

CHANGE REQUEST

⌘ **25.331 CR 2253** ⌘ rev **1** ⌘ Current version: **6.0.1** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Introduction of UMTS1700/2100 (Band IV)		
Source:	⌘ Nokia, [Samsung]		
Work item code:	⌘ RinImp-UMTS1721	Date:	⌘ 04/03/04
Category:	⌘ B	Release:	⌘ Rel-6
	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>

Reason for change:	⌘ - Introduction of UMTS1700/2100		
Summary of change:	⌘ - SIB 5bis is created. In Band IV networks SIB 5bis should be sent instead of SIB 5. A UE not supporting Band IV entering a network that do not send SIB 5 will be barred from access. A UE not supporting Band IV will hence not be able to transmit on the uplink neither for normal access nor emergency calls. This is also the desired behaviour since this UE does not have the correct frequency support. - UMTS1700/2100, ie. Band IV is added in the UE capability and in the IE "Frequency band indicator" in SIB5bis and SIB6. - Revision1: - Updated 8.1.1.5 to cover UEs that support Band IV and some other bands. - Updated 8.1.1.6.5 to cover the case where a Band IV UE enters eg. a R99 Band I network that does not broadcast the IE "Frequency band indicator".		
Consequences if not approved:	⌘ - UMTS1700/2100 cannot be supported		

Clauses affected:	⌘ 8.1.1.1.2, 8.1.1.5, 8.1.1.6.5, 8.5.17, 8.6.4.8, 10.2.48.8.8, 10.3.3.21a, 10.3.3.42a, 10.3.6.35b, 10.3.6.55, 10.3.8.18a, 10.3.8.21, 10.3.8.22, 11.3						
Other specs	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> </table>	Y	N	X		Other core specifications	⌘ 25.307 R4-040027, CR 324 to Rel-6 of 25.101 R4-040119, CR 216r1 to Rel-6 of 25.104
Y	N						
X							

affected:	<input type="checkbox"/>	
	<input checked="" type="checkbox"/>	Test specifications
	<input type="checkbox"/>	
	<input checked="" type="checkbox"/>	O&M Specifications

Other comments: ⌘

R4-040120, CR 336r1 to Rel-6 of 25.141
R4-040148, CR 650r1 to Rel-6 of 25.133

How to create CRs using this form:

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

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

8.1 RRC Connection Management Procedures

8.1.1 Broadcast of system information

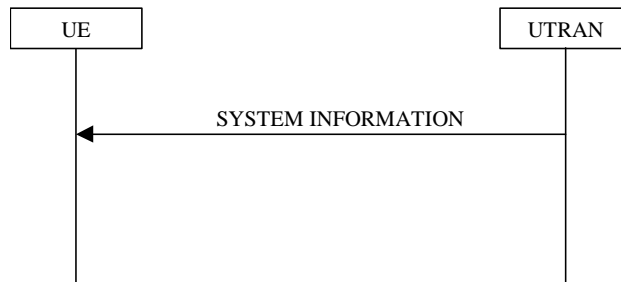


Figure 8.1.1-1: Broadcast of system information

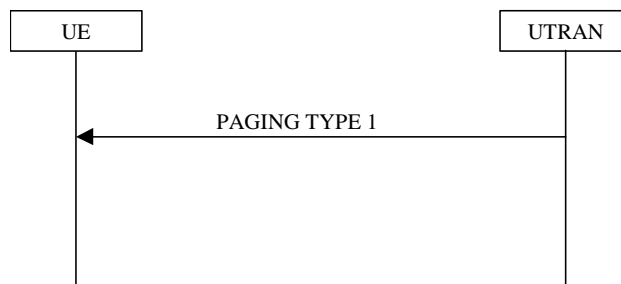


Figure 8.1.1-2: Notification of system information modification for UEs in idle mode, CELL_PCH state and URA_PCH state

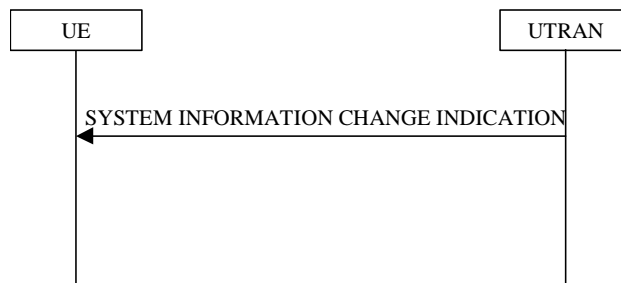


Figure 8.1.1-3: Notification of system information modification for UEs in CELL_FACH state

8.1.1.1 General

The purpose of this procedure is to broadcast system information from the UTRAN to UEs in a cell.

8.1.1.1.1 System information structure

The system information elements are broadcast in *system information blocks*. A system information block groups together system information elements of the same nature. Different system information blocks may have different characteristics, e.g. regarding their repetition rate and the requirements on UEs to re-read the system information blocks.

The system information is organised as a tree. A *master information block* gives references and scheduling information to a number of system information blocks in a cell. The system information blocks contain the actual system information. The master information block may optionally also contain reference and scheduling information to one or two *scheduling blocks*, which give references and scheduling information for additional system information blocks. Scheduling information for a system information block may only be included in either the master information block or one of the scheduling blocks.

For all system information blocks except System Information Block types 15.2, 15.3 and 16, the content is the same in each occurrence for system information blocks using value tag. System Information Block types 15.2, 15.3 and 16 may occur more than once with different content. In this case scheduling information is provided for each such occurrence of the system information block. System information blocks that do not use value tag may have different content for each occurrence.

8.1.1.1.2 System information blocks

Table 8.1.1 specifies all system information blocks and their characteristics.

The *area scope column* in table 8.1.1 specifies the area where a system information block's value tag is valid. If the area scope is *cell*, the UE shall consider the system information block to be valid only in the cell in which it was read. If system information blocks have been previously stored for this cell, the UE shall check whether the value tag for the system information block in the entered cell is different compared to the stored value tag. If the area scope is *PLMN* or *Equivalent PLMN*, the UE shall check the value tag for the system information block when a new cell is selected. If the value tag for the system information block in the new cell is different compared to the value tag for the system information block stored in the UE, the UE shall re-read the system information block. If the area scope is *PLMN*, the UE shall consider the system information block to be valid only within the PLMN in which it was read. If the area scope is *Equivalent PLMN*, the UE shall consider the system information block to be valid within the PLMN in which it was received and all PLMNs which are indicated by higher layers to be equivalent.

For System information block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence has its own independent value tag. The UE shall re-read a particular occurrence if the value tag of this occurrence has changed compared to that stored in the UE.

The *UE mode/state column when block is valid* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block shall be regarded as valid by the UE. In other words, the indicated system information block becomes invalid upon change to a mode/state that is not included in this column. System Information Block Type 16 remains also valid upon transition to or from GSM/GPRS. In some cases, the states are inserted in brackets to indicate that the validity is dependent on the broadcast of the associated System Information Blocks by the network as explained in the relevant procedure subclause.

The *UE mode/state column when block is read* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block may be read by the UE. The UE shall have the necessary information prior to execution of any procedure requiring information to be obtained from the appropriate system information block. The requirements on the UE in terms of when to read the system information may therefore be derived from the procedure specifications that specify which IEs are required in the different UE modes/states in conjunction with the different performance requirements that are specified.

System Information Block type 10 shall only be read by the UE while in CELL_DCH.

The UE shall:

- 1> if System Information Block type 11 is referenced in the master information block or in the scheduling blocks:
 - 2> if System Information Block type 12 is not referenced in the master information block or in the scheduling blocks, or broadcast of System Information Block type 12 is not indicated in System Information Block type 11:
 - 3> have read and acted upon System Information Block type 11 in a cell when the UE transmits an RRC message on RACH.
 - 2> else:
 - 3> have read and acted upon System Information Block type 11 in a cell before the UE transmits the RRC CONNECTION REQUEST message.
 - 3> have read and acted upon both System Information Block type 11 and System Information Block type 12 in a cell when:
 - 4> the UE transmits an RRC message on RACH in RRC connected mode; or
 - 4> the UE receives a message commanding to enter Cell_DCH state.

