          INTEGER (876..1172)

UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (769..1280)

UE-State ::=                         ENUMERATED {
                                         cell-DCH, all-But-Cell-DCH, all-States }

UE-TransmittedPowerFDD ::=           INTEGER (-50..33)

-- **TODO**, not defined yet
UE-TransmittedPowerTDD ::=           SEQUENCE {
}

UE-TransmittedPowerTDD-List ::=      SEQUENCE (SIZE (1..maxUsedUplTScount)) OF
                                         UE-TransmittedPowerTDD

UncompressedNavModel ::=             SEQUENCE {
    iode                                 BIT STRING (SIZE (8)),
    t-oe                                 BIT STRING (SIZE (16)),
    c-rc                                 BIT STRING (SIZE (16)),
    c-rs                                 BIT STRING (SIZE (16)),
    c-ic                                 BIT STRING (SIZE (16)),
    c-is                                 BIT STRING (SIZE (16)),
    c-uc                                 BIT STRING (SIZE (16)),
    c-us                                 BIT STRING (SIZE (16)),
    e                                    BIT STRING (SIZE (32)),
    m0                                   BIT STRING (SIZE (32)),
    a-Sqrt                               BIT STRING (SIZE (32)),
    delta-n                              BIT STRING (SIZE (16)),
    omega0                               BIT STRING (SIZE (32)),
    omegaDot                             BIT STRING (SIZE (24)),
    i0                                   BIT STRING (SIZE (32)),
    iDot                                 BIT STRING (SIZE (14)),
    omega                                BIT STRING (SIZE (32)),
    t-oc                                 BIT STRING (SIZE (16)),
    af0                                  BIT STRING (SIZE (22)),
    af1                                  BIT STRING (SIZE (16)),
    af2                                  BIT STRING (SIZE (8))
}

UTRA-CarrierRSSI ::=                 INTEGER (-95..-30)

UTRAN-ReferenceTime ::=              SEQUENCE {
    gps-TOW                              INTEGER (0..604700000000),
    sfn                                  INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::=      ENUMERATED {
                                         plv0, plv4, plv8, plv16, plv32, plv64,
                                         plv128, plv256, plv512, plv1024,
                                         plv2k, plv4k, plv8k, plv16k }

-- Actual value = IE value * 0.1
W ::=                                INTEGER (0..20)

END
```

11.3.8   Other information elements

```
Other-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    CN-DomainSysInfoList,
```

```
        NAS-SystemInformationGSM-MAP,
        PLMN-Type
FROM CoreNetwork-IEs

        CellAccessRestriction,
        CellIdentity,
        CellSelectReselectInfo,
        URA-IdentityList
FROM UTRANMobility-IEs

        CapabilityUpdateRequirement,
        CPCH-Parameters,
        DRAC-SysInfoList,
        ProtocolErrorCause,
        UE-ConnTimersAndConstants,
        UE-IdleTimersAndConstants
FROM UserEquipment-IEs

        PreDefRadioConfigurationList
FROM RadioBearer-IEs

        PreDefTransChConfiguration
FROM TransportChannel-IEs

        AICH-PowerOffset,
        ConstantValue,
        CPCH-PersistenceLevelsList,
        CPCH-SetInfoList,
        DynamicPersistenceLevelList,
        FrequencyInfo,
        IndividualTS-InterferenceList,
        MaxAllowedUL-TX-Power,
        MidambleConfiguration,
        PDSCH-SysInfoList,
        PICH-PowerOffset,
        PRACH-SystemInformationList,
        PreDefPhyChConfiguration,
        PrimaryCCPCH-InfoSI,
        PrimaryCCPCH-TX-Power,
        PUSCH-SysInfoList,
        SCCPCH-SystemInformationList,
        UL-Interference
FROM PhysicalChannel-IEs

        FACH-MeasurementOccasionInfo,
        LCS-GPS-AssistanceSIB,
        LCS-OTDOA-AssistanceSIB,
        MeasurementControlSysInfo
FROM Measurement-IEs

        ANSI-41-GlobalServiceRedirectInfo,
        ANSI-41-PrivateNeighborListInfo,
        ANSI-41-RAND-Information,
        ANSI-41-UserZoneID-Information
FROM ANSI-41-IEs

        maxDataLength,
        maxInterSysMessages,
        maxNoOfErrors,
        maxSysInfoBlockCount,
        maxSysInfoBlockFACHcount
FROM Constant-definitions;

BCC ::=                             INTEGER (0..7)

BCCH-ModificationInfo ::=           SEQUENCE {
    mib-ValueTag                        MIB-ValueTag,
    bcch-ModificationTime               BCCH-ModificationTime               OPTIONAL
}

-- Actual value = IE value * 2
BCCH-ModificationTime ::=           INTEGER (0..2047)

BSIC ::=                            SEQUENCE {
    ncc                                 NCC,
    bcc                                 BCC
}

CBS-DRX-Level1Information ::=       SEQUENCE {
    ctch-AllocationPeriod               INTEGER (1..256),
    cbs-FrameOffset                     INTEGER (0..255)
```

```
}

CDMA2000-Message ::=                 SEQUENCE {
    msg-Type                             BIT STRING (SIZE (8)),
    payload                              BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::=             SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                        CDMA2000-Message

CellValueTag ::=                     INTEGER (1..4)

GSM-MessageList ::=                  SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                        BIT STRING (SIZE (1..512))

InterSystemHO-Failure ::=            SEQUENCE {
    interSystemHO-FailureCause           InterSystemHO-FailureCause       OPTIONAL,
    interSystemMessage                   InterSystemMessage               OPTIONAL
}

InterSystemHO-FailureCause ::=       CHOICE {
    configurationUnacceptable            NULL,
    physicalChannelFailure               NULL,
    protocolError                        ProtocolErrorInformation,
    unspecified                          NULL,
    spare                                NULL
}

InterSystemMessage ::=               SEQUENCE {
    systemType                           SystemType,
    systemSpecificMessage                CHOICE {
        gsm                                  SEQUENCE {
            gsm-MessageList                      GSM-MessageList
        },
        cdma2000                             SEQUENCE {
            cdma2000-MessageList                 CDMA2000-MessageList
        }
    }
}

MasterInformationBlock ::=           SEQUENCE {
        mib-ValueTag                     MIB-ValueTag,
        plmn-Type                        PLMN-Type,
        -- TABULAR: The PLMN identity and ANSI-41 core network information
        -- are included in PLMN-Type.
        modeSpecificInfo                 CHOICE {
            fdd                              NULL,
            tdd                              SEQUENCE {
                sfn-prime                        SFN-Prime
            }
        },
        sib-ReferenceList                SIB-ReferenceList,
    -- Extension mechanism
        non-Release99-Information         SEQUENCE {}                     OPTIONAL
}

MIB-ValueTag ::=                     INTEGER (1..8)

NCC ::=                              INTEGER (0..7)

PLMN-ValueTag ::=                    INTEGER (1..256)

ProtocolErrorInformation ::=         SEQUENCE {
    diagnosticsType                      CHOICE {
        type1                                SEQUENCE {
            protocolErrorCause                   ProtocolErrorCause
        },
        spare                                NULL
    }
}

ProtocolErrorInformationList ::=     SEQUENCE (SIZE (1..maxNoOfErrors)) OF
                                        ProtocolErrorInformation

SchedulingInformation ::=            SEQUENCE {
    sib-Type                             SIB-TypeAndTag,
    scheduling                           SEQUENCE {
        segCount                             SegCount                     DEFAULT 1,
        sib-Pos                              CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
```

```
            rep4                                INTEGER (0..1),
            rep8                                INTEGER (0..3),
            rep16                               INTEGER (0..7),
            rep32                               INTEGER (0..15),
            rep64                               INTEGER (0..31),
            rep128                              INTEGER (0..63),
            rep256                              INTEGER (0..127),
            rep512                              INTEGER (0..255),
            rep1024                             INTEGER (0..511),
            rep2048                             INTEGER (0..1023)
        },
        sib-PosOffsetInfo              SibOFF-List                      OPTIONAL
    }                                                                   OPTIONAL
}

SegCount ::=                        INTEGER (1..16)

SegmentIndex ::=                    INTEGER (0..15)

-- Actual value = 2 * IE value
SFN-Prime ::=                       INTEGER (0..2047)

SIB-Content ::=                     CHOICE {
    masterInformationBlock              MasterInformationBlock,
    sysInfoType1                        SysInfoType1,
    sysInfoType2                        SysInfoType2,
    sysInfoType3                        SysInfoType3,
    sysInfoType4                        SysInfoType4,
    sysInfoType5                        SysInfoType5,
    sysInfoType6                        SysInfoType6,
    sysInfoType7                        SysInfoType7,
    sysInfoType8                        SysInfoType8,
    sysInfoType9                        SysInfoType9,
    sysInfoType10                       SysInfoType10,
    sysInfoType11                       SysInfoType11,
    sysInfoType12                       SysInfoType12,
    sysInfoType13                       SysInfoType13,
    sysInfoType13-1                     SysInfoType13-1,
    sysInfoType13-2                     SysInfoType13-2,
    sysInfoType13-3                     SysInfoType13-3,
    sysInfoType13-4                     SysInfoType13-4,
    sysInfoType14                       SysInfoType14,
    sysInfoType15                       SysInfoType15,
    sysInfoType16                       SysInfoType16,
    spare                               SEQUENCE {}
}

SIB-Data ::=                        BIT STRING (SIZE (1..maxDataLength))

SIB-Reference ::=                   SEQUENCE {
    schedulingInformation               SchedulingInformation
}

SIB-ReferenceList ::=               SEQUENCE (SIZE (1..maxSysInfoBlockCount)) OF
                                        SIB-Reference

SIB-ReferenceListFACH ::=           SEQUENCE (SIZE (1..maxSysInfoBlockFACHcount)) OF
                                        SIB-Reference

SIB-Type ::=                        ENUMERATED {
                                        masterInformationBlock,
                                        systemInformationBlockType1,
                                        systemInformationBlockType2,
                                        systemInformationBlockType3,
                                        systemInformationBlockType4,
                                        systemInformationBlockType5,
                                        systemInformationBlockType6,
                                        systemInformationBlockType7,
                                        systemInformationBlockType8,
                                        systemInformationBlockType9,
                                        systemInformationBlockType10,
                                        systemInformationBlockType11,
                                        systemInformationBlockType12,
                                        systemInformationBlockType13,
                                        systemInformationBlockType13-1,
                                        systemInformationBlockType13-2,
                                        systemInformationBlockType13-3,
                                        systemInformationBlockType13-4,
                                        systemInformationBlockType14,
                                        systemInformationBlockType15,
                                        systemInformationBlockType16,
```

```
                                        spare1, spare2, spare3 }

    SIB-TypeAndTag ::=                  CHOICE {
        sysInfoType1                        PLMN-ValueTag,
        sysInfoType2                        PLMN-ValueTag,
        sysInfoType3                        CellValueTag,
        sysInfoType4                        CellValueTag,
        sysInfoType5                        CellValueTag,
        sysInfoType6                        CellValueTag,
        sysInfoType7                        NULL,
        sysInfoType8                        NULL,
        sysInfoType9                        NULL,
        sysInfoType10                       NULL,
        sysInfoType11                       CellValueTag,
        sysInfoType12                       CellValueTag,
        sysInfoType13                       CellValueTag,
        sysInfoType13-1                     CellValueTag,
        sysInfoType13-2                     CellValueTag,
        sysInfoType13-3                     CellValueTag,
        sysInfoType13-4                     CellValueTag,
        sysInfoType14                       NULL,
        sysInfoType15                       NULL,
        sysInfoType16                       NULL
    }

    SibOFF ::=                          ENUMERATED {
                                        so2, so4, so6, so8, so10,
                                        so12, so14, so16, so18,
                                        so20, so22, so24, so26,
                                        so28, so30, so32 }

    SibOFF-List ::=                     SEQUENCE (SIZE(1..15)) OF
                                        SibOFF

    SysInfoType1 ::=                    SEQUENCE {
        -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo     NAS-SystemInformationGSM-MAP,
        cn-DomainSysInfoList             CN-DomainSysInfoList,
        -- User equipment IEs
        ue-IdleTimersAndConstants        UE-IdleTimersAndConstants,
        -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                     OPTIONAL
    }

    SysInfoType2 ::=                    SEQUENCE {
        -- UTRAN mobility IEs
        ura-IdentityList                 URA-IdentityList,
        -- User equipment IEs
        ue-ConnTimersAndConstants        UE-ConnTimersAndConstants,
        -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                     OPTIONAL
    }

    SysInfoType3 ::=                    SEQUENCE {
        -- Other IEs
        sib-ReferenceList                SIB-ReferenceList               OPTIONAL,
        -- UTRAN mobility IEs
        cellIdentity                     CellIdentity,
        cellSelectReselectInfo           CellSelectReselectInfo,
        cellAccessRestriction            CellAccessRestriction,
        -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                     OPTIONAL
    }

    SysInfoType4 ::=                    SEQUENCE {
        -- Other IEs
        sib-ReferenceList                SIB-ReferenceList               OPTIONAL,
        -- UTRAN mobility IEs
        cellIdentity                     CellIdentity,
        cellSelectReselectInfo           CellSelectReselectInfo,
        cellAccessRestriction            CellAccessRestriction,
        -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                     OPTIONAL
    }

    SysInfoType5 ::=                    SEQUENCE {
        -- Other IEs
        sib-ReferenceList                SIB-ReferenceList               OPTIONAL,
        -- Physical channel IEs
        frequencyInfo                    FrequencyInfo                   OPTIONAL,
        maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power           OPTIONAL,
```

```
            modeSpecificInfo                CHOICE {
                fdd                             NULL,
                tdd                             SEQUENCE {
                    midambleConfiguration           MidambleConfiguration    OPTIONAL
                }
            },
            primaryCCPCH-Info               PrimaryCCPCH-InfoSI                       OPTIONAL,
            prach-SystemInformationList     PRACH-SystemInformationList,
            sCCPCH-SystemInformationList    SCCPCH-SystemInformationList,
            cbs-DRX-Level1Information        CBS-DRX-Level1Information                 OPTIONAL,
            -- Conditional on any of the CTCH indicator IEs in
            -- sCCPCH-SystemInformationList
        -- Extension mechanism
            non-Release99-Information        SEQUENCE {}                              OPTIONAL
}

SysInfoType6 ::=                    SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList                            OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                                OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power                        OPTIONAL,
        primaryCCPCH-Info               PrimaryCCPCH-InfoSI                          OPTIONAL,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                pich-PowerOffset                PICH-PowerOffset,
                aich-PowerOffset                AICH-PowerOffset
            },
            tdd                             SEQUENCE {
                pusch-SysInfo                   PUSCH-SysInfoList                    OPTIONAL,
                pdsch-SysInfo                   PDSCH-SysInfoList                    OPTIONAL
            }
        },
        prach-SystemInformationList     PRACH-SystemInformationList,
        sCCPCH-SystemInformationList    SCCPCH-SystemInformationList,
        cbs-DRX-Level1Information        CBS-DRX-Level1Information                    OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
    -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                                 OPTIONAL
}

SysInfoType7 ::=                    SEQUENCE {
    -- Physical channel IEs
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                ul-Interference                 UL-Interference
            },
            tdd                             NULL
        },
        prach-Information-SIB5-List     DynamicPersistenceLevelList,
        prach-Information-SIB6-List     DynamicPersistenceLevelList                 OPTIONAL,
    -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                                 OPTIONAL
}

SysInfoType8 ::=                    SEQUENCE {
    -- User equipment IEs
        cpch-Parameters                 CPCH-Parameters,
    -- Physical channel IEs
        cpch-SetInfoList                CPCH-SetInfoList,
    -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                                 OPTIONAL
}

SysInfoType9 ::=                    SEQUENCE {
    -- Physical channel IEs
        cpch-PersistenceLevelsList      CPCH-PersistenceLevelsList,
    -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                                 OPTIONAL
}

SysInfoType10 ::=                   SEQUENCE {
    -- User equipment IEs
        drac-SysInfoList                DRAC-SysInfoList,
    -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                                 OPTIONAL
}

SysInfoType11 ::=                   SEQUENCE {
    -- Other IEs
```

```
        sib-ReferenceList              SIB-ReferenceList                OPTIONAL,
    -- Measurement IEs
        fach-MeasurementOccasionInfo   FACH-MeasurementOccasionInfo     OPTIONAL,
        measurementControlSysInfo      MeasurementControlSysInfo,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType12 ::=               SEQUENCE {
    -- Other IEs
        sib-ReferenceList              SIB-ReferenceList                OPTIONAL,
    -- Measurement IEs
        fach-MeasurementOccasionInfo   FACH-MeasurementOccasionInfo     OPTIONAL,
        measurementControlSysInfo      MeasurementControlSysInfo,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType13 ::=               SEQUENCE {
    -- Other IEs
        sib-ReferenceList              SIB-ReferenceList                OPTIONAL,
    -- Core network IEs
        cn-DomainSysInfoList           CN-DomainSysInfoList,
    -- User equipment IEs
        ue-IdleTimersAndConstants      UE-IdleTimersAndConstants        OPTIONAL,
        capabilityUpdateRequirement    CapabilityUpdateRequirement      OPTIONAL,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType13-1 ::=             SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-RAND-Information        ANSI-41-RAND-Information,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType13-2 ::=             SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-UserZoneID-Information  ANSI-41-UserZoneID-Information,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType13-3 ::=             SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-PrivateNeighborListInfo ANSI-41-PrivateNeighborListInfo,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType13-4 ::=             SEQUENCE {
    -- ANSI-41 IEs
        ansi-41-GlobalServiceRedirectInfo
                                        ANSI-41-GlobalServiceRedirectInfo,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType14 ::=               SEQUENCE {
    -- Other IEs
        sib-ReferenceList              SIB-ReferenceList                OPTIONAL,
    -- Physical channel IEs
        primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power            OPTIONAL,
        individualTS-InterferenceList  IndividualTS-InterferenceList,
        rach-ConstantValue             ConstantValue                    OPTIONAL,
        dpch-ConstantValue             ConstantValue                    OPTIONAL,
        usch-ConstantValue             ConstantValue                    OPTIONAL,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}

SysInfoType15 ::=               SEQUENCE {
    -- Other IEs
        sib-ReferenceList              SIB-ReferenceList                OPTIONAL,
    -- Measurement IEs
        lcs-GPS-Assistance             LCS-GPS-AssistanceSIB            OPTIONAL,
        lcs-OTDOA-Assistance           LCS-OTDOA-AssistanceSIB          OPTIONAL,
    -- Extension mechanism
        non-Release99-Information      SEQUENCE {}                      OPTIONAL
}
```

```
SysInfoType15-1 ::=                 SEQUENCE {
    -- DGPS corrections
      lcs-DGPS-SIB-Data            LCS-DGPS-SIB-Data
}

SysInfoType15-2 ::=                 SEQUENCE {
    -- Ephemeris and clock corrections
      lcs-Ephe-SIB-Data            LCS-Ephe-SIB-Data
}

SysInfoType15-3 ::=                 SEQUENCE {
    -- Almanac and other data
      lcs-Alma-SIB-Data            LCS-Alma-SIB-Data
}

SysInfoType16 ::=                   SEQUENCE {
    -- Other IEs
      sib-ReferenceList            SIB-ReferenceList                OPTIONAL,
    -- Radio bearer IEs
      preDefinedRadioConfigurations  PreDefRadioConfigurationList,
    -- Transport channel IEs
      preDefTransChConfiguration   PreDefTransChConfiguration,
    -- Physical channel IEs
      preDefPhyChConfiguration     PreDefPhyChConfiguration,
    -- Extension mechanism
      non-Release99-Information    SEQUENCE {}                      OPTIONAL
}

SystemType ::=                      ENUMERATED {
                                    gsm, cdma2000,
                                    spare1, spare2, spare3, spare4,
                                    spare5, spare6, spare7, spare8,
                                    spare9, spare10, spare11,
                                    spare12, spare13, spare14 }


END
```

***** NEXT MODIFIED SECTION******

14.12   LCS measurements

14.12.1   Compression algorithm for GPS navigation model

NOTE: The calculations used to compress and differentially encode the ephemeris and clock correction parameters in the Navigation Model are given in the following. These calculations are illustrated by pseudocode, in which the following definitions are used:

```
IODE₀ = Past version of Navigation Model;
IODE₁ = Current version of Navigation Model;
μ = 3.986005 x 10¹⁴ (constant);
```

The encoding algorithm is given below.

```
ΔIODE = (IODE₁ - IODE₀)  ; account for [0,239] roll-over
if (ΔIODE <16) && (IODE₁ <240) && (IODE₀ <240),
  Send 4-bit ΔIODE value
else,
  Send 0000 and IODE₁

Δtₒₑ = ([tₒₑ(IODE₁) - tₒₑ(IODE₀)] % (7200/16 sec)

if |Δtₒₑ| ≤ (2²-1),
    Send 3 bit Δtₒₑ value  AND
  the 4-bit number of 2hr intervals lapsed
else,
    Send 1<<2 and tₒₑ(IODE₁)

ΔCᵣc = Cᵣc(IODE₁) - Cᵣc(IODE₀)
if |ΔCᵣc| ≤ (2¹¹-1),
    Send 12-bit ΔCᵣc value
else,
    Send 1<<11 and Cᵣc(IODE₁)
ΔCᵣₛ = Cᵣₛ(IODE₁) - Cᵣₛ(IODE₀)
if |ΔCᵣₛ| ≤ (2¹¹-1),
    Send 12 bit ΔCᵣₛ value
else,
    Send 1<<11 and Cᵣₛ(IODE₁)
ΔCᵢc = Cᵢc(IODE₁) - Cᵢc(IODE₀)
if |ΔCᵢc| ≤ (2⁸-1),
    Send 9 bit ΔCᵢc value
else,
    Send 1<<8 and Cᵢc(IODE₁)
ΔCᵢₛ = Cᵢₛ(IODE₁) - Cᵢₛ(IODE₀)
if |ΔCᵢₛ| ≤ (2⁸-1),
    Send 9 bit ΔCᵢₛ value
else,
    Send 1<<8 and Cᵢₛ(IODE₁)
ΔCᵤc = Cᵤc(IODE₁) - Cᵤc(IODE₀)
if |ΔCᵤc| ≤ (2¹⁰-1),
    Send 11 bit ΔCᵤc value
else,
    Send 1<<10 and Cᵤc(IODE₁)
ΔCᵤₛ = Cᵤₛ(IODE₁) - Cᵤₛ(IODE₀)
if |ΔCᵤₛ| ≤ (2¹⁰-1),
    Send 11 bit ΔCᵤₛ value
else,
    Send 1<<10 and Cᵤₛ(IODE₁)
Δe = e(IODE₁) - e(IODE₀)
if |Δe| ≤ (2¹⁵-1),
    Send 16 bit Δe value
else,
    Send 1<<15 and e(IODE₁)
Δt = tₒₑ(IODE₁) - tₒₑ(IODE₀)
n₀ = (μ/[A^(1/2)(IODE₀)]³)^(1/2)
```

$\Delta M_0 = M_0(IODE_1) - [M_0(IODE_0) + (n_0 + \Delta n(IODE_0))\Delta t]$
if $|\Delta M_0| \leq (2^{21} - 1)$,
     Send 22-bit ΔM_0 value
else,
     Send 1<<21 and $M_0(IODE_1)$
$\Delta A^{1/2} = A^{1/2}(IODE_1) - A^{1/2}(IODE_0)$
if $|\Delta A^{1/2}| \leq (2^{12} - 1)$,
     Send 13-bit $\Delta A^{1/2}$ value
else,
     Send 1<<12 and $A^{1/2}(IODE_1)$
$\Delta(\Delta n) = \Delta n(IODE_1) - \Delta n(IODE_0)$
if $|\Delta(\Delta n)| \leq (2^{10} - 1)$,
     Send 11-bit $\Delta(\Delta n)$ value
else,
     Send 1<<10 and $\Delta n(IODE_1)$
$\Delta t = t_{oe}(IODE_1) - t_{oe}(IODE_0)$
$\Delta OMEGA_0 = OMEGA_0(IODE_1) -$
         $[OMEGA_0(IODE_0) + OMEGAdot(IODE_0) \cdot \Delta t]$
if $|\Delta OMEGA| \leq (2^{13} - 1)$,
     Send 14 bit $\Delta OMEGA_0$ value
else,
     Send 1<<13 and $OMEGA_0(IODE_1)$

$\Delta OMEGAdot = OMEGAdot(IODE_1) - OMEGAdot(IODE_0)$
if $|\Delta OMEGAdot| \leq (2^{11} - 1)$,
     Send 12 bit $\Delta OMEGAdot$ value
else,
     Send 1<<11 and $OMEGAdot(IODE_1)$
$\Delta I_0 = I_0(IODE_1) - I_0(IODE_0)$
if $|\Delta I_0| \leq (2^{14} - 1)$,
     Send 15 bit ΔI_0 value
else,
     Send 1<<14 + $I_0(IODE_1)$
$\Delta Idot = Idot(IODE_1) - Idot(IODE_0)$
if $|\Delta Idot| \leq (2^{10} - 1)$,
     Send 11 bit $\Delta Idot$ value
else,
     Send 1<<10 and $Idot(IODE_1)$
$\Delta \omega = \omega(IODE_1) - \omega(IODE_0)$
if $|\Delta \omega| \leq (2^{20} - 1)$,
     Send 21 bit $\Delta \omega$ value
else,
     Send 1<<20 and $\omega(IODE_1)$
$\Delta t_{oe} = ([t_{oe}(IODE_1) - t_{oe}(IODE_0)] \% (7200/16 \text{ sec})$

if $|\Delta t_{oe}| \leq (2^2 - 1)$,
     Send 3 bit Δt_{oe} value AND
the 4-bit number of 2hr intervals lapsed
else,
     Send 1<<2 and $t_{oe}(IODE_1)$
$\Delta t = t_{oe}(IODE_1) - t_{oe}(IODE_0)$
$\Delta af_0 = af_0(IODE_1) -$
     $[af_0(IODE_0) + af_1(IODE_0) \cdot \Delta t + af_2(IODE_0) \cdot \Delta t^2/2]$
if $|\Delta af_0| \leq (2^6 - 1)$,
     Send 7-bit Δaf_0 value
else,
     Send 1<<6 and $af_0(IODE_1)$

$\Delta af_1 = af_1(IODE_1) - [af_1(IODE_0) + af_2(IODE_0) \cdot \Delta t]$
if $|\Delta af_1| \leq (2^2 - 1)$,
     Send 3-bit Δaf_1 value
else,
     Send 1<<2 and $af_1(IODE_1)$)

if $af_2(IODE_1) == 0$,
     Send $\Delta af_2 = 0$
else,
     Send 1 and $af_2(IODE_1)$)

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e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	**CR**	**401**	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #8	for approval	X	strategic		*(for SMG*
list expected approval meeting # here ↑		for information		non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio **X**   Core Network ☐
(at least one should be marked with an X)

Source:	TSG-RAN WG2	**Date:**	May 22, 2000

Subject:	Choice of Initial UE identity

Work item:	

Category:	F	Correction	X	**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature			Release 97	
shall be marked	C	Functional modification of feature			Release 98	
with an X)	D	Editorial modification			Release 99	X
					Release 00	

Reason for change:	• The procedure for choice of initial UE identity in case of the PLMN_type being "ANSI-41" is missing.

Clauses affected:	8.5.1

Other specs affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	

help.doc

<--------- double-click here for help and instructions on how to create a CR.

8.5 General procedures

8.5.1 Selection of initial UE identity

The purpose of the IE "Initial UE identity" is to provide a unique UE identification at the establishment of an RRC connection. The type of identity shall be selected by the UE according to the following.

If the variable SELECTED_CN in the UE has the value "GSM-MAP", the UE shall choose "UE id type" in the IE "Initial UE identity" with the following priority:

1. TMSI (GSM-MAP): The TMSI (GSM-MAP) shall be chosen if available. The IE "LAI" in the IE "Initial UE identity" shall also be present when TMSI (GSM-MAP) is used, for making it unique.

2. P-TMSI (GSM-MAP): The P-TMSI (GSM-MAP) shall be chosen if available and no TMSI (GSM-MAP) is available. The IE "RAI" in the IE "Initial UE identity" shall in this case also be present when P-TMSI (GSM-MAP) is used, for making it unique.

3. IMSI (GSM-MAP): The IMSI (GSM-MAP) shall be chosen if available and no TMSI (GSM-MAP) or P-TMSI is available.

4. IMEI: The IMEI shall be chosen when none of the above three conditions are fulfilled.

When being used, the IEs "TMSI (GSM-MAP)," "P-TMSI (GSM-MAP)", "IMSI (GSM-MAP)", "LAI" and "RAI" shall be set equal to the values of the corresponding identities stored in the USIM or SIM.

If the variable SELECTED_CN in the UE has the value "ANSI-41", the UE shall choose "UE id type" in the IE "Initial UE identity" according to the procedure specified in the 3GPP2 document "3GPP2 C.P0004-A".

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Oahu, Hawaii, May 22th-26th, 2000

Document　**R2-001119**

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

	25.331	**CR**	**402**		Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑　　　　　*↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #8	for approval	X		strategic		*(for SMG*
list expected approval meeting # here ↑		for information			non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG　　　*The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects:
(at least one should be marked with an X)　　(U)SIM ☐　　ME **X**　　UTRAN / Radio **X**　　Core Network ☐

Source:	TSG-RAN WG2		**Date:**	May 22, 2000

Subject:	ANSI-41 information elements

Work item:	

Category:

(only one category shall be marked with an X)

				Release:		
F	Correction	**X**			Phase 2	
A	Corresponds to a correction in an earlier release				Release 96	
B	Addition of feature				Release 97	
C	Functional modification of feature				Release 98	
D	Editorial modification				Release 99	**X**
					Release 00	

Reason for change:	Type and reference for some ANSI-41 information elements is missing in the Tabular format - this is now aligned with the ASN.1 text.

Clauses affected:	10.3.9.7,10.3.9.8,10.3.9.9,10.3.9.10

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:	

help.doc
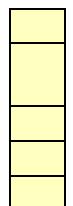
<-------- double-click here for help and instructions on how to create a CR.

10.3.9.7   MIN_P_REV

This Information Element contains minimum protocol revision level.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MIN_P_REV	MP		Bitstring (8)	Minimum protocol revision level

10.3.9.8   NID

This Information Element contains Network identification.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
NID	MP		Bitstring (16)	Network identification

10.3.9.9   P_REV

This Information Element contains protocol revision level.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
P_REV	MP		Bitstring (8)	Protocol revision level

10.3.9.10   SID

This Information Element contains System identification.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SID	MP		Bitstring (15)	System identification

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	404r1	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to:	TSG-RAN #8	for approval	X	strategic		*(for SMG use only)*
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio **X**   Core Network ☐
(at least one should be marked with an X)

Source:	TSG-RAN WG2		**Date:**	22 May 2000

Subject:	RLC value ranges

Work item:	

Category:

(only one category shall be marked with an X)

				Release:		
F	Correction	**X**		Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	**X**
				Release 00	

Reason for change:

1) The Receiving Window Size needs to been added to the UL AM configuration as the UE needs to be aware of the UL Rx window in order to be consistent with the retransmission of AM PDU rules as stated TS 25.322.

2) The Poll_Window percentage cannot be set to 100% as this would never be reached. Therefore the 100% value is changed to 99%.

3) Currently the RLC timer values are quite coarse and are restrictive for the RLC toolbox settings. Finer granularity of the timer values has been introduced.

4) The corresponding changes to the ASN.1 definition.

Clauses affected:	10.3.4.1, 10.3.4.4, 10.3.4.18, 11.3.4

Other specs affected:

Other 3G core specifications	☐	→ List of CRs:	
Other GSM core specifications	☐	→ List of CRs:	
MS test specifications	☐	→ List of CRs:	
BSS test specifications	☐	→ List of CRs:	
O&M specifications	☐	→ List of CRs:	

Other comments:	

help.doc

<---------- double-click here for help and instructions on how to create a CR.

10.3.4   Radio Bearer Information elements

10.3.4.1   Downlink RLC STATUS info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timer_Status_Prohibit	OP		Integer(~~50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000~~10..550 by step of 10, 600..1000 by step of 50)	Minimum time in ms between STATUS reports At least 16 spare values with criticality reject is needed
Timer_EPC	OP		Integer(~~50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000~~50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 300, 400, 500, 700, 900)	Time in ms At least 16 spare values with criticality reject is needed
Missing PU Indicator	MP		Boolean	Value true indicates that UE should send a STATUS report for each missing PU that is detected
Timer_STATUS_periodic	OP		Integer(100, 200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds

10.3.4.4   Polling info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Timer_poll_prohibit	OP		Integer(~~50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000~~50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 300, 400, 500, 700, 900)	Minimum time between polls in ms 16 spare values needed, criticality: reject
Timer_poll	OP		Integer(~~50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000~~10..550 by step of 10, 600..1000 by step of 50)	Time in ms. 16 spare values needed, criticality: reject
Poll_PU	OP		Integer(1,2,4,8,16,32,64,128)	Number of PUs, interval between pollings 8 spare values needed, criticality: reject
Poll_SDU	OP		Integer(1,4,16,64)	Number of SDUs, interval between pollings 4 spare values needed, criticality: reject
Last transmission PU poll	MP		Boolean	TRUE indicates that poll is made at last PU in transmission buffer
Last retransmission PU poll	MP		Boolean	TRUE indicates that poll is made at last PU in retransmission buffer
Poll_Window	OP		Integer(50,60,70,80,85,90,95,~~100~~99)	Percentage of transmission window, threshold for polling 8 spare values needed, criticality: reject
Timer_poll_periodic	OP		Integer(100, 200, 300, 400, 500, 750, 1000, 2000)	Time in milliseconds Timer for periodic polling. 8 spare values needed, criticality: reject

10.3.4.18   RLC info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Uplink RLC mode*	OP			Indicates if Acknowledged, Unacknowledged or Transparent mode RLC shall be used. One spare value needed, criticality: reject.
>AM RLC				
>>Transmission RLC discard	OP		Transmission RLC discard 10.3.4.20	
>>Transmission window size	MP		Integer(1,8,16,32,128,256,512,768,1024,1536,~~2048~~2047,2560,3072,3584,~~4096~~4095)	Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used. ~~One~~ At least one spare value needed, criticality: reject
>>Receiving window size	MP		Integer(1,8,16,32,128,256,512,768,1024,1536,2047,2560,3072,3584,4095)	Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used. This is to provide information of the UTRAN Receiving window size to the UE, for the RLC AM entity. At least one spare value with criticality reject needed
>>Timer_RST	MP		Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	It is used to detect the loss of RESET ACK PDU. 16 spare values needed, criticality: reject
>>Max_RST	MP		Enumerated(1, 4, 6, 8, 12 16, 24, 32)	The maximum number of retransmission of RESET PDU. 8 spare values needed, criticality: reject
>> Polling info	OP		Polling info 10.3.4.4	
>UM RLC				
>> Transmission RLC discard	OP		Transmission RLC discard10.3.4.20	
>TM RLC				(no specific data)
CHOICE *Downlink RLC mode*	OP			Indicates if Acknowledged, Unacknowledged or Transparent mode RLC shall be used. One spare value needed, criticality: reject.
>AM RLC				
>>In-sequence delivery	MP		Boolean	TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered.
>>Receiving window size	MP		Integer(1,8,16,32,128,256,512,768,1024,1536,~~2048~~2047,2560,3072,3584,~~4096~~4095)	Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used. At least one spare value with criticality reject needed
>>Downlink RLC status Info	OP			

>UM RLC				
>>In-sequence delivery	MP		Boolean	TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered.
>TM RLC				
>>In-sequence delivery	MP		Boolean	TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered.

10.3.4.20   Transmission RLC Discard

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE SDU Discard Mode	MP			Different modes for discharge the RLC buffer on the transmitter side; Timer based with explicit signalling, Timer based without explicit signalling or Discard after Max_DAT retransmissions. For unacknowledged mode only Timer based without explicit signalling is applicable. If No_discard is used, reset procedure shall be done after Max_DAT retransmissions
>Timer based explicit				
>>Timer_MRW	MP		Enumerated(~~50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000~~50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 300, 400, 500, 700, 900)	It is used to trigger the retransmission of a STATUS PDU containing an MRW SUFI field. 16 spare values needed, criticality: reject
>>Timer_discard	MP		Real(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5)	Elapsed time in seconds before a SDU is discarded.
>>MaxMRW	MP		Enumerated(1, 4, 6, 8, 12 16, 24, 32)	It is the maximum value for the number of retransmissions of a MRW command 8 spare values needed, criticality: ~~ffs~~reject
>Timer based no explicit				
>>Timer_discard	MP		Real(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5)	Elapsed time in seconds before a SDU is discarded.
>Max DAT retransmissions				
>> Max_DAT	MP		Integer(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40)	Number of retransmissions of a PU before a SDU is discarded.
>No discard				(no data)

CHOICE *SDU Discard Mode*	Condition under which the given *SDU Discard Mode* is chosen
Timer based explicit	If the modes for discharge of the RLC buffer on the transmitter side is "Timer based with explicit signalling"
Timer based no explicit	If the modes for discharge of the RLC buffer on the transmitter side is "Timer based without explicit signalling" For unacknowledged mode, only Timer based without explicit signalling is applicable.
Max DAT retransmissions	If the modes for discharge of the RLC buffer on the transmitter side is "Discard after Max_DAT retransmissions"
No discard	If the modes for discharge the of RLC buffer on the transmitter side is "Reset procedure shall be done after Max_DAT retransmissions"

11.3.4   Radio bearer information elements