NOTE 1: There are a number of system information blocks that include the same IEs while the UE mode/state in which the information is valid differs. This approach is intended to allow the use of different IE values in different UE mode/states.

NOTE 2: System Information Block Type 16 is also obtained by a UE while in GSM/GPRS. The details of this are not within the scope of this specification.

The *Scheduling information* column in table 8.1.1 specifies the position and repetition period for the SIB.

The *modification of system information* column in table 8.1.1 specifies the update mechanisms applicable for a certain system information block. For system information blocks with a value tag, the UE shall update the information according to subclause 8.1.1.7.1 or 8.1.1.7.2. For system information blocks with an expiration timer, the UE shall, when the timer expires, perform an update of the information according to subclause 8.1.1.7.4.

Table 8.1.1: Specification of system information block characteristics

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
Master information block	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	SIB_POS = 0 SIB_REP = 8 (FDD) SIB_REP = 8, 16, 32 (TDD) SIB_OFF=2	Value tag	
Scheduling block 1	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
Scheduling block 2	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
System information block type 1	PLMN	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 3	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	
System information block type 4	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If System information block type 4 is not broadcast in a cell, the connected mode UE shall apply information in System information block type 3 in connected mode.
System information block type 5 and 5bis	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Specified by the IE "Scheduling information"	Value tag	System information block type 5bis is sent instead of system information block type 5 in networks that use Band IV.

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 6	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Value tag	<p>If system information block type 6 is not broadcast in a cell, the connected mode UE shall read System information block type 5.</p> <p>If some of the optional IEs are not included in System information block type 6, the UE shall read the corresponding IEs in System information block type 5</p> <p>In TDD mode system information block 6 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7 and/or if shared transport channels are assigned to the UE. In these cases system information block type 6 is not broadcast the UE shall read system information block type 5.</p>
System information block type 7	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Expiration timer = MAX(32 , SIB_REP * ExpirationTimeFactor)	In TDD mode system information block type 7 shall only be read in CELL_DCH if shared transport channels are assigned to the UE.
System information block type 8	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 9	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 10	Cell	CELL_DCH	CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 11	Cell	Idle mode (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH)	Idle mode (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 12	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If system information block type 12 is not broadcast in a cell, the connected mode UE shall read System information block type 11. If some of the optional IEs are not included in System information block type 12, the UE shall read the corresponding IEs in System information block type 11.
System information block type 13	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.3	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 14	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = MAX(32 , SIB_REP * ExpirationTimeFactor)	This system information block is used in 3.84 Mcps TDD mode only. System information block type 14 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7.
System information block type 15	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences
System information block type 15.3	PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 15.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.5	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 16	Equivalent PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences. This system information block is also valid while in GSM/GPRS.
System information block type 17	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	This system information block is used in TDD mode only. System information block type 17 shall only be read if shared transport channels are assigned to the UE.
System Information Block type 18	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	

The UE shall acquire all system information blocks except system information block type 10 on BCH. System Information Block type 10 shall be acquired on the FACH and only by UEs with support for simultaneous reception of one SCCPCH and one DPCH. If System Information Block type 10 is not broadcast in a cell, the DRAC procedures do not apply in this cell. System Information Block type 10 is used in FDD mode only.

8.1.1.1.3 Segmentation and concatenation of system information blocks

A generic SYSTEM INFORMATION message is used to convey the system information blocks on the BCCH. A given BCCH may be mapped onto either a BCH or a FACH transport channel according to subclause 8.1.1.1.2. The size of the SYSTEM INFORMATION message shall fit the size of a BCH or a FACH transport block.

The RRC layer in UTRAN performs segmentation and concatenation of encoded system information blocks. If the encoded system information block is larger than the size of a SYSTEM INFORMATION message, it will be segmented and transmitted in several messages. If the encoded system information block is smaller than a SYSTEM INFORMATION message, UTRAN may concatenate several system information blocks, or the first segment or the last segment into the same message as specified in the remainder of this clause.

Four different segment types are defined:

- First segment;
- Subsequent segment;
- Last segment;
- Complete.

Each of the types - *First*, *Subsequent* and *Last segment* - is used to transfer segments of a master information block, scheduling block or a system information block. The segment type, *Complete*, is used to transfer a complete master information block, complete scheduling block or a complete system information block.

Each segment consists of a header and a data field. The data field carries the encoded system information elements. The header contains the following parameters:

- The number of segments in the system information block (SEG_COUNT). This parameter is only included in the header if the segment type is "First segment".
- SIB type. The SIB type uniquely identifies the master information block, scheduling block or a system information block.
- Segment index. This parameter is only included in the header if the segment type is "Subsequent segment" or "Last segment".

UTRAN may combine one or several segments of variable length in the same SYSTEM INFORMATION message. The following combinations are allowed:

1. No segment;
2. First segment;
3. Subsequent segment;
4. Last segment;
5. Last segment + First segment;
6. Last segment + one or several Complete;
7. Last segment + one or several Complete + First segment;
8. One or several Complete;
9. One or several Complete + First segment;
10. One Complete of size 215 to 226;
11. Last segment of size 215 to 222.

The "No segment" combination is used when there is no master information block, scheduling block or system information block scheduled for a specific BCH transport block.

UEs are not required to support the reception of multiple occurrences of the same system information block type within one SYSTEM INFORMATION message.

NOTE: Since the SIB type is the same for each occurrence of the system information block, the UE does not know the order in which the occurrences, scheduled for this SYSTEM INFORMATION message, appear. Therefore, the UE is unable to determine which scheduling information, e.g., value tag relates to which occurrence of the system information block.

8.1.1.1.4 Re-assembly of segments

The RRC layer in the UE shall perform re-assembly of segments. All segments belonging to the same master information block, scheduling block or system information block shall be assembled in ascending order with respect to the segment index. When all segments of the master information block, scheduling block or a system information block have been received, the UE shall perform decoding of the complete master information block, scheduling block or system information block. For System Information Block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence shall be re-assembled independently.

The UE shall discard system information blocks of which segments were missing, of which segments were received out of sequence and/or for which duplicate segments were received. The only valid sequence is an ascending one with the sequence starting with the First Segment of the associated System Information Block.

If the UE receives a Subsequent segment or Last segment where the index in IE "Segment index" is equal to or larger than the number of segments stated in IE "SEG_COUNT" in the scheduling information for that scheduling block or system information block:

- 1> the UE may:
 - 2> read all the segments to create a system information block as defined by the scheduling information read by the UE;
 - 2> store the content of the system information block with a value tag set to the value NULL; and
 - 2> consider the content of the scheduling block or system information block as valid:
 - 3> until it receives the same type of scheduling block or system information block in a position according to its scheduling information; or
 - 3> at most for 6 hours after reception.
- 1> and the UE shall:
 - 2> re-read scheduling information for that scheduling block or system information block.

If the UE receives a Subsequent segment or Last segment where the index in IE "Segment index" is equal to or larger than the number of segments stated in IE "SEG_COUNT" in the First segment, the UE shall

- 1> discard all segments for that master information block, scheduling block or system information block; and
- 1> re-read the scheduling information for that system information block;
- 1> then re-read all segments for that system information block.

8.1.1.1.5 Scheduling of system information

Scheduling of system information blocks is performed by the RRC layer in UTRAN. If segmentation is used, it should be possible to schedule each segment separately.

To allow the mixing of system information blocks with short repetition period and system information blocks with segmentation over many frames, UTRAN may multiplex segments from different system information blocks. Multiplexing and de-multiplexing is performed by the RRC layer.

The scheduling of each system information block broadcast on a BCH transport channel is defined by the following parameters:

- the number of segments (SEG_COUNT);
- the repetition period (SIB_REP). The same value applies to all segments;
- the position (phase) of the first segment within one cycle of the Cell System Frame Number (SIB_POS(0)). Since system information blocks are repeated with period SIB_REP, the value of SIB_POS(i), $i = 0, 1, 2, \dots, \text{SEG_COUNT}-1$ must be less than SIB_REP for all segments;
- the offset of the subsequent segments in ascending index order (SIB_OFF(i), $i = 1, 2, \dots, \text{SEG_COUNT}-1$). The position of the subsequent segments is calculated using the following: $\text{SIB_POS}(i) = \text{SIB_POS}(i-1) + \text{SIB_OFF}(i)$.