```
RadioBearer-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    CN-DomainIdentity,
    RAB-Identity
FROM CoreNetwork-IEs

    TransportChannelIdentity
FROM TransportChannel-IEs

    algorithmCount,
    maxMuxOptionsCount,
    maxOtherRBcount,
    maxPredefConfigCount,
    maxRABcount,
    maxRB-WithPDCPcount,
    maxRBcount,
    maxReconRBcount,
    maxReconRBs,
    maxRelRBcount,
    maxSetupRBcount,
    maxSRBcount
FROM Constant-definitions;

AlgorithmSpecificInfo ::=          CHOICE {
    rfc2507-Info                       RFC2507-Info,
    spare                              NULL
}

DL-AM-RLC-Mode ::=                 SEQUENCE {
    inSequenceDelivery                 BOOLEAN,
    receivingWindowSize                ReceivingWindowSize,
    receptionRLC-DiscardTimer          ReceptionRLC-DiscardTimer          OPTIONAL,
    -- TABULAR: The CV in the specification is unclear - which IE does
    it refer to?
    dl-RLC-StatusInfo                  DL-RLC-StatusInfo
}

DL-LogicalChannelMapping ::=       SEQUENCE {
    dl-TransportChannelType            DL-TransportChannelType,
    transportChannelIdentity           TransportChannelIdentity           OPTIONAL,
    logicalChannelIdentity             LogicalChannelIdentity             OPTIONAL
}

DL-LogicalChannelMappingList ::=   SEQUENCE (SIZE (1..2)) OF
                                   DL-LogicalChannelMapping

DL-RLC-Mode ::=                    CHOICE {
    dl-AM-RLC-Mode                     DL-AM-RLC-Mode,
    dl-UM-RLC-Mode                     DL-UM-RLC-Mode,
    dl-TM-RLC-Mode                     DL-TM-RLC-Mode
}
```

```
}

DL-RLC-StatusInfo ::=               SEQUENCE {
    timerStatusProhibit             TimerStatusProhibit             OPTIONAL,
    timerEPC                        TimerEPC                        OPTIONAL,
    missingPU-Indicator             BOOLEAN,
    timerStatusPeriodic             TimerStatusPeriodic             OPTIONAL
}

DL-TM-RLC-Mode ::=                  SEQUENCE {
    inSequenceDelivery              BOOLEAN
}

DL-TransportChannelType ::=         ENUMERATED {
                                    dch, fach, dsch }

DL-UM-RLC-Mode ::=                  SEQUENCE {
    inSequenceDelivery              BOOLEAN
}

ExplicitDiscard ::=                 SEQUENCE {
    timerMRW                        TimerMRW,
    timerDiscard                    TimerDiscard,
    maxMRW                          MaxMRW
}

ExpectReordering ::=                ENUMERATED {
                                    reorderingNotExpected,
                                    reorderingExpected }

HeaderCompressionInfo ::=           SEQUENCE {
    reconfigurationReset            BOOLEAN,
    -- TABULAR: Optional boolean values are not very efficient...
    algorithmSpecificInfo           AlgorithmSpecificInfo
}

HeaderCompressionInfoList ::=       SEQUENCE (SIZE (1..algorithmCount)) OF
                                    HeaderCompressionInfo

LogicalChannelIdentity ::=          INTEGER (1..16)

MAC-LogicalChannelPriority ::=      INTEGER (1..8)

MaxDAT ::=                          ENUMERATED {
                                    dat1, dat2, dat3, dat4, dat5, dat6,
                                    dat7, dat8, dat9, dat10, dat15, dat20,
                                    dat25, dat30, dat35, dat40 }

MaxMRW ::=                          ENUMERATED {
                                    mm1, mm4, mm6, mm8, mm12, mm16,
                                    mm24, mm32, spare1, spare2, spare3,
                                    spare4, spare5, spare6, spare7, spare8 }

MaxRST ::=                          ENUMERATED {
                                    rst1, rst4, rst6, rst8, rst12,
                                    rst16, rst24, rst32,
                                    spare1, spare2, spare3, spare4,
                                    spare5, spare6, spare7, spare8 }

NoExplicitDiscard ::=               ENUMERATED {
                                    dt0-1, dt0-25, dt0-5, dt0-75, dt1,
                                    dt1-25, dt1-5, dt1-75, dt2, dt2-5,
                                    dt3, dt3-5, dt4, dt4-5, dt5, dt7-5 }

PDCP-Info ::=                       SEQUENCE {
    losslessSRNS-RelocSupport       BOOLEAN,
    pdcp-PDU-Header                 PDCP-PDU-Header                  OPTIONAL,
    headerCompressionInfoList       HeaderCompressionInfoList       OPTIONAL
}

PDCP-InfoReconfig ::=               SEQUENCE {
    pdcp-Info                       PDCP-Info,
    pdcp-SN-Info                    PDCP-SN-Info
}

PDCP-PDU-Header ::=                 ENUMERATED {
                                    present, absent }
```

```
PDCP-SN-Info ::=                    INTEGER (0..65535)

Poll-PU ::=                         ENUMERATED {
                                        pu1, pu2, pu4, pu8, pu16,
                                        pu32, pu64, pu128,
                                        spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7, spare8 }

Poll-SDU ::=                        ENUMERATED {
                                        sdu1, sdu4, sdu16, sdu64,
                                        spare1, spare2, spare3, spare4 }

PollingInfo ::=                     SEQUENCE {
    timerPollProhibit                   TimerPollProhibit               OPTIONAL,
    timerPoll                           TimerPoll                       OPTIONAL,
    poll-PU                             Poll-PU                         OPTIONAL,
    poll-SDU                            Poll-SDU                        OPTIONAL,
    lastTransmissionPU-Poll             BOOLEAN,
    lastRetransmissionPU-Poll           BOOLEAN,
    pollWindow                          PollWindow                      OPTIONAL,
    timerPollPeriodic                   TimerPollPeriodic               OPTIONAL
}

PollWindow ::=                      ENUMERATED {
                                        pw50, pw60, pw70, pw80, pw85,
                                        pw90, pw95, pw100pw99,
                                        spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7, spare8 }

PredefinedConfigIdentity ::=        INTEGER (0..15)

PredefinedConfigValueTag ::=        INTEGER (0..15)

PreDefRadioConfiguration ::=        SEQUENCE {
    predefinedConfigIdentity            PredefinedConfigIdentity,
    predefinedConfigValueTag            PredefinedConfigValueTag,
    predefinedRB-Configuration          PredefinedRB-Configuration
}

PreDefRadioConfigurationList ::=    SEQUENCE (SIZE (1..maxPredefConfigCount)) OF
                                        PreDefRadioConfiguration

PredefinedRB-Configuration ::=      SEQUENCE {
    srb-InformationList                 SRB-InformationList,
    rb-InformationList                  RB-InformationList              OPTIONAL
}

RAB-Info ::=                        SEQUENCE {
    rab-Identity                        RAB-Identity,
    cn-DomainIdentity                   CN-DomainIdentity
}

RAB-InformationSetup ::=            SEQUENCE {
    rab-Info                            RAB-Info,
    rb-InformationSetupList             RB-InformationSetupList
}

RAB-InformationSetupList ::=        SEQUENCE (SIZE (1..maxRABcount)) OF
                                        RAB-InformationSetup

RB-ActivationTimeInfo ::=           SEQUENCE {
    rb-Identity                         RB-Identity,
    rlc-SequenceNumber                  RLC-SequenceNumber
}

RB-ActivationTimeInfoList ::=       SEQUENCE (SIZE (1..maxReconRBs)) OF
                                        RB-ActivationTimeInfo

RB-Identity ::=                     INTEGER (0..31)


RB-InformationAffected ::=          SEQUENCE {
    rb-Identity                         RB-Identity,
    rb-MappingInfo                      RB-MappingInfo
}

RB-InformationAffectedList ::=      SEQUENCE (SIZE (1..maxOtherRBcount)) OF
                                        RB-InformationAffected
```

```
RB-InformationList ::=              SEQUENCE (SIZE (1..maxRBcount)) OF
                                        RB-InformationSetup

RB-InformationReconfig ::=          SEQUENCE {
    rb-Identity                         RB-Identity,
    pdcp-Info                           PDCP-InfoReconfig           OPTIONAL,
    rlc-InfoChoice                      RLC-InfoChoice              OPTIONAL,
    rb-MappingInfo                      RB-MappingInfo              OPTIONAL,
    rb-SuspendResume                    RB-SuspendResume            OPTIONAL
}

RB-InformationReconfigList ::=      SEQUENCE (SIZE (1..maxReconRBcount)) OF
                                        RB-InformationReconfig

RB-InformationRelease ::=           SEQUENCE {
    rb-Identity                         RB-Identity
}

RB-InformationReleaseList ::=       SEQUENCE (SIZE (1..maxRelRBcount)) OF
                                        RB-InformationRelease

RB-InformationSetup ::=             SEQUENCE {
    rb-Identity                         RB-Identity,
    pdcp-Info                           PDCP-Info                   OPTIONAL,
    rlc-Info                            RLC-Info,
    rb-MappingInfo                      RB-MappingInfo
}

RB-InformationSetupList ::=         SEQUENCE (SIZE (1..maxSetupRBcount)) OF
                                        RB-InformationSetup

RB-MappingInfo ::=                  SEQUENCE (SIZE (1..maxMuxOptionsCount)) OF
                                        RB-MappingOption

RB-MappingOption ::=                SEQUENCE {
    ul-LogicalChannelMappingList        UL-LogicalChannelMappingList    OPTIONAL,
    dl-LogicalChannelMappingList        DL-LogicalChannelMappingList    OPTIONAL
}

RB-SuspendResume ::=                ENUMERATED {
                                        suspend, resume }

RB-WithPDCP-Info ::=                SEQUENCE {
    rb-Identity                         RB-Identity,
    pdcp-SN-Info                        PDCP-SN-Info
}

RB-WithPDCP-InfoList ::=            SEQUENCE (SIZE (1..maxRB-WithPDCPcount)) OF
                                        RB-WithPDCP-Info

ReceivingWindowSize ::=             ENUMERATED {
                                        rw1, rw8, rw16, rw32, rw128, rw256,
                                        rw512, rw768, rw1024, rw1536, rw2048rw2047,
                                        rw2560, rw3072, rw3584, rw4096 rw4095 }

ReceptionRLC-DiscardTimer ::=       ENUMERATED {
                                        dt100, dt250, dt500, dt750, dt1000,
                                        dt1250, dt1500, dt1750, dt2000, dt2500,
                                        dt3000, dt3500, dt4000, dt4500,
                                        dt5000, dt7500 }

RFC2507-Info ::=                    SEQUENCE {
    f-MAX-PERIOD                        INTEGER (1..655355)         OPTIONAL,
    f-MAX-TIME                          INTEGER (1..255)            OPTIONAL,
    max-HEADER                          INTEGER (60..65535)         OPTIONAL,
    tcp-SPACE                           INTEGER (3..255)            OPTIONAL,
    non-TCP-SPACE                       INTEGER (3..65535)          OPTIONAL,
    expectReordering                    ExpectReordering
    -- TABULAR: The IE above has only two possible values, so using Optional
    -- would be wasteful
}

RLC-Info ::=                        SEQUENCE {
    ul-RLC-Mode                         UL-RLC-Mode                 OPTIONAL,
    dl-RLC-Mode                         DL-RLC-Mode                 OPTIONAL
}
```

```
RLC-InfoChoice ::=                  CHOICE {
    rlc-Info                            RLC-Info,
    spare                               NULL
}

RLC-SequenceNumber ::=              INTEGER (0..4095)

SRB-InformationList ::=             SEQUENCE (SIZE (1..maxSRBcount)) OF
                                        SRB-InformationSetup

SRB-InformationSetup ::=           SEQUENCE {
    rb-Identity                         RB-Identity,
    rlc-InfoChoice                      RLC-InfoChoice,
    rb-MappingInfo                      RB-MappingInfo
}

SRB-InformationSetupList2 ::=       SEQUENCE (SIZE (3..4)) OF
                                        SRB-InformationSetup

SRB-InformationSetupList ::=        SEQUENCE (SIZE (1..maxSRBcount)) OF
                                        SRB-InformationSetup

TimerEPC ::=                        ENUMERATED {
                                        te50, te60, te70, te80, te90
                                        te100, te120, te140, te150, te160, te180,
                                        te200, te250,
                                        te300, te350, te400, te450, te500,
                                        te550, te600, te700, te800,

                                        te900, , te1000 spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7, spare8, spare9,
                                        spare10, spare11, spare12, spare13, spare14,
                                        spare15, spare16 }

TimerDiscard ::=                    ENUMERATED {
                                        td0-1, td0-25, td0-5, td0-75,
                                        td1, td1-25, td1-5, td1-75,
                                        td2, td2-5, td3, td3-5, td4,
                                        td4-5, td5, td7-5 }

TimerMRW ::=                        ENUMERATED {
                                        te50, te60, te70, te80, te90
                                        te100, te120, te140, te160, te180,
                                        te200, te300, te400, te500, te700,
                                        te900tm50, tm100, tm150, tm200, tm250,
                                        tm300, tm350, tm400, tm450, tm500,
                                        tm550, tm600, tm700, tm800, tm900, tm1000,
                                        spare1, spare2, spare3, spare4,
                                        spare5,
                                        spare6, spare7, spare8, spare9,
                                        spare10,
                                        spare11, spare12, spare13, spare14,
                                        spare15, spare16 }

TimerPoll ::=                       ENUMERATED {
                                        tp10, tp20, tp30, tp40, tp50,
                                        tp60, tp70, tp80, tp90, tp100,
                                        tp110, tp120, tp130, tp140, tp150,
                                        tp160, tp170, tp180, tp190, tp200,
                                        tp210, tp220, tp230, tp240, tp250,
                                        tp260, tp270, tp280, tp290, tp300,
                                        tp310, tp320, tp330, tp340, tp350,
                                        tp360, tp370, tp380, tp390, tp400,
                                        tp410, tp420, tp430, tp440, tp450,
                                        tp460, tp470, tp480, tp490, tp500,
                                        tp510, tp520, tp530, tp540, tp550,
                                        tp600, tp650, tp700, tp750, tp800,
                                        tp850, tp900, tp950, tp1000tp50, tp100, tp150, tp200, tp250,
                                        tp300, tp350, tp400, tp450, tp500,
                                        tp550, tp600, tp700, tp800,
                                        tp900, tp1000,
                                        spare1, spare2, spare3, spare4, spare5,
                                        spare6, spare7, spare8, spare9, spare10,
                                        spare11, spare12, spare13, spare14,
                                        spare15, spare16 }

TimerPollPeriodic ::=               ENUMERATED {
                                        tper100, tper200, tper300, tper400,
```

```
                                    tper500, tper750, tper1000, tper2000,
                                    spare1, spare2, spare3, spare4,
                                    spare5, spare6, spare7, spare8 }

TimerPollProhibit ::=               ENUMERATED {
                                    tpp10, tpp20, tpp30, tpp40, tpp50,
                                    tpp60, tpp70, tpp80, tpp90, tpp100,
                                    tpp110, tpp120, tpp130, tpp140, tpp150,
                                    tpp160, tpp170, tpp180, tpp190, tpp200,
                                    tpp210, tpp220, tpp230, tpp240, tpp250,
                                    tpp260, tpp270, tpp280, tpp290, tpp300,
                                    tpp310, tpp320, tpp330, tpp340, tpp350,
                                    tpp360, tpp370, tpp380, tpp390, tpp400,
                                    tpp410, tpp420, tpp430, tpp440, tpp450,
                                    tpp460, tpp470, tpp480, tpp490, tpp500,
                                    tpp510, tpp520, tpp530, tpp540, tpp550,
                                    tpp600, tpp650, tpp700, tpp750, tpp800,
                                    tpp850, tpp900, tpp950, tpp1000,
                                    spare1, spare2, spare3, spare4, spare5,
                                    spare6, spare7, spare8, spare9, spare10,
                                    spare11, spare12, spare13, spare14,
                                    spare15, spare16 tpp50, tpp100, tpp150, tpp200, tpp250,
                                    tpp300, tpp350, tpp400, tpp450, tpp500,
                                    tpp550, tpp600, tpp700, tpp800,
                                    tpp900, tpp1000,
                                    spare1, spare2, spare3, spare4, spare5,
                                    spare6, spare7, spare8, spare9, spare10,
                                    spare11, spare12, spare13, spare14,
                                    spare15, spare16 }

TimerRST ::=                        ENUMERATED {
                                    tr50, tr100, tr150, tr200, tr250, tr300,
                                    tr350, tr400, tr450, tr500, tr550,
                                    tr600, tr700, tr800, tr900, tr1000,
                                    spare1, spare2, spare3, spare4, spare5,
                                    spare6, spare7, spare8, spare9, spare10,
                                    spare11, spare12, spare13, spare14,
                                    spare15, spare16 }

TimerStatusPeriodic ::=             ENUMERATED {
                                    tsp50, tsp100, tsp150, tsp200, tsp250,
                                    tsp300, tsp350, tsp400, tsp450, tsp500,
                                    tsp550, tsp600, tsp700, tsp800,
                                    tsp900, tsp1000,
                                    spare1, spare2, spare3, spare4, spare5,
                                    spare6, spare7, spare8, spare9, spare10,
                                    spare11, spare12, spare13, spare14,
                                    spare15, spare16 }

TimerStatusProhibit ::=             ENUMERATED {
                                    tsp10,tsp20,tsp30,tsp40,tsp50,
                                    tsp60,tsp70,tsp80,tsp90,tsp100,
                                    tsp110,tsp120,tsp130,tsp140,tsp150,
                                    tsp160,tsp170,tsp180,tsp190,tsp200,
                                    tsp210,tsp220,tsp230,tsp240,tsp250,
                                    tsp260,tsp270,tsp280,tsp290,tsp300,
                                    tsp310,tsp320,tsp330,tsp340,tsp350,
                                    tsp360,tsp370,tsp380,tsp390,tsp400,
                                    tsp410,tsp420,tsp430,tsp440,tsp450,
                                    tsp460,tsp470,tsp480,tsp490,tsp500,
                                    tsp510,tsp520,tsp530,tsp540,tsp550,
                                    tsp600,tsp650,tsp700,tsp750,tsp800,
                                    tsp850,tsp900,tsp950,tsp1000,
                                    spare1, spare2, spare3, spare4, spare5,
                                    spare6, spare7, spare8, spare9, spare10,
                                    spare11, spare12, spare13, spare14,
                                    spare15, spare16 tsp160, tsp320, tsp640, tsp1280 }

TransmissionRLC-Discard ::=         CHOICE {
    timerBasedExplicit              ExplicitDiscard,
    timerBasedNoExplicit            NoExplicitDiscard,
    maxDAT-Retransmission           MaxDAT,
    noDiscard                       NULL
}

TransmissionWindowSize ::=          ENUMERATED {
                                    tw1, tw8, tw16, tw32, tw128, tw256,
```

```
                                        tw512, tw768, tw1024, tw1536, tw2048,
                                        tw2560, tw3072, tw3584, tw4096 }

UL-AM-RLC-Mode ::=                   SEQUENCE {
    transmissioRLC-Discard              TransmissionRLC-Discard,
    transmissionWindowSize              TransmissionWindowSize,
    receivingWindowSize                 ReceivingWindowSize,
    timerRST                            TimerRST,
    max-RST                             MaxRST,
    pollingInfo                         PollingInfo                  OPTIONAL
}

UL-LogicalChannelMapping ::=         SEQUENCE {
    ul-TransportChannelType             UL-TransportChannelType,
    transportChannelIdentity            TransportChannelIdentity     OPTIONAL,
    logicalChannelIdentity              LogicalChannelIdentity       OPTIONAL,
    mac-LogicalChannelPriority          MAC-LogicalChannelPriority   OPTIONAL
}

UL-LogicalChannelMappingList ::=     SEQUENCE (SIZE (1..2)) OF
                                        UL-LogicalChannelMapping

UL-RLC-Mode ::=                      CHOICE {
    ul-AM-RLC-Mode                      UL-AM-RLC-Mode,
    ul-UM-RLC-Mode                      UL-UM-RLC-Mode,
    ul-TM-RLC-Mode                      NULL,
    spare                               NULL
}

UL-TransportChannelType ::=          ENUMERATED {
                                        dch, rach, cpch, usch }

UL-UM-RLC-Mode ::=                   SEQUENCE {
    transmissionRLC-Discard             TransmissionRLC-Discard      OPTIONAL
}

END
```

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

| **25.331** | CR | **408r1** | Current Version: | 3.2.0 |

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: **TSG-RAN #8**   for approval **X**   strategic ☐   *(for SMG*
list expected approval meeting # here   for information ☐   non-strategic ☐   *use only)*
                    ↑

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio **X**   Core Network ☐
(at least one should be marked with an X)

| **Source:** | TSG-RAN WG2 | **Date:** | 22nd May, 2000 |

| **Subject:** | HFN Reset |

| **Work item:** | |

Category: F Correction   **Release:**   Phase 2   ☐
           A Corresponds to a correction in an earlier release   Release 96   ☐
(only one category   B Addition of feature   Release 97   ☐
Shall be marked   C Functional modification of feature   **X**   Release 98   ☐
With an X)   D Editorial modification   Release 99   **X**
                                                                Release 00   ☐

| **Reason for change:** | This CR proposes a reset mechanism of HFN for ciphering. |

TM RLC

If UE have a capability of incrementing CFN precisely in itself in out-of-sync state, there will be no HFN inconsistency problem. However, if the UE doesn't support this function and the out-of-sync state continues, there will be an HFN inconsistency.

AM RLC

Since the Window_size is maximum 4096, there will be no case that HFN inconsistency occurs except for the case that AMD with SN=0 has not reached to the receiving side.

UM RLC

Since there is no restriction in Window_size, there is a possibility that HFN inconsistency occurs due to out-of-sync.

As shown above, there are possibilities that the HFN inconsistency between UE and NW occurs. This CR proposes to reset HFN by UE sending latest HFN+1, and the NW use it for new HFN.

This mechanism is proposed in RRC CONNECTION RE-ESATABLISHMENT REQUEST messages since HFN inconsistency may be caused by "out-of-sync in CELL_DCH state".

This mechanism is also proposed in CELL UPDATE messages since HFN inconsistency may be caused by "out of service area in CELL_FACH state".

Rev1

Highlighted part is the revised part.

UE shall include one latest HFN+1 in above 2 messages. The value to set is "the maximum

value in the currently used HFNs among CS and PS domains " + "1".

Clauses affected: 8.3.1.2, 8.1.5.2, 10.2.4, 10.2.37, 11.2

Other specs 　Other 3G core specifications 　　　□ → List of CRs:
Affected: 　　Other GSM core 　　　　　　　　□ → List of CRs:
　　　　　　　　　specifications
　　　　　　　MS test specifications 　　　　　□ → List of CRs:
　　　　　　　BSS test specifications 　　　　　□ → List of CRs:
　　　　　　　O&M specifications 　　　　　　□ → List of CRs:

Other
comments:

help.doc
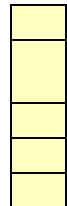
<---------- double-click here for help and instructions on how to create a CR.

8.3.1 Cell update

8.3.1.1 General

8.3.1.2 Initiation

A UE in CELL_FACH, CELL_PCH or URA_PCH state may apply the cell update procedure for a number of purposes. The specific requirements the UE shall take into account for each case are specified in the following:

- Upon initiation of the procedure, the UE shall set the variable PROTOCOL_ERROR_INDICATOR to FALSE.

- In CELL_FACH or CELL_PCH state, the UE shall perform the cell update procedure when selecting another cell (cell reselection).

- In CELL_FACH and CELL_PCH state, the UE shall perform the cell update procedure upon expiry of T305 while the UE is in the service area. The UE shall only perform this periodic cell updating if configured by means of the IE "Information for periodical cell and URA update" in System Information Block Type 2. The UE shall initially start timer T305 upon entering CELL_FACH or CELL_PCH state.

- In CELL_PCH state and URA_PCH state, the UE shall initiate the cell update procedure if it wants to transmit UL data.

- In CELL_PCH and URA_PCH state, the UE shall perform the cell update procedure when receiving a PAGING TYPE 1 message as in subclause 8.1.2.3.

- moving to CELL_FACH state, if not already in that state.

- delete any C-RNTI and suspend data transmission on RB 2 and upward, if RLC-AM or RLC-UM is used on those radio bearers.

- sending a CELL UPDATE message on the uplink CCCH.

- starting timer T302 and resetting counter V302.

The IE "cell update cause" shall be used as follows:

- In case of cell reselection: "cell reselection";

- In case of periodic cell updating: "periodic cell update";

- In case of UL data transmission: "UL data transmission";

- In case of paging response: "paging response".

If the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE, the UE shall set the IE "Protocol error indicator" to TRUE and include the IE "Protocol error information" set to the value of the variable PROTOCOL_ERROR_INFORMATION.

If the value of the variable PROTOCOL_ERROR_INDICATOR is FALSE, the UE shall set the IE "Protocol error indicator" to FALSE.

The IE "AM_RLC error indication" shall be set when the UE detects unrecoverable error in an AM RLC entity for the signalling link.

UE shall include "the maximum value in the currently used HFNs among CS and PS domains " + "1" in IE "HFN" in CELL UPDATE message.

The UE shall include an intra-frequency measurement report in the CELL UPDATE message, as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in system information block type 12.

8.1.5 RRC connection re-establishment

8.1.5.1 General

8.1.5.2 Initiation

When a UE loses the radio connection due to e.g. radio link failure (see 8.5.6) in CELL_DCH state, the UE may initiate a new cell selection by transiting to CELL_FACH state.

If timer T314=0 and timer T315=0 the UE shall:

- Enter idle mode. The procedure ends and a connection failure may be indicated to the non-access stratum. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2

If timer T314=0 the UE shall:

- Release locally all radio bearers (except Signalling Radio Bearers) using Tr or UM RLC. An indication may be sent to the non-access stratum.

If timer T315=0 the UE shall:

- Release locally all radio bearers (except Signalling Radio Bearers) using AM RLC. An indication may be sent to the non-access stratum.

If T314>0, the UE shall start timer T314.

If T315>0, the UE shall start timer T315.

Upon initiation of the procedure, the UE shall set the variable PROTOCOL_ERROR_INDICATOR to FALSE.

UE shall include "the maximum value in the currently used HFNs among CS and PS domains" plus "1" in IE "HFN" in RRC CONNECTION RE-ESTABLISHMENT REQUEST message.

10.2.4 CELL UPDATE

This message is used by the UE to initiate a cell update procedure.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
U-RNTI	MP		U-RNTI 10.3.3.45	
Integrity check info	CH		Integrity check info 10.3.3.16	
Hyper frame number	MP		Hyper frame number 10.3.3.13	
AM_RLC error indication	MP		Boolean	TRUE indicates AM_RLC unrecoverable error occurred on c-plane in the UE
Cell update cause	MP		Cell update cause 10.3.3.3	
Protocol error indicator	MD		Protocol error indicator 10.3.3.29	Default value is FALSE
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	
Other information elements				
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.9	

10.2.37 RRC CONNECTION RE-ESTABLISHMENT REQUEST

NOTE: Functional description of this message to be included here.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
U-RNTI	MP		U-RNTI 10.3.3.45	
Integrity check info	CH		Integrity check info 10.3.3.16	
Hyper frame number	MP		Hyper frame number 10.3.3.13	
Protocol error indicator	MD		Protocol error indicator 10.3.3.29	Default value is FALSE
Measurement information elements				
Measured results on RACH	OP		Measured results on RACH 10.3.7.70	
Other information elements				
Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.9	

11.2   PDU definitions

```
CellUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                      U-RNTI,
        hyperFrameNumber            HyperFrameNumber,
        am-RLC-ErrorIndication      BOOLEAN,
        cellUpdateCause             CellUpdateCause,
        protocolErrorIndicator      ProtocolErrorIndicatorWithInfo,
        -- TABULAR: Protocol error information is nested in
        -- ProtocolErrorIndicatorWithInfo.
    -- Measurement IEs
        measuredResultsOnRACH       MeasuredResultsOnRACH               OPTIONAL,
    -- Extension mechanism
        non-Release99-Information    SEQUENCE {}                        OPTIONAL
}


RRCConnectionReEstablishmentRequest ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                      U-RNTI,
        hyperFrameNumber            HyperFrameNumber,
        protocolErrorIndicator      ProtocolErrorIndicatorWithInfo,
        -- TABULAR: The IE above is MD in tabular, but making a 2-way choice
        -- optional wastes one bit (using PER) and produces no additional
        -- information.
    -- Measurement IEs
```

```
        measuredResultsOnRACH            MeasuredResultsOnRACH              OPTIONAL,
    -- Extension mechanism
        non-Release99-Information        SEQUENCE {}                       OPTIONAL
}
```

3GPP TSG RAN WG2#13
Oahu, HI, USA, 22-26 May, 2000

Document **R2-001278**

CHANGE REQUEST

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25.331	CR	**409r1**		Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ ↑ *CR number as allocated by MCC support team*

For submission to: **TSG-RAN #8**   for approval **X**   strategic ☐ *(for SMG*
list expected approval meeting # here   for information ☐   non-strategic ☐ *use only)*
↑

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio **X**   Core Network ☐
(at least one should be marked with an X)

Source: TSG-RAN WG2   **Date:** 2000-05-22

Subject: Clarification on ciphering parameters and integrity protection procedure in case of SRNS relocation

Work item:

Category: F Correction   **Release:** Phase 2 ☐
        A Corresponds to a correction in an earlier release   Release 96 ☐
(only one category   B Addition of feature   **X**   Release 97 ☐
shall be marked   C Functional modification of feature   Release 98 ☐
with an X)   D Editorial modification   Release 99 **X**
        Release 00 ☐
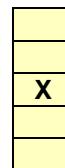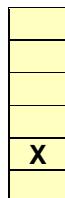
Reason for change:

1. Addition to the RRC Initialisation Information between network nodes in order to enable the ciphering procedure in case of SRNS relocation without hard handover. The change refers to RLC TM case.

2. Clarification on the ciphering/integrity procedure in case of SRNS relocation.

3. Minor editorial modifications

Clauses affected: 8.2.1, 8.2.2, 8.2.4, 8.2.6, 10.3.7.6, 11.X, 11.3.7, 14.10.1
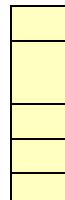
Other specs Affected:
Other 3G core specifications	☐	→ List of CRs:
Other GSM core specifications	☐	→ List of CRs:
MS test specifications	☐	→ List of CRs:
BSS test specifications	☐	→ List of CRs:
O&M specifications	☐	→ List of CRs:

Other comments: The changes on chapter 11.X took in account the ASN.1 description proposed in CR 397r1 to 25.331 (Tdoc R2-001253)

help.doc

<--------- double-click here for help and instructions on how to create a CR.

8.2 Radio Bearer control procedures

8.2.1 Radio bearer establishment
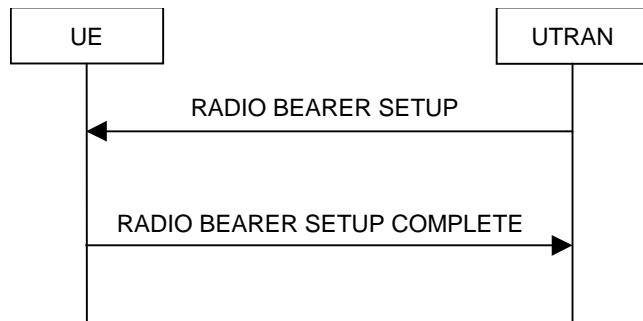
Figure 18: Radio Bearer Establishment, normal case
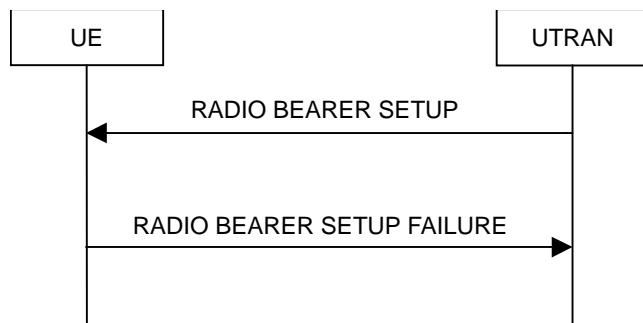
Figure 19: Radio Bearer Establishment, UE reverts to old configuration

8.2.1.1 General

The purpose with this procedure is to establish new radio bearer(s). Each radio bearer established by the procedure belongs to one of the following categories:

-   a signalling radio bearer, i.e. used for control plane signalling;

-   a radio bearer that implements a radio access bearer (RAB) or RAB subflow(s) in the user plane.

While establishing radio bearers, the procedure may perform a hard handover, see 8.3.5. The procedure may also be used to establish a transport channel for the transparent transfer of signalling.

8.2.1.2 Initiation

The upper layer in the network may request an establishment of radio bearer(s).

To initiate the procedure, UTRAN should:

-   configures new radio links in any new physical channel configuration and start transmission and reception on the new radio links;

-    transmits a RADIO BEARER SETUP message on the downlink DCCH using AM or UM RLC.

If the Radio Bearer Establishment procedure is simultaneous with SRNS relocation procedure, and ciphering and/or integrity protection are activated, transmit new ciphering and/or integrity protection information to be used after reconfiguration.

If transport channels are added, reconfigured or deleted in uplink and/or downlink, UTRAN shall:

-   set TFCS according to the new transport channel(s).

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

8.2.2   Radio bearer reconfiguration
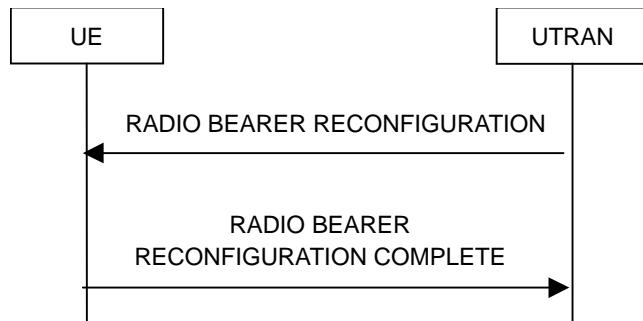
Figure 20: Radio bearer reconfiguration, normal flow
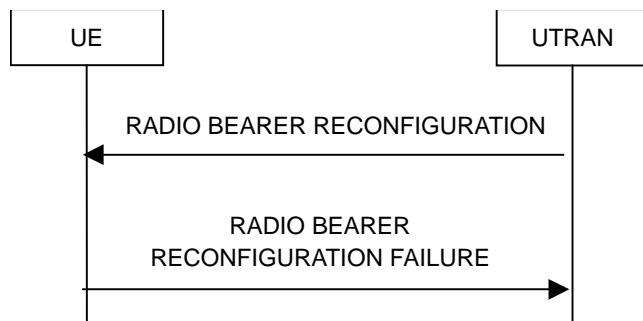
Figure 21: Radio bearer reconfiguration, failure case

8.2.2.1   General

The radio bearer reconfiguration procedure is used to reconfigure parameters for a radio bearer or the signalling link to reflect a change in QoS. While doing so, the procedure may perform a hard handover, see 8.3.5.

8.2.2.2   Initiation

To initiate the procedure, UTRAN should:The UTRAN initiates the procedure by:

- configureing new radio links in any new physical channel configuration and start transmission and reception on the new radio links;

- tTransmitting a RADIO BEARER RECONFIGURATION message on the downlink DCCH using AM or UM RLC

If the Radio Bearer Reconfiguration procedure is simultaneous with SRNS relocation procedure, and ciphering and/or integrity protection are activated, transmit new ciphering and/or integrity protection information to be used after reconfiguration.

If transport channels are added, reconfigured or deleted in uplink and/or downlink, the UTRAN shall:

- Set TFCS according to the new transport channel(s).

UTRAN should indicate that uplink transmission shall be suspended on certain bearers. Uplink transmission on a radio bearer used by the RRC signalling should not be suspended.

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

If the message is used to initiate a transition from CELL_DCH to CELL_FACH state, the UTRAN may assign a common channel configuration of a given cell and C-RNTI to be used in that cell to the UE.

8.2.4   Transport channel reconfiguration
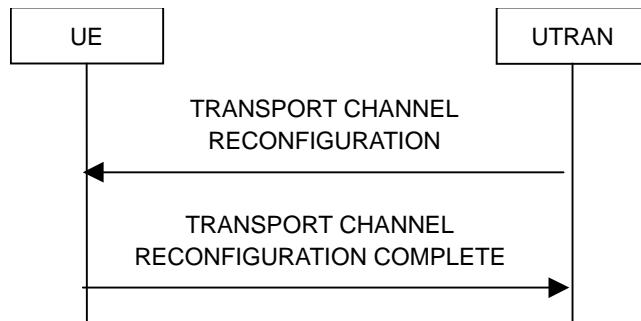
Figure 24: Transport channel reconfiguration, normal flow
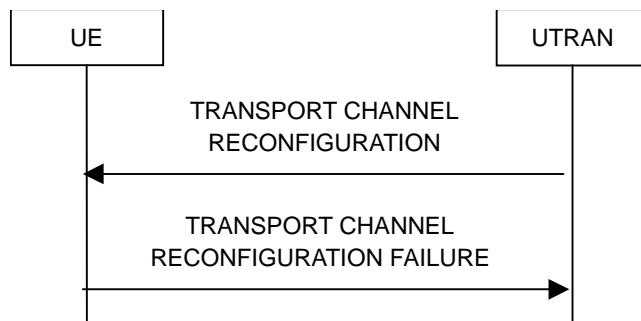
Figure 25: Transport channel reconfiguration, failure case

8.2.4.1   General

The transport channel reconfiguration procedure is used to reconfigure transport channel parameters. While doing so, the procedure may perform a hard handover, see 8.3.5.

8.2.4.2   Initiation

To initiate the procedure, UTRAN should:The UTRAN shall:

-   Configure new radio links in any new physical channel configuration and start transmission and reception on the new radio links.

-    transmit a TRANSPORT CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC.

If the Transport Channel Reconfiguration procedure is simultaneous with SRNS relocation procedure, and ciphering and/or integrity protection are activated, transmit new ciphering and/or integrity protection information to be used after reconfiguration.

If transport channels are added, reconfigured or deleted in uplink and/or downlink, the UTRAN shall:

-   Set TFCS according to the new transport channel(s).

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

8.2.6   Physical channel reconfiguration
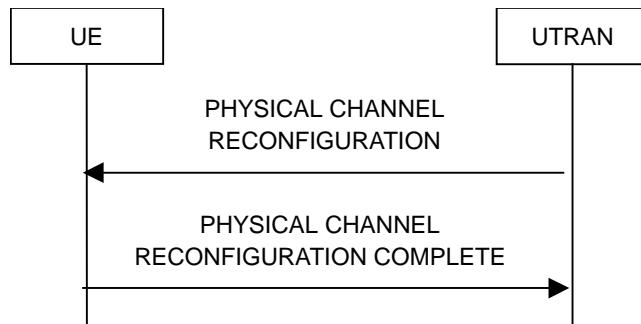
Figure 27: Physical channel reconfiguration, normal flow
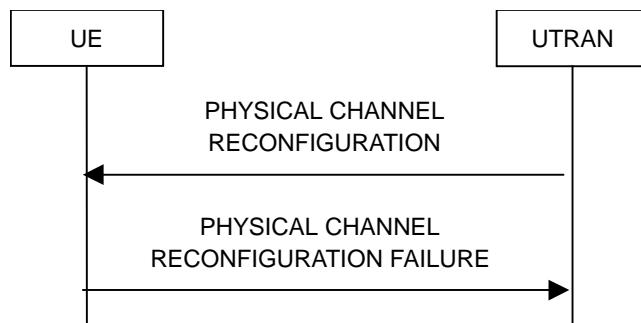
Figure 28: Physical channel reconfiguration, failure case

8.2.6.1   General

The physical channel reconfiguration procedure is used to establish, reconfigure and release physical channels. While doing so, the procedure may perform a hard handover, see 8.3.5.

8.2.6.2   Initiation

To initiate the procedure, the UTRAN should:

-    Configure new radio links in any new physical channel configuration and start transmission and reception on the new radio links.

-    transmit a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC.

If the Physical Channel Reconfiguration procedure is simultaneous with SRNS relocation procedure, and ciphering and/or integrity protection are activated, transmit new ciphering and/or integrity protection information to be used after reconfiguration.

UTRAN should take the UE capabilities into account when setting the new configuration.

If the message is used to initiate a transition from CELL_DCH to CELL_FACH state, the UTRAN may assign a common channel configuration of a given cell and C-RNTI to be used in that cell to the UE.

14.10   Provision and reception of RRC information between network nodes

14.10.1   RRC Initialisation Information, source RNC to target RNC

When relocation of SRNS is decided to be executed, the RRC shall build the state information, which contains the RRC, RLC and MAC related RRC message information elements, which currently specify the state of the RRC including the radio bearer and transport channel configuration. This "RRC initialisation information, source RNC to target RNC" shall be sent by the source RNC to the target RNC to enable transparent relocation of the RRC and lower layer protocols. Correspondingly, the RRC in the target RNC shall receive the "RRC initialisation information, source RNC to target RNC" and update its state parameters accordingly to facilitate a transparent relocation of SRNS for the UE.

Information Element	Need	Multi	Type and reference	Semantics description
Non RRC IEs				
State of RRC	M		Enumerated (CELL_DCH, CELL_FACH,CELL_PCH, URA_PCH)	
State of RRC procedure	M		Enumerated (await no RRC message, await RRC Connection Re-establishment Complete, await RB Setup Complete, await RB Reconfiguration Complete, await RB Release Complete, await Transport CH Reconfiguration Complete, await Physical CH Reconfiguration Complete, await Active Set Update Complete, await Handover Complete, others)	
Variable RLC parameters	M		?????	
Ciphering related information				
Ciphering status	M		Enumerated(Not started, Started)	
Calculation time for ciphering related information	CV *Ciphering*			Time when the ciphering information of the message were calculated, relative to a cell of the target RNC
>Cell Identity	MP		Cell Identity 10.3.2.2	Identity of one of the cells under the target RNC and included in the active set of the current call
>SFN	MP		Integer(0..4095)	
Ciphering info per radio bearer		0 to < numberOfRadioBearers>		
>RB identity	M		RB identity	
>Downlink HFN	M		Ciphering hyperframe number	
>Uplink HFN	M		Ciphering hyperframe number	
>Downlink RLC sequence Number	O		Integer(0..4095)	RLC SN [TS 25.322]
>Uplink RLC sequence number	O		Integer(0..4095)	RLC SN [TS 25.322]
Integrity protection related information				
Integrity protection status	M		Enumerated(Not started, Started)	
Integrity protection failure count	M		Integer(0..N316)	
Signalling radio bearer specific integrity protection information	CV *IP*	3 to <maxSRBcount>		Status information for RB#0-3 in that order
> Uplink HFN	M		Integrity protection hyper frame number	

Information Element	Need	Multi	Type and reference	Semantics description
> Downlink HFN	M		Integrity protection hyper frame number	
> Uplink RRC Message sequence number	M		Integer (0.. 15)	
> Downlink RRC Message sequence number	M		Integer (0.. 15)	
Implementation specific parameters	O		Bitstring (1..512)	
RRC IEs				
UE Information elements				
U-RNTI	M			
C-RNTI	O			
UE radio access Capability	M			
Other Information elements				
Inter System message (inter system classmark)	O			
UTRAN Mobility Information elements				
URA Identifier	O			
CN Information Elements				
CN common GSM-MAP NAS system information	M		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNo CNdomai ns>		CN related information to be provided for each CN domain
>CN domain identity	O			
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	
Measurement Related Information elements				
For each ongoing measurement reporting		0 to <maxNo OfMeas>		
Measurement Identity Number	M			
Measurement Command	M			
Measurement Type	C Setup			
Measurement Reporting Mode	O			
Additional Measurement Identity number				
CHOICE Measurement				
Intra-frequency				
Intra-frequency cell info		0 to <MaxIntr aCells>		
Intra-frequency measurement quantity	O			
Intra-frequency reporting quantity	O			
Reporting cell status	O			
Measurement validity	O			
CHOICE report criteria	O			
Intra-frequency measurement reporting criteria				
Periodical reporting				
No reporting			NULL	
Inter-frequency				
Inter-frequency cell info		0 to <MaxInte rCells>		
Inter-frequency measurement quantity	O			
Inter-frequency reporting quantity	O			
Reporting cell status	O			

Information Element	Need	Multi	Type and reference	Semantics description
Measurement validity	O			
CHOICE report criteria	O			
Inter-frequency measurement reporting criteria				
Periodical reporting				
No reporting			NULL	
Inter-system				
Inter-system cell info		0 to <MaxInterSysCells>		
Inter-system measurement quantity	O			
Inter-system reporting quantity	O			
Reporting cell status	O			
Measurement validity				
CHOICE report criteria				
Inter-system measurement reporting criteria				
Periodical reporting				
No reporting			NULL	
Traffic Volume				
Traffic volume measurement Object	O			
Traffic volume measurement quantity	O			
Traffic volume reporting quantity	O			
CHOICE report criteria	O			
Traffic volume measurement reporting criteria				
Periodical reporting				
No reporting			NULL	
Quality				
Quality measurement Object	O			
Quality measurement quantity	O			
Quality reporting quantity	O			
CHOICE report criteria	O			
Quality measurement reporting criteria				
Periodical reporting				
No reporting			NULL	
UE internal				
UE internal measurement quantity	O			
UE internal reporting quantity	O			
CHOICE report criteria	O			
UE internal measurement reporting criteria				
Periodical reporting				
No reporting			NULL	
Radio Bearer Information Elements				
Signalling radio bearer information		3 to <maxSRBcount>		For each signalling radio bearer
>RB identity	M			
>RLC info	M			
>RB mapping info	M			
RAB information		0 to <maxRABcount>		Information for each RAB

Information Element	Need	Multi	Type and reference	Semantics description
>RAB info	M			
>For each Radio Bearer		0 to \<maxRB count>		Information for each radio bearer belonging to this RAB
>>RB Identity	M			
>>RLC Info	M			
>>PDCP Info	O			Absent ifPDCP is not configured for RB
>>PDCP SN Info	C PDCP			
>>RB mapping info	M			
Transport Channel Information Elements				
TFCS (UL DCHs)	O			
TFCS (DL DCHs)	O			
TFC subset (UL DCHs)	O			
TFCS (USCHs)	O			
TFCS (DSCHs)	O			
TFC subset (USCHs)	O			
Uplink transport channels				
For each uplink transport channel		0 to \<MaxTrCH>		
>Transport channel identity	M			
>TFS	M			
Downlink transport channels				
For each downlink transport channel		0 to \<MaxTrCH>		
>Transport channel identity	M			
>TFS	M			
Measurement report	O			MEASUREMENT REPORT 10.1.15

Condition	Explanation
Ciphering	The IE is mandatory when the IE Ciphering Status has the value "started" and the ciphering counters need not be reinitialised, otherwise the IE is not needed.
IP	The IE is mandatory when the IE Integrity protection status has the value "started" and the ciphering counters need not be reinitialised, otherwise the IE is not needed.
PDCP	The IE is only present when PDCP Info IE is present

10.3.7.6 CFN-SFN observed time difference

NOTE: Only for FDD.

The measured time difference to cell indicates the time difference that is measured by UE between ~~CFN~~ RLC Transparent Mode COUNT-C in the UE and the SFN of the target neighbouring cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages. This measurement is for FDD only.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CFN-SFN observed time difference	MP		Enumerated(0..~~983 0399~~ 157286399)	Number of chip

11.4   Constant definitions

```
maxNoOfMeas              INTEGER ::= 16
```

11.x   RRC information between network nodes

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

BEGIN

IMPORTS

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    TransportChannelReconfiguration,
    UECapabilityInformation
FROM PDU-definitions

    CN-DomainInformationList,
    NAS-SystemInformationGSM-MAP
FROM CoreNetwork-IEs

    URA-Identity
    CellIdentity
FROM UTRANMobility-IEs

    C-RNTI,
    HyperFrameNumber,
    RRC-MessageSequenceNumber,
    U-RNTI,
    UE-RadioAccessCapability
FROM UserEquipment-IEs

    PDCP-InfoReconfig,
    RAB-Info,
    RB-Identity,
    RB-MappingInfo,
    RLC-Info,
    RLC-SequenceNumber,
    SRB-InformationSetup
FROM RadioBearer-IEs

    TFC-Subset,
    TFCS,
    TransportChannelIdentity,
    TransportFormatSet
FROM TransportChannel-IEs

    MeasurementIdentityNumber,
    MeasurementReportingMode,
    MeasurementType,
    AdditionalMeasurementID-List
FROM Measurement-IEs

    InterSystemMessage
FROM Other-IEs

    maxNoOfMeas,
    maxRABcount,
    maxRBcount,
    maxSRBcount,
    maxTrCH
FROM Constant-definitions;

CalculationTimeForCiphering ::=      SEQUENCE {
    cell-Id                          CellIdentity,
    sfn                              Integer (0..4095)
}
CipheringInfoPerRB ::=               SEQUENCE {
    dl-HFN                               HyperFrameNumber,
    ul-HFN                               HyperFrameNumber,
```

```
    dl-RLC-SequenceNumber              RLC-SequenceNumber,
    ul-RLC-SequenceNumber              RLC-SequenceNumber
}

-- TABULAR: Multiplicity value numberOfRadioBearers has been replaced
-- with maxRBcount.
CipheringInfoPerRB-List ::=        SEQUENCE (SIZE (1..maxRBcount)) OF
                                   CipheringInfoPerRB

CipheringStatus ::=                ENUMERATED {
                                   started, notStarted }

ImplementationSpecificParams ::=   BIT STRING (SIZE (1..512))

-- **TODO** Upper limit N316 is undefined! An arbitrary upper limit of
-- 7 has been used here instead.
IntegrityProtectionFailureCount ::= INTEGER (0..7)

IntegrityProtectionStatus ::=      ENUMERATED {
                                   started, notStarted }

MeasurementCommandWithType ::=     CHOICE {
    setup                          MeasurementType,
    modify                         NULL,
    release                        NULL
}

OngoingMeasRep ::=                 SEQUENCE {
    measurementIdentityNumber          MeasurementIdentityNumber,
    measurementCommandWithType         MeasurementCommandWithType,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in the IE above.
    measurementReportingMode           MeasurementReportingMode        OPTIONAL,
    additionalMeasurementID-List       AdditionalMeasurementID-List    OPTIONAL
}

OngoingMeasRepList ::=             SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                   OngoingMeasRep

RAB-Information ::=                SEQUENCE {
    rab-Info                           RAB-Info,
    rb-InformationList                 RB-InformationList              OPTIONAL
}

RAB-InformationList ::=            SEQUENCE (SIZE (1..maxRABcount)) OF
                                   RAB-Information

RB-Information ::=                 SEQUENCE {
    rb-Identity                        RB-Identity,
    rlc-Info                           RLC-Info,
    pdcp-Info                          PDCP-InfoReconfig               OPTIONAL,
    rb-MappingInfo                     RB-MappingInfo
}

RB-InformationList ::=             SEQUENCE (SIZE (1..maxRBcount)) OF
                                   RB-Information

-- **************************************************
--
-- Source RNC to target RNC
--
-- **************************************************

SourceRNCToTargetRNC ::=           SEQUENCE {
    -- Non-RRC IEs
        stateOfRRC                     StateOfRRC,
        stateOfRRC-Procedure           StateOfRRC-Procedure,
        cipheringStatus                CipheringStatus,
        calculationTimeForCiphering    CalculationTimeForCiphering     OPTIONAL,
        cipheringInfoPerRB-List        CipheringInfoPerRB-List         OPTIONAL,
        integrityProtectionStatus      IntegrityProtectionStatus,
        integrityProtectionFailureCount IntegrityProtectionFailureCount,
        srb-SpecificIntegrityProtInfo  SRB-SpecificIntegrityProtInfoList,
        implementationSpecificParams   ImplementationSpecificParams    OPTIONAL,
    -- User equipment IEs
        u-RNTI                         U-RNTI,
        c-RNTI                         C-RNTI                          OPTIONAL,
        ue-RadioAccessCapability       UE-RadioAccessCapability,
```

```
      -- Other IEs
          interSystemMessage              InterSystemMessage              OPTIONAL,
      -- UTRAN mobility IEs
          ura-Identity                    URA-Identity                    OPTIONAL,
      -- Core network IEs
          cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
          cn-DomainInformationList        CN-DomainInformationList        OPTIONAL,
      -- Measurement IEs
          ongoingMeasRepList              OngoingMeasRepList              OPTIONAL,
      -- Radio bearer IEs
          srb-InformationList             SRB-InformationList,
          rab-InformationList             RAB-InformationList             OPTIONAL,
      -- Transport channel IEs
          ul-DCH-TFCS                     TFCS                            OPTIONAL,
          dl-DCH-TFCS                     TFCS                            OPTIONAL,
          ul-DCH-TFC-Subset               TFC-Subset                      OPTIONAL,
          usch-TFCS                       TFCS                            OPTIONAL,
          dsch-TFCS                       TFCS                            OPTIONAL,
          usch-TFC-Subset                 TFC-Subset                      OPTIONAL,
          ul-TransChInfoList              TransChInfoList                 OPTIONAL,
          dl-TransChInfoList              TransChInfoList                 OPTIONAL,
      -- Measurement report
          measurementReport               MeasurementReport               OPTIONAL
}

-- *************************************************
--
-- Source system to target RNC
--
-- *************************************************

SourceSystemToTargetRNC ::=         CHOICE {
    ueCapabilityInformation             UECapabilityInformation,
    spare                               NULL
}

SRB-InformationList ::=              SEQUENCE (SIZE (3..maxSRBcount)) OF
                                        SRB-InformationSetup

SRB-SpecificIntegrityProtInfo ::=   SEQUENCE {
    ul-HFN                              HyperFrameNumber,
    dl-HFN                              HyperFrameNumber,
    ul-RRC-SequenceNumber              RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber              RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (3..maxSRBcount)) OF
                                        SRB-SpecificIntegrityProtInfo

StateOfRRC ::=                      ENUMERATED {
                                        cell-DCH, cell-FACH,
                                        cell-PCH, ura-PCH }

StateOfRRC-Procedure ::=            ENUMERATED {
                                        awaitNoRRC-Message,
                                        awaitRRC-ConnectionRe-establishmentComplete,
                                        awaitRB-SetupComplete,
                                        awaitRB-ReconfigurationComplete,
                                        awaitTransportCH-ReconfigurationComplete,
                                        awaitPhysicalCH-ReconfigurationComplete,
                                        awaitActiveSetUpdateComplete,
                                        awaitHandoverComplete,
                                        otherStates }

-- *************************************************
--
-- Target system to source RNC
--
-- *************************************************

TargetSystemToSourceRNC ::=         CHOICE {
    radioBearerSetup                    RadioBearerSetup,
    radioBearerReconfiguration          RadioBearerReconfiguration,
    radioBearerRelease                  RadioBearerRelease,
    transportChannelReconfiguration     TransportChannelReconfiguration,
    physicalChannelReconfiguration      PhysicalChannelReconfiguration,
    handoverToUTRANCommand              HandoverToUTRANCommand
}
```

```
TransChInfo ::=                      SEQUENCE {
    transportChannelIdentity         TransportChannelIdentity,
    transportFormatSet               TransportFormatSet
}

TransChInfoList ::=                  SEQUENCE (SIZE (1..maxTrCH)) OF
                                     TransChInfo

END
```