The scheduling is based on the Cell System Frame Number (SFN). The SFN of a frame at which a particular segment, i , with $i = 0, 1, 2, \dots, \text{SEG_COUNT}-1$ of a system information block occurs, fulfils the following relation:

$$\text{SFN mod SIB_REP} = \text{SIB_POS}(i)$$

In FDD and TDD the scheduling of the master information block is fixed as defined in table 8.1.1. For TDD, UTRAN may apply one of the values allowed for the master information block's repetition period. The value that UTRAN is using in TDD is not signalled; UEs have to determine it by trial and error.

8.1.1.2 Initiation

The system information is continuously broadcast on a regular basis in accordance with the scheduling defined for each system information block.

8.1.1.3 Reception of SYSTEM INFORMATION messages by the UE

The UE shall read SYSTEM INFORMATION messages broadcast on a BCH transport channel in idle mode and in the connected mode in states CELL_FACH, CELL_PCH, URA_PCH and CELL_DCH (TDD only). In addition, UEs in FDD mode which support simultaneous reception of one SCCPCH and one DPCH shall read system information on a FACH transport channel when in CELL_DCH state.

In idle mode and connected mode different combinations of system information blocks are valid. The UE shall acquire the system information blocks that are needed according to table 8.1.1.

The UE may store system information blocks with *cell*, *PLMN* or *Equivalent PLMN* area scope (including their value tag if applicable) for different cells and different PLMNs, to be used if the UE returns to these cells.

The UE shall consider all stored system information blocks as invalid after it has been switched off. Some information obtained from system information may be stored by the UE or in the USIM for use in a stored information cell selection.

When selecting a new cell within the currently used PLMN, the UE shall consider all current system information blocks with area scope *cell* to be invalid. If the UE has stored valid system information blocks for the newly selected cell, the UE may set those as current system information blocks.

After selecting a new PLMN, the UE shall consider all current system information blocks with area scope *cell* and *PLMN* to be invalid. If the UE has previously stored valid system information blocks for the selected cell of the new PLMN, the UE may set those as current system information blocks. Upon selection of a new PLMN the UE shall store all information elements specified within variable SELECTED_PLMN for the new PLMN within this variable.

After selecting a new PLMN which is not indicated by higher layers to be equivalent to the identity of the previously selected PLMN, the UE shall consider all system information blocks with area scope *Equivalent PLMN* to be invalid.

8.1.1.4 Reception of SYSTEM INFORMATION messages broadcast on a FACH transport channel

System information block type 10 may be broadcast on FACH, as specified in subclause 8.1.1.1.2.

When reading system information blocks on FACH, the UE shall perform the actions as defined in subclause 8.1.1.6.

8.1.1.5 Actions upon reception of the Master Information Block and Scheduling Block(s)

When selecting a new cell, the UE shall read the master information block. The UE may use the pre-defined scheduling information to locate the master information block in the cell.

Upon reception of the master information block, the UE shall:

- 1> if the "PLMN type" in the variable SELECTED_PLMN has the value "GSM-MAP" and the IE "PLMN Type" has the value "GSM-MAP" or "GSM-MAP and ANSI-41":
 - 2> check the IE "PLMN identity" in the master information block and verify that it is the selected PLMN, stored as "PLMN identity" in the variable SELECTED_PLMN.
- 1> if the "PLMN type" in the variable SELECTED_PLMN has the value "ANSI-41" and the IE "PLMN Type" has the value "ANSI-41" or "GSM-MAP and ANSI-41":
 - 2> store the ANSI-41 Information elements contained in the master information block and perform initial process for ANSI-41.
- 1> compare the value tag in the master information block with the value tag stored for this cell and this PLMN in the variable VALUE_TAG;

- 1> if the value tags differ, or if no IEs for the master information block are stored:
 - 2> store the value tag into the variable VALUE_TAG for the master information block;
 - 2> read and store scheduling information included in the master information block.
- 1> if the value tags are the same the UE may use stored system information blocks and scheduling blocks using value tag that were stored for this cell and this PLMN as valid system information.

For all system information blocks or scheduling blocks that are supported by the UE referenced in the master information block or the scheduling blocks, the UE shall perform the following actions:

- 1> for all system information blocks with area scope "PLMN" or "Equivalent PLMN" that use value tags:
 - 2> compare the value tag read in scheduling information for that system information block with the value stored within the variable VALUE_TAG for that system information block;
 - 2> if the value tags differ, or if no IEs for the corresponding system information block are stored:
 - 3> store the value tag read in scheduling information for that system information block into the variable VALUE_TAG;
 - 3> read and store the IEs of that system information block.
 - 2> if the value tags are the same the UE may use stored system information blocks using value tag that were stored in this PLMN as valid system information.
- 1> for all system information blocks or scheduling blocks with area scope cell that use value tags:
 - 2> compare the value tag read in scheduling information for that system information block or scheduling block with the value stored within the variable VALUE_TAG for that system information block or scheduling block;
 - 2> if the value tags differ, or if no IEs for the corresponding system information block or scheduling block are stored:
 - 3> store the value tag read in scheduling information for that system information block or scheduling block into the variable VALUE_TAG;
 - 3> read and store the IEs of that system information block or scheduling block.
 - 2> if the value tags are the same the UE may use stored system information blocks using value tags that were stored for this cell and this PLMN as valid system information.
- 1> for system information blocks which may have multiple occurrences:
 - 2> compare the value tag and the configuration or multiple occurrence identity for the occurrence of the system information blocks read in scheduling information with the value tag and configuration or multiple occurrence identity stored within the variable VALUE_TAG:
 - 3> if the value tags differ, or if no IEs from the occurrence with that configuration or multiple occurrence identity of the system information block are stored:
 - 4> store the value tag read in scheduling information for that system information block and the occurrence with that configuration or multiple occurrence identity into the variable VALUE_TAG;
 - 4> read and store the IEs of that system information block.
 - 3> if the value tags and the configuration or multiple occurrence identity are identical to those stored, the UE may use stored occurrences of system information blocks that were stored for this cell and this PLMN as valid system information.

For system information blocks, not supported by the UE, but referenced either in the master information block or in the scheduling blocks, the UE may:

- 1> skip reading this system information block;

1> skip monitoring changes to this system information block.

If the UE:

1> receives a scheduling block at a position different from its position according to the scheduling information for the scheduling block; or

1> receives a scheduling block for which scheduling information has not been received:

the UE may:

1> store the content of the scheduling block with a value tag set to the value NULL; and

1> consider the content of the scheduling block as valid until it receives the same type of scheduling block in a position according to its scheduling information or at most for 6 hours after reception.

If the UE does not find a scheduling block in a position where it should be according to its scheduling information, but a transport block with correct CRC was found at that position, the UE shall:

1> read the scheduling information for this scheduling block.

If the UE does not find the master information block in a position fulfilling:

$$\text{SFN mod } 32 = 0$$

but a transport block with correct CRC was found at that position), the UE shall:

1> consider the master information block as not found; and

1> consider the cell to be barred according to [4]; and

1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

NOTE: This permits a different repetition for the MIB in later versions for FDD. In TDD it allows for a variable SIB_REP in this and future releases.

If system information block type 1 is not scheduled on BCH, and system information block type 13 is not scheduled on BCH, the UE shall:

1> consider the cell to be barred according to [4]; and

1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

If the UE only supports GSM-MAP but finds a cell that broadcasts System Information Block type 13 but not System Information Block type 1, the UE shall:

1> consider the cell barred.

If:

- system information block type 1 is not scheduled on BCH; and
- the "PLMN Type" in the variable SELECTED_PLMN has the value "GSM-MAP"; and
- the IE "PLMN type" in the Master Information Block has the value "GSM-MAP" or "GSM-MAP and ANSI-41":

the UE shall:

1> indicate to upper layers that no CN system information is available.