11.3.7   Measurement information elements

```
Measurement-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    CellIdentity
FROM UTRANMobility-IEs

    DRX-CycleLengthCoefficient
FROM UserEquipment-IEs

    RB-Identity
FROM RadioBearer-IEs

    TransportChannelIdentity
FROM TransportChannel-IEs

    FrequencyInfo,
    MaxAllowedUL-TX-Power,
    PrimaryCCPCH-Info,
    PrimaryCCPCH-TX-Power,
    PrimaryCPICH-Info,
    PrimaryCPICH-TX-Power,
    Timeslot
FROM PhysicalChannel-IEs

    BSIC
FROM Other-IEs

    maxAdditionalMeas,
    maxAddRLcount,
    maxBLER,
    maxCCTrCHcount,
    maxCellCount,
    maxCellsForbidden,
    maxDelRLcount,
    maxEventCount,
    maxFreqCount,
    maxInterCells,
    maxInterRAT,
    maxInterSys,
    maxInterSysCells,
    maxIntraCells,
    maxN-BadSAT,
    maxN-SAT,
    maxNoCells,
    maxNonUsedFrequency,
    maxNumFreq,
    maxTraf,
    maxTrCHcount,
    maxTSperCCTrCHcount,
    maxTStoMeasureCount,
    maxUsedRLcount,
    maxUsedUplTScount
FROM Constant-definitions;

AcquisitionSatInfo ::=               SEQUENCE {
    satID                            INTEGER (0..63),
    doppler0thOrder                  INTEGER (-2048..2047),
    extraDopplerInfo                 ExtraDopplerInfo                OPTIONAL,
    codePhase                        INTEGER (0..1022),
    integerCodePhase                 INTEGER (0..19),
    gps-BitNumber                    INTEGER (0..3),
    codePhaseSearchWindow            CodePhaseSearchWindow,
    azimuthAndElevation              AzimuthAndElevation             OPTIONAL
}

AcquisitionSatInfoList ::=           SEQUENCE (SIZE (1..maxN-SAT)) OF
                                         AcquisitionSatInfo

ActiveSetCellReport ::=              ENUMERATED {
                                         includeAll,
                                         excludeAll,
                                         other }
```

```
-- **TODO**, definition to be checked from TS 09.31
AdditionalAssistanceData ::=         SEQUENCE {
}

AdditionalMeasurementID-List ::=     SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                         MeasurementIdentityNumber

AlmanacSatInfo ::=                   SEQUENCE {
    satID                               INTEGER (0..63),
    deltaI                              BIT STRING (SIZE (16)),
    e                                   BIT STRING (SIZE (16)),
    m0                                  BIT STRING (SIZE (24)),
    a-Sqrt                              BIT STRING (SIZE (24)),
    omega0                              BIT STRING (SIZE (24)),
    omegaDot                            BIT STRING (SIZE (16)),
    omega                               BIT STRING (SIZE (24)),
    af0                                 BIT STRING (SIZE (11)),
    af1                                 BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::=               SEQUENCE (SIZE (1..maxN-SAT)) OF
                                         AlmanacSatInfo

AverageRLC-BufferPayload ::=         ENUMERATED {
                                         pla0, pla4, pla8, pla16, pla32,
                                         pla64, pla128, pla256, pla512,
                                         pla1024, pla2k, pla4k, pla8k, pla16k }

AzimuthAndElevation ::=              SEQUENCE {
    azimuth                             INTEGER (0..31),
    elevation                           INTEGER (0..7)
}

BadSatList ::=                       SEQUENCE (SIZE (1..maxN-BadSAT)) OF
                                         INTEGER (0..63)

BCCH-ARFCN ::=                       INTEGER (0..1023)

BLER-MeasurementResults ::=          SEQUENCE {
    transportChannelIdentity            TransportChannelIdentity,
    dl-TransportChannelBLER             DL-TransportChannelBLER         OPTIONAL
}

BLER-MeasurementResultsList ::=      SEQUENCE (SIZE(1..maxBLER)) OF
                                         BLER-MeasurementResults

BLER-TransChIdList ::=               SEQUENCE (SIZE (1..maxBLER)) OF
                                         TransportChannelIdentity

-- IE value 0 = true value -0.05, IE value 16 = true value -0.003125,
-- IE value 17 = true value 0.003125, IE value 32 = true value 0.05
BTS-ClockDrift ::=                   INTEGER (0..31)

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

CCTrCH-Timeslot ::=                  SEQUENCE {
    iscp                                DL-TimeslotISCP                 OPTIONAL,
    rscp                                RSCP                           OPTIONAL
}

CCTrCH-TimeslotList ::=              SEQUENCE (SIZE(1..maxTSperCCTrCHcount)) OF
                                         CCTrCH-Timeslot

CellDCH-ReportCriteria ::=           CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria
}

-- Actual value = IE value * 0.5
CellIndividualOffset ::=             INTEGER (-20..20)

CellInfo ::=                         SEQUENCE {
    cellIndividualOffset                CellIndividualOffset           DEFAULT 1,
```

```
        referenceTimeDifferenceToCell      ReferenceTimeDifferenceToCell      OPTIONAL,
        modeSpecificInfo                   CHOICE {
            fdd                                SEQUENCE {
                primaryCPICH-Info                  PrimaryCPICH-Info          OPTIONAL,
                primaryCPICH-TX-Power              PrimaryCPICH-TX-Power      OPTIONAL,
                readSFN-Indicator                  BOOLEAN,
                tx-DiversityIndicator              BOOLEAN
            },
            tdd                                SEQUENCE {
                primaryCCPCH-Info                  PrimaryCCPCH-Info,
                primaryCCPCH-TX-Power              PrimaryCCPCH-TX-Power,
                dl-CCTrCH-Info                     DL-CCTrCH-Info             OPTIONAL,
                dl-TimeslotInfo                    DL-TimeslotInfo            OPTIONAL
            }
        }
}

CellInfoSI ::=                     SEQUENCE {
    cellIndividualOffset               CellIndividualOffset                   DEFAULT 1,
    referenceTimeDifferenceToCell      ReferenceTimeDifferenceToCell          OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            primaryCPICH-Info                  PrimaryCPICH-Info              OPTIONAL,
            primaryCPICH-TX-Power              PrimaryCPICH-TX-Power          OPTIONAL,
            readSFN-Indicator                  BOOLEAN,
            tx-DiversityIndicator              BOOLEAN
        },
        tdd                                SEQUENCE {
            primaryCCPCH-Info                  PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power              PrimaryCCPCH-TX-Power,
            dl-CCTrCH-Info                     DL-CCTrCH-Info                 OPTIONAL,
            dl-TimeslotInfo                    DL-TimeslotInfo                OPTIONAL
        }
    },
    cellSelectionReselectionInfo       CellSelectionReselectionInfo,
    signallingOption                   SignallingOption
}

CellMeasuredResults ::=            SEQUENCE {
    cellIdentity                       CellIdentity                           OPTIONAL,
    sfn-SFN-ObsTimeDifference          SFN-SFN-ObsTimeDifference              OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            primaryCPICH-Info                  PrimaryCPICH-Info,
            cpich-Ec-N0                        CPICH-Ec-N0                    OPTIONAL,
            cpich-RSCP                         CPICH-RSCP                     OPTIONAL,
            cpich-SIR                          CPICH-SIR                      OPTIONAL,
            pathloss                           Pathloss                       OPTIONAL,
            cfn-SFN-ObsTimeDifference          CFN-SFN-ObsTimeDifference      OPTIONAL
        },
        tdd                                SEQUENCE {
            primaryCCPCH-Info                  PrimaryCCPCH-Info,
            dl-CCTrCH-SIR-List                 DL-CCTrCH-SIR-List             OPTIONAL,
            dl-TimeslotISCP-List               DL-TimeslotISCP-List           OPTIONAL
        }
    }
}

CellMeasurementEventResults ::=    CHOICE {
    fdd                                SEQUENCE (SIZE (1..maxCellCount)) OF
                                           PrimaryCPICH-Info,
    tdd                                SEQUENCE (SIZE (1..maxCellCount)) OF
                                           PrimaryCCPCH-Info
}

CellPosition ::=                   SEQUENCE {
    relativeNorth                      INTEGER (-32767..32767),
    relativeEast                       INTEGER (-32767..32767),
    relativeAltitude                   INTEGER (-4095..4095)
}

CellReportingQuantities ::=        SEQUENCE {
    sfn-SFN-OTD-Type                   SFN-SFN-OTD-Type,
    cellIdentity                       CellIdentity,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            cpich-Ec-N0                        BOOLEAN,
            cpich-RSCP                         BOOLEAN,
```

```
            cpich-SIR                        BOOLEAN,
            pathloss                         BOOLEAN,
            cfn-SFN-ObsTimeDifference        BOOLEAN
        },
        tdd                              SEQUENCE {
            dl-CCTrCH-SIR                    BOOLEAN,
            timeslotISCP                     BOOLEAN,
            primaryCCPCH-RSCP                BOOLEAN,
            pathloss                         BOOLEAN
        }
    }
}

CellSelectionReselectionInfo ::=    SEQUENCE {
    modeSpecificInfo                 CHOICE {
        fdd                             Qmin-FDD,
        tdd                             Qmin-TDD
    }                                                            OPTIONAL,
    maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power        OPTIONAL,
    signallingOption                SignallingOption
}

CellToMeasure ::=                   SEQUENCE {
    sfn-sfn-Drift                    INTEGER (0..30)             OPTIONAL,
    primaryCPICH-Info                PrimaryCPICH-Info,
    frequencyInfo                    FrequencyInfo               OPTIONAL,
    sfn-SFN-ObservedTimeDifference   SFN-SFN-ObsTimeDifference1,
    fineSFN-SFN                      FineSFN-SFN,
    cellPosition                     CellPosition                OPTIONAL
}

CellToMeasureInfoList ::=           SEQUENCE (SIZE (1..maxNoCells)) OF
                                        CellToMeasure

CellToReport ::=                    SEQUENCE {
    frequency                        Frequency,
    bsic                             BSIC
}

CellToReportList ::=                SEQUENCE (SIZE (1..maxCellCount)) OF
                                        CellToReport

CFN-SFN-ObsTimeDifference ::=       INTEGER (0..9830399157286399)

CodePhaseSearchWindow ::=           ENUMERATED {
                                        w1023, w1, w2, w3, w4, w6, w8,
                                        w12, w16, w24, w32, w48, w64,
                                        w96, w128, w192 }

CompressedNavModel ::=              SEQUENCE {
    iode                             BIT STRING (SIZE (4)),
    t-oe                             BIT STRING (SIZE (7)),
    c-rc                             BIT STRING (SIZE (12)),
    c-rs                             BIT STRING (SIZE (12)),
    c-ic                             BIT STRING (SIZE (9)),
    c-is                             BIT STRING (SIZE (9)),
    c-uc                             BIT STRING (SIZE (11)),
    c-us                             BIT STRING (SIZE (11)),
    e                                BIT STRING (SIZE (16)),
    m0                               BIT STRING (SIZE (22)),
    a-Sqrt                           BIT STRING (SIZE (13)),
    delta-n                          BIT STRING (SIZE (11)),
    omega0                           BIT STRING (SIZE (14)),
    omegaDot                         BIT STRING (SIZE (12)),
    i0                               BIT STRING (SIZE (15)),
    iDot                             BIT STRING (SIZE (11)),
    omega                            BIT STRING (SIZE (21)),
    t-oc                             BIT STRING (SIZE (7)),
    af0                              BIT STRING (SIZE (7)),
    af1                              BIT STRING (SIZE (3)),
    af2                              BIT STRING (SIZE (1))
}

CPICH-Ec-N0 ::=                     INTEGER (-20..0)

-- IE value 0 = <-24 dB, 1 = between -24 and -23 and so on
CPICH-Ec-N0-OTDOA ::=               INTEGER (0..26)
```

```
CPICH-RSCP ::=                      INTEGER (-115..-40)

CPICH-SIR ::=                       INTEGER (-10..20)

DGPS-CorrectionSatInfo ::=          SEQUENCE {
    satID                           INTEGER (0..63),
    iode                            BIT STRING (SIZE (8)),
    udre                            UDRE,
    prc                             INTEGER (-2048..2048),
    rrc                             INTEGER (-125..125),
    deltaPRC2                       INTEGER (-127..127),
    deltaRRC2                       INTEGER (-7..7),
    deltaPRC3                       INTEGER (-127..127),
    deltaRRC3                       INTEGER (-7..7)
}

DGPS-CorrectionSatInfoList ::=      SEQUENCE (SIZE (1..maxN-SAT)) OF
                                        DGPS-CorrectionSatInfo

DGPS-Information ::=                 SEQUENCE {
    satID                           SatID,
    iode                            IODE,
    udre                            UDRE,
    scaleFactor                     ScaleFactor,
    prc                             PRC,
    rrc                             RRC
}

DGPS-InformationList ::=            SEQUENCE (SIZE (1..maxN-SAT)) OF
                                        DGPS-Information

DiffCorrectionStatus ::=            ENUMERATED {
                                        udre-1-0, udre-0-75, udre-0-5, udre-0-3,
                                        udre-0-2, udre-0-1, noData, invalidData }

-- **TODO**, not defined yet
DL-CCTrCH-Info ::=                  SEQUENCE {
}

DL-CCTrCH-SIR ::=                   SEQUENCE {
    ccTrCH-TimeslotList             CCTrCH-TimeslotList
}

DL-CCTrCH-SIR-List ::=             SEQUENCE (SIZE(1..maxCCTrCHcount)) OF
                                        DL-CCTrCH-SIR

-- Actual value = IE value * 0.02
DL-PhysicalChannelBER ::=           INTEGER (0..255)

-- **TODO**, not defined yet
DL-TimeslotInfo ::=                 SEQUENCE {
}

-- **TODO**, not defined yet
DL-TimeslotISCP ::=                 SEQUENCE {
}

DL-TimeslotISCP-List ::=           SEQUENCE (SIZE(1..maxTStoMeasureCount)) OF
                                        DL-TimeslotISCP

-- Actual value = IE value * 0.02
DL-TransportChannelBLER ::=         INTEGER (0..255)

DopplerUncertainty ::=              ENUMERATED {
                                        hz12-5, hz25, hz50, hz100, hz200 }

EnvironmentCharacterization ::=     ENUMERATED {
                                        possibleHeavyMultipathNLOS,
                                        lightMultipathLOS,
                                        notDefined }

Event1a ::=                         SEQUENCE {
    triggeringCondition             TriggeringCondition,
    reportingRange                  ReportingRange,
    forbiddenAffectCellList         ForbiddenAffectCellList,
    w                               W,
    hysteresis                      Hysteresis                          OPTIONAL,
    reportDeactivationThreshold     ReportDeactivationThreshold
```

3GPP

```
}

Event1b ::=                         SEQUENCE {
    triggeringCondition             TriggeringCondition,
    reportingRange                  ReportingRange,
    forbiddenAffectCellList         ForbiddenAffectCellList,
    w                               W,
    hysteresis                      Hysteresis                 OPTIONAL
}

Event1c ::=                         SEQUENCE {
    hysteresis                      Hysteresis                 OPTIONAL,
    replacementActivationThreshold  ReplacementActivationThreshold
}

Event2a ::=                         SEQUENCE {
    usedFreqThreshold               Threshold,
    usedFreqW                       W,
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval,
    nonUsedFreqParameterList        NonUsedFreqParameterList   OPTIONAL
}

Event2b ::=                         SEQUENCE {
    usedFreqThreshold               Threshold,
    usedFreqW                       W,
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval,
    nonUsedFreqParameterList        NonUsedFreqParameterList   OPTIONAL
}

Event2c ::=                         SEQUENCE {
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval,
    nonUsedFreqParameterList        NonUsedFreqParameterList   OPTIONAL
}

Event2d ::=                         SEQUENCE {
    usedFreqThreshold               Threshold,
    usedFreqW                       W,
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event2e ::=                         SEQUENCE {
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval,
    nonUsedFreqParameterList        NonUsedFreqParameterList   OPTIONAL
}

Event2f ::=                         SEQUENCE {
    usedFreqThreshold               Threshold,
    usedFreqW                       W,
    hysteresis                      HysteresisInterFreq,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3a ::=                         SEQUENCE {
    thresholdOwnSystem              Threshold,
    w                               W,
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}
```

```
Event3b ::=                     SEQUENCE {
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3c ::=                     SEQUENCE {
    thresholdOtherSystem            Threshold,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

Event3d ::=                     SEQUENCE {
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

EventIDInterFreq ::=            ENUMERATED {
                                    e2a, e2b, e2c, e2d, e2e, e2f }

EventIDInterSystem ::=          ENUMERATED {
                                    e3a, e3b, e3c, e3d }

EventIDIntraFreq ::=            ENUMERATED {
                                    e1a, e1b, e1c, e1d, e1e,
                                    e1f, e1g, e1h, e1i, e1j }

EventIDTrafficVolume ::=        ENUMERATED {
                                    e4a, e4b }

EventResults ::=                CHOICE {
    intraFreqEventResults           IntraFreqEventResults,
    interFreqEventResults           InterFreqEventResults,
    interSystemEventResults         InterSystemEventResults,
    trafficVolumeEventResults       TrafficVolumeEventResults,
    qualityEventResults             QualityEventResults,
    ue-InternalEventResults         UE-InternalEventResults,
    lcs-MeasurementEventResults     LCS-MeasurementEventResults
}

ExtraDopplerInfo ::=            SEQUENCE {
    doppler1stOrder                 INTEGER (-42..21),
    dopplerUncertainty              DopplerUncertainty
}

FACH-MeasurementOccasionInfo ::=  SEQUENCE {
    k-UTRA                          DRX-CycleLengthCoefficient,
    otherRAT-InSysInfoList          OtherRAT-InSysInfoList
}

FilterCoefficient ::=           ENUMERATED {
                                    fc1, fc2, fc3, fc4, fc6, fc8,
                                    fc12, fc16, fc24, fc32, fc64,
                                    fc128, fc256, fc512, fc1024,
                                    spare1 }

FineSFN-SFN ::=                 ENUMERATED {
                                    fs0, fs0-25, fs0-5, fs0-75 }

ForbiddenAffectCell ::=         SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            primaryCPICH-Info               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            primaryCCPCH-Info               PrimaryCCPCH-Info
        }
    }
}

ForbiddenAffectCellList ::=     SEQUENCE (SIZE(1..maxCellsForbidden)) OF
```

```
                                      ForbiddenAffectCell

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
                                      cpich-Ec-N0,
                                      cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
                                      primaryCCPCH-RSCP }

-- **TODO**, not defined yet
Frequency ::=                     SEQUENCE {
}

GPS-MeasurementParam ::=          SEQUENCE {
    satelliteID                       INTEGER (0..63),
    c-N0                              INTEGER (0..63),
    doppler                           INTEGER (-32768..32768),
    wholeGPS-Chips                    INTEGER (0..1023),
    fractionalGPS-Chips               INTEGER (0..1023),
    multipathIndicator                MultipathIndicator,
    pseudorangeRMS-Error              INTEGER (0..63)
}

GPS-MeasurementParamList ::=      SEQUENCE (SIZE (1..maxN-SAT)) OF
                                      GPS-MeasurementParam

GPS-TOW-1msec ::=                 INTEGER (0..604700000)

GPS-TOW-Assist ::=                SEQUENCE {
    satID                             INTEGER (0..63),
    tlm-Message                       BIT STRING (SIZE (14)),
    antiSpoof                         BOOLEAN,
    alert                             BOOLEAN,
    tlm-Reserved                      BIT STRING (SIZE (2))
}

GPS-TOW-AssistList ::=            SEQUENCE (SIZE (1..maxN-SAT)) OF
                                      GPS-TOW-Assist

GPS-TOW-HighResolution ::=        INTEGER (0..999)

GSM-CarrierRSSI ::=               BIT STRING (SIZE (6))

-- **TODO**, not defined yet
GSM-OutputPower ::=               SEQUENCE {
}

HCS-CellReselectInformation ::=   SEQUENCE {
    penaltyTime                       PenaltyTime
}

HCS-NeighbouringCellInformation ::= SEQUENCE {
    hcs-PRIO                             HCS-PRIO                            OPTIONAL,
    q-HCS                                Q-HCS                              OPTIONAL,
    hcs-CellReselectInformation         HCS-CellReselectInformation        OPTIONAL
}

HCS-PRIO ::=                      INTEGER (0..7)

-- Actual value = IE value * 0.5
Hysteresis ::=                    INTEGER (0..15)

-- Actual value = IE value * 0.5
HysteresisInterFreq ::=           INTEGER (0..29)

InterFreqCell ::=                 SEQUENCE {
    frequencyInfo                     FrequencyInfo,
    nonFreqRelatedEventResults        CellMeasurementEventResults
}

InterFreqCellID ::=               INTEGER (0..maxInterCells)

InterFreqCellInfoList ::=         SEQUENCE {
    removedInterFreqCellList          RemovedInterFreqCellList             OPTIONAL,
    newInterFreqCellList              NewInterFreqCellList                 OPTIONAL
}

InterFreqCellInfoSI-List ::=      SEQUENCE {
```

```
    removedInterFreqCellList            RemovedInterFreqCellList              OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List               OPTIONAL
}

InterFreqCellList ::=                   SEQUENCE (SIZE (1..maxFreqCount)) OF
                                            InterFreqCell

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxInterCells)) OF
                                            CellMeasuredResults

InterFreqEvent ::=                      CHOICE {
    event2a                                 Event2a,
    event2b                                 Event2b,
    event2c                                 Event2c,
    event2d                                 Event2d,
    event2e                                 Event2e,
    event2f                                 Event2f
}

InterFreqEventList ::=                  SEQUENCE (SIZE(1..maxEventCount)) OF
                                            InterFreqEvent

InterFreqEventResults ::=               SEQUENCE {
    eventID                                 EventIDInterFreq,
    interFreqCellList                       InterFreqCellList
}

InterFreqMeasQuantity ::=               SEQUENCE {
    reportingCriteria                       CHOICE {
        intraFreqReportingCriteria              SEQUENCE {
            intraFreqMeasQuantity                   IntraFreqMeasQuantity,
        },
        interFreqReportingCriteria              SEQUENCE {
            filterCoefficient                       FilterCoefficient,
            modeSpecificInfo                        CHOICE {
                fdd                                     SEQUENCE {
                    freqQualityEstimateQuantity-FDD     FreqQualityEstimateQuantity-FDD
                },
                tdd                                     SEQUENCE {
                    freqQualityEstimateQuantity-TDD     FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::=            SEQUENCE {
    frequencyInfo                           FrequencyInfo                         OPTIONAL,
    utra-CarrierRSSI                        UTRA-CarrierRSSI                      OPTIONAL,
    interFreqCellMeasuredResultsList        InterFreqCellMeasuredResultsList      OPTIONAL
}

InterFreqMeasuredResultsList ::=        SEQUENCE (SIZE (1..maxNumFreq)) OF
                                            InterFreqMeasuredResults

InterFreqMeasurementSysInfo ::=         SEQUENCE {
    interFreqMeasurementID                  MeasurementIdentityNumber             OPTIONAL,
    interFreqCellInfoSI-List                InterFreqCellInfoSI-List              OPTIONAL,
    interFreqMeasQuantity                   InterFreqMeasQuantity                 OPTIONAL
}

InterFreqReportCriteria ::=             CHOICE {
    intraFreqReportingCriteria              IntraFreqReportingCriteria,
    interFreqReportingCriteria              InterFreqReportingCriteria,
    periodicalReportingCriteria             PeriodicalReportingCriteria,
    noReporting                             NULL
}

InterFreqReportingCriteria ::=          SEQUENCE {
    interFreqEventList                      InterFreqEventList                    OPTIONAL
}

InterFreqReportingQuantity ::=          SEQUENCE {
    utra-Carrier-RSSI                       BOOLEAN,
    frequencyQualityEstimate                BOOLEAN,
    nonFreqRelatedQuantities                CellReportingQuantities
}
```

```
InterFreqSetUpdate ::=              SEQUENCE {
    ue-AutonomousUpdateMode              UE-AutonomousUpdateMode
}

InterFrequencyMeasurement ::=       SEQUENCE {
    interFreqCellInfoList                InterFreqCellInfoList,
    interFreqMeasQuantity                InterFreqMeasQuantity            OPTIONAL,
    interFreqReportingQuantity           InterFreqReportingQuantity      OPTIONAL,
    reportingCellStatus                  ReportingCellStatus             OPTIONAL,
    measurementValidity                  MeasurementValidity             OPTIONAL,
    interFreqSetUpdate                   InterFreqSetUpdate              OPTIONAL,
    reportCriteria                       InterFreqReportCriteria
}

InterSystemCellID ::=               INTEGER (0..maxInterSysCells)

InterSystemCellInfoList ::=         SEQUENCE {
    removedInterSystemCellList           RemovedInterSystemCellList,
    newInterSystemCellList               NewInterSystemCellList
}

InterSystemEvent ::=                CHOICE {
    event3a                              Event3a,
    event3b                              Event3b,
    event3c                              Event3c,
    event3d                              Event3d
}

InterSystemEventList ::=            SEQUENCE (SIZE(1..maxEventCount)) OF
                                    InterSystemEvent

InterSystemEventResults ::=         SEQUENCE {
    eventID                              EventIDInterSystem,
    cellToReportList                     CellToReportList
}

InterSystemInfo ::=                 ENUMERATED {
                                    gsm, spare1 }

InterSystemMeasQuantity ::=         SEQUENCE {
    measQuantityUTRAN-QualityEstimate    IntraFreqMeasQuantity,
    systemSpecificInfo                   CHOICE {
        gsm                                  SEQUENCE {
            measurementQuantity                  MeasurementQuantityGSM,
            filterCoefficient                    FilterCoefficient,
            bsic-VerificationRequired            BOOLEAN
        },
        is-2000                              SEQUENCE {
            tadd-EcIo                            INTEGER (0..63),
            tcomp-EcIo                           INTEGER (0..15),
            softSlope                            INTEGER (0..63)         OPTIONAL,
            addIntercept                         INTEGER (0..63)         OPTIONAL
        }
    }
}

InterSystemMeasuredResults ::=      CHOICE {
    gsm                                  SEQUENCE {
        frequency                            Frequency,
        gsm-CarrierRSSI                      GSM-CarrierRSSI                 OPTIONAL,
        pathloss                             Pathloss                       OPTIONAL,
        bsic                                 BSIC                           OPTIONAL,
        observedTimeDifferenceToGSM          ObservedTimeDifferenceToGSM    OPTIONAL
    },
    other                               NULL
}

InterSystemMeasuredResultsList ::= SEQUENCE (SIZE (1..maxInterSys)) OF
                                    InterSystemMeasuredResults

InterSystemMeasurement ::=          SEQUENCE {
    interSystemCellInfoList              InterSystemCellInfoList            OPTIONAL,
    interSystemMeasQuantity              InterSystemMeasQuantity            OPTIONAL,
    interSystemReportingQuantity         InterSystemReportingQuantity       OPTIONAL,
    reportingCellStatus                  ReportingCellStatus                OPTIONAL,
    reportCriteria                       InterSystemReportCriteria
}
```

```
InterSystemMeasurementSysInfo ::=   SEQUENCE {
    interSystemMeasurementID        MeasurementIdentityNumber       OPTIONAL,
    interSystemCellInfoList         InterSystemCellInfoList         OPTIONAL,
    interSystemMeasQuantity         InterSystemMeasQuantity         OPTIONAL
}

InterSystemReportCriteria ::=       CHOICE {
    interSystemReportingCriteria    InterSystemReportingCriteria,
    periodicalReportingCriteria     PeriodicalReportingCriteria,
    noReporting                     NULL
}

InterSystemReportingCriteria ::=    SEQUENCE {
    interSystemEventList            InterSystemEventList            OPTIONAL
}

InterSystemReportingQuantity ::=    SEQUENCE {
    utran-EstimatedQuality          BOOLEAN,
    systemSpecificInfo              CHOICE {
        gsm                             SEQUENCE {
            pathloss                        BOOLEAN,
            observedTimeDifferenceGSM       BOOLEAN,
            gsm-Carrier-RSSI                BOOLEAN,
            bsic                            BOOLEAN
        },
        spare1                          SEQUENCE {}
    }
}

IntraFreqCellID ::=                 INTEGER (0..maxIntraCells)

IntraFreqCellInfoList ::=           SEQUENCE {
    removedIntraFreqCellList         RemovedIntraFreqCellList       OPTIONAL,
    newIntraFreqCellList             NewIntraFreqCellList           OPTIONAL
}

IntraFreqCellInfoSI ::=             SEQUENCE {
    cellInfo                         CellInfoSI
}

IntraFreqCellInfoSI-List ::=        SEQUENCE {
    removedIntraFreqCellList         RemovedIntraFreqCellList       OPTIONAL,
    newIntraFreqCellList             NewIntraFreqCellSI-List        OPTIONAL
}

IntraFreqEvent ::=                  CHOICE {
    e1a                             Event1a,
    e1b                             Event1b,
    e1c                             Event1c,
    e1d                             Hysteresis,
    e1e                             TriggeringCondition,
    e1f                             TriggeringCondition,
    e1g                             Hysteresis,
    e1h                             Hysteresis,
    e1i                             Hysteresis,
    e1j                             Hysteresis
}

IntraFreqEventCriteria ::=          SEQUENCE {
    event                           IntraFreqEvent,
    timeToTrigger                   TimeToTrigger,
    reportingAmount                 ReportingAmount,
    reportingInterval               ReportingInterval
}

IntraFreqEventCriteriaList ::=      SEQUENCE (SIZE(1..maxEventCount)) OF
                                    IntraFreqEventCriteria

IntraFreqEventResults ::=           SEQUENCE {
    eventID                         EventIDIntraFreq,
    cellMeasurementEventResults     CellMeasurementEventResults
}

IntraFreqMeasQuantity ::=           SEQUENCE {
    filterCoefficient               FilterCoefficient,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            intraFreqMeasQuantity-FDD       IntraFreqMeasQuantity-FDD
```

```
    },
    tdd                              SEQUENCE {
        intraFreqMeasQuantity-TDD        IntraFreqMeasQuantity-TDD
    }
  }
}

IntraFreqMeasQuantity-FDD ::=        ENUMERATED {
                                    cpich-Ec-NO,
                                    cpich-RSCP,
                                    cpich-SIR,
                                    pathloss,
                                    utra-CarrierRSSI }

IntraFreqMeasQuantity-TDD ::=        ENUMERATED {
                                    primaryCCPCH-RSCP,
                                    pathloss,
                                    timeslotISCP,
                                    utra-CarrierRSSI }

IntraFreqMeasuredResults ::=        SEQUENCE {
    cellMeasuredResults                 CellMeasuredResults
}

IntraFreqMeasuredResultsList ::=    SEQUENCE (SIZE (1..maxIntraCells)) OF
                                    IntraFreqMeasuredResults

IntraFreqMeasurementSysInfo ::=     SEQUENCE {
    intraFreqMeasurementID              MeasurementIdentityNumber       OPTIONAL,
    intraFreqCellInfoSI-List            IntraFreqCellInfoSI-List        OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity           OPTIONAL,
    intraFreqReportingQuantityForRACH   IntraFreqReportingQuantityForRACH   OPTIONAL,
    maxReportedCellsOnRACH              MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH             ReportingInfoForCellDCH         OPTIONAL
}

IntraFreqReportCriteria ::=         CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

IntraFreqReportingCriteria ::=      SEQUENCE {
    eventCriteriaList                   IntraFreqEventCriteriaList
}

IntraFreqReportingQuantity ::=      SEQUENCE {
    activeSetReportingQuantities        CellReportingQuantities,
    monitoredSetReportingQuantities     CellReportingQuantities,
    unlistedSetReportingQuantities      CellReportingQuantities         OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-ObsTimeDifference           SFN-SFN-ObsTimeDifference,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            intraFreqRepQuantityRACH-FDD        IntraFreqRepQuantityRACH-FDD
        },
        tdd                                 SEQUENCE {
            intraFreqRepQuantityRACH-TDD        IntraFreqRepQuantityRACH-TDD
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::=    ENUMERATED {
                                    cpich-EcN0, cpich-RSCP,
                                    cpich-SIR, pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::=    ENUMERATED {
                                    timeslotISCP,
                                    primaryCCPCH-RSCP,
                                    noReport }

IntraFrequencyMeasurement ::=       SEQUENCE {
    intraFreqCellInfoList               IntraFreqCellInfoList           OPTIONAL,
    intraFreqMeasQuantity               IntraFreqMeasQuantity           OPTIONAL,
    intraFreqReportingQuantity          IntraFreqReportingQuantity      OPTIONAL,
    reportingCellStatus                 ReportingCellStatus             OPTIONAL,
```

```
    measurementValidity              MeasurementValidity                  OPTIONAL,
    reportCriteria                   IntraFreqReportCriteria
}

IODD ::=                            INTEGER (0..255)

IODE ::=                            INTEGER (0..255)

IP-Length ::=                       ENUMERATED {
                                        ipl5, ipl10 }

IP-Spacing ::=                      ENUMERATED {
                                        e5, e7, e10, e15, e20,
                                        e30, e40, e50 }

IS-2000SpecificMeasInfo ::=         ENUMERATED {
                                        frequency, timeslot, colourcode,
                                        outputpower, pn-Offset }

K-InterRAT ::=                      INTEGER (0..12)

LCS-Accuracy ::=                    BIT STRING (SIZE (7))

LCS-CipherParameters ::=            SEQUENCE {
    cipheringKeyFlag                    BIT STRING (SIZE (1)),
    cipheringSerialNumber               INTEGER (0..65535)
}

LCS-Error ::=                       SEQUENCE {
    errorReason                         LCS-ErrorCause,
    additionalAssistanceData            AdditionalAssistanceData
    -- The IE above is defined in GSM 09.31, the actual definition
    -- will have to be checked
}

LCS-ErrorCause ::=                  ENUMERATED {
                                        notEnoughOTDOA-Cells,
                                        notEnoughGPS-Satellites,
                                        assistanceDataMissing,
                                        methodNotSupported,
                                        undefinedError,
                                        requestDeniedByUser,
                                        notProcessedAndTimeout }

LCS-EventID ::=                     ENUMERATED {
                                        e7a, e7b, e7c }

LCS-EventParam ::=                  SEQUENCE {
    eventID                             LCS-EventID,
    reportingAmount                     ReportingAmount,
    reportFirstFix                      BOOLEAN,
    measurementInterval                 LCS-MeasurementInterval,
    eventSpecificInfo                   LCS-EventSpecificInfo
}

LCS-EventParamList ::=              SEQUENCE (SIZE (1..maxEventCount)) OF
                                        LCS-EventParam

LCS-EventSpecificInfo ::=           CHOICE {
    e7a                                 ThresholdPositionChange,
    e7b                                 ThresholdSFN-SFN-Change,
    e7c                                 ThresholdSFN-GPS-TOW
}

LCS-GPS-AcquisitionAssistance ::=   SEQUENCE {
    referenceTime                       CHOICE {
        utran-ReferenceTime                 UTRAN-ReferenceTime,
        gps-ReferenceTimeOnly               INTEGER (0..604700000)
    },
    satelliteInformationList            AcquisitionSatInfoList
}

LCS-GPS-Almanac ::=                 SEQUENCE {
    almanacSatInfoList                  AlmanacSatInfoList
}

LCS-GPS-AssistanceSIB ::=           SEQUENCE {
    lcs-CipherParameters                LCS-CipherParameters              OPTIONAL,
```

```
    referenceGPS-TOW                    ReferenceGPS-TOW,
    status                             DiffCorrectionStatus,
    btsClockDrift                      BTS-ClockDrift                    OPTIONAL,
    timeOffset                         LCS-TimeOffset                    OPTIONAL,
    iodd                               IODD                             OPTIONAL,
    dgps-InformationList               DGPS-InformationList             OPTIONAL
}

LCS-GPS-AssistanceData ::=          SEQUENCE {
    lcs-GPS-ReferenceTime              LCS-GPS-ReferenceTime            OPTIONAL,
    lcs-GPS-ReferenceLocation          LCS-GPS-ReferenceLocation        OPTIONAL,
    lcs-GPS-DGPS-Corrections           LCS-GPS-DGPS-Corrections         OPTIONAL,
    lcs-GPS-NavigationModel            LCS-GPS-NavigationModel          OPTIONAL,
    lcs-GPS-IonosphericModel           LCS-GPS-IonosphericModel         OPTIONAL,
    lcs-GPS-UTC-Model                  LCS-GPS-UTC-Model                OPTIONAL,
    lcs-GPS-Almanac                    LCS-GPS-Almanac                  OPTIONAL,
    lcs-GPS-AcquisitionAssistance      LCS-GPS-AcquisitionAssistance    OPTIONAL,
    lcs-GPS-Real-timeIntegrity         LCS-GPS-Real-timeIntegrity       OPTIONAL
}

LCS-GPS-DGPS-Corrections ::=        SEQUENCE {
    gps-TOW                            INTEGER (0..604799),
    statusHealth                       DiffCorrectionStatus,
    dgps-CorrectionSatInfoList         DGPS-CorrectionSatInfoList
}

LCS-GPS-IonosphericModel ::=        SEQUENCE {
    alfa0                              BIT STRING (SIZE (8)),
    alfa1                              BIT STRING (SIZE (8)),
    alfa2                              BIT STRING (SIZE (8)),
    alfa3                              BIT STRING (SIZE (8)),
    beta0                              BIT STRING (SIZE (8)),
    beta1                              BIT STRING (SIZE (8)),
    beta2                              BIT STRING (SIZE (8)),
    beta3                              BIT STRING (SIZE (8))
}

LCS-GPS-Measurement ::=             SEQUENCE {
    referenceSFN                       ReferenceSFN                     OPTIONAL,
    gps-TOW-1msec                      GPS-TOW-1msec,
    gps-TOW-HighResolution             GPS-TOW-HighResolution           OPTIONAL,
    gps-MeasurementParamList           GPS-MeasurementParamList
}

LCS-GPS-NavigationModel ::=         SEQUENCE {
    n-SAT                              INTEGER (1..16),
    navigationModelSatInfoList         NavigationModelSatInfoList
}

-- **TODO**, definition in 23.032
LCS-GPS-ReferenceLocation ::=       SEQUENCE {
}

LCS-GPS-Real-timeIntegrity ::=      SEQUENCE {
    badSatList                         BadSatList
}

LCS-GPS-ReferenceTime ::=           SEQUENCE {
    gps-Week                           INTEGER (0..1023),
    gps-TOW                            INTEGER (0..604700000000),
    sfn                                INTEGER (0..4095),
    gps-TOW-AssistList                 GPS-TOW-AssistList               OPTIONAL
}

LCS-GPS-UTC-Model ::=               SEQUENCE {
    a0                                 BIT STRING (SIZE (32)),
    a1                                 BIT STRING (SIZE (24)),
    delta-t-LS                         BIT STRING (SIZE (8)),
    t-ot                               BIT STRING (SIZE (8)),
    wn-t                               BIT STRING (SIZE (8)),
    wn-lsf                             BIT STRING (SIZE (8)),
    dn                                 BIT STRING (SIZE (8)),
    delta-t-LSF                        BIT STRING (SIZE (8))
}

LCS-IPDL-Parameters ::=             SEQUENCE {
    ip-Spacing                         IP-Spacing,
    ip-Length                          IP-Length,
```

```
    ip-Offset                       INTEGER (0..9),
    seed                            INTEGER (0..63),
    burstModeParameters             BurstModeParameters
}

LCS-MeasuredResults ::=             SEQUENCE {
    lcs-MultipleSets                LCS-MultipleSets                    OPTIONAL,
    lcs-ReferenceCellIdentity       PrimaryCPICH-Info                   OPTIONAL,
    lcs-OTDOA-Measurement           LCS-OTDOA-Measurement               OPTIONAL,
    lcs-Position                    LCS-Position                        OPTIONAL,
    lcs-GPS-Measurement             LCS-GPS-Measurement                 OPTIONAL,
    lcs-Error                       LCS-Error                           OPTIONAL
}

LCS-Measurement ::=                 SEQUENCE {
    lcs-ReportingQuantity           LCS-ReportingQuantity,
    reportCriteria                  LCS-ReportCriteria,
    lcs-OTDOA-AssistanceData        LCS-OTDOA-AssistanceData            OPTIONAL,
    lcs-GPS-AssistanceData          LCS-GPS-AssistanceData              OPTIONAL
}

LCS-MeasurementEventResults ::=     SEQUENCE {
    event7a                         LCS-Position,
    event7b                         LCS-OTDOA-Measurement,
    event7c                         LCS-GPS-Measurement
}

LCS-MeasurementInterval ::=         ENUMERATED {
                                    e5, e15, e60, e300,
                                    e900, e1800, e3600, e7200 }

LCS-MethodType ::=                  ENUMERATED {
                                    ue-Assisted,
                                    ue-Based,
                                    ue-BasedPreferred,
                                    ue-AssistedPreferred }

LCS-MultipleSets ::=                SEQUENCE {
    numberOfOTDOA-IPDL-GPS-Sets     INTEGER (2..3),
    numberOfReferenceCells          INTEGER (1..3),
    referenceCellRelation           ReferenceCellRelation
}

LCS-OTDOA-AssistanceData ::=        SEQUENCE {
    lcs-OTDOA-ReferenceCell                 LCS-OTDOA-ReferenceCell            OPTIONAL,
    lcs-OTDOA-MeasurementAssistDataList LCS-OTDOA-MeasurementAssistDataList OPTIONAL,
    lcs-IPDL-Parameters                     LCS-IPDL-Parameters               OPTIONAL
}

LCS-OTDOA-AssistanceSIB ::=         SEQUENCE {
    lcs-CipherParameters            LCS-CipherParameters                OPTIONAL,
    searchWindowSize                OTDOA-SearchWindowSize,
    referenceCellPosition           ReferenceCellPosition,
    lcs-IPDL-Parameters             LCS-IPDL-Parameters                 OPTIONAL,
    cellToMeasureInfoList           CellToMeasureInfoList
}

LCS-OTDOA-Measurement ::=           SEQUENCE {
    sfn                             INTEGER (0..4095),
    -- Actual value = IE value * 0.25 + 876
    ue-Rx-Tx-TimeDifference         INTEGER (0..1184),
    qualityType                     QualityType,
    qualityChoice                   CHOICE {
        std-10                          ReferenceQuality10,
        std-50                          ReferenceQuality50,
        cpich-EcN0                      CPICH-Ec-N0-OTDOA,
        defaultQuality                  ReferenceQuality
    },
    neighborList                    NeighborList                        OPTIONAL
}

LCS-OTDOA-MeasurementAssistData ::= SEQUENCE {
    primaryCPICH-Info               PrimaryCPICH-Info,
    frequencyInfo                   FrequencyInfo                       OPTIONAL,
    sfn-SFN-ObsTimeDifference       SFN-SFN-ObsTimeDifference1,
    fineSFN-SFN                     FineSFN-SFN                         OPTIONAL,
    searchWindowSize                OTDOA-SearchWindowSize,
    relativeNorth                   INTEGER (-20000..20000)             OPTIONAL,
```

```
    relativeEast                         INTEGER (-20000..20000)        OPTIONAL,
    relativeAltitude                     INTEGER (-4000..4000)          OPTIONAL
}

LCS-OTDOA-MeasurementAssistDataList ::= SEQUENCE (SIZE (1..15)) OF
                                LCS-OTDOA-MeasurementAssistData

LCS-OTDOA-ReferenceCell ::=          SEQUENCE {
    primaryCPICH-Info                    PrimaryCPICH-Info,
    frequencyInfo                        FrequencyInfo                  OPTIONAL,
    cellPosition                         ReferenceCellPosition          OPTIONAL
}

LCS-Position ::=                     SEQUENCE {
    referenceSFN                         ReferenceSFN,
    gps-TOW                              INTEGER (0..604700000000),
    positionEstimate                     PositionEstimate
}

LCS-ReportCriteria ::=               CHOICE {
    lcs-ReportingCriteria                LCS-ReportingCriteria,
    periodicalReportingCriteria          PeriodicalReportingCriteria,
    noReporting                          NULL
}

LCS-ReportingCriteria ::=            SEQUENCE {
    eventParameterList                   LCS-EventParamList             OPTIONAL
}

LCS-ReportingQuantity ::=            SEQUENCE {
    methodType                           LCS-MethodType,
    positioningMethod                    PositioningMethod,
    responseTime                         LCS-ResponseTime,
    accuracy                             LCS-Accuracy                   OPTIONAL,
    gps-TimingOfCellWanted               BOOLEAN,
    multipleSets                         BOOLEAN,
    environmentCharacterization          EnvironmentCharacterization    OPTIONAL
}

LCS-ResponseTime ::=                 ENUMERATED {
                                     s1, s2, s4, s8, s16,
                                     s32, s64, s128 }

LCS-TimeOffset ::=                   INTEGER (0..4095)

MaxNumberOfReportingCells ::=        ENUMERATED {
                                         mandatoryCellsOnly,
                                         mandatoryCellsPlus1,
                                         mandatoryCellsPlus2,
                                         mandatoryCellsPlus3,
                                         mandatoryCellsPlus4,
                                         mandatoryCellsPlus5,
                                         mandatoryCellsPlus6 }

MaxReportedCellsOnRACH ::=           ENUMERATED {
                                         noReport,
                                         currentCell,
                                         currentAnd-1-BestNeighbour,
                                         currentAnd-2-BestNeighbour,
                                         currentAnd-3-BestNeighbour,
                                         currentAnd-4-BestNeighbour,
                                         currentAnd-5-BestNeighbour,
                                         currentAnd-6-BestNeighbour }

MeasuredResults ::=                  CHOICE {
    intraFreqMeasuredResultsList         IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList         InterFreqMeasuredResultsList,
    interSystemMeasuredResultsList       InterSystemMeasuredResultsList,
    trafficVolumeMeasuredResultsList     TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults               QualityMeasuredResults,
    ue-InternalMeasuredResults           UE-InternalMeasuredResults,
    lcs-MeasuredResults                  LCS-MeasuredResults
}

MeasuredResultsList ::=              SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                     MeasuredResults

MeasuredResultsOnRACH ::=            SEQUENCE {
```

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```
    currentCell                         SEQUENCE {
        modeSpecificInfo                    CHOICE {
            fdd                                 SEQUENCE {
                measurementQuantity                 CHOICE {
                    cpich-Ec-N0                         CPICH-Ec-N0,
                    cpich-RSCP                          CPICH-RSCP,
                    cpich-SIR                           CPICH-SIR,
                    pathloss                            Pathloss
                }
            },
            tdd                                 SEQUENCE {
                timeslotISCP                        TimeslotISCP,
                primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP
            }
        }
    },
    monitoredCells                      MonitoredCellRACH-List          OPTIONAL
}

MeasurementCommand ::=              CHOICE {
    setup                               MeasurementType,
    modify                              SEQUENCE {
        measurementType                     MeasurementType                 OPTIONAL
    },
    release                             NULL
}

MeasurementControlSysInfo ::=      SEQUENCE {
    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo     OPTIONAL,
    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo     OPTIONAL,
    interSystemMeasurementSysInfo       InterSystemMeasurementSysInfo   OPTIONAL,
    trafficVolumeMeasSysInfo            TrafficVolumeMeasSysInfo        OPTIONAL,
    ue-InternalMeasurementSysInfo       UE-InternalMeasurementSysInfo   OPTIONAL
}

-- **TODO**, not defined yet
MeasurementIdentityNumber ::=      SEQUENCE {
}

MeasurementQuantityGSM ::=         ENUMERATED {
                                        gsm-CarrierRSSI,
                                        pathloss }

MeasurementReportingMode ::=       SEQUENCE {
    measurementReportTransferMode       TransferMode,
    periodicalOrEventTrigger            PeriodicalOrEventTrigger
}

MeasurementType ::=                CHOICE {
    intraFrequencyMeasurement           IntraFrequencyMeasurement,
    interFrequencyMeasurement           InterFrequencyMeasurement,
    interSystemMeasurement              InterSystemMeasurement,
    lcs-Measurement                     LCS-Measurement,
    trafficVolumeMeasurement            TrafficVolumeMeasurement,
    qualityMeasurement                  QualityMeasurement,
    ue-InternalMeasurement              UE-InternalMeasurement
}

MeasurementValidity ::=            SEQUENCE {
    resume-Release                      Resume-Release
}

MonitoredCellRACH-List ::=         SEQUENCE (SIZE(1..7)) OF
                                        MonitoredCellRACH-Result

MonitoredCellRACH-Result ::=       SEQUENCE {
    sfn-SFN-ObsTimeDifference           SFN-SFN-ObsTimeDifference       OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info,
            measurementQuantity                 CHOICE {
                cpich-Ec-N0                         CPICH-Ec-N0,
                cpich-RSCP                          CPICH-RSCP,
                cpich-SIR                           CPICH-SIR,
                pathloss                            Pathloss
            }                                                               OPTIONAL
        },
        tdd                                 SEQUENCE {
```

```
                primaryCCPCH-Info                    PrimaryCCPCH-Info,
                primaryCCPCH-RSCP                    PrimaryCCPCH-RSCP              OPTIONAL
        }
    }
}

MonitoredSetCellReport ::=          ENUMERATED {
                                        excludeAll,
                                        other }

MultipathIndicator ::=              ENUMERATED {
                                        nm,
                                        low,
                                        medium,
                                        high }

NavigationModelSatInfo ::=          SEQUENCE {
    satID                               INTEGER (0..63),
    satelliteStatus                     SatelliteStatus,
    compression                         CHOICE {
        uncompressed                        UncompressedNavModel,
        compressed                          CompressedNavModel
    }
}

NavigationModelSatInfoList ::=      SEQUENCE (SIZE (1..maxN-SAT)) OF
                                        NavigationModelSatInfo

Neighbor ::=                        SEQUENCE {
    neighborIdentity                    PrimaryCPICH-Info             OPTIONAL,
    neignborQuantity                    NeighborQuantity,
    sfn-SFN-ObsTimeDifference2          SFN-SFN-ObsTimeDifference2
}

NeighborList ::=                    SEQUENCE (SIZE (1..15)) OF
                                        Neighbor

-- **TODO**, to be defined fully
NeighborQuantity ::=                SEQUENCE {
}

NewInterFreqCell ::=                SEQUENCE {
    interFreqCellID                     InterFreqCellID              OPTIONAL,
    frequencyInfo                       FrequencyInfo                OPTIONAL,
    cellInfo                            CellInfo
}

NewInterFreqCellList ::=            SEQUENCE (SIZE (1..maxInterCells)) OF
                                        NewInterFreqCell

NewInterFreqCellSI ::=              SEQUENCE {
    interFreqCellID                     InterFreqCellID              OPTIONAL,
    frequencyInfo                       FrequencyInfo                OPTIONAL,
    cellInfo                            CellInfoSI
}

NewInterFreqCellSI-List ::=         SEQUENCE (SIZE (1..maxInterCells)) OF
                                        NewInterFreqCellSI

NewInterSystemCell ::=              SEQUENCE {
    technologySpecificInfo              CHOICE {
        gsm                                 SEQUENCE {
            q-Offset                            Q-Offset                 OPTIONAL,
            hcs-NeighbouringCellInformation     HCS-NeighbouringCellInformation
                                                                         OPTIONAL,
            q-Min                               Q-Min,
            maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power,
            bsic                                BSIC,
            bcch-ARFCN                          BCCH-ARFCN,
            gsm-OutputPower                     GSM-OutputPower          OPTIONAL
        },
        is-2000                             SEQUENCE {
            is-2000SpecificMeasInfo             IS-2000SpecificMeasInfo
        }
    }
}
```

```
NewInterSystemCellList ::=          SEQUENCE (SIZE (1..maxInterSysCells)) OF
                                        NewInterSystemCell

NewIntraFreqCell ::=                SEQUENCE {
    intraFreqCellID                     IntraFreqCellID                 OPTIONAL,
    cellInfo                            CellInfo
}

NewIntraFreqCellList ::=            SEQUENCE (SIZE (1..maxIntraCells)) OF
                                        NewIntraFreqCell

NewIntraFreqCellSI ::=              SEQUENCE {
    intraFreqCellID                     IntraFreqCellID                 OPTIONAL,
    cellInfo                            CellInfoSI
}

NewIntraFreqCellSI-List ::=         SEQUENCE (SIZE (1..maxIntraCells)) OF
                                        NewIntraFreqCell

NonUsedFreqParameter ::=            SEQUENCE {
    nonUsedFreqThreshold                Threshold,
    nonUsedFreqW                        W
}

NonUsedFreqParameterList ::=        SEQUENCE (SIZE (1..maxNonUsedFrequency)) OF
                                        NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::=     INTEGER (0..4095)

OtherRAT-InSysInfo ::=              SEQUENCE {
    rat-Type                            RAT-Type,
    k-InterRAT                          K-InterRAT
}

OtherRAT-InSysInfoList ::=          SEQUENCE (SIZE (1..maxInterRAT)) OF
                                        OtherRAT-InSysInfo

OTDOA-SearchWindowSize ::=          ENUMERATED {
                                        c10, c20, c30, c40, c50,
                                        c60, c70, moreThan70 }

Pathloss ::=                        INTEGER (46..158)

PenaltyTime ::=                     CHOICE {
    notUsed                             NULL,
    pt10                                TemporaryOffset,
    pt20                                TemporaryOffset,
    pt30                                TemporaryOffset,
    pt40                                TemporaryOffset,
    pt50                                TemporaryOffset,
    pt60                                TemporaryOffset
}

PendingTimeAfterTrigger ::=         ENUMERATED {
                                        ptat0-25, ptat0-5, ptat1,
                                        ptat2, ptat4, ptat8, ptat16 }

PeriodicalOrEventTrigger ::=        ENUMERATED {
                                        periodical,
                                        eventTrigger }

PeriodicalReportingCriteria ::=     SEQUENCE {
    reportingAmount                     ReportingAmount                 OPTIONAL,
    reportingInterval                   ReportingIntervalLong           OPTIONAL
}

-- **TODO**, contents to be defined, source 23.032
PositionEstimate ::=                CHOICE {
    ellipsoidPoint                      SEQUENCE {},
    ellipsoidPointUncertCircle          SEQUENCE {},
    ellipsoidPointUncertEllipse         SEQUENCE {},
    ellipsoidPointAltitude              SEQUENCE {},
    ellipsoidPointAltitudeEllipse       SEQUENCE {}
}

PositioningMethod ::=               ENUMERATED {
                                        otdoa,
                                        gps,
```

```
                                      otdoaOrGPS }

PRC ::=                            INTEGER (-32767..32767)

-- **TODO**, not defined yet
PrimaryCCPCH-RSCP ::=             SEQUENCE {
}

Q-Accept-s-n ::=                  INTEGER (0..63)

Q-HCS ::=                         INTEGER (0..99)

Q-Offset ::=                      INTEGER (-50..50)

-- Actual value = IE value * 0.5
Q-OffsetS-N ::=                   INTEGER (-40..40)

-- **TODO**, not defined yet
Q-Min  ::=                        SEQUENCE {
}

Qmin-FDD ::=                      INTEGER (-20..0)

-- Actual value = IE value * 2 - 115
Qmin-TDD ::=                      INTEGER (0..45)

-- **TODO**, not defined yet
QualityEventResults ::=           SEQUENCE {
}

-- **TODO**, not defined yet
QualityMeasQuantity ::=           SEQUENCE {
}

QualityMeasuredResults ::=        SEQUENCE {
    blerMeasurementResultsList        BLER-MeasurementResultsList        OPTIONAL,
    dl-PhysicalChannelBER             DL-PhysicalChannelBER              OPTIONAL,
    sir                               SIR                                OPTIONAL
}

QualityMeasurement ::=            SEQUENCE {
    qualityMeasurementObject          QualityMeasurementObject           OPTIONAL,
    qualityMeasQuantity               QualityMeasQuantity                OPTIONAL,
    qualityReportingQuantity          QualityReportingQuantity           OPTIONAL,
    reportCriteria                    QualityReportCriteria
}

-- **TODO**, not defined yet
QualityMeasurementObject ::=      SEQUENCE {
}

QualityReportCriteria ::=         CHOICE {
    qualityReportingCriteria          QualityReportingCriteria,
    periodicalReportingCriteria       PeriodicalReportingCriteria,
    noReporting                       NULL
}

-- **TODO**, not defined yet
QualityReportingCriteria ::=      SEQUENCE {
}

QualityReportingQuantity ::=      SEQUENCE {
    dl-TransChBLER                    BOOLEAN,
    bler-TransChIdList                BLER-TransChIdList                 OPTIONAL,
    sir                               BOOLEAN
}

QualityType ::=                   ENUMERATED {
                                      std-10, std-50, cpich-Ec-N0 }

RAT-Type ::=                      ENUMERATED {
                                      gsm, is2000, spare1, spare2,
                                      spare3, spare4, spare5, spare6,
                                      spare7, spare8, spare9, spare10,
                                      spare11, spare12, spare13, spare14 }

-- **TODO**, definition to be checked from 23.032
ReferenceCellPosition ::=         SEQUENCE {
```

```
}

ReferenceCellRelation ::=          ENUMERATED {
                                       first-12-second-3,
                                       first-13-second-2,
                                       first-1-second-23 }

ReferenceGPS-TOW ::=               INTEGER (0..604700000000)

ReferenceQuality ::=              ENUMERATED {
                                      m0-19, m20-39, m40-79,
                                      m80-159, m160-319, m320-639,
                                      m640-1319, m1320Plus }

-- Actual value = IE value * 10
ReferenceQuality10 ::=            INTEGER (1..32)

-- Actual value = IE value * 50
ReferenceQuality50 ::=            INTEGER (1..32)

ReferenceSFN ::=                  INTEGER (0..4095)

-- Actual value = IE value * 512
ReferenceTimeDifferenceToCell ::= CHOICE {
    -- Actual value = IE value * 40
    accuracy40                       INTEGER (0..960),
    -- Actual value = IE value * 256
    accuracy256                      INTEGER (0..150),
    -- Actual value = IE value * 2560
    accuracy2560                     INTEGER (0..15)
}

RemovedInterFreqCell :: =          SEQUENCE {
    interFreqCellID                  InterFreqCellID
}

RemovedInterFreqCellList ::=       SEQUENCE (SIZE (1..maxInterCells)) OF
                                       RemovedInterFreqCell

RemovedInterSystemCell ::=         SEQUENCE {
    interSystemCellID                InterSystemCellID
}

RemovedInterSystemCellList ::=     SEQUENCE (SIZE (1..maxInterSysCells)) OF
                                       RemovedInterSystemCell

RemovedIntraFreqCell ::=           SEQUENCE {
    intraFreqCellID                  IntraFreqCellID
}

RemovedIntraFreqCellList ::=       SEQUENCE (SIZE (1..maxIntraCells)) OF
                                       RemovedIntraFreqCell

ReplacementActivationThreshold ::= ENUMERATED {
                                       notApplicable, t1, t2,
                                       t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::=    ENUMERATED {
                                       notApplicable, t1, t2,
                                       t3, t4, t5, t6, t7 }

ReportingAmount ::=                ENUMERATED {
                                       ra1, ra2, ra4, ra8, ra16, ra32,
                                       ra64, ra-Infinity }

ReportingCellStatus ::=            SEQUENCE {
    maxNumberOfReportingCells         MaxNumberOfReportingCells,
    measurement                       CHOICE {
        intraFreq                         ReportingCellStatusIntraFreq,
        otherMeasurement                  NULL
    }
}

ReportingCellStatusIntraFreq ::=   SEQUENCE {
    activeSetCellReport               ActiveSetCellReport,
    monitoredSetCellReport            MonitoredSetCellReport
}
```

```
ReportingInfoForCellDCH ::=         SEQUENCE {
    intraFreqReportingQuantity          IntraFreqReportingQuantity,
    reportCriteria                      CellDCH-ReportCriteria
}

ReportingInterval ::=               ENUMERATED {
                                    noPeriodicalreporting, ri0-25,
                                    ri0-5, ri1, ri2, ri4, ri8, ri16 }

ReportingIntervalLong ::=           ENUMERATED {
                                    ril0, ril0-25, ril0-5, ril1,
                                    ril2, ril3, ril4, ril6, ril8,
                                    ril12, ril16, ril20, ril24,
                                    ril28, ril32, ril64 }

-- Actual value = IE value * 0.5
ReportingRange ::=                  INTEGER (0..29)

Resume-Release ::=                  CHOICE {
    resume                              UE-State,
    release                             NULL
}

RL-AdditionInfo ::=                 SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info
}

RL-AdditionInfoList ::=             SEQUENCE (SIZE(1..maxAddRLcount)) OF
                                        RL-AdditionInfo

RL-InformationLists ::=             SEQUENCE {
    rl-AdditionInfoList                 RL-AdditionInfoList              OPTIONAL,
    rl-RemovalInfoList                  RL-RemovalInfoList              OPTIONAL
}

RL-RemovalInfo ::=                  SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info
}

RL-RemovalInfoList ::=              SEQUENCE (SIZE(1..maxDelRLcount)) OF
                                        RL-RemovalInfo

RLC-BuffersPayload ::=              ENUMERATED {
                                    pl0, pl4, pl8, pl16, pl32, pl64, pl128,
                                    pl256, pl512, pl1024, pl2k, pl4k,
                                    pl8k, pl16k, pl32k, pl64k, pl128k,
                                    pl256k, pl512k, pl1024k }

RRC ::=                             INTEGER (-127..127)

-- **TODO**, not defined yet
RSCP ::=                            SEQUENCE {
}

SatelliteStatus ::=                 ENUMERATED {
                                    ns-NN-U,
                                    es-SN,
                                    es-NN-U,
                                    es-NN-C }

SatID ::=                           INTEGER (0..31)

ScaleFactor ::=                     ENUMERATED {
                                    prc0-02-rrc0-002,
                                    prc0-32-rrc0-032 }

SFN-SFN-ObsTimeDifference ::=       CHOICE {
    type1                               SFN-SFN-ObsTimeDifference1,
    -- Actual value for type2 = IE value * 0.25
    type2                               SFN-SFN-ObsTimeDifference2
}

SFN-SFN-ObsTimeDifference1 ::=      INTEGER (0..9830399)

SFN-SFN-ObsTimeDifference2 ::=      INTEGER (-5119..5120)

SFN-SFN-OTD-Type ::=                ENUMERATED {
                                    noReport,
```

```
                                        type1,
                                        type2 }

SignallingOption ::=            CHOICE {
    alternative1                    SEQUENCE {
        q-OffsetS-N                     Q-OffsetS-N                         OPTIONAL
    },
    alternative2                NULL
}

SIR ::=                         INTEGER (-10..20)

TemporaryOffset ::=             ENUMERATED {
                                    to10, to20, to30, to40, to50,
                                    to60, to70, infinite }

-- **TODO**, not defined yet
Threshold ::=                   SEQUENCE {
}

ThresholdPositionChange ::=     ENUMERATED {
                                    pc10, pc20, pc30, pc40, pc50,
                                    pc100, pc200, pc300, pc500,
                                    pc1000, pc2000, pc5000, pc10000,
                                    pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=        ENUMERATED {
                                    ms1, ms2, ms3, ms5, ms10,
                                    ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=     ENUMERATED {
                                    c0-25, c0-5, c1, c2, c3, c4, c5,
                                    c10, c20, c50, c100, c200, c500,
                                    c1000, c2000, c5000 }

-- **TODO**, not defined yet
TimeslotISCP ::=                SEQUENCE {
}

TimeslotListWithISCP ::=        SEQUENCE (SIZE (1..14)) OF
                                    TimeslotWithISCP

TimeslotWithISCP ::=            SEQUENCE {
    timeslot                        Timeslot,
    timeslotISCP                    TimeslotISCP
}

TimeToTrigger ::=               ENUMERATED {
                                    ttt0, ttt10, ttt20, ttt40, ttt60,
                                    ttt80, ttt100, ttt120, ttt160,
                                    ttt200, ttt240, tt320, ttt640,
                                    ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=     SEQUENCE {
    eventID                         TrafficVolumeEventType,
    reportingThreshold              TrafficVolumeThreshold
}

TrafficVolumeEventResults ::=   SEQUENCE {
    transportChannelCausingEvent    TransportChannelIdentity,
    trafficVolumeEventIdentity      EventIDTrafficVolume
}

TrafficVolumeEventType ::=      ENUMERATED {
                                    e4a,
                                    e4b }

TrafficVolumeMeasObject ::=     SEQUENCE {
    targetTransportChannelID        TransportChannelIdentity
}

TrafficVolumeMeasObjectList ::= SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                    TrafficVolumeMeasObject