If in idle mode and System Information Block type 3 is not scheduled on BCH, the UE shall:

1> consider the cell to be barred according to [4]; and

1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

If in connected mode and System Information Block type 3 is not scheduled on BCH, and System Information Block type 4 is not scheduled on BCH, the UE shall:

- 1> consider the cell to be barred according to [4]; and
- 1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

If in idle mode and neither System Information Block type 5 nor type 5bis is ~~not~~ scheduled on BCH, or System Information Block type 5 or type 5bis is scheduled but IE "AICH info" (FDD) or IE "PICH info" is not present, the UE shall:

- 1> consider the cell to be barred according to [4]; and
- 1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

If in connected mode and neither System Information Block type 5 nor type 5bis is ~~not~~ scheduled on BCH, and System Information Block type 6 is not scheduled on BCH, or any of System Information Block type 5, type5bis or type 6 is scheduled but IE "AICH info" (FDD) or IE "PICH info" is not present, the UE shall:

- 1> consider the cell to be barred according to [4]; and
- 1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

If System Information Block type 7 is not scheduled on BCH, the UE shall:

- 1> consider the cell to be barred according to [4]; and
- 1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

In 3.84 Mcps TDD, if System Information Block type 14 is not scheduled on BCH, the UE shall:

- 1> consider the cell to be barred according to [4]; and
- 1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " T_{barred} ".

8.1.1.6 Actions upon reception of system information blocks

The UE may use the scheduling information included within the master information block and the scheduling blocks to locate each system information block to be acquired.

The UE should only expect one occurrence of the scheduling information for a system information block in the master information block and any of the scheduling blocks except for System Information Block type 16, System Information Block type 15.2 and System Information Block type 15.3, which may have multiple occurrences. However, to enable future introduction of new system information blocks, the UE shall also be able to receive system information blocks other than the ones indicated within the scheduling information. The UE may ignore contents of such system information block.

If the UE:

- 1> receives a system information block in a position according to the scheduling information for the system information block; and
- 1> this system information block uses a value tag; or
- 1> this system information block uses a value tag and configuration or multiple occurrence identity:

the UE shall:

- 1> store the content of the system information block together with the value of its value tag or the values of configuration and multiple occurrence identity and the associated value tag in the scheduling information for the system information block; and

- 1> consider the content of the system information block valid until, if used, the value tag in the scheduling information for the system information block is changed or at most for 6 hours after reception.

If the UE:

- 1> receives a system information block in a position according to the scheduling information for the system information block; and
- 1> this system information block does not use a value tag according to the system information block type:

the UE shall:

- 1> store the content of the system information block; and
- 1> start an expiration timer using a value as defined in Table 8.1.1 for that system information block type; and
- 1> consider the content of the system information block valid until, the expiration timer expires.

If the UE:

- 1> receives a system information block at a position different from its position according to the scheduling information for the system information block; or
- 1> receives a system information block for which scheduling information has not been received; and
- 1> this system information block uses a value tag:

the UE may:

- 1> store the content of the system information block with a value tag set to the value NULL; and
- 1> consider the content of the system information block as valid until it receives the same type of system information block in a position according to its scheduling information or at most for 6 hours after reception.

If the UE:

- 1> receives a system information block with multiple occurrences at a position different from its position according to the scheduling information for the system information block; or
- 1> receives a system information block with multiple occurrences for which scheduling information has not been received; and
- 1> this system information block uses a value tag and configuration or multiple occurrence identity:

the UE shall:

- 1> ignore this information.

If the UE does not find a system information block in a position where it should be according to its scheduling information, but a transport block with correct CRC was found at that position, the UE shall read the scheduling information for this system information block.

The UE shall act upon all received information elements as specified in subclause 8.6 unless specified otherwise in the following subclauses.

8.1.1.6.1 System Information Block type 1

The UE should store all relevant IEs included in this system information block if the "PLMN Type" in the variable SELECTED_PLMN has the value "GSM-MAP" and the IE "PLMN type" in the Master Information Block has the value "GSM-MAP" or "GSM-MAP and ANSI-41". The UE shall also:

- 1> check that the cell, according to information included in IE "CN common GSM-MAP NAS system information", is suitable [4];
- 1> if in connected mode:
 - 2> not forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers.

- 1> if in idle mode:
 - 2> forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers.
- 1> for the IE "CN domain system information list":
 - 2> for each IE "CN domain system information" that is present:
 - 3> check that the cell, according to information included in IE "CN domain specific NAS system information", is suitable [4];
 - 3> if in connected mode:
 - 4> not forward the content of the IE "CN domain specific NAS system information" to upper layers.
 - 3> if in idle mode:
 - 4> forward the content of the IE "CN domain specific NAS system information" and the IE "CN domain identity" to upper layers;
 - 4> use the IE "CN domain specific DRX cycle length coefficient" to calculate frame number for the Paging Occasions as specified in [4];
 - 4> store the value of the IE "CN domain specific DRX cycle length coefficient" for use in connected mode.
 - 2> if an IE "CN domain system information" is not present for a particular CN domain:
 - 3> indicate to upper layers that no CN system information is available for that CN domain.
- 1> if the UE has not yet entered UTRA RRC connected mode:
 - 2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS_AND_CONSTANTS.
- 1> use the values stored in the variable TIMERS_AND_CONSTANTS for the relevant timers and constants.

8.1.1.6.2 System Information Block type 2

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

- 1> if in state URA_PCH, start to perform URA updates using the information in the IE "URA identity".

If in idle mode, the UE shall not use the values of the IEs in this system information block.

8.1.1.6.3 System Information Block type 3

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

- 1> if in connected mode, and System Information Block 4 is indicated as used in the cell:
 - 2> read and act on information sent in that block.

8.1.1.6.4 System Information Block type 4

If in connected mode, the UE should store all relevant IEs included in this system information block.

If in idle mode, the UE shall not use the values of the IEs included in this system information block.

8.1.1.6.5 System Information Block type 5 and 5bis

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

- 1> if the IE "Frequency band indicator" is included, and if 2 the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability, or

1> if the IE "Frequency band indicator" is not included in System Information Block type 5, the DL frequency is on the 2.1 GHz band, and Band I is not part of the frequency bands supported by the UE in the UE radio access capability, or

1> if the IE "Frequency band indicator" is not included in System Information Block type 5bis, the DL frequency is on the 2.1 GHz band, and Band IV is not part of the frequency bands supported by the UE in the UE radio access capability;:

32> consider the cell to be barred according to [4]; and

32> consider the barred cell as using the value "not allowed" in the IE "Intra-frequency csel re-selection indicator", and the maximum value in the IE "T_{barred}".

1> if in connected mode, and System Information Block type 6 is indicated as used in the cell:

2> read and act on information sent in System Information Block type 6.

1> replace the TFS of the RACH with the one stored in the UE if any;

1> let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink for the PRACH if UE is in CELL_FACH state;

1> start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" (FDD only) when given allocated PRACH is used;

1> use the first instance of the list of transport formats as in the IE "RACH TFS" for the used RACH received in the IE "PRACH system information list" when using the CCCH;

1> replace the TFS of the FACH/PCH with the one stored in the UE if any;

1> select a Secondary CCPCH as specified in [4] and in subclause 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if UE is in Idle mode or in CELL_PCH or URA_PCH state;

1> start to monitor its paging occasions on the selected PICH if UE is in Idle mode or in CELL_PCH or URA_PCH state;

1> start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if UE is in CELL_FACH state;

1> in 3.84 Mcps TDD:

2> use the IE "TDD open loop power control" as defined in subclause 8.5.7 when allocated PRACH is used.

1> in TDD:

2> if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included:

3> store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH Identity" respectively. For every configuration, for which the IE "SFN Time info" is included, the information shall be stored for the duration given there.

If a UE is a 12 kbps class UE according to [35] and the UE has a lower capability than required to support all transport channel configurations mapped on a specific Secondary CCPCH, the UE shall at a certain time instant still be able to decode those transport channels mapped on this Secondary CCPCH that do match the capability supported by the UE. The UE shall use the TFCI bits for that Secondary CCPCH, to distinguish a transport channel configuration that is supported by the UE from a transport channel configuration that is not supported by the UE.

In particular if the UE is a 12 kbps class UE according to [35] and it does not support the processing requirement at a given point in time for a Secondary CCPCH, it shall still be able to decode the same Secondary CCPCH when the processing requirement is consistent with the UE capability. Or if the UE does not support the number of TFs or the coding of a certain transport channel on a Secondary CCPCH, it shall still be able to decode other transport channels mapped on the same Secondary CCPCH that is consistent with what is supported by the UE.