TrafficVolumeMeasQuantity ::=   ENUMERATED {
                                    rlc-BufferPayload,
                                    averageRLC-BufferPayload,
                                    varianceOfRLC-BufferPayload }
```

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```
TrafficVolumeMeasSysInfo ::=        SEQUENCE {
    trafficVolumeMeasurementID          MeasurementIdentityNumber        OPTIONAL,
    trafficVolumeMeasObjectList         TrafficVolumeMeasObjectList      OPTIONAL,
    trafficVolumeMeasQuantity           TrafficVolumeMeasQuantity        OPTIONAL
}

TrafficVolumeMeasuredResults ::=    SEQUENCE {
    rb-Identity                         RB-Identity,
    rlc-BuffersPayload                  RLC-BuffersPayload               OPTIONAL,
    averageRLC-BufferPayload            AverageRLC-BufferPayload         OPTIONAL,
    varianceOfRLC-BufferPayload         VarianceOfRLC-BufferPayload      OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxTraf)) OF
                                    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::=        SEQUENCE {
    TrafficVolumeMeasurementObjectList  TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity           TrafficVolumeMeasQuantity        OPTIONAL,
    trafficVolumeReportingQuantity      TrafficVolumeReportingQuantity   OPTIONAL,
    measurementValidity                 MeasurementValidity              OPTIONAL,
    reportCriteria                      TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObject ::= SEQUENCE {
    targetTransportChannelID            TransportChannelIdentity
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                    TrafficVolumeMeasurementObject

TrafficVolumeReportCriteria ::=     CHOICE {
    trafficVolumeReportingCriteria      TrafficVolumeReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    transChCriteriaList                 TransChCriteriaList              OPTIONAL,
    timeToTrigger                       TimeToTrigger                    OPTIONAL,
    pendingTimeAfterTrigger             PendingTimeAfterTrigger          OPTIONAL,
    tx-InterruptionAfterTrigger         TX-InterruptionAfterTrigger      OPTIONAL,
    reportingAmount                     ReportingAmount                  OPTIONAL,
    reportingInterval                   ReportingInterval                OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload                BOOLEAN,
    rlc-RB-BufferPayloadAverage         BOOLEAN,
    rlc-RB-BufferPayloadVariance        BOOLEAN
}

TrafficVolumeThreshold ::=          ENUMERATED {
                                    th8, th16, th32, th64, th128,
                                    th256, th512, th1024, th1536,
                                    th2048, th3072, th4096, th6144,
                                    th8192 }

TransChCriteria ::=                 SEQUENCE {
    transportChannelID                  TransportChannelIdentity,
    eventSpecificParameters             SEQUENCE (SIZE (1..2)) OF
                                            TrafficVolumeEventParam      OPTIONAL
}

TransChCriteriaList :: =            SEQUENCE (SIZE (1..maxTrCHcount)) OF
                                    TransChCriteria

TransferMode ::=                    ENUMERATED {
                                    acknowledgedModeRLC,
                                    unacknowledgedModeRLC }

TransmittedPowerThreshold ::=       INTEGER (-50..33)

TriggeringCondition ::=             ENUMERATED {
                                    activeSetCellsOnly,
                                    monitoredCellsOnly,
                                    activeSetAndMonitoredCells }
```

```
TX-InterruptionAfterTrigger ::=       ENUMERATED {
                                        txiat0-25, txiat0-5, txiat1,
                                        txiat2, txiat4, txiat8, txiat16 }

UDRE ::=                               ENUMERATED {
                                        lessThan1,
                                        between1-and-4,
                                        between4-and-8,
                                        over8 }

UE-6AB-Event ::=                      SEQUENCE {
    timeToTrigger                       TimeToTrigger,
    transmittedPowerThreshold           TransmittedPowerThreshold
}

UE-6FG-Event ::=                      SEQUENCE {
    timeToTrigger                       TimeToTrigger,
    ue-RX-TX-TimeDifferenceThreshold    UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::=           CHOICE {
    on                                  NULL,
    onWithNoReporting                   NULL,
    off                                 RL-InformationLists
}


UE-InternalEventParam ::=             CHOICE {
    event6a                             UE-6AB-Event,
    event6b                             UE-6AB-Event,
    event6c                             TimeToTrigger,
    event6d                             TimeToTrigger,
    event6e                             TimeToTrigger,
    event6f                             UE-6FG-Event,
    event6g                             UE-6FG-Event
}

UE-InternalEventParamList ::=         SEQUENCE (SIZE (1..maxEventCount)) OF
                                        UE-InternalEventParam

UE-InternalEventResults ::=           CHOICE {
    event6a                             NULL,
    event6b                             NULL,
    event6c                             NULL,
    event6d                             NULL,
    event6e                             NULL,
    event6f                             PrimaryCPICH-Info,
    event6g                             PrimaryCPICH-Info
}

UE-InternalMeasQuantity ::=           SEQUENCE {
    measurementQuantity                 UE-MeasurementQuantity,
    filterCoefficient                   FilterCoefficient
}

UE-InternalMeasuredResults ::=        SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ue-TransmittedPowerFDD              UE-TransmittedPowerFDD     OPTIONAL,
            ue-RX-TX-ReportEntryList           UE-RX-TX-ReportEntryList   OPTIONAL
        },
        tdd                                 SEQUENCE {
            ue-TransmittedPowerTDD-List        UE-TransmittedPowerTDD-List OPTIONAL
        }
    }
}

UE-InternalMeasurement ::=            SEQUENCE {
    ue-InternalMeasQuantity             UE-InternalMeasQuantity             OPTIONAL,
    ue-InternalReportingQuantity        UE-InternalReportingQuantity        OPTIONAL,
    reportCriteria                      UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::=     SEQUENCE {
    ue-InternalMeasurementID            MeasurementIdentityNumber           OPTIONAL,
    ue-InternalMeasQuantity             UE-InternalMeasQuantity
}
```

```
UE-InternalReportCriteria ::=       CHOICE {
    ue-InternalReportingCriteria        UE-InternalReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

UE-InternalReportingCriteria ::=    SEQUENCE {
    ue-InternalEventParamList           UE-InternalEventParamList          OPTIONAL
}

UE-InternalReportingQuantity ::=    SEQUENCE {
    ue-TransmittedPower                 BOOLEAN,
    ue-RX-TX-TimeDifferece              BOOLEAN,
    ue-Position                         BOOLEAN
}

UE-MeasurementQuantity ::=          ENUMERATED {
                                        ue-TransmittedPower,
                                        utra-Carrier-RSSI,
                                        ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::=            SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info,
    ue-RX-TX-TimeDifference             UE-RX-TX-TimeDifference
}

UE-RX-TX-ReportEntryList ::=        SEQUENCE (SIZE (1..maxUsedRLcount)) OF
                                        UE-RX-TX-ReportEntry

UE-RX-TX-TimeDifference ::=         INTEGER (876..1172)

UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (769..1280)

UE-State ::=                        ENUMERATED {
                                        cell-DCH, all-But-Cell-DCH, all-States }

UE-TransmittedPowerFDD ::=          INTEGER (-50..33)

-- **TODO**, not defined yet
UE-TransmittedPowerTDD ::=          SEQUENCE {
}

UE-TransmittedPowerTDD-List ::=     SEQUENCE (SIZE (1..maxUsedUplTScount)) OF
                                        UE-TransmittedPowerTDD

UncompressedNavModel ::=            SEQUENCE {
    iode                                BIT STRING (SIZE (8)),
    t-oe                                BIT STRING (SIZE (16)),
    c-rc                                BIT STRING (SIZE (16)),
    c-rs                                BIT STRING (SIZE (16)),
    c-ic                                BIT STRING (SIZE (16)),
    c-is                                BIT STRING (SIZE (16)),
    c-uc                                BIT STRING (SIZE (16)),
    c-us                                BIT STRING (SIZE (16)),
    e                                   BIT STRING (SIZE (32)),
    m0                                  BIT STRING (SIZE (32)),
    a-Sqrt                              BIT STRING (SIZE (32)),
    delta-n                             BIT STRING (SIZE (16)),
    omega0                              BIT STRING (SIZE (32)),
    omegaDot                            BIT STRING (SIZE (24)),
    i0                                  BIT STRING (SIZE (32)),
    iDot                                BIT STRING (SIZE (14)),
    omega                               BIT STRING (SIZE (32)),
    t-oc                                BIT STRING (SIZE (16)),
    af0                                 BIT STRING (SIZE (22)),
    af1                                 BIT STRING (SIZE (16)),
    af2                                 BIT STRING (SIZE (8))
}

UTRA-CarrierRSSI ::=                INTEGER (-95..-30)

UTRAN-ReferenceTime ::=             SEQUENCE {
    gps-TOW                             INTEGER (0..604700000000),
    sfn                                 INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::=     ENUMERATED {
```

```
                                        plv0, plv4, plv8, plv16, plv32, plv64,
                                        plv128, plv256, plv512, plv1024,
                                        plv2k, plv4k, plv8k, plv16k }

-- Actual value = IE value * 0.1
W ::=                                    INTEGER (0..20)

END
```

**3GPP TSG RAN WG2 Meeting #13
Oahu, Hawaii, USA, 22-26 May 2000**

Document **R2-001256**

CHANGE REQUEST	
25.331 CR **410r1**	Current Version: 3.2.0

For submission to:	TSG-RAN #8	for approval	X	strategic	
		for information		non-strategic	

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

Source:	TSG-RAN WG2		**Date:**	1.6.2000

Subject:	Clarification of compressed mode configuration failure and activation

Work item:	

Category:
			Release:	
F	Correction		Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature	X	Release 98	
D	Editorial modification		Release 99	X
			Release 00	

Reason for change:	- DPCH compressed mode status info is added as optional to the MEAUSREMENT CONTROL message. This enables the UTRAN to make preconfigurations of transmission gap pattern sequences. Pattern sequences may subsequently be activated or deactivated.
	- The Scrambling Code Change IE is moved from DPCH compressed mode info to Downlink DPCH info for each RL to align to requirements identified in RAN3.
	- It is clarified that all compressed mode pattern sequences are configured in the same message. If there is a need to reconfigure any of the old pattern sequences or a need to add a new one, all pattern sequences must be resignalled.
	- It is clarified that when the UE receives a DPCH compressed mode info, it shall check that there are no overlapping transmission pattern gaps in the same frame created by puncturing. If there are, the UE shall send the corresponding uplink failure message.
	- It is clarified that inter-frequency measurements are begun or terminated when the corresponding compressed mode pattern sequence is activated or deactivated.

Clauses affected:	8.2.1.4, 8.2.2.6, 8.2.3.4, 8.2.6.6, 8.4.1.3, 8.5.7.6, 10.3.6.x, 11.2, 11.3.6, 11.4, 13.4

Other specs affected:	Other 3G core specifications	☐	→ List of CRs:	
	Other GSM core	☐	→ List of CRs:	

specifications

MS test specifications → List of CRs:

BSS test specifications → List of CRs:
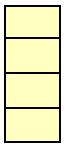
O&M specifications → List of CRs:

Other comments:

## 8.2.1.4	Unsupported or unacceptable configuration in the UE

If UTRAN instructs the UE to use a configuration, which that it does not support or if the variable UNACCEPTABLE_CONFIGURATION is set to TRUE, the UE transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC and set the IE "failure cause" the cause value "configuration unacceptable".

When the transmission of the RADIO BEARER SETUP FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers, the UE shall clear the variable ORDERED_CONFIG and the procedure ends.

8.2.2.6   Unsupported or unacceptable configuration in the UE

If the UTRAN instructs the UE to use a configuration, which that it does not support or if the variable UNACCEPTABLE_CONFIGURATION is set to TRUE, the UE shall:

-    transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC;

-    set the cause value in IE "failure cause" to "configuration unacceptable".

When the transmission of the RADIO BEARER RECONFIGURATION FAILURE message has been confirmed by RLC, the UE shall clear the variable ORDERED_CONFIG and the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers. It shall resume the normal operation as if no radio bearer reconfiguration attempt had occurred and the procedure ends.

8.2.3.4 Unsupported or unacceptable configuration in the UE

If UTRAN instructs the UE to use a configuration, which ~~that~~ it does not support or if the variable UNACCEPTABLE_CONFIGURATION is set to TRUE, the UE shall Transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC and set the value of the IE "failure cause" to "configuration unacceptable".

When the transmission of the RADIO BEARER RELEASE FAILURE message has been confirmed by RLC, the UE shall clear the variable ORDERED_CONFIG and the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers. The procedure ends.

8.2.4.6 Unsupported or unacceptable configuration in the UE

If the UTRAN instructs the UE to use a configuration, which ~~that~~ it does not support or if the variable UNACCEPTABLE_CONFIGURATION is set to TRUE, the UE shall:

- transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC and set the cause value in IE "Failure Cause" to "configuration unacceptable".

- When the transmission of the TRANSPORT CHANNEL RECONFIGURATION FAILURE message has been confirmed by RLC, the UE shall clear the variable ORDERED_CONFIG, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers and the procedure ends.

8.2.6.6 Unsupported or unacceptable configuration in the UE

If the UE instructs the UE to use a configuration, that which it does not support or if the variable UNACCEPTABLE_CONFIGURATION is set to TRUE, the UE shall

- transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC and shall set the cause value in IE "failure cause" to "configuration unacceptable".

When the transmission of the PHYSICAL CHANNEL RECONFIGURATION FAILURE message has been confirmed by RLC, the UE shall clear the variable ORDERED_CONFIG and the procedure ends.

8.4.1.3   Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in 8.5.7 unless otherwise specified below.

The UE shall:

- Read the IE "Measurement command".

If the IE "measurement command" has the value "setup", the UE shall:

- store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity number";

- store into the variable MEASUREMENT_IDENTITY the control information defined by IE "Measurement object", the IE "Measurement quantity", the IE "Reporting quantity", the IE "Measurement reporting criteria", the IE "Measurement validity", the IE "Reporting mode" and if present all IEs "Additional measurement identity number", which are valid for this measurement type; and

- for measurement types "inter-system measurement" or "inter-frequency measurement", begin measurements according to the stored control information for this measurement identity number on condition that the corresponding compressed mode pattern sequence stored in variable TGPS_IDENTITY is active or unless it is simultaneously activated; or

- for any other measurement type, begin measurements according to the stored control information for this measurement identity number.

See clause 14 for detailed description of a measurement object, measurement quantity and measurement reporting criteria for the different types of measurements.

If the IE "Measurement command" has the value "modify", the UE shall:

- retrieve the stored measurement information associated with the identity indicated in the IE "measurement identity number";

- if any of the IEs "measurement object", IE "measurement quantity", IE "reporting quantity", IE "measurement reporting criteria", IE "measurement validity", IE "reporting mode" or IE "Additional measurement identity number" are present in the MEASUREMENT CONTROL message, the control information defined by that IE shall replace the corresponding stored information;

- store the new set of IEs and associate them with the measurement identity number; and

- resume the measurements according to the new stored measurement control information.

If the IE "measurement command has the value "release", the UE shall:

- terminate the measurement associated with the identity given in the IE "measurement identity number";

- clear all stored measurement control information related associated to this measurement identity number.

After the above actions have been performed, the procedure is complete.

If the IE " DPCH Compressed Mode Status Info" is present, the UE

- shall activate the pattern sequence stored in variable TGPS_IDENTITY corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" and begin the inter-frequency and/or inter-system measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

- shall deactivate the pattern sequence stored in variable TGPS_IDENTITY corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "deactivate" and terminate the inter-frequency and/or inter-system measurements corresponding to the pattern sequence measurement purpose of each deactivated pattern sequence;

8.5.7.6 Physical channel information elements

8.5.7.6.1 Frequency info

If the IE "Frequency info" is included the UE shall:

- Store that frequency as the active frequency; and

- Tune to that frequency.

If the IE "Frequency info" is not included and the UE has a stored active frequency, the UE shall

- Continue to use the stored active frequency.

If the IE "Frequency info" is not included and the UE has no stored active frequency, it shall:

- map any used physical channels on the frequency given in system information as default.

8.5.7.6.2 PRACH info

If the IE "PRACH info" is included, the UE shall:

- release any active dedicated physical channels in the uplink; and

- let the PRACH be the default in the uplink for RACH.

8.5.7.6.3 Secondary CCPCH info

If the IE "Secondary CCPCH info" is indicated by a dedicated message, the UE shall start to receive that Secondary CCPCH in the downlink. If the IE "Secondary CCPCH info" is not indicated by a dedicated message, the UE selects a SCCPCH from the broadcast SCCPCHs on BCH which are set to "Selection indicator"="On" based on "Initial UE identity" in idle mode or "old U-RNTI" in connected mode and the UE shall start to receive that Secondary CCPCH in the downlink.

The UE selects one SCCPCH based on the following algorithm.

- Selected SCCPCH = (Initial UE Identity) mod   (listed SCCPCHs with "Selection Indicator"="on")   (idle mode)

- Selected SCCPCH = (old U-RNTI) mod (listed SCCPCHs with "Selection Indicator"="on") (connected mode)

8.5.7.6.4 Uplink DPCH info

If the IE "Uplink DPCH info" is included, the UE shall:

- release any active uplink physical channels and activate the given physical channels.

8.5.7.6.5 Downlink DPCH info

If the IE "Downlink DPCH info" is included, the UE shall:

- Activate the dedicated physical channels indicated by that IE.

8.5.7.6.6 Maximum allowed UL TX power

If the IE "Maximum allowed UL TX power" is included, the UE shall:

- Keep the UE uplink transmit power below the indicated power value. If the current UE uplink transmit power is above the indicated power value, the UE shall decrease the power to a level below the power value.

8.5.7.6.7 Gated transmission control info

If the IE "Gated transmission control info" is included and the gating rate equals Full, then UE shall:

- Stop gated transmission of uplink(if supported) and downlink DPCCH at activation time.

Otherwise, UE shall:

- Start gated transmission of uplink(if supported) and downlink DPCCH at activation time with given gating rate and pattern.

8.5.7.6.8 PDSCH with SHO DCH Info (FDD only)

If the IE 'PDSCH with SHO DCH Info' is included, the UE shall:

- Configure itself such that when an allocation on the DSCH is made it will receive the PDSCH from the specified BS within the active set.

and in cases where the TFCI for the user in question has a 'hard' split (meaning that TFCI(field 1) and TFCI (field 2) have their own individual block coding):

- Configure the Layer 1 to only soft combine the DPCCH TFCI(field 2) of the radio links within the associated DCH active set which are specified;

- Infer that the set of radio links for which TFCI (field 2) should be soft combined will include all radio links within the active set if the IE 'TFCI combining set' is not included and the sending of the message in which the IE 'PDSCH with SHO DCH Info' is being used will result in a transport channel switch from a state in which the DSCH transport channel was not available to a state in which it is available.

8.5.7.6.9 PDSCH code mapping (FDD only)

If the IE 'PDSCH code mapping' is included, the UE shall:

- Configure Layer 1 to support the mapping of TFCI(field 2) values to PDSCH channelisation codes as specified in the IE.

8.5.7.6.10 Uplink DPCH power control info

In FDD, if the IE "Uplink DPCH power control info" is included the UE shall:

- start inner loop power control as specified in 8.5.3;

- for the UL inner loop power control use the parameters specified in the IE.

In TDD, if the IE "Uplink DPCH power control info" is included the UE shall:

- use the parameters specified in the IE for open loop power control as defined in 8.5.9.

8.5.7.6.11 Secondary CPICH info

If the IE Secondary CPICH info is included, the UE:

- May use the channelisation code according to IE "channelisation code", with scrambling code according to IE "DL scrambling code" in the IE "Secondary CPICH info", for channel estimation of that radio link;

- May use the pilot bits on DPCCH for channel estimation.

8.5.7.6.12 Primary CPICH usage for channel estimation

If the IE "Primary CPICH usage for channel estimation" is included and has the value "Primary CPICH may be used" the UE:

- may use the Primary CPICH for channel estimation;

- may use the pilot bits on DPCCH for channel estimation.

If the IE "Primary CPICH usage for channel estimation" is included and has the value "Primary CPICH shall not be used" the UE:

- shall not use the Primary CPICH for channel estimation;

- may use the pilot bits on DPCCH for channel estimation.

8.5.7.6.13 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" are included, the UE

- shall check, that none of the parallel transmission gap pattern sequences create transmission gaps in the same frame by using the compressed mode method 'puncturing'.

If the configuration creates this kind of overlap, the UE

- shall set the variable UNACCEPTABLE_CONFIGURATION to TRUE;

- shall retain all previously stored compressed mode pattern sequences.

Otherwise, the UE

- shall set the variable UNACCEPTABLE_CONFIGURATION to FALSE;

- shall delete all previously stored compressed mode pattern sequences;

- shall store each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";

- shall store into the variable TGPS_IDENTITY the configuration information defined by IE group" transmission gap pattern sequence configuration parameters "; and

- shall activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" and begin the inter-frequency and/or inter-system measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall

- shall activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" and begin the inter-frequency and/or inter-system measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

- shall deactivate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "deactivate" and terminate the inter-frequency and/or inter-system measurements corresponding to the pattern sequence measurement purpose of each deactivated pattern sequence;

10.2.13 MEASUREMENT CONTROL

NOTE: Functional description of this message to be included here.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	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	
Measurement Information elements				
Measurement Identity Number	MP		Measurement Identity Number 10.3.7.73	
Measurement Command	MP		Measurement Command 10.3.7.71	
Measurement Reporting Mode	OP		Measurement Reporting Mode 10.3.7.74	
Additional measurements list	OP		Additional measurements list 10.3.7.1	
CHOICE Measurement type	CV *command*			
>Intra-frequency measurement			Intra-frequency measurement 10.3.7.36	
>Inter-frequency measurement			Inter-frequency measurement 10.3.7.16	
>Inter-system measurement			Inter-system measurement 10.3.7.27	
>LCS measurement			LCS measurement 10.3.7.57	
>Traffic Volume measurement			Traffic Volume measurement 10.3.7.94	
>Quality measurement			Quality measurement 10.3.7.80	
>UE internal measurement			UE internal measurement 10.3.7.103	
Physical channel information elements				
DPCH compressed mode status info	OP		DPCH compressed mode status info 10.3.6.x	

Condition	Explanation
Command	The IE is mandatory if the "Measurement command"

	IE is set to "Setup", optional if the "Measurement command" IE is set to "modify", otherwise the IE is not needed.

10.3.6.15 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 10.3.6.45	
>>Secondary CPICH info	OP		Secondary CPICH info 10.3.6.54	
>>DL channelisation code	MP	1 to <maxChan count>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	MD		Secondary scrambling code 10.3.6.55	Default is the same scrambling code as for the Primary CPICH
>>>Code number	MP		Integer(0..max CodeNum)	
>>> 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 10.3.6.62	
>>SSDT Cell Identity	OP		SSDT Cell Identity 10.3.6.56	
>>Closed loop timing adjustment mode	CH TxDiversity Mode		Enumerated(1 slot, 2 slot)	It is present if current TX Diversity Mode in UE is "closed loop mode 1" or "closed loop mode 2".
>TDD				
>>DL CCTrCh List	CV HO list length	1..<maxCC TrCHcount>		
>>>TFCS Identity	CV HO Needed			Identity of this CCTrCh.
>>>Individual Timeslot info list		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.25	
>>>>Channelisation code list	MP	1 to <max Codes Count>		The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.
>>>>>Channelisation code	MP		Enumerated ((16/1)...(16/16))	

Condition	Explanation
HO list length	MaxCCTRCHcount is 8 in case of handover, otherwise it is equal to one.
HO presence	The element is only present in case of handover
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.

10.3.6.x　　DPCH Compressed Mode Status Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission gap pattern sequence		1 to <MaxTGPS>		
> TGPSI	MP		Integer(1..< MaxTGPS>)	Transmission Gap Pattern Sequence Identifier
> TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it shall be active or inactive.

11.2　PDU definitions

```
IMPORTS

    AllocationPeriodInfo,
    CCTrCH-PowerControlInfo,
    ConstantValue,
    CPCH-SetInfo,
    DL-CommonInformation,
    DL-InfoPerRL-List,
    DL-InformationPerRL,
    DL-InformationPerRL-List,
    DL-DPCH-InfoCommon,
    DL-DPCH-PowerControlInfo,
    DL-OuterLoopControl,
    DL-PDSCH-Information,
    DPCH-CompressedModeStatusInfo,
    FrequencyInfo,
    IndividualTS-InterferenceList,
    MaxAllowedUL-TX-Power,
    PDSCH-Info,
    PRACH-RACH-Info,
    PrimaryCCPCH-TX-Power,
    PUSCH-Info,
    RL-AdditionInformationList,
    RL-RemovalInformationList,
    UL-DPCH-InfoShort,
    SSDT-Information,
    TFC-ControlDuration,
    TimeslotList,
    TX-DiversityMode,
    UL-ChannelRequirement,
    UL-DPCH-Info,
    UL-DPCH-InfoHO,
    UL-Interference,
    UL-TimingAdvance
FROM PhysicalChannel-IEs

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

MeasurementControl ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentityNumber        MeasurementIdentityNumber,
        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,
    -- Extension mechanism
```

```
        non-Release99-Information        SEQUENCE {}                                    OPTIONAL
}
```

11.3.6   Physical channel information elements

```
IMPORTS

    maxAddRLcount,
    maxAP-SigNum,
    maxAP-SubCH,
    maxChanCount,
    maxCodeCount,
    maxCodeNum,
    maxCodeNumComp-1,
    maxCombineSet,
    maxCPCH-SetCount,
    maxDelRLcount,
    maxDPDCHcount,
    maxFACH-Count,
    maxMidambleShift-1,
    maxNoCodeGroups,
    maxNoTFCI-Groups,
    maxPCPCHs,
    maxPDSCHcount,
    maxPRACHcount,
    maxPUSCHcount,
    maxReplaceCount,
    maxRLcount,
    maxSCCPCHcount,
    maxSigNum,
    maxSF-Num,
    maxSubChNum,
    maxTFCI-2-Combs,
    maxTFs,
    maxTGPS,
    maxTimeslotCount,
    maxTScount,
    maxUL-CCTrCHcount
FROM Constant-definitions

DL-ChannelisationCode ::=            SEQUENCE {
    secondaryScramblingCode            SecondaryScramblingCode            OPTIONAL,
    codeNumber                         CodeNumber,
    scramblingCodeChange               ScramblingCodeChange               OPTIONAL
}

DPCH-CompressedModeStatusInfo ::=   SEQUENCE (SIZE (1..maxTGPS)) OF
                                    TGP-SequenceShort

TGP-SequenceShort ::=               SEQUENCE {
    tgpsi                               TGPSI,
    tgps-StatusFlag                     TGPS-StatusFlag
}

TGPS-StatusFlag ::=                 ENUMERATED {
                                    tgpsActive, tgpsInactive }

TGPSI ::=                           INTEGER (1..maxTGPS)
```

11.4   Constant definitions

```
maxTGPS                   INTEGER ::= 6
```

13.4 UE variables

13.4.1 DEFAULT_TFC_SUBSET

This variable contains the TFC subset to go back to when a temporary TFC limitation is released.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFC subset	M			

13.4.2 ESTABLISHED_RABS

This variable is used to store information about the established radio access bearers in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
RAB information		0 to <MaxRABcount>		For each RAB established
>RAB info	M			
>RB information		1 to <MaxRBperRABcount>		For each RB belonging to the RAB
>>RB identity	M			
>>Subflow			Integer(0..<maxSubflowcount>)	Reference to the RAB subflow implemented by this RB

13.4.3 INTEGRITY_PROTECTION_INFO

This variable contains information about the current status of the integrity protection in the UE.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Status	M		Enumerated(Not started, Started)	
Failure count	M		Integer(0..N316)	
Signalling radio bearer specific integrity protection information		4		Status information for RB#0-3 in that order
> Uplink HFN	M		Integrity protection hyper frame number	
> Downlink HFN	M		Integrity protection hyper frame number	
> Uplink RRC Message sequence number	M		Integer (0..15)	
> Downlink RRC Message sequence number	M		Integer (0..15)	

13.4.4 MEASUREMENT_IDENTITY

This variable stores the measurements configured in the UE. For each configured measurement, the information below shall be stored.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MEASUREMENT CONTROL	M		10.1.12	Information as contained in this message.

13.4.5 ORDERED_ASU (FDD only)

This variable stores information about an ordered, but not yet executed, update of active set.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
ACTIVE SET UPDATE	M		10.1.1	Information as contained in this message.

13.4.6 ORDERED_CONFIG

This variable stores information about an ordered but not yet executed establishment/release/reconfiguration of radio bearers, and/or transport channels and/or physical channels.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *message*	M			Information as contained in one of the following messages
>RADIO BEARER SETUP			10.1.28	
>RADIO BEARER RECONFIGURATION			10.1.22	
>RADIO BEARER RELEASE			10.1.25	
>TRANSPORT CHANNEL RECONFIGURATION			10.1.49	
>PHYSICAL CHANNEL RECONFIGURATION			10.1.17	

13.4.7 PROTOCOL_ERROR_INDICATOR

This variable indicates whether there exist a protcol error that is to be reported to UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error indicator	M			

13.4.8 PROTOCOL_ERROR_INFORMATION

This varaible contains diagnostics to be reported to UTRAN for a message that was not completely understood.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Protocol error information	M			

13.4.9 SELECTED_PLMN

This variable contains the type of and identity of the selected PLMN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PLMN Type	M			
CHOICE *identity type*	M			
>PLMN identity				
>SID				

CHOICE *identity type*	Condition under which the given *identity type* is chosen
PLMN identity	PLMN Type is "GSM-MAP"
SID	PLMN Type is "ANSI-41"

13.4.X   TGPS_IDENTITY

This variable contains the configuration parameters of a compressed mode transmission gap pattern sequence

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS_IDENTITY	M		DPCH compressed mode info 10.3.6.22	Information as contained in the IE group "Transmission gap pattern sequence configuration parameters".

13.4.10 UE_CAPABILITY_TRANSFERRED

This variable stores information about which UE capabilities that have been transferred to UTRAN.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UE radio access capability	O			
UE system specific capability	O		Inter-system message	Includes inter-system classmark

13.4.X   UNACCEPTABLE_CONFIGURATION

This variable contains information on whether the received configuration from the UTRAN resulted in an illegal configuration.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
UNACCEPTABLE_CONFIGURATION	MP		Boolean	

13.4.11 VALUE_TAG

This variable contains information about the value tag for the last received system information block of a given type, for all system information blocks using value tags.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
MIB value tag	M		MIB value tag	Value tag for the master information block
SIB 1 value tag	C-*GSM*		PLMN value tag	Value tag for the system information block type 1
SIB 2 value tag	M		PLMN value tag	Value tag for the system information block type 2
SIB 3 value tag	M		Cell value tag	Value tag for the system information block type 3
SIB 4 value tag	M		Cell value tag	Value tag for the system information block type 4
SIB 5 value tag	M		Cell value tag	Value tag for the system information block type 5
SIB 6 value tag	M		Cell value tag	Value tag for the system information block type 6
SIB 8 value tag	M		Cell value tag	Value tag for the system information block type 8
SIB 11 value tag	M		Cell value tag	Value tag for the system information block type 11
SIB 12 value tag	M		Cell value tag	Value tag for the system information block type 12
SIB 13 value tag	C-*ANSI*		Cell value tag	Value tag for the system information block type 13
SIB 13.1 value tag	C-*ANSI*		Cell value tag	Value tag for the system information block type 13.1
SIB 13.2 value tag	C-*ANSI*		Cell value tag	Value tag for the system information block type 13.2
SIB 13.3 value tag	C-*ANSI*		Cell value tag	Value tag for the system information block type 13.3
SIB 13.4 value tag	C-*ANSI*		Cell value tag	Value tag for the system information block type 13.4
CHOICE *mode*				
> TDD				
>>SIB 14 value tag	M		Cell value tag	Value tag for the system information block type 14

Condition	Explanation
GSM	This information is only stored when the PLMN Type in the variable SELECTED_PLMN is "GSM-MAP".
ANSI	This information is only stored when the PLMN Type in the variable SELECTED_PLMN is "ANSI-41".

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	**CR**	**412r1**	Current Version:	**3.2.0**	

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ ↑ *CR number as allocated by MCC support team*

For submission to: TSG-RAN #8 for approval **X** strategic (for SMG
list expected approval meeting # here for information non-strategic use only)
↑

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐ ME **X** UTRAN / Radio **X** Core Network ☐
(at least one should be marked with an X)

Source:	TSG-RAN WG2	**Date:**	26st May 2000

Subject:	Modification of the RLC Size IE

Work item:	

Category: F Correction
  A Corresponds to a correction in an earlier release
(only one category B Addition of feature
shall be marked C Functional modification of feature **X**
with an X) D Editorial modification

Release: Phase 2
  Release 96
  Release 97
  Release 98
  Release 99 **X**
  Release 00

Reason for change:	Too much transfer-oriented description of the information in the tabular description

Clauses affected:	10.3.5, 11.3.5

Other specs affected:
Other 3G core specifications	☐ → List of CRs:	
Other GSM core specifications	☐ → List of CRs:	
MS test specifications	☐ → List of CRs:	
BSS test specifications	☐ → List of CRs:	
O&M specifications	☐ → List of CRs:	

Other comments:	

help.doc

<---------- double-click here for help and instructions on how to create a CR.