8.1.1.6.6 System Information Block type 6

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

- 1> if the IE "Frequency band indicator" is included:
 - 2> if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability;
 - 3> consider the cell to be barred according to [4]; and
 - 3> consider the barred cell as using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T_{barred}".
- 1> replace the TFS of the RACH with the one stored in the UE if any;
- 1> let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink if UE is in CELL_FACH state. If the IE "PRACH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 and use that information to configure the PRACH;
- 1> start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" when associated PRACH is used. If the IE "AICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 and use that information (FDD only);
- 1> replace the TFS of the FACH/PCH with the one stored in the UE if any;
- 1> select a Secondary CCPCH as specified in [4] and in subclause 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if the UE is in CELL_PCH or URA_PCH state. If the IE "PICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 and use that information;
- 1> start to monitor its paging occasions on the selected PICH if the UE is in CELL_PCH or URA_PCH state;
- 1> start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if the UE is in CELL_FACH state. If the IE "Secondary CCPCH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 and use that information;
- 1> in 3.84 Mcps TDD: use the IE "TDD open loop power control" as defined in subclause 8.5.7;
- 1> in TDD: if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included, store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH Identity" respectively. For every configuration, for which the IE "SFN Time info" is included, the information shall be stored for the duration given there.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

If a UE is a 12 kbps class UE according to [35] and the UE has a lower capability than required to support all transport channel configurations mapped on a specific Secondary CCPCH, the UE shall at a certain time instant still be able to decode those transport channels mapped on this Secondary CCPCH that do match the capability supported by the UE. The UE shall use the TFCI bits for that Secondary CCPCH, to distinguish a transport channel configuration that is supported by the UE from a transport channel configuration that is not supported by the UE.

In particular if the UE is a 12 kbps class UE according to [35] and it does not support the processing requirement at a given point in time for a Secondary CCPCH, it shall still be able to decode the same Secondary CCPCH when the processing requirement is consistent with the UE capability. Or if the UE does not support the number of TFs or the coding of a certain transport channel on a Secondary CCPCH, it shall still be able to decode other transport channels mapped on the same Secondary CCPCH that is consistent with what is supported by the UE.

8.1.1.6.7 System Information Block type 7

The UE should store all relevant IEs included in this system information block.

8.1.1.6.8 System Information Block type 8

This system information block type is used only in FDD.

If in connected mode, the UE should store all relevant IEs included in this system information block.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

8.1.1.6.9 System Information Block type 9

This system information block type is used only in FDD.

If in connected mode, the UE should store all relevant IEs included in the system information block. The UE shall:

- 1> start a timer set to the value given by the repetition period (SIB_REP) for that system information block.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

8.1.1.6.10 System Information Block type 10

This system information block type is used only in FDD.

If in state CELL_DCH, the UE should store all relevant IEs included in this system information block. The UE shall:

- 1> start a timer set to the value given by the repetition period (SIB_REP) for that system information block;
- 1> perform actions defined in subclause 14.8.

If in idle mode, state CELL_FACH, state CELL_PCH or state URA_PCH, the UE shall not use the values of the IEs in this system information block.

8.1.1.6.11 System Information Block type 11

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

- 1> if in idle mode:

- 2> clear the variable MEASUREMENT_IDENTITY.

- 1> if IE "FACH measurement occasion info" is included:

- 2> act as specified in subclause 8.6.7.

- 1> else:

- 2> may perform inter-frequency/inter-RAT measurements or inter-frequency/inter-RAT cell re-selection evaluation, if the UE capabilities permit such measurements while simultaneously receiving the S-CCPCH of the serving cell.

- 1> clear the variable CELL_INFO_LIST;

- 1> act upon the received IE "Intra-frequency cell info list"/"Inter-frequency cell info list"/"Inter-RAT cell info list" as described in subclause 8.6.7.3;

- 1> if in idle mode; or

- 1> if in connected mode and if System Information Block type 12 is not broadcast in the cell:

- 2> if no intra-frequency measurement was set up or modified through a MEASUREMENT CONTROL message:

- 3> if included, store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL_DCH is entered in the variable MEASUREMENT_IDENTITY. The IE "Cells for measurement" is absent for this measurement. The IE "Measurement Validity" is absent for this measurement after a state transition to CELL_DCH;

- 1> if in connected mode and if System Information Block type 12 is not broadcast in the cell:

- 2> read the IE "Traffic volume measurement information";

- 2> if no traffic volume measurement with the measurement identity indicated in the IE "Traffic volume measurement system information" was set up or modified through a MEASUREMENT CONTROL message:
 - 3> update the variable MEASUREMENT_IDENTITY with the measurement information received in that IE.
- 1> if the IE "Cell selection and reselection info" is not included for a new neighbouring cell in the IE "intra-frequency cell info list", the IE "inter-frequency cell info list" or the IE "inter-RAT cell info list" in System Information Block type 11:
 - 2> use the default values specified for the IE "Cell selection and reselection info" for that cell except for the IE "HCS neighbouring cell information".
- 1> if the IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:
 - 2> if IE "HCS neighbouring cell information" is not included for the first new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 11:
 - 3> use the default values specified for the IE "HCS neighbouring cell information" for that cell.
 - 2> if IE "HCS neighbouring cell information" is not included for any other new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 11:
 - 3> for that cell use the same parameter values as used for the preceding cell in the same cell info list in System Information Block type 11.
- 1> if the value of the IE "Cell selection and reselection quality measure" is different from the value of the IE "Cell selection and reselection quality measure" obtained from System Information Block type 3 or System Information Block type 4:
 - 2> use the value of the IE from this System Information Block and ignore the value obtained from System Information Block type 3 or System Information Block type 4.
- 1> if in connected mode, and System Information Block type 12 is indicated as used in the cell:
 - 2> read and act on information sent in System Information Block type 12 as indicated in subclause 8.1.1.6.12.

8.1.1.6.12 System Information Block type 12

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

- 1> after reception of System Information Block type 11:
 - 2> update the variable MEASUREMENT_IDENTITY with the measurement information in the received IEs unless specified otherwise.
- 1> if IE "FACH measurement occasion info" is included:
 - 2> act as specified in subclause 8.6.7.
- 1> else:
 - 2> may perform inter-frequency/inter-RAT measurements or inter-frequency/inter-RAT cell re-selection evaluation, if the UE capabilities permit such measurements while simultaneously receiving the S-CCPCH of the serving cell.
- 1> act upon the received IE "Intra-frequency cell info list"/"Inter-frequency cell info list"/"Inter-RAT cell info list" as described in subclause 8.6.7.3;
- 1> if any of the IEs "Intra-frequency measurement quantity", "Intra-frequency reporting quantity for RACH reporting", "Maximum number of reported cells on RACH" or "Reporting information for state CELL_DCH" are not included in the system information block:

- 2> read the corresponding IE(s) in system information block type 11 and use that information for the intra-frequency measurement.
- 1> if included in this system information block or in System Information Block type 11:
 - 2> if no intra-frequency measurement in the variable MEASUREMENT_IDENTITY was set up or modified through a MEASUREMENT CONTROL message:
 - 3> store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL_DCH is entered in the variable MEASUREMENT_IDENTITY. The IE "Cells for measurement" is absent for this measurement. The IE "Measurement Validity" is absent for this measurement after a state transition to CELL_DCH;
- 1> if the IE "Traffic volume measurement system information" is not included in this system information block:
 - 2> read the corresponding IE in System Information Block type 11.
- 1> if the IE "Traffic volume measurement system information" was received either in this system information block or in System Information Block type 11:
 - 2> if no traffic volume measurement with the measurement identity indicated in the IE "Traffic volume measurement system information" was set up or modified through a MEASUREMENT CONTROL message:
 - 3> update the variable MEASUREMENT_IDENTITY with the measurement information received in that IE.
- 1> if in CELL_FACH state:
 - 2> start or continue the traffic volume measurements stored in the variable MEASUREMENT_IDENTITY that are valid in CELL_FACH state.
- 1> if the IE "Cell selection and reselection info" is not included for a new neighbouring cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 12:
 - 2> use the default values specified for the IE "Cell selection and reselection info" for that cell except for the IE "HCS neighbouring cell information".
- 1> if the IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:
 - 2> if IE "HCS neighbouring cell information" is not included for the first new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 12:
 - 3> use the default values specified for the IE "HCS neighbouring cell information" for that cell.
 - 2> if IE "HCS neighbouring cell information" is not included for any other new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 12:
 - 3> for that cell use the same parameter values as used for the preceding cell in the same cell info list in System Information Block type 12.
- 1> if the value of the IE "Cell selection and reselection quality measure" is different from the value of the IE "Cell selection and reselection quality measure" obtained from System Information Block type 3 or System Information Block type 4:
 - 2> use the value of the IE from this System Information Block and ignore the value obtained from System Information Block type 3 or System Information Block type 4.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

8.1.1.6.13 System Information Block type 13

If in idle or connected mode, the UE should store all relevant IEs included in this system information block except for the IEs "CN domain specific DRX cycle length coefficient", "UE timers and constants in idle mode" and "Capability update requirement" which shall be stored only in the idle mode case. The UE shall read System Information Block type 13 and the associated System Information Block types 13.1, 13.2, 13.3 and 13.4 only when the "PLMN Type" in the variable SELECTED_PLMN has the value "ANSI-41" and the IE "PLMN type" in the Master Information Block has the value "ANSI-41" or "GSM-MAP and ANSI-41". The UE shall also:

- 1> forward the content of the IE "CN domain specific NAS system information" to the non-access stratum entity indicated by the IE "CN domain identity";
- 1> use the IE "CN domain specific DRX cycle length coefficient" to calculate frame number for the Paging Occasions and Page indicator as specified in [4].

Refer to TIA/EIA/IS-2000.5-A for actions on information contained in System Information Block types 13.1, 13.2, 13.3 and 13.4.

8.1.1.6.14 System Information Block type 14

This system information block type is used only in 3.84 Mcps TDD.

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

- 1> use the IE "UL Timeslot Interference" to calculate PRACH, DPCH and PUSCH transmit power for TDD uplink open loop power control as defined in subclause 8.5.7.

8.1.1.6.15 System Information Block type 15

If the UE is in idle or connected mode, and supports GPS location services it should store all relevant IEs included in this system information block. The UE shall:

- 1> if the IE "GPS Data ciphering info" is included:
 - 1> act as specified in the subclause 8.6.7.19.4.- act upon the received IE "Reference position" as specified in subclause 8.6.7.19.3.8;
 - 1> act upon the received IE "GPS reference time" as specified in subclause 8.6.7.19.3.7;
- 1> if IE "Satellite information" is included:
 - 2> act upon this list of bad satellites as specified in subclause 8.6.7.19.3.6.

NOTE: For efficiency purposes, the UTRAN should broadcast System Information Block type 15 if it is broadcasting System Information Block type 15.2.

8.1.1.6.15.1 System Information Block type 15.1

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

- 1> act on "DGPS information" in the IE "DGPS Corrections" in a similar manner as specified in [13] except that the scale factors for PRC and RRC are different;
- 1> act upon the received IE "UE Positioning GPS DGPS corrections" as specified in subclause 8.6.7.19.3.3.

In this version of the specification, the UE shall:

- 1> ignore the following IEs: "Delta PRC2", "Delta RRC2", "Delta PRC3" and "Delta RRC3".

8.1.1.6.15.2 System Information Block type 15.2

For System Information Block type 15.2 multiple occurrences may be used; one occurrence for one satellite. To identify the different occurrences, the scheduling information for System Information Block type 15.2 includes IE "SIB

occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE_POSITIONING_GPS_DATA. The UE shall:

- 1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the SIB with the same occurrence identity;
- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
 - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
 - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;
- 1> interpret IE "SatID" as the satellite ID of the data from which this message was obtained;
- 1> act upon the received IEs "Sat ID" and "GPS Ephemeris and Clock Corrections Parameter" as specified in subclause 8.6.7.19.3.4.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed.

The UE may not need to receive all occurrences before it can use the information from any one occurrence.

8.1.1.6.15.3 System Information Block type 15.3

For System Information Block type 15.3 multiple occurrences may be used; one occurrence for each set of satellite data. To identify the different occurrences, the scheduling information for System Information Block type 15.3 includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE_POSITIONING_GPS_DATA. The UE shall:

- 1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the SIB with the same occurrence identity;
- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
 - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
 - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;
- 1> if the IE "GPS Almanac and Satellite Health" is included:
 - 2> interpret IE "SatMask" as the satellites that contain the pages being broadcast in this message;
 - 2> interpret IE "LSB TOW" as the least significant 8 bits of the TOW ([12]);
 - 2> act upon the received IE "GPS Almanac and Satellite Health" as specified in subclause 8.6.7.19.3.2.
- 1> if the IE "GPS ionospheric model" is included:
 - 2> act upon the received IE "GPS ionospheric model" as specified in subclause 8.6.7.19.3.5.
- 1> if the IE "GPS UTC model" is included:
 - 2> act upon the received IE "GPS UTC model" as specified in subclause 8.6.7.19.3.9.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed. One SIB occurrence value tag is assigned to the table of subclause 10.2.48.8.18.3.

The UE may not need to receive all occurrences before it can use the information for any one occurrence.

8.1.1.6.15.4 System Information Block type 15.4

If the UE is in idle mode or connected mode, the UE shall:

- 1> if the IE "OTDOA Data ciphering info" is included:
 - 2> act as specified in subclause 8.6.7.19.4.

If the UE is in connected mode, the UE shall:

- 1> act as specified in subclause 8.6.7.19.2.

8.1.1.6.15.5 System Information Block type 15.5

If the UE is in idle or connected mode, the UE shall:

- 1> if the UE supports UE-based OTDOA positioning:
 - 2> act as specified in subclause 8.6.7.19.2a.

8.1.1.6.16 System Information Block type 16

For System Information Block type 16 multiple occurrences may be used; one occurrence for each predefined configuration. To identify the different predefined configurations, the scheduling information for System Information Block type 16 includes IE "Predefined configuration identity and value tag".

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

- 1> compare for each predefined configuration the value tag of the stored predefined configuration with the preconfiguration value tag included in the IE "Predefined configuration identity and value tag" for the occurrence of the SIB with the same predefined configuration identity;
- 1> in case the UE has no predefined configuration stored with the same identity or in case the predefined configuration value tag is different:
 - 2> store the predefined configuration information together with its identity and value tag for later use e.g. during handover to UTRAN.
- 1> in case a predefined configuration with the same identity but different value tag was stored:
 - 2> overwrite this one with the new configuration read via system information for later use e.g. during handover to UTRAN.

The above handling applies regardless of whether the previously stored predefined configuration information has been obtained via UTRA or via another RAT.

The UE is not required to complete reading of all occurrences of System Information Block type 16 before initiating RRC connection establishment.

The UE is not required to store more than maxPredefConfig preconfigurations even in the case of multiple equivalent PLMNs.

8.1.1.6.17 System Information Block type 17

This system information block type is used only for TDD.

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

- 1> if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included, store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH Identity" respectively. This information shall become invalid after the time specified by the repetition period (SIB_REP) for this system information block.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

8.1.1.6.18 System Information Block type 18

If the System Information Block type 18 is present, a UE shall obtain knowledge of the PLMN identity of the neighbour cells to be considered for cell reselection, and shall behave as specified in this subclause and in subclause 8.5.14a.

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

A UE in idle mode shall act according to the following rules:

- 1> any PLMN list of a given type (IEs "PLMNs of intra-frequency cells list", "PLMNs of inter-frequency cells list", "PLMNs of inter-RAT cell lists") included in the IE "Idle mode PLMN identities" is paired with the list of cells of the same type derived from System Information Block type 11;
- 1> the PLMN identity located at a given rank in the PLMN list is that of the cell with the same ranking in the paired list of cells, the cells being considered in the increasing order of their associated identities ("Intra-frequency cell id", "Inter-frequency cell id", "Inter-RAT cell id");
- 1> if the number of identities in a PLMN list exceeds the number of neighbour cells in the paired list (if any), the extra PLMN identities are considered as unnecessary and ignored;
- 1> if the number of identities in a PLMN list (if any) is lower than the number of neighbour cells in the paired list, the missing PLMN identities are replaced by the last PLMN identity in the list if present, otherwise by the identity of the selected PLMN.