10.3.5 Transport CH Information elements

10.3.5.3 Bit mode RLC size info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Bit mode RLC size*	MP			
>Size type 1				1 bit granularity
>>Size part 1	MP		Integer(1..127)	in bits
>Size type 2				8 bit granularity
>>Size part 1	MP		Integer(128..248 by step of 8)	in bits
>>Size part 2	OP		Integer (1..7)	Bits added to size part 1.
>Size type 3				16 bit granularity
>>Size part 1	MP		Integer(256..1008 by step of 16)	in bits
>>Size part 2	OP		Integer (1..15)	Bits added to size part 1.
>Size type 4				64 bit granularity
>>Size part 1	MP		Integer(1024..4992 by step of 64)	in bits
>>Size part 2	OP		Integer (1..63)	Bits added to size part 1.

10.3.5.10 Octet mode RLC size info type1

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Octet mode RLC size*	MP			
>Size type 1				8 bit granularity
>>Size Part 1	MP		Integer (16..264 by step of 8)	
>Size type 2				32 bit granularity
>>Size Part 1	MP		Integer (272..1008 by step of 32)	
>>Size Part 2	OP		Integer (1..3)	Octets added to size part 1.
>Size type 3				64 bit granularity
>>Size Part 1	MP		Integer(1040..4944 by step of 64)	
>>Size Part 2	OP		Integer (1..7)	Octets added to size part 1.

10.3.5.11 Octet mode RLC size info type2

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Transport block size*	MP			
>Size type 1			Integer(48..296 by step of 8)	In bits
>Size type 2			Integer(312..1320 by step of 16)	In bits
>Size type 3			Integer(1384..4968 by step of 64)	In bits

10.3.5.11 Octet mode RLC size info type2

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

10.3.5.20 Transport Format Set

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Transport channel type*	MP			
>Dedicated transport channels				The transport channel that is configured with this TFS is of type DCH
>>Dynamic Transport Format Information	MP	1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	MP		Integer(0..4095)	Note
>>>RLC Size	MP		Integer(0..4992)	Unit is bits
>>>CHOICE *RLC mode*	OP			
>>>> Bit mode RLC size info			Bit mode RLC size info 10.3.5.3	The RLC entity mapped to this transport channels can generate bit specific RLC PDU sizes
>>>> Octet mode RLC size info type1			Octet mode RLC size info type1 10.3.5.10	The RLC entity mapped to this transport channels can only generate octet aligned RLC PDU sizes
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.14	
>Common transport channels				The transport channel that is configured with this TFS is of a type not equal to DCH
>>Dynamic Transport Format Information	MP	1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	MP		Integer(0..4095)	Note
>>>RLC Size	MP		Integer(0..4992)	Unit is bits
>>>CHOICE mode	MP			
>>>>FDD				
>>>>>Octet mode RLC size info type2	OP		Octet mode RLC size info type2 10.3.5.11	
>>>>TDD				
>>>>>CHOICE *RLC mode*	OP			
>>>>>>Bit mode RLC size info			Bit mode RLC size info 10.3.5.3	
>>>>>>Octet mode RLC size info type1			Octet mode RLC size info type1 10.3.5.10	
>>Semi-static Transport Format Information	MP		Semi-static Transport Format	

Information Element/Group name	Need	Multi	Type and reference	Semantics description
			Information 10.3.5.14	

Multi Bound	Explanation
MaxTFcount	Maximum number of different transport formats that can be included in the Transport format set for one transport channel is 32.

NOTE: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in 25.302.

NOTE: For dedicated channels, ~~sizes~~ 'RLC size' reflect RLC PDU sizes. In FDD for common channels ~~sizes~~ 'RLC size' reflect actual TB size. In TDD for common channels since MAC headers are not octet aligned, to calculate TB size the MAC header bit offset is added to the specified size (similar to the dedicated case). Therefore for TDD DCH TrCHs the 4 bit C/T is added if MAC multiplexing is applied, for FACH the 3 bit TCTF offset is added and for RACH the 2 bit TCTF offset is added.

NOTE: If the number of transport blocks <> 0, and Optional IE "CHOICE RLC mode" or "CHOICE Transport block size is absent, it implies that no RLC PDU data exists but only parity bits exist. If the number of transport blocks = 0, it implies that neither RLC PDU data nor parity bits exist.

11.3.5 Transport channel information elements

```
TransportChannel-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    maxAddTFC-Count,
    maxCPCHsetcount,
    maxCTFC,
    maxCTFC-DCH,
    maxCTFC-DSCH,
    maxDelTFC-Count,
    maxDelTrCHcount,
    maxDL-CCTrCHcount,
    maxDRAC-Classes,
    maxDRACReconAddTrCHcount,
    maxFACHcount,
    maxNoTFCI-Groups,
    maxReconAddTrCHcount,
    maxRM,
    maxRstTrCH-Count,
    maxTF-Count,
    maxTF-Value,
    maxTFC-Count,
    maxTFC-Value,
    maxTFC-Value-1,
    maxTFCI-1-Combs,
    maxTFCI-2-Combs,
    maxTFCI-Value,
    maxTFcount,
    maxTrCH,
    maxTrChCount,
    maxTrChValue,
    maxUL-CCTrCHcount
FROM Constant-definitions;

AddCTFC-List ::=                 SEQUENCE (SIZE (1..maxAddTFC-Count)) OF
                                    CTFC

Addition ::=                     SEQUENCE {
    ctfc                            CTFC,
    gainFactorInformation           GainFactorInformation,
    powerOffsetPp-m                 PowerOffsetPp-m
}
```

```
AdditionList ::=                SEQUENCE (SIZE (1..maxAddTFC-Count)) OF
                                    Addition

AllowedTFI-List ::=             SEQUENCE (SIZE (1..maxTF-Count)) OF
                                    INTEGER (0..maxTF-Value)

AllowedTFC-List ::=             SEQUENCE (SIZE (1..maxTFC-Count)) OF
                                    TFC-Value

BitModeRLC-SizeInfo ::=         CHOICE {
    sizeType1                       INTEGER (1..127),
    sizeType2                       SEQUENCE {
        part1                           INTEGER (0..15),
        part2                           INTEGER (1..7)              OPTIONAL
        -- Actual size = (part1 * 8) + 128 + part2
    },
    sizeType3                       SEQUENCE {
        part1                           INTEGER (0..47),
        part2                           INTEGER (1..15)         OPTIONAL
        -- Actual size = (part1 * 16) + 256 + part2
    },
    sizeType4                       SEQUENCE {
        part1                           INTEGER (0..62),
        part2                           INTEGER (1..63)         OPTIONAL
        -- Actual size = (part1 * 64) + 1024 + part2
    }
}

BLER-QualityValue ::=           INTEGER (0..63)

ChannelCodingType ::=           CHOICE {
    noCoding                        NULL,
    convolutional                   CodingRate,
    turbo                           NULL
}

CodingRate ::=                  ENUMERATED {
                                    half,
                                    third }

CommonDynamicTF-Info ::=        SEQUENCE {
    numberOfTransportBlocks         NumberOfTransportBlocks,
    modeSpecificInforLC-Size                    CHOICE {
        fdd                             SEQUENCE {
            octetModeRLC-SizeInfoType2      OctetModeRLC-SizeInfoType2
        },
        tdd                             SEQUENCE {
            commonTDD-Choice                CHOICE {
                bitModeRLC-SizeInfo         BitModeRLC-SizeInfo,
                octetModeRLC-SizeInfoType1  OctetModeRLC-SizeInfoType1
            }                                           OPTIONAL
        }
    }
}

CommonDynamicTF-InfoList ::=    SEQUENCE (SIZE (1..maxTFcount)) OF
                                    CommonDynamicTF-Info

CommonTransChTFS ::=            SEQUENCE {
    dynamicTF-InformationList        CommonDynamicTF-InfoList,
    semistaticTF-Information          SemistaticTF-Information
}

CompleteReconf ::=             SEQUENCE {
    ctfc                            CTFC,
    gainFactorInformation           GainFactorInformation,
    powerOffsetPp-m                 PowerOffsetPp-m
}

CompleteReconfList ::=          SEQUENCE (SIZE (1..maxTFC-Count)) OF
                                    CompleteReconf

ComputedGainFactors ::=         SEQUENCE {
    referenceTFC-Number             ReferenceTFC-Number
}

ControlledTrChList ::=          SEQUENCE (SIZE (1..maxTrChCount)) OF
                                    TransportChannelIdentity
```

```
CPCH-SetID ::=                  INTEGER (1..maxCPCHsetcount)

CRC-Size ::=                    ENUMERATED {
                                    crc0, crc8, crc12, crc16, crc24 }

CTFC-DCH ::=                    INTEGER (0..maxCTFC-DCH)

CTFC-DSCH ::=                   INTEGER (0..maxCTFC-DSCH)

CTFC ::=                        INTEGER (0..maxCTFC)

DedicatedDynamicTF-Info ::=     SEQUENCE {
    numberOfTransportBlocks         NumberOfTransportBlocks,
    rlcModeRLC-Size                 CHOICE {
        bitMode                         BitModeRLC-SizeInfo,
        octetModeType1                  OctetModeRLC-SizeInfoType1
    }                                                   OPTIONAL
}

DedicatedDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTFcount)) OF
                                    DedicatedDynamicTF-Info

DedicatedTransChTFS ::=         SEQUENCE {
    dynamicTF-InformationList       DedicatedDynamicTF-InfoList,
    semistaticTF-Information         SemistaticTF-Information
}

DeletedUL-TransChInformation ::=    SEQUENCE {
    transportChannelIdentity            TransportChannelIdentity
}

DL-AddReconfTransChInfo2List ::=    SEQUENCE (SIZE (1..maxReconAddTrCHcount)) OF
                                        DL-AddReconfTransChInformation2

DL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxReconAddTrCHcount)) OF
                                    DL-AddReconfTransChInformation

DL-AddReconfTransChInformation ::= SEQUENCE {
    trasportChannelIdentity         TransportChannelIdentity,
    transportFormatSet              TransportFormatSet,
    modeSpecificInfo                CHOICE {
        fdd                             NULL,
        tdd                             SEQUENCE {
            dl-DCH-TFCS-Identity            TFCS-Identity           OPTIONAL
        }
    }                                                   OPTIONAL,
    dch-QualityTarget               QualityTarget               OPTIONAL,
    tm-SignallingInfo               TM-SignallingInfo           OPTIONAL
}

DL-AddReconfTransChInformation2 ::= SEQUENCE {
    trasportChannelIdentity             TransportChannelIdentity,
    transportFormatSet                  TransportFormatSet,
    qualityTarget                       QualityTarget
}

DL-CommonTransChInfo ::=        SEQUENCE {
    sccpch-TFCS                     TFCS                            OPTIONAL,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            dl-DCH-TFCS                     TFCS                        OPTIONAL
        },
        tdd                             SEQUENCE {
            individualDL-CCTrCH-InfoList    IndividualDL-CCTrCH-InfoList
                                                            OPTIONAL
        }
    }
}

DL-DeletedTransChInfoList ::=   SEQUENCE (SIZE (1..maxDelTrCHcount)) OF
                                    DL-DeletedTransChInformation

DL-DeletedTransChInformation ::=    SEQUENCE {
    transportChannelIdentity            TransportChannelIdentity,
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
```

```
            dl-DCH-TFCS-Identity              TFCS-Identity           OPTIONAL
        }
    }                                                      OPTIONAL
}

DL-PreDefTrChInfoList ::=       SEQUENCE (SIZE (1..maxTrCH)) OF
                                DL-PreDefTrChInformation

DL-PreDefTrChInformation ::=    SEQUENCE {
    trasportChannelIdentity       TransportChannelIdentity,
    transportFormatSet            TransportFormatSet,
    qualityTarget                 QualityTarget              OPTIONAL,
    tm-SignallingInfo             TM-SignallingInfo          OPTIONAL
}

DRAC-ClassIdentity ::=          INTEGER (1..maxDRAC-Classes)

DRAC-StaticInformation ::=      SEQUENCE {
    transmissionTimeValidity      TransmissionTimeValidity,
    timeDurationBeforeRetry       TimeDurationBeforeRetry,
    drac-ClassIdentity            DRAC-ClassIdentity
}

DRAC-StaticInformationList ::=  SEQUENCE (SIZE (1..maxDRACReconAddTrCHcount))
OF DRAC-StaticInformation

FACH-PCH-Information ::=         SEQUENCE {
    transportFormatSet            TransportFormatSet,
    ctch-Indicator                BOOLEAN
}

FACH-PCH-InformationList ::=    SEQUENCE (SIZE (1..maxFACHcount)) OF
                                FACH-PCH-Information

GainFactor ::=                  INTEGER (0..15)

GainFactorInformation ::=       CHOICE {
    signalledGainFactors          SignalledGainFactors,
    computedGainFactors           ComputedGainFactors
}

IndividualDL-CCTrCH-Info ::=    SEQUENCE {
    dl-DCH-TFCS-Identity          TFCS-Identity,
    dl-DCH-TFCS                   TFCS
}

IndividualUL-CCTrCH-InfoList ::=   SEQUENCE (SIZE (1..maxUL-CCTrCHcount)) OF
                                   IndividualUL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::=    SEQUENCE {
    ul-DCH-TFCS-Identity          TFCS-Identity,
    ul-DCH-TFCS                   TFCS
}

IndividualDL-CCTrCH-InfoList ::=   SEQUENCE (SIZE (1..maxDL-CCTrCHcount)) OF
                                   IndividualDL-CCTrCH-Info

-- **TODO**, extensibility?
MessType ::=                    ENUMERATED {
                                transportFormatCombinationControl }

Non-allowedTFC-List ::=         SEQUENCE (SIZE (1..maxTFC-Count)) OF
                                INTEGER (0..maxTFC-Value)

NumberOfTransportBlocks ::=     INTEGER (0..4095)

OctetModeRLC-SizeInfoType1 ::=  CHOICE {
    sizeType1                     INTEGER (0..31),
    -- Actual size = (8 * sizeType1) + 16
    sizeType2                     SEQUENCE {
        part1                         INTEGER (0..23),
        part2                         INTEGER (1..3)           OPTIONAL
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
    },
    sizeType3                     SEQUENCE {
        part1                         INTEGER (0..61),
        part2                         INTEGER (1..7)           OPTIONAL
        -- Actual size = (64 * part1) + 1040 + (part2 * 8)
```

```
    }
}

OctetModeRLC-SizeInfoType2 ::=  SEQUENCE {
    sizeType1                       INTEGER (0..31),
    -- Actual size = (sizeType1 * 8) + 48
    sizeType2                       INTEGER (0..63),
    -- Actual size = (sizeType2 * 16) + 312
    sizeType3                       INTEGER (0..56)
    -- Actual size = (sizeType3 *64) + 1384
}

PowerOffsetPp-m ::=             INTEGER (-5..10)

PreDefTransChConfiguration ::=  SEQUENCE {
    ul-TFCS                         TFCS                            OPTIONAL,
    ul-AddReconfTrChInfoList        UL-PreDefTrChInfoList           OPTIONAL,
    dl-TFCS                         TFCS                            OPTIONAL,
    dl-TrChInfoList                 DL-PreDefTrChInfoList           OPTIONAL,
    modeSpecificInfo                CHOICE {
        fdd                             NULL,
        tdd                             SEQUENCE {
            ul-DCH-TFCS-Identity            TFCS-Identity,
            dl-DCH-TFCS-Identity            TFCS-Identity
        }
        -- TABULAR: The two separate choices in tabular have been
        -- combined here.
    }
}

QualityTarget ::=               SEQUENCE {
    bler-QualityValue               BLER-QualityValue
}

RateMatchingAttribute ::=       INTEGER (1..maxRM)

ReferenceTFC-Number ::=         INTEGER (0..15)

Removal ::=                     SEQUENCE {
    tfci                            TFCI
}

RemovalList ::=                 SEQUENCE (SIZE (1..maxDelTFC-Count)) OF
                                    Removal

RestrictedTrChIdentity ::=      INTEGER (0..maxTrChValue)

RestrictedTrChInfo ::=          SEQUENCE {
    restrictedTrChIdentity          RestrictedTrChIdentity,
    allowedTFI-List                 AllowedTFI-List                 OPTIONAL
}

RestrictedTrChInfoList ::=      SEQUENCE (SIZE (1..maxRstTrCH-Count)) OF
                                    RestrictedTrChInfo

SemistaticTF-Information ::=     SEQUENCE {
    transmissionTimeInterval        TransmissionTimeInterval,
    channelCodingType               ChannelCodingType,
    rateMatchingAttribute           RateMatchingAttribute,
    crc-Size                        CRC-Size
}

SignalledGainFactors ::=        SEQUENCE {
    gainFactorBetaC                 GainFactor,
    gainFactorBetaD                 GainFactor,
    referenceTFC-Number             ReferenceTFC-Number
}

TFC-DCH-List ::=                SEQUENCE (SIZE (1..maxTFCI-1-Combs)) OF
                                    CTFC-DCH

TFC-DSCH-List ::=               SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                    CTFC-DSCH

TFC-MappingOnDSCH ::=           SEQUENCE {
    maxTFCI-Field2Value             INTEGER (1..512),
    ctfc-DSCH                       CTFC-DSCH
}
```

```
TFC-MappingOnDSCH-List ::=      SEQUENCE (SIZE (1..maxNoTFCI-Groups)) OF
                                    TFC-MappingOnDSCH

TFC-Subset ::=                  CHOICE {
    minimumAllowedTFC-Number        TFC-Value,
    allowedTFC-List                 AllowedTFC-List,
    non-allowedTFC-List             Non-allowedTFC-List,
    restrictedTrChInfoList          RestrictedTrChInfoList
}

TFC-Value ::=                   INTEGER (0..maxTFC-Value-1)

TFCI ::=                        INTEGER (0..maxTFCI-Value)

TFCI2-Length ::=                INTEGER (1..9)

TFCS ::=                        CHOICE {
    fddWithoutAccessOrTDD           SEQUENCE {
        tfcsRepresentation              CHOICE {
            completeReconfList              CompleteReconfList,
            removalList                     RemovalList,
            additionList                    AdditionList
        }
    },
    fddWithAccess                   SEQUENCE {
        tfci2-Length                    TFCI2-Length,
        tfc-DCH-List                    TFC-DCH-List,
        signallingMethod                CHOICE {
            tfci-Range                      SEQUENCE {
                tfc-MappingOnDSCH-List          TFC-MappingOnDSCH-List
            },
            explicit                        SEQUENCE {
                tfc-DSCH-List                   TFC-DSCH-List
            }
        }
    }
}

TFCS-Identity ::=               SEQUENCE {
    tfcs-ID                         INTEGER (1..8),
    sharedChannelIndicator          BOOLEAN
}

TimeDurationBeforeRetry ::=     INTEGER (1..256)

TM-SignallingInfo   ::=         SEQUENCE {
    transportChannelIdentity        TransportChannelIdentity,
    tm-SignallingMode               CHOICE {
        mode1                           SEQUENCE {
            messType                        MessType
        },
        mode2                           SEQUENCE {
            controlledTrChList              ControlledTrChList
        }
    }
}

TransmissionTimeInterval ::=    ENUMERATED {
                                    tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::=    INTEGER (1..256)

TransportChannelIdentity ::=    INTEGER (1..64)

TransportFormatSet ::=          CHOICE {
    dedicatedTransChTFS             DedicatedTransChTFS,
    commonTransChTFS                CommonTransChTFS
}

UL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxReconAddTrCHcount)) OF
                                    UL-AddReconfTransChInformation

UL-AddReconfTransChInformation ::= SEQUENCE {
    transportChannelIdentity        TransportChannelIdentity,
    transportFormatSet              TransportFormatSet,
    modeSpecificInfo                CHOICE {
        fdd                             NULL,
```

```
        tdd                             SEQUENCE {
            ul-DCH-TFCS-Identity            TFCS-Identity            OPTIONAL
        }
    }                                                       OPTIONAL
}

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

UL-DeletedTransChInfoList ::=   SEQUENCE (SIZE (1..maxDelTrCHcount)) OF
                                DeletedUL-TransChInformation

UL-DeletedTransChInformation ::= SEQUENCE {
    transportChannelIdentity        TransportChannelIdentity,
    modeSpecificInfo                CHOICE {
        fdd                         NULL,
        tdd                         SEQUENCE {
            individualUL-CCTrCH-InfoList    IndividualUL-CCTrCH-InfoList
                                                OPTIONAL
        }
    }                                                       OPTIONAL
}

UL-PreDefTrChInfoList ::=       SEQUENCE (SIZE (1..maxTrCH)) OF
                                UL-PreDefTrChInformation

UL-PreDefTrChInformation ::=    SEQUENCE {
    transportChannelIdentity        TransportChannelIdentity,
    transportFormatSet              TransportFormatSet
}

END
```

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	**CR**	**414**		Current Version:	**3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

For submission to:	**TSG-RAN #8**	for approval	**X**		strategic		*(for SMG*
list expected approval meeting # here ↑		for information			non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM [ ]   ME **X**   UTRAN / Radio **X**   Core Network [ ]
(at least one should be marked with an X)

Source:	TSG-RAN WG2		**Date:**	24 May, 2000

Subject:	CPCH DL Power Control

Work item:	

Category:
(only one category shall be marked with an X)

			Release:	
F	Correction	**X**	Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature		Release 98	
D	Editorial modification		Release 99	**X**
			Release 00	

Reason for change:	DL DPCCH BER parameter is added to CPCH parameter list for DL power control in UE for CPCH.

Clauses affected:	10.3.3.6, 10.3.6.11, 11.3.3, 14.7

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:	

help.doc

<---------- double-click here for help and instructions on how to create a CR.

10.3.3.6 CPCH Parameters

NOTE: Only for FDD.

These parameters are used by any UE using any CPCH set allocated to the Node B that is broadcasting this system information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Initial Priority Delay	OP	8		Initial delays for ASC priority.
>NS_IP	MP		Integer (0…28)	Number of slots for initial fixed delay for each ASC priority level
Backoff control parameters	MP			
>N_ap_retrans_max	MP		Integer (1…64)	Max number of AP transmissions without AP-AICH response, a PHY parameter.
>N_access_fails	MP		Integer (1…64)	Max number of preamble ramping cycles when NAK response received, a MAC parameter.
>NF_bo_no aich	MP		Integer (0…31)	Number of frames for UE backoff after N ap_retrans_max unsuccessful AP access attempts, a MAC parameter.
>NS_bo_busy	MP		Integer (0…63)	Number of slots for UE fixed backoff after access attempt to busy CPCH, a MAC parameter.
>NF_bo_all_busy	MP		Integer (0…31)	Max number of frames for UE backoff after access attempt to last busy CPCH, a MAC parameter. UE randomly selects backoff value from range (0..NF_bo_all_busy)
>NF_bo_ mismatch	MP		Integer (0…127)	Max number of frames for the UE backoff after received mismatch on CD/CA-ICH, a MAC parameter. UE randomly selects backoff value from range (0..NF_bo_mismatch)
>T_CPCH	MP		Enumerated (0, 1)	CPCH channel timing used to determine Tau, a PHY parameter
DL DPCCH BER	MP		Integer (0,1,..63)	The BER quality value shall be set in the range $0 \leq$ DPCCH BER ≤ 1 in the unit BER_dB where: BER_dB_0: DPCCH BER = 0 BER_dB_1: $-\infty <$ Log10(DPCCH BER) < -4.03 BER_dB_2: $-4.03 \leq$ Log10(DPCCH BER) < -3.965 BER_dB_3: $-3.965 \leq$ Log10(DPCCH BER) < -3.9 … BER_dB_61: $-0.195 \leq$ Log10(DPCCH BER) < -0.13 BER_dB_62: $-0.13 \leq$ Log10(DPCCH BER) < -0.065 BER_dB_63: $-0.065 \leq$ Log10(DPCCH BER) ≤ 0

10.3.6.11 CPCH set info

NOTE: Only for FDD.

This IE may be broadcast in the System Information message or assigned by SRNC. It is pseudo-static in a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		CPCH set ID 10.3.5.4	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	MP		Transport Format Set 10.3.5.20	Transport Format Set Information allocated to this CPCH set.
AP preamble scrambling code	MP		Integer (0..255)	Preamble scrambling code for AP in UL
AP-AICH scrambling code	MP		Integer (0..255)	Scrambling code for AP-AICH in DL
AP-AICH channelisation code	MP		Integer(0..255)	Channelisation code for AP-AICH in DL
CD preamble scrambling code	MP		Integer (0..255)	Preamble scrambling code for CD in UL
CD/CA-ICH scrambling code	MP		Integer (0..255)	Scrambling code for CD/CA-ICH in DL
CD/CA-ICH channelisation code	MP		Integer (0..255)	Channelisation code for CD/CA-ICH in DL
Available CD access slot subchannel	CV-CDSigPresent	1 to <maxSubChNum>		Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays.
>CD access slot subchannel	MP		Enumerated (0..11)	
Available CD signatures	OP	1 to <maxSigNum>		Signatures for CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signatures	MP		Enumerated (0..15)	
Slot Format	MP			Indicates slot format of PCPCH for this CPCH set
> PC Preamble Slot Format	MP		Enumerated (0, 1)	Slot format for optional power control preamble in UL
> UL DPCCH Slot Format	MP		Enumerated (0,1,2,3,4,5)	Slot format for UL DPCCH
>DL DPCCH Slot Format	MP		Enumerated (0, 1)	Slot format for DL DPCCH
N_start_message	MP		Integer (1..8)	Number of Frames for start of message indication
Channel Assignment Active	OP		Boolean	When present, indicates that Node B send a CA message and mapping rule shall be used.
CPCH status indication mode	MP		Enumerated (PCPCH availability, PCPCH availability and minimum available	Defines the status information type broadcast on the CPCH Status Indication Channel (CSICH)

			Spreading Factor)	
PCPCH Channel Info.	MP	1 to <maxPCPCHs>		
> UL scrambling code	MP		Integer (0..255)	For PCPCH message part
> DL channelisation code	MP		Integer (0…511)	For DPCCH in PCPCH message part
> DL scrambling code	OP		Integer (0…255)	If not present, the primary DL scrambling code is used
> PCP length	MP		Enumerated (0 access slots, 8 access slots)	Indicates length of power control preamble, 0 access slots (no preamble used) or 8 access slots
> UCSM Info	CV-NCAA			
>> Available Minimum Spreading Factor	MP	1 to <maxSFNum m>		The UE may use this CPCH at any equal to or greater than the indicated Spreading Factor for PCPCH message part. In UE channel selection mode, the Spreading Factor for initial access is the minimum Spreading Factor.
>>> Minimum Spreading Factor	MP		Enumerated (4,8,16,32,64,128,256)	
>> NF_max	MP		Integer (1…64)	Maximum number of frames for PCPCH message part
>> Channel request parameters for UCSM	OP	1 to <maxSigNum>		Required in UE channel selection mode.
>>>Available AP signature	MP	1 to <maxAPSigNum>		AP preamble signature codes for selection of this PCPCH channel.
>>>> AP signature	MP		Enumerated (0..15)	
>>>Available AP access slot subchannel	OP	1 to <maxSubChNum>		Lists the set of subchannels to be used for AP access preambles in combination with the above AP signature. Note: if not present, all subchannels are to be used without access delays.
>>>> AP access slot subchannel	MP		Enumerated (0..11)	
VCAM info	CV-CAA			
> Available Minimum Spreading Factor	MP	1 to <maxSFNum m>		
>> Minimum Spreading Factor	MP		Enumerated (4,8,16,32,64,128,256)	
>>NF_max	MP		Integer (1..64)	Maximum number of frames for PCPCH message part
>> Maximum available number of PCPCH	MP		Integer (1..64)	Maximum available number of PCPCH for the indicated Spreading Factor.
>> Available AP signatures	MP	1 to <maxAPSigNum>		Signatures for AP preamble in UL.
>>> AP signature			Enumerated (0..15)	

>> Available AP sub-channel	OP	1 to < maxAP subCH		AP sub-channels for the given AP signature in UL. Note: if not present, all subchannels are to be used without access delays.
>>> AP sub-channel	MP		Enumerated (0..11)	

Condition	Explanation
CDSigPresent	This IE may be included if IE "Available CD signatures" is present.
NCAA	This IE is included if IE "Channel Assignment Active" is not present
CAA	This IE is included if IE ""Channel Assignment Active" is present.

Multi Bound	Explanation
MaxSubChNum	Maximum number of available sub channels (max = 12 subchannels)
MaxCDSigNum	Maximum number of available signatures for CD (max = 16 signatures)
MaxSFNum	Maximum number of available SFs. In case of single code, max=7.
MaxPCPCHs	Maximum number of PCPCH channels in a CPCH Set.
MaxAPSigNum	Maximum number of available signatures for AP (max = 16 signatures)
MaxAPsubCH	Maximum number of available sub channels for AP signature (max=12 sub channels)

NOTE: Criteria for DL power control needs to be defined.