A UE in connected mode shall act in the same manner as a UE in idle mode with the following modifications:

- 1> the PLMN lists to be considered are the ones included, when present, in the IE "Connected mode PLMN identities"; otherwise, the UE shall use, in place of any missing list, the corresponding one in the IE "Idle mode PLMN identities";
- 1> the paired lists of cells are the ones derived from System Information Block type 11, and System Information Block type 12 if present.

8.1.1.7 Modification of system information

For System Information Block type 15.2, 15.3 and 16 that may have multiple occurrences, the UE shall handle each occurrence independently as specified in the previous; that is each occurrence is handled as a separate system information block.

NOTE: It should be noted that for the proper operation of the BCCH Modification Information sent on a PCH, the System Information should not be changed more frequently than can be accommodated by mobile stations operating at the maximum DRX cycle length supported by the UTRAN.

8.1.1.7.1 Modification of system information blocks using a value tag

Upon modifications of system information blocks using value tags, UTRAN should notify the new value tag for the master information block in the IE "BCCH modification info", transmitted in the following way:

- 1> to reach UEs in idle mode, CELL_PCH state and URA_PCH state, the IE "BCCH modification info" is contained in a PAGING TYPE 1 message transmitted on the PCCH in all paging occasions in the cell;
- 1> to reach UEs in CELL_FACH state or TDD UEs in CELL_DCH with S-CCPCH assigned, the IE "BCCH modification info" is contained in a SYSTEM INFORMATION CHANGE INDICATION message transmitted on the BCCH mapped on at least one FACH on every Secondary CCPCH in the cell.

Upon reception of a PAGING TYPE 1 message or a SYSTEM INFORMATION CHANGE INDICATION message containing the IE "BCCH modification info" containing the IE "MIB value tag" but not containing the IE "BCCH modification time", the UE shall perform actions as specified in subclause 8.1.1.7.3.

If the IE "BCCH modification time" is included the UE shall perform actions as specified in subclause 8.1.1.7.2.

8.1.1.7.2 Synchronised modification of system information blocks

For modification of some system information elements, e.g. reconfiguration of the channels, it is important for the UE to know exactly when a change occurs. In such cases, the UTRAN should notify the SFN when the change will occur as well as the new value tag for the master information block in the IE "BCCH modification info" transmitted in the following way:

- 1> To reach UEs in idle mode, CELL_PCH state and URA_PCH state, the IE "BCCH modification info" is contained in a PAGING TYPE 1 message transmitted on the PCCH in all paging occasions in the cell;
- 1> To reach UEs in CELL_FACH state, the IE "BCCH modification info" is contained in a SYSTEM INFORMATION CHANGE INDICATION message transmitted on the BCCH mapped on at least one FACH on every Secondary CCPCH in the cell.

Upon reception of a PAGING TYPE 1 message or a SYSTEM INFORMATION CHANGE INDICATION message containing the IE "BCCH modification info" containing the IE "MIB value tag" and containing the IE "BCCH modification time", the UE shall:

- 1> perform the actions as specified in subclause 8.1.1.7.3 at the time, indicated in the IE "BCCH Modification Info".

8.1.1.7.3 Actions upon system information change

The UE shall:

- 1> compare the value of IE "MIB value tag" in the IE "BCCH modification info" with the value tag stored for the master information block in variable VALUE_TAG.
- 1> if the value tags differ:
 - 2> read the master information block on BCH;
 - 2> if the value tag of the master information block in the system information is the same as the value in IE "MIB value tag" in "BCCH modification info" but different from the value tag stored in the variable VALUE_TAG:
 - 3> perform actions as specified in subclause 8.1.1.5.
 - 2> if the value tag of the master information block in the system information is the same as the value tag stored in the variable VALUE_TAG:
 - 3> for the next occurrence of the master information block:
 - 4> perform actions as specified in subclause 8.1.1.7.3 again.
 - 2> if the value tag of the master information block in the system information is different from the value tag stored in the variable VALUE_TAG, and is different from the value in IE "MIB value tag" in "BCCH modification info":
 - 3> perform actions as specified in subclause 8.1.1.5;
 - 3> if $(VT_{CI} - VT_{MIB}) \bmod 8 < 4$, where VT_{CI} is the value tag in the IE "MIB value tag" in "BCCH modification info" and VT_{MIB} is the value tag of the master information block in the system information:
 - 4> for the next occurrence of the master information block:
 - 5> perform actions as specified in subclause 8.1.1.7.3 again.

8.1.1.7.4 Actions upon expiry of a system information expiry timer

When the expiry timer of a system information block not using a value tag expires the UE shall:

- 1> consider the content of the system information block invalid;
- 1> re-acquire the system information block again before the content can be used;

In FDD for system information blocks other than System Information Block type 7, or in states other than CELL_FACH, or in TDD for system information blocks other than System Information Block type 14, or in states other than CELL_FACH or CELL_DCH the UE may:

- 1> postpone reading the system information block until the content is needed.

In FDD for System Information Block type 7, while in state CELL_FACH, and in TDD for System Information Block type 14, while in state CELL_FACH or CELL_DCH the UE shall always keep an up to date version of the relevant IEs, unless this is not possible because system information can not be received due to bad radio conditions.

8.5.17 PRACH selection

For this version of the specification, when a UE selects a cell, the uplink frequency to be used for the initial PRACH transmission shall have a default duplex frequency spacing offset from the downlink frequency that the cell was selected on. The default duplex frequency separation to be used by the UE is specified in [35] (for FDD only).

NOTE: The PRACH selection scheme assumes that all PRACHs configured in System Information Block type 5, [System Information Block type 5bis](#) and System Information Block type 6 support all (implicitly or explicitly) configurable RLC sizes of the cell, i.e. at least the transport formats corresponding to a single transport block of each applicable RLC size of the cell must be defined for each PRACH.

The UE shall select a "PRACH system information" according to the following rule. The UE shall:

- 1> select a "PRACH system information" from the ones indicated in the IE "PRACH system information list" in System Information Block type 5 [or in System Information Block type 5bis](#) (applicable in Idle Mode and Connected Mode) or System Information Block type 6 (applicable in Connected Mode only), as follows:
 - 2> if in connected mode and System Information Block type 6 is defined and includes PRACH info:
 - 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in SIB 6, in the order of appearance as in SIB 6.
 - 2> otherwise:
 - 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in SIB 5 [or in SIB 5bis](#), in the order of appearance as in SIB 5 [or in SIB 5bis, respectively](#).
- 2> in FDD:
 - 3> perform RACH TTI selection as specified in subclause 8.5.18.1.
- 2> in 1.28 Mcps TDD:
 - 3> perform RACH TTI selection according to subclause 8.5.18.2.
- 2> remove from the list of candidate PRACHs those PRACHs that have a TTI length different from the selected value;
- 2> select a PRACH randomly from the list of candidate PRACHs as follows:

$$\text{"Index of selected PRACH"} = \text{floor}(\text{rand} * K)$$

where K is equal to the number of candidate PRACH system informations, "rand" is a random number uniformly distributed in the $0 \leq \text{rand} < 1$ and "floor" refers to rounding down to nearest integer. The candidate PRACH system informations shall be indexed from 0 to K-1. The random number generator is left to implementation. The scheme shall be implemented such that one of the available PRACH system informations is randomly selected with uniform probability. At start-up of the random number generator in the UE the seed shall be dependent on the IMSI of the UE or time, thereby avoiding that all UEs select the same RACH;

- 2> use the TFCS of the selected PRACH when performing TFC selection (see [15]);
 - 2> reselect the PRACH system information when a new cell is selected. RACH reselection may also be performed after each transmission of a Transport Block Set on RACH.
- 1> for emergency call, the UE is allowed to select any of the available PRACH system informations.

After selecting a PRACH system information, the RRC in the UE shall configure the MAC and the physical layer for the RACH access according to the parameters included in the selected "PRACH system information" IE.

8.6.4.8 RB mapping info

If the IE "RB mapping info" is included, the UE shall:

- 1> for each multiplexing option of the RB:
 - 2> if a transport channel that would not exist as a result of the message (i.e. removed in the same message in IE "Deleted DL TrCH information" and IE "Deleted UL TrCH information") is referred to:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if a multiplexing option that maps a logical channel corresponding to a TM-RLC entity onto RACH, CPCH, FACH or DSCH or HS-DSCH is included:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if the multiplexing option realises the radio bearer on the uplink (resp. on the downlink) using two logical channels with different values of the IE "Uplink transport channel type" (resp. of the IE "Downlink transport channel type"):
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if that RB is using TM and the IE "Segmentation indication" is set to TRUE and, based on the multiplexing configuration resulting from this message, the logical channel corresponding to it is mapped onto the same transport channel as another logical channel:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if the transport channel considered in that multiplexing option is different from RACH and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
 - 2> if that RB is using UM or TM and the multiplexing option realises it using two logical channels:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
- 2> for each logical channel in that multiplexing option:
 - 3> if the value of the IE "RLC size list" is set to "Explicit list":
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the IE transport format set of that transport channel given in the message; or
 - 4> if the transport channel this logical channel is mapped on in this multiplexing option is different from RACH, and if a "Transport format set" for that transport channel is not included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the stored transport format set of that transport channel; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
 - 3> if the value of the IE "RLC size list" is set to "All":
 - 4> if the transport channel this logical channel is mapped on is RACH; or

- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
- 3> if the value of the IE "RLC size list" is set to "Configured":
 - 4> if the transport channel this logical channel is mapped on is RACH; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and for none of the RLC sizes defined for that transport channel in the "Transport format set", the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel; or
 - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and for none of the RLC sizes defined in the transport format set stored for that transport channel, the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel:
 - 5> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if, as a result of the message this IE is included in, several radio bearers can be mapped onto the same transport channel, and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on that transport channel or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on that transport channel:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the "RB mapping info" is considered as valid according to the rules above:
 - 2> delete all previously stored multiplexing options for that radio bearer;
 - 2> store each new multiplexing option for that radio bearer;
 - 2> perform the actions as specified in subclause 8.5.21.
- 1> if the IE "Uplink transport channel type" is set to the value "RACH":
 - 2> in FDD:
 - 3> refer the IE "RLC size index" to the RACH Transport Format Set of the first PRACH received in the IE "PRACH system information list" received in SIB5, [SIB5bis](#) or SIB6.
 - 2> in TDD:
 - 3> use the first Transport Format of the PRACH of the IE "PRACH system information list" at the position equal to the value in the IE "RLC size index".

In case IE "RLC info" includes IE "Downlink RLC mode" ("DL RLC logical channel info" is mandatory present) but IE "Number of downlink RLC logical channels" is absent in the corresponding IE "RB mapping info", the parameter values are exactly the same as for the corresponding UL logical channels. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards the IE "Channel type", the following rule should be applied to derive the DL channel type from the UL channel included in the IE:

Channel used in UL	DL channel type implied by "same as"
DCH	DCH
RACH	FACH
CPCH	FACH
USCH	DSCH

If ciphering is applied, UTRAN should not map Transparent Mode RBs of different CN domains on the same transport channel and it should not map transparent mode SRBs and RBs onto the same transport channel. In such cases the UE behaviour is not specified.

10.2.48.8.8 System Information Block type 5 and 5bis

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. System information block type 5bis uses the same structure as System information block type 5. System information block type 5bis is sent instead of system information block type 5 in networks that use Band IV.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
SIB6 Indicator	MP		Boolean	TRUE indicates that SIB6 is broadcast in the cell.	
PhyCH information elements					
PICH Power offset	MP		PICH Power offset 10.3.6.50		
CHOICE <i>mode</i>	MP				
>FDD					
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	This AICH Power offset also indicates the power offset for AP-AICH and for CD/CA-ICH.	
>TDD					
>>PUSCH system information	OP		PUSCH system information 10.3.6.66		
>>PDSCH system information	OP		PDSCH system information 10.3.6.46		
>>TDD open loop power control	MP		TDD open loop power control 10.3.6.79		
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.57	Note 1	
PRACH system information list	MP		PRACH system information list 10.3.6.55		
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.72		
CBS DRX Level 1 information	CV- <i>CTCH</i>		CBS DRX Level 1 information 10.3.8.3		
Frequency band indicator	OP		Frequency band indicator 10.3.6.35b		REL-6

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

Condition	Explanation
CTCH	The IE is mandatory present if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed in the message

10.3.3.21a Measurement capability extension

This IE may be used to replace the measurement capability information provided within IE "Measurement capability".

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
FDD measurements	MP	1 to <maxFreqBands FDD>			
>FDD Frequency band	MD		Enumerated(FDD2100, FDD1900,	The default value is the same as indicated in the IE "Frequency band" included in the IE " UE radio access capability extension". Three Four spare values are needed	
			FDD1800 Band VI, Band IV, FDD800)		REL-5 REL-6
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"	
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"	
TDD measurements	CV- <i>tdd_sup</i>	1 to <maxFreqBands TDD>			
>TDD Frequency band	MP		Enumerated(a, b, c)		
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"	
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"	
GSM measurements	CV- <i>gsm_sup</i>	1 to <maxFreqBands GSM>			

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>GSM Frequency band	MP		Enumerated(GSM450, GSM480, GSM850, GSM900P, GSM900E, GSM1800, GSM1900)	as defined in [45]. Nine spare values are needed.	
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band"	
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band"	
Multi-carrier measurement	CV- <i>mc_sup</i>				
>Need for DL compressed mode	MP		Boolean	TRUE means that the UE requires DL compressed mode in order to perform measurements on multi-carrier	
>Need for UL compressed mode	MP		Boolean	TRUE means that the UE requires UL compressed mode in order to perform measurements on multi-carrier	

Condition	Explanation
<i>tdd_sup</i>	The IE is mandatory present if the IE "Multi-mode capability" has the value "TDD" or "FDD/TDD". Otherwise this field is not needed in the message.
<i>gsm_sup</i>	The IE is mandatory present if the IE "Support of GSM" has the value TRUE. Otherwise this field is not needed in the message.
<i>mc_sup</i>	The IE is mandatory present if the IE "Support of multi-carrier" has the value TRUE. Otherwise this field is not needed in the message.

10.3.3.42a UE radio access capability extension

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Frequency band specific capability list	MP	1 to <maxFreqbandsFDD>			
>Frequency band	MP		Enumerated(FDD2100, FDD1900, FDD1800	Three Four spare values are needed	REL-5
			Band VI, Band IV FDD800)		REL-6
>RF capability FDD extension	MD		RF capability FDD extension 10.3.3.33a	the default values are the same values as in the immediately preceding IE "RF capability FDD extension"; the first occurrence is MP	
>Measurement capability extension	MP		Measurement capability extension 10.3.3.21a		

10.3.6.35b Frequency band indicator

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Frequency band indicator	MP		Enumerated(<u>Band I,</u> <u>Band II,</u> <u>Band III,</u> <u>Band VI,</u> <u>Band IV</u> FDD2100, FDD1900, FDD1800, FDD800)	Three Four spare values are needed	REL-6

10.3.6.55 PRACH system information list

Information element	Need	Multi	Type and reference	Semantics description
PRACH system information	MP	1 .. <maxPRA CH>		
>PRACH info	MP		PRACH info (for RACH) 10.3.6.52	
>Transport channel identity	MP		Transport channel identity 10.3.5.18	
>RACH TFS	MD		Transport format set 10.3.5.23	Default value is the value of "RACH TFS" for the previous PRACH in the list NOTE: The first occurrence is then MP). NOTE: For TDD in this release there is a single TF within the RACH TFS.
>RACH TFCS	MD		Transport Format Combination Set 10.3.5.20	Default value is the value of "RACH TFCS" for the previous PRACH in the list. NOTE: The first occurrence is then MP). NOTE: For TDD in this release there is no TFCS required.
>PRACH partitioning	MD		PRACH partitioning 10.3.6.53	Default value is the value of "PRACH partitioning" for the previous PRACH in the list (note : the first occurrence is then MP)
>Persistence scaling factors	OP		Persistence scaling factors 10.3.6.48	This IE shall not be present if only ASC 0 and ASC 1 are defined. If this IE is absent, value is the value of "Persistence scaling factors" for the previous PRACH in the list if value exists
>AC-to-ASC