11.3.3 User equipment information elements

```
UserEquipment-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    CN-DomainIdentity,
    IMEI,
    IMSI-GSM-MAP,
    LAI,
    P-TMSI-GSM-MAP,
    RAI,
    TMSI-GSM-MAP
FROM CoreNetwork-IEs

    RB-ActivationTimeInfoList
FROM RadioBearer-IEs

    FrequencyInfo
FROM PhysicalChannel-IEs

    InterSystemInfo
FROM Measurement-IEs
```

```
    ProtocolErrorInformation
FROM Other-IEs

    maxAlgoTypeCount,
    maxDRAC-Classes,
    maxFrequencyBandsCount,
    maxNoSystemCapability,
    maxRAT-Count,
    pageCount
FROM Constant-definitions;

ActivationTime ::=                  INTEGER (0..255)

BackoffControlParams ::=            SEQUENCE {
    n-AP-RetransMax                     N-AP-RetransMax,
    n-AccessFails                       N-AccessFails,
    nf-BO-NoAICH                        NF-BO-NoAICH,
    ns-BO-Busy                          NS-BO-Busy,
    nf-BO-AllBusy                       NF-BO-AllBusy,
    nf-BO-Mismatch                      NF-BO-Mismatch,
    t-CPCH                              T-CPCH
}

C-RNTI ::=                          BIT STRING (SIZE (16))

CapabilityUpdateRequirement ::=     SEQUENCE {
    ue-RadioCapabilityUpdateRequirement BOOLEAN,
    systemSpecificCapUpdateReqList      SystemSpecificCapUpdateReqList      OPTIONAL
}

CellUpdateCause ::=                 ENUMERATED {
                                        cellReselection,
                                        periodicCellUpdate,
                                        ul-DataTransmission,
                                        pagingResponse,
                                        rb-ControlResponse,
                                        spare1, spare2, spare3 }

ChipRateCapability ::=              ENUMERATED {
                                        mcps3-84, mcps1-28 }

CipheringAlgorithm ::=              ENUMERATED {
                                        standardUEA1,
                                        spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7, spare8,
                                        spare9, spare10, spare11, spare12,
                                        spare13, spare14, spare15 }

CipheringModeCommand ::=            CHOICE {
    startRestart                        CipheringAlgorithm,
    stopCiphering                       NULL
}

CipheringModeInfo ::=               SEQUENCE {
    cipheringModeCommand                CipheringModeCommand,
    -- TABULAR: The ciphering algorithm is included in
    -- the CipheringModeCommand.
    activationTimeForDPCH               ActivationTime                     OPTIONAL,
    rb-DL-CiphActivationTimeInfo        RB-ActivationTimeInfoList          OPTIONAL
}

CN-PagedUE-Identity ::=             CHOICE {
    imsi-GSM-MAP                        IMSI-GSM-MAP,
    tmsi-GSM-MAP                        TMSI-GSM-MAP,
    p-TMSI-GSM-MAP                      P-TMSI-GSM-MAP,
    imsi-DS-41                          IMSI-DS-41,
    tmsi-DS-41                          TMSI-DS-41,
    spare                               NULL
}

CompressedModeMeasCapability ::=    SEQUENCE {
    fdd-Measurements                    BOOLEAN,
```

```
    tdd-Measurements                      BOOLEAN,
    gsm-Measurements                      GSM-Measurements,
    multiCarrierMeasurements              BOOLEAN
}

ConformanceTestCompliance ::=         ENUMERATED {
                                        r99,
                                        spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7 }

CPCH-Parameters ::=                   SEQUENCE {
    initialPriorityDelayList              InitialPriorityDelayList          OPTIONAL,
    backoffControlParams                  BackoffControlParams,
    downlink-DPCCH-BER                    DL-DPCCH-BER
}

DL-DPCCH-BER                          INTEGER (0..63)

DL-PhysChCapabilityFDD ::=            SEQUENCE {
    maxSimultaneousCCTrCH-Count           MaxSimultaneousCCTrCH-Count,
    maxNoDPCH-PDSCH-Codes                 INTEGER (1..8),
    maxNoPhysChBitsReceived               MaxNoPhysChBitsReceived,
    supportForSF-512                      BOOLEAN,
    supportOfPDSCH                        BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception     SimultaneousSCCPCH-DPCH-Reception
}

DL-PhysChCapabilityTDD ::=            SEQUENCE {
    maxSimultaneousCCTrCH-Count           MaxSimultaneousCCTrCH-Count,
    maxTS-PerFrame                        MaxTS-PerFrame,
    maxPhysChPerFrame                     MaxPhysChPerFrame,
    minimumSF                             MinimumSF-DL,
    supportOfPDSCH                        BOOLEAN
}

DL-TransChCapability ::=              SEQUENCE {
    maxNoBitsReceived                     MaxNoBits,
    maxConvCodeBitsReceived               MaxNoBits,
    turboDecodingSupport                  TurboSupport,
    maxSimultaneousTransChs               MaxSimultaneousTransChsDL,
    maxReceivedTransportBlocks            MaxTransportBlocksDL,
    maxNumberOfTFC-InTFCS                 MaxNumberOfTFC-InTFCS-DL,
    maxNumberOfTF                         MaxNumberOfTF
}

DRAC-SysInfo ::=                      SEQUENCE {
    transmissionProbability               TransmissionProbability,
    maximumBitRate                        MaximumBitRate
}

DRAC-SysInfoList ::=                  SEQUENCE (SIZE(1..maxDRAC-Classes)) OF
                                        DRAC-SysInfo

DRX-CycleLengthCoefficient ::=        INTEGER (2..12)

DRX-Indicator ::=                     ENUMERATED {
                                        noDRX,
                                        drxWithCellUpdating,
                                        drxWithURA-Updating,
                                        spare1 }

ESN-DS-41 ::=                         BIT STRING (SIZE (32))

EstablishmentCause ::=                ENUMERATED {
                                        originatingSpeechCall,
                                        originatingCS-DataCall,
                                        originatingPS-DataCall,
                                        terminatingSpeechCall,
                                        terminatingCS-DataCall,
                                        terminatingPS-DataCall,
                                        emergencyCall,
                                        interSystemCellReselection,
                                        locationUpdate,
```

```
                                        imsi-Detach,
                                        sms,
                                        callRe-establishment,
                                        unspecified,
                                        spare1, spare2, spare3 }

FailureCauseWithProtErr ::=         CHOICE {
    configurationUnacceptable           NULL,
    physicalChannelFailure              NULL,
    incompatibleSimultaneousReconfiguration
                                        NULL,
    protocolError                       ProtocolErrorInformation,
    spare                               NULL
}

GSM-Measurements ::=                SEQUENCE {
    gsm900                              BOOLEAN,
    dcs1800                             BOOLEAN,
    gsm1900                             BOOLEAN
}

HyperFrameNumber ::=                BIT STRING (SIZE (20))

IMSI-and-ESN-DS-41 ::=              SEQUENCE {
    imsi-DS-41                          IMSI-DS-41,
    esn-DS-41                           ESN-DS-41
}

IMSI-DS-41 ::=                      OCTET STRING (SIZE (5..7))

InitialPriorityDelayList ::=        SEQUENCE (SIZE (8)) OF
                                        NS-IP

InitialUE-Capability ::=            SEQUENCE {
    maximumAM-EntityNumber              MaximumAM-EntityNumber
}

InitialUE-Identity ::=              CHOICE {
    imsi                                IMSI-GSM-MAP,
    tmsi-and-LAI                        TMSI-and-LAI-GSM-MAP,
    p-TMSI-and-RAI                      P-TMSI-and-RAI-GSM-MAP,
    imei                                IMEI,
    esn-DS-41                           ESN-DS-41,
    imsi-DS-41                          IMSI-DS-41,
    imsi-and-ESN-DS-41                  IMSI-and-ESN-DS-41,
    tmsi-DS-41                          TMSI-DS-41,
    spare                               NULL
}

IntegrityCheckInfo ::=              SEQUENCE {
    messageAuthenticationCode           MessageAuthenticationCode,
    rrc-MessageSequenceNumber           RRC-MessageSequenceNumber
}

IntegrityProtActivationInfo ::=     SEQUENCE {
    rrc-MessageSequenceNumberList       RRC-MessageSequenceNumberList
}

IntegrityProtectionAlgorithm ::=    ENUMERATED {
                                        standardUIA1,
                                        spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7, spare8,
                                        spare9, spare10, spare11, spare12,
                                        spare13, spare14, spare15 }

IntegrityProtectionModeCommand ::=  CHOICE {
    startIntegrityProtection            SEQUENCE {
        integrityProtInitNumber             IntegrityProtInitNumber
    },
    modify                              SEQUENCE {
        dl-IntegrityProtActivationInfo      IntegrityProtActivationInfo
    },
    spare                               NULL
```

```
}

IntegrityProtectionModeInfo ::=      SEQUENCE {
    integrityProtectionModeCommand      IntegrityProtectionModeCommand,
    -- TABULAR: DL integrity protection activation info and Integrity
    -- protection intialisation number have been nested inside
    -- IntegrityProtectionModeCommand.
    integrityProtectionAlgorithm        IntegrityProtectionAlgorithm      OPTIONAL
}

IntegrityProtInitNumber ::=          BIT STRING (SIZE (32))

LCS-Capability ::=                   SEQUENCE {
    standaloneLocMethodsSupported       BOOLEAN,
    ue-BasedOTDOA-Supported             BOOLEAN,
    networkAssistedGPS-Supported        NetworkAssistedGPS-Supported,
    gps-ReferenceTimeCapable            BOOLEAN,
    supportForIDL                       BOOLEAN
}

MaximumAM-EntityNumber ::=           ENUMERATED {
                                        am-2to3,
                                        am-4to8,
                                        am-16to32,
                                        spare1 }

MaximumAM-EntityNumberRLC-Cap ::=    ENUMERATED {
                                        am2, am3, am4, am8, am16, am32,
                                        spare1, spare2 }

-- Actual value = IE value * 16
MaximumBitRate ::=                   INTEGER (0..32)

MaxNoDPDCH-BitsTransmitted ::=       ENUMERATED {
                                        b150, b300, b600, b1200, b2400,
                                        b4800, b9600, b19200, b28800, b38400,
                                        b48000, b57600,
                                        spare1, spare2, spare3, spare4 }

MaxNoBits ::=                        ENUMERATED {
                                        b640, b1280, b2560, b3840, b5120,
                                        b6400, b7680, b8960, b10240,
                                        b20480, b40960, b81920, b163840,
                                        spare1, spare2, spare3 }

MaxNoPhysChBitsReceived ::=          ENUMERATED {
                                        b300, b600, b1200, b2400, b4800,
                                        b9600, b19200, b28800, b38400,
                                        b48000, b57600, b67200,
                                        spare1, spare2, spare3, spare4 }

MaxNoSCCPCH-RL ::=                   ENUMERATED {
                                        rl1, spare1, spare2, spare3,
                                        spare4, spare5, spare6, spare7 }

MaxNumberOfTF ::=                    ENUMERATED {
                                        tf32, tf64, tf128, tf256,
                                        tf512, tf1024, spare1, spare2 }

MaxNumberOfTFC-InTFCS-DL ::=         ENUMERATED {
                                        tfc16, tfc32, tfc48, tfc64, tfc96,
                                        tfc128, tfc256, tfc512, tfc1024,
                                        spare1, spare2, spare3, spare4,
                                        spare5, spare6, spare7 }

MaxNumberOfTFC-InTFCS-UL ::=         ENUMERATED {
                                        tfc4, tfc8, tfc16, tfc32, tfc48, tfc64,
                                        tfc96, tfc128, tfc256, tfc512, tfc1024,
                                        spare1, spare2, spare3, spare4,
                                        spare5 }

-- TABULAR: Used range in Release99 is 1..224
MaxPhysChPerFrame ::=                INTEGER (1..224)
```

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```
MaxPhysChPerTimeslot ::=            ENUMERATED {
                                        ts1, ts2 }

MaxSimultaneousCCTrCH-Count ::=     INTEGER (1..8)

MaxSimultaneousTransChsDL ::=       ENUMERATED {
                                        e4, e8, e16, e32 }

MaxSimultaneousTransChsUL ::=       ENUMERATED {
                                        e2, e4, e8, e16, e32,
                                        spare1, spare2, spare3 }

MaxTransportBlocksDL ::=            ENUMERATED {
                                        tb4, tb8, tb16, tb32, tb48,
                                        tb64, tb96, tb128, tb256, tb512,
                                        spare1, spare2, spare3,
                                        spare4, spare5, spare6 }

MaxTransportBlocksUL ::=            ENUMERATED {
                                        tb2, tb4, tb8, tb16, tb32, tb48,
                                        tb64, tb96, tb128, tb256, tb512,
                                        spare1, spare2, spare3,
                                        spare4, spare5 }

-- TABULAR: Used range in Release99 is 1..14
MaxTS-PerFrame ::=                  INTEGER (1..16)

-- TABULAR: This IE contains dependencies to UE-MultiModeRAT-Capability,
-- the conditional fields have been left mandatory for now.
MeasurementCapability ::=           SEQUENCE {
    downlinkCompressedMode              CompressedModeMeasCapability,
    uplinkCompressedMode                CompressedModeMeasCapability
}

MessageAuthenticationCode ::=       BIT STRING (SIZE (32))

MinimumSF-DL ::=                    ENUMERATED {
                                        sf1, sf16 }

MinimumSF-UL ::=                    ENUMERATED {
                                        sf1, sf2, sf4, sf8, sf16,
                                        spare1, spare2, spare3 }

MultiModeCapability ::=             ENUMERATED {
                                        tdd, fdd, fdd-tdd }

MultiRAT-Capability ::=             ENUMERATED {
                                        gsm, multicarrier,
                                        spare1, spare2 }

MultiRAT-CapabilityList ::=         SEQUENCE (SIZE (1..maxRAT-Count)) OF
                                        MultiRAT-Capability

N-300 ::=                           INTEGER (1..8)

N-302 ::=                           INTEGER (1..8)

N-303 ::=                           INTEGER (1..8)

N-304 ::=                           INTEGER (1..8)

N-310 ::=                           INTEGER (1..8)

N-312 ::=                           ENUMERATED {
                                        s1, s50, s100, s200, s400,
                                        s600, s800, s1000 }

N-313 ::=                           ENUMERATED {
                                        s1, s50, s100, s200, s400,
                                        s600, s800, s1000 }

N-315 ::=                           ENUMERATED {
```

```
                                        s1, s50, s100, s200, s400,
                                        s600, s800, s1000 }

N-AccessFails ::=                   INTEGER (1..64)

N-AP-RetransMax ::=                 INTEGER (1..64)

NetworkAssistedGPS-Supported ::=    ENUMERATED {
                                        networkBased,
                                        ue-Based,
                                        bothNetworkAndUE-Based,
                                        noNetworkAssistedGPS }

NF-BO-AllBusy ::=                   INTEGER (0..31)

NF-BO-NoAICH ::=                    INTEGER (0..31)

NF-BO-Mismatch ::=                  INTEGER (0..127)

NS-BO-Busy ::=                      INTEGER (0..63)

NS-IP ::=                           INTEGER (0..28)

P-TMSI-and-RAI-GSM-MAP ::=          SEQUENCE {
    p-TMSI                              P-TMSI-GSM-MAP,
    rai                                 RAI
}

PagingCause ::=                     ENUMERATED {
                                        terminatingSpeechCall,
                                        terminatingCS-DataCall,
                                        terminatingPS-DataCall,
                                        sms,
                                        unspecified,
                                        spare1, spare2, spare3 }

PagingRecord ::=                    CHOICE {
    cn-Page                             SEQUENCE {
        pagingCause                         PagingCause,
        cn-DomainIdentity                   CN-DomainIdentity,
        cn-pagedUE-Identity                 CN-PagedUE-Identity
    },
    utran-Page                          SEQUENCE {
        u-RNTI                              U-RNTI
    }
}

PagingRecordList ::=                SEQUENCE (SIZE (1..pageCount)) OF
                                        PagingRecord

PDCP-Capability ::=                 SEQUENCE {
    losslessSRNS-RelocationSupport     BOOLEAN,
    supportedHC-AlgoTypeList           SupportedHC-AlgoTypeList
}

PhysicalChannelCapability ::=       SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityFDD,
            uplinkPhysChCapability              UL-PhysChCapabilityFDD
        },
        tdd                                 SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityTDD,
            uplinkPhysChCapability              UL-PhysChCapabilityTDD
        }
    }
}

ProtocolErrorCause ::=              ENUMERATED {
                                        transferSyntaxError,
                                        messageTypeNonexistent,
                                        messageNotCompatibleWithReceiverState,
                                        ie-ValueNotComprehended,
```

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```
                                         messageExtensionNotComprehended,
                                         spare1, spare2, spare3 }

ProtocolErrorIndicator ::=          ENUMERATED {
                                         noError, errorOccurred }

ProtocolErrorIndicatorWithInfo ::= CHOICE {
    noError                              NULL,
    errorOccurred                        ProtocolErrorInformation
}

RadioFrequencyBand ::=              ENUMERATED {
                                         a, b, c,
                                         spare1 }

RadioFrequencyBandList ::=          SEQUENCE (SIZE (1..maxFrequencyBandsCount)) OF
                                         RadioFrequencyBand

Re-EstablishmentTimer ::=           SEQUENCE {
    t-314                                T-314,
    t-315                                T-315
}

RedirectionInfo ::=                 CHOICE {
    frequencyInfo                        FrequencyInfo,
    interSystemInfo                      InterSystemInfo,
    spare                                NULL
}

RejectionCause ::=                  ENUMERATED {
                                         congestion,
                                         unspecified,
                                         spare1, spare2 }

ReleaseCause ::=                    ENUMERATED {
                                         normalEvent,
                                         unspecified,
                                         pre-emptiveRelease,
                                         congestion,
                                         re-establishmentReject,
                                         spare1, spare2, spare3 }

RF-Capability ::=                   SEQUENCE {
    modeSpecificInfo                     CHOICE {
        fdd                                  SEQUENCE {
            ue-PowerClass                        UE-PowerClass,
            txRxFrequencySeparation              TxRxFrequencySeparation
        },
        tdd                                  SEQUENCE {
            ue-PowerClass                        UE-PowerClass,
            radioFrequencyBandList               RadioFrequencyBandList,
            chipRateCapability                   ChipRateCapability
        }
    }
}

RFC2507 ::=                         SEQUENCE {
    maximumMaxHeader                     INTEGER (60..65535)           DEFAULT 65535,
    maximumTCP-Space                     INTEGER (3..255)              DEFAULT 255,
    maximumNonTCP-Space                  INTEGER (3..65535)            DEFAULT 65535
}

RLC-Capability ::=                  SEQUENCE {
    totalRLC-AM-BufferSize               TotalRLC-AM-BufferSize,
    maximumAM-EntityNumber               MaximumAM-EntityNumberRLC-Cap
}

RLC-ReconfigurationIndicator ::=    BOOLEAN

RRC-MessageSequenceNumberList ::=   SEQUENCE (SIZE (2..3)) OF
                                         RRC-MessageSequenceNumber

RRC-MessageSequenceNumber ::=       INTEGER (0..15)
```

```
RRC-MessageTX-Count ::=             INTEGER (1..8)

S-RNTI ::=                          BIT STRING (SIZE (20))

S-RNTI-2 ::=                        INTEGER (0..1023)

SecurityCapability ::=              SEQUENCE {
    cipheringAlgorithm                  CipheringAlgorithm,
    integrityProtectionAlgorithm        IntegrityProtectionAlgorithm
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    notSupported                        NULL,
    supported                           MaxNoSCCPCH-RL
}

SRNC-Identity ::=                   BIT STRING (SIZE (12))

SupportedHC-AlgoType ::=            CHOICE {
    rfc2507                             RFC2507,
    spare                               NULL
}

SupportedHC-AlgoTypeList ::=        SEQUENCE (SIZE (1..maxAlgoTypeCount)) OF
                                        SupportedHC-AlgoType

SystemSpecificCapUpdateReq ::=      ENUMERATED {
                                        gsm, spare1, spare2, spare3,
                                        spare4, spare5, spare6, spare7,
                                        spare8, spare9, spare10, spare11,
                                        spare12, spare13, spare14, spare15 }

SystemSpecificCapUpdateReqList ::= SEQUENCE (SIZE (1..maxNoSystemCapability)) OF
                                        SystemSpecificCapUpdateReq

T-300 ::=                           INTEGER (1..8)

T-301 ::=                           INTEGER (1..8)

T-302 ::=                           INTEGER (1..8)

T-303 ::=                           INTEGER (1..8)

T-304 ::=                           ENUMERATED {
                                        ms100, ms200, ms400,
                                        ms1000, ms2000,
                                        spare1, spare2, spare3 }

T-305 ::=                           ENUMERATED {
                                        noUpdate, m5, m10, m30,
                                        m60, m120, m360, m720 }

T-306 ::=                           ENUMERATED {
                                        noUpdate, m5, m10, m30,
                                        m60, m120, m360, m720 }

T-307 ::=                           ENUMERATED {
                                        s5, s10, s15, s20,
                                        s30, s40, s50, spare1 }

T-308 ::=                           ENUMERATED {
                                        ms40, ms80, ms160, ms320 }

T-309 ::=                           INTEGER (1..8)

T-310 ::=                           ENUMERATED {
                                        ms40, ms80, ms120, ms160,
                                        ms200, ms240, ms280, ms320 }

T-311 ::=                           ENUMERATED {
                                        ms250, ms500, ms750, ms1000,
                                        ms1250, ms1500, ms1750, ms2000 }
```

```
T-312 ::=                         INTEGER (0..15)

T-313 ::=                         INTEGER (0..15)

T-314 ::=                         ENUMERATED {
                                      s0, s10, s20, s30, s60,
                                      s180, s600, s1200, s1800 }

T-315 ::=                         ENUMERATED {
                                      s0, s50, s100, s200, s400,
                                      s600, s800, s1000 }

T-CPCH ::=                        ENUMERATED {
                                      ct0, ct1 }

TMSI-and-LAI-GSM-MAP ::=          SEQUENCE {
    tmsi                              TMSI-GSM-MAP,
    lai                               LAI
}

TMSI-DS-41 ::=                    OCTET STRING (SIZE (2..12))

TotalRLC-AM-BufferSize ::=        ENUMERATED {
                                      kb2, kb10, kb50, kb100,
                                      kb150, kb500, kb1000,
                                      spare1 }

-- Actual value = IE value * 0.125
TransmissionProbability ::=       INTEGER (1..8)

TransportChannelCapability ::=    SEQUENCE {
    dl-TransChCapability              DL-TransChCapability,
    ul-TransChCapability              UL-TransChCapability
}

TurboSupport ::=                  CHOICE {
    notSupported                      NULL,
    supported                         MaxNoBits
}

TxRxFrequencySeparation ::=       ENUMERATED {
                                      mhz190, mhz174-8-205-2,
                                      mhz134-8-245-2, spare1 }

U-RNTI ::=                        SEQUENCE {
    srnc-Identity                     SRNC-Identity,
    s-RNTI                            S-RNTI
}

U-RNTI-Short ::=                  SEQUENCE {
    srnc-Identity                     SRNC-Identity,
    s-RNTI-2                          S-RNTI-2
}

UE-ConnTimersAndConstants ::=     SEQUENCE {
    t-301                             T-301,
    t-302                             T-302,
    n-302                             N-302,
    t-303                             T-303,
    n-303                             N-303,
    t-304                             T-304,
    n-304                             N-304,
    t-305                             T-305,
    t-306                             T-306,
    t-307                             T-307,
    t-308                             T-308,
    t-309                             T-309,
    t-310                             T-310,
    n-310                             N-310,
    t-311                             T-311,
    t-312                             T-312,
    n-312                             N-312,
```

```
    t-313                           T-313,
    n-313                           N-313,
    t-314                           T-314,
    t-315                           T-315,
    n-315                           N-315
}

UE-IdleTimersAndConstants ::=       SEQUENCE {
    t-300                           T-300,
    n-300                           N-300,
    t-312                           T-312,
    n-312                           N-312
}

UE-MultiModeRAT-Capability ::=      SEQUENCE {
    multiRAT-CapabilityList         MultiRAT-CapabilityList              OPTIONAL,
    multiModeCapability             MultiModeCapability
}

UE-PowerClass ::=                   INTEGER (1..4)

UE-RadioAccessCapability ::=        SEQUENCE {
    conformanceTestCompliance       ConformanceTestCompliance,
    pdcp-Capability                 PDCP-Capability,
    rlc-Capability                  RLC-Capability,
    transportChannelCapability      TransportChannelCapability,
    rf-Capability                   RF-Capability,
    physicalChannelCapability       PhysicalChannelCapability,
    ue-MultiModeRAT-Capability      UE-MultiModeRAT-Capability,
    securityCapability              SecurityCapability,
    lcs-Capability                  LCS-Capability,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            measurementCapability           MeasurementCapability
        },
        tdd                             NULL
    }
}

UL-PhysChCapabilityFDD ::=          SEQUENCE {
    maxNoDPDCH-BitsTransmitted      MaxNoDPDCH-BitsTransmitted,
    supportOfPCPCH                  BOOLEAN
}

UL-PhysChCapabilityTDD ::=          SEQUENCE {
    maxSimultaneousCCTrCH-Count     MaxSimultaneousCCTrCH-Count,
    maxTS-PerFrame                  MaxTS-PerFrame,
    maxPhysChPerTimeslot            MaxPhysChPerTimeslot,
    minimumSF                       MinimumSF-UL,
    supportOfPUSCH                  BOOLEAN
}

UL-TransChCapability ::=            SEQUENCE {
    maxNoBitsTransmitted            MaxNoBits,
    maxConvCodeBitsTransmitted      MaxNoBits,
    turboDecodingSupport            TurboSupport,
    maxSimultaneousTransChs         MaxSimultaneousTransChsUL,
    maxTransmittedBlocks            MaxTransportBlocksUL,
    maxNumberOfTFC-InTFCS           MaxNumberOfTFC-InTFCS-UL,
    maxNumberOfTF                   MaxNumberOfTF
}

URA-UpdateCause ::=                 ENUMERATED {
                                        changeOfURA,
                                        periodicURAUpdate,
                                        re-enteredServiceArea,
                                        spare1, spare2, spare3,
                                        spare4, spare5 }

WaitTime ::=                        INTEGER (0..15)

END
```

14.7　Downlink outer loop power control

This function is implemented in the UE in order to set the SIR target value on each CCTrCH used for the downlink inner loop power control. This SIR value shall be adjusted according to an autonomous function in the UE in order to achieve the same measured quality as the quality target set by UTRAN. The quality target is set as the transport channel BLER value for each transport channel as signalled by UTRAN. For CPCH the quality target is set as the BER of the DL DPCCH as signalled by UTRAN.

When transport channel BLER is used the UE shall run a quality target control loop such that the quality requirement is met for each transport channel, which has been assigned a BLER target.

When DL DPCCH BER is used the UE shall run a quality target control loop such that the quality requirement is met for each CPCH transport channel, which has been assigned a DL DPCCH BER target.

The UE shall set the SIR target within the range allocated by the RNC when the physical channel has been set up or reconfigured. It shall not increase the SIR target value before the inner loop power control has converged on the current value. The UE may estimate whether the inner loop power control has converged on the current value, by comparing the averaged measured SIR to the SIR target value.

If the UE has received a DL outer loop control message from UTRAN indicating that the SIR target value shall not be increased above the current value, it shall record the current value as the maximum allowed value for the outer loop power control function, until it receives a new DL outer loop control message from UTRAN indicating that the restriction is removed.

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331 CR	**415r1**	Current Version:	3.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ ↑ *CR number as allocated by MCC support team*

For submission to: **TSG-RAN #8**
list expected approval meeting # here ↑

| For approval | X | | Strategic | | *(for SMG* |
| For information | | | non-strategic | | *use only)* |

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM [ ]   ME **[X]**   UTRAN / Radio **[X]**   Core Network [ ]
(at least one should be marked with an X)

Source:	TSG-RAN WG2		**Date:**	05/27/00

Subject:	SFN Measurement in TDD

Work item:	

Category: F   Correction   **[X]**   **Release:**   Phase 2   [ ]
(only one category   A   Corresponds to a correction in an earlier release   [ ]   Release 96   [ ]
Shall be marked   B   Addition of feature   [ ]   Release 97   [ ]
With an X)   C   Functional modification of feature   [ ]   Release 98   [ ]
   D   Editorial modification   [ ]   Release 99   **[X]**
      Release 00   [ ]
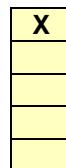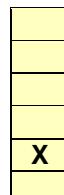
Reason for change:

In TDD mode it is necessary to maintain a continuous CFN when transiting cells for MAC layer ciphering and for scheduling radio transmissions. When the SFN is not coordinated between cells it is necessary to measure the OFF (CFN – SFN observed time difference) and increase the frequency of SFN transmission on the BCCH in TDD mode.

As defined in 25.301 (sect 8.2.2), ciphering of RLC TM connections is provided by the MAC using the CFN to maintain transmission sequence and uniquely identify data frames. When transiting cells it is necessary to provide a continuous CFN to maintain ciphering. It is also necessary to maintain CFN's for scheduling of frame transmissions over the air and Iub/Iur interfaces.

The CFN is not transmitted over the air interface it is calculated from each cells SFN by applying the OFF (offset). The OFF is determined before entering new cells by reading neighbour cell SFN and calculating the difference to the current cells SFN.

When SFN's are not synchronised between cells it is necessary for the UE to measure the SFN of neighbour cells and report the OFF result to the S-RNC when requested. It is therefore proposed to allow the CFN-SFN observed time difference measurement.

Clauses affected:	10.3.7.6, 10.3.7.3 & 10.3.7.5

Other specs Affected:
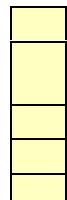
Other 3G core specifications	[ ]	→ List of CRs:	
Other GSM core specifications	[ ]	→ List of CRs:	
MS test specifications	[ ]	→ List of CRs:	
BSS test specifications	[ ]	→ List of CRs:	
O&M specifications	[ ]	→ List of CRs:	

Other comments:	

10.3.7.6 CFN-SFN observed time difference

NOTE: Only for FDD

The measured time difference to cell indicates the time difference that is measured by UE between CFN in the UE and the SFN of the target neighbouring cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages. This measurement is for FDD only

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE mode	MP			
>TDD				
>> CFN-SFN observed time difference	MP		Enumerated(0..4095)	Number of frames
>FDD				
>>CFN-SFN observed time difference	MP		Enumerated(0..9830399)	Number of chips

NOTE: This measurement is only used in TDD when cells are not SFN synchronized

10.3.7.3 Cell measured results

Includes non frequency related measured results for a cell

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Identity	OP		Cell Identity 10.3.2.2	
SFN-SFN observed time difference	OP		SFN-SFN observed time difference 10.3.7.90	
CFN-SFN observed time difference	OP		CFN-SFN observed time difference 10.3.7.6	Note 2
CHOICE *mode*	MP			
>FDD				
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.43	
>>CPICH Ec/N0	OP		Enumerated(-20..0)	In dB
>>CPICH RSCP	OP		Enumerated(-115..-40)	In dBm
>>CPICH SIR	OP		Enumerated(-10..20)	In dB Note 1
>>Pathloss	OP		Enumerated(46..158)	In dB
>>CFN-SFN observed time difference	OP		CFN-SFN observed time difference 10.3.7.6	Note 2
>TDD				
>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.41	
>>Primary CCPCH RSCP	OP			
>>DL CCTrCH SIR	OP	1 to <maxCCTrCHcount>		SIR measurements for each DL CCTrCH
>>>Timeslot	OP	1 to <maxTS perCCTrCH count		All timeslots on which the CCTrCH is mapped on
>>>>ISCP	OP			
>>>>RSCP	OP			
>>DL Timeslot ISCP	OP	1 to <maxTS toMEASURE count>		ISCP measurements for each timeslot indicated by the UTRAN
>>>ISCP	OP			

10.3.7.5   Cell reporting quantities

Includes non frequency related cell reporting quantities

For all boolean types TRUE means inclusion in the report is requested

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SFN-SFN observed time difference	MP		Enumerated(No report, type 1, type 2)	
CFN-SFN observed time difference	MP		Boolean	
Cell Identity	MP		Boolean	
CHOICE *mode*	MP			
>FDD				
>>CPICH Ec/N0	MP		Boolean	
>>CPICH RSCP	MP		Boolean	
>>CPICH SIR	MP		Boolean	Note 1
>>Pathloss	MP		Boolean	
>>CFN-SFN observed time difference	MP		Boolean	
>TDD				
>>DL CCTrCH SIR	MP		Boolean	
>>Timeslot ISCP	MP		Boolean	
>>Primary CCPCH RSCP	MP		Boolean	
>>Pathloss	MP		Boolean	

```
CellMeasuredResults ::=          SEQUENCE {
    cellIdentity                 CellIdentity                OPTIONAL,
    sfn-SFN-ObsTimeDifference     SFN-SFN-ObsTimeDifference   OPTIONAL,
    cfn-SFN-ObsTimeDifference     CFN-SFN-ObsTimeDifference   OPTIONAL,
    modeSpecificInfo             CHOICE {
        fdd                          SEQUENCE {
            primaryCPICH-Info            PrimaryCPICH-Info,
            cpich-Ec-N0                  CPICH-Ec-N0          OPTIONAL,
            cpich-RSCP                   CPICH-RSCP           OPTIONAL,
            cpich-SIR                    CPICH-SIR            OPTIONAL,
            pathloss                     Pathloss             OPTIONAL,
            cfn-SFN-ObsTimeDifference     CFN-SFN-ObsTimeDifference
                                                              OPTIONAL
        },
        tdd                          SEQUENCE {
            primaryCCPCH-Info            PrimaryCCPCH-Info,
            dl-CCTrCH-SIR-List           DL-CCTrCH-SIR-List   OPTIONAL,
            dl-TimeslotISCP-List         DL-TimeslotISCP-List OPTIONAL
        }
    }
}

CellReportingQuantities ::=      SEQUENCE {
    sfn-SFN-OTD-Type             SFN-SFN-OTD-Type,
    cellIdentity                 CellIdentity,
    cfn-SFN-ObsTimeDifference     BOOLEAN,
    modeSpecificInfo             CHOICE {
        fdd                          SEQUENCE {
            cpich-Ec-N0                  BOOLEAN,
            cpich-RSCP                   BOOLEAN,
            cpich-SIR                    BOOLEAN,
            pathloss                     BOOLEAN,
            cfn-SFN-ObsTimeDifference     BOOLEAN
        },
        tdd                          SEQUENCE {
            dl-CCTrCH-SIR                BOOLEAN,
            timeslotISCP                BOOLEAN,
            primaryCCPCH-RSCP           BOOLEAN,
            pathloss                    BOOLEAN
        }
    }
}

CFN-SFN-ObsTimeDifference ::=    SEQUENCE {
    modeSpecificInfo             CHOICE {
        fdd                          SEQUENCE {
            cfn-SFN-ChipDiff             INTEGER (0..9830399)
        },
        tdd                          SEQUENCE {
            cfn-SFN-FrameDiff            INTEGER (0..4095)
        }
    }
}
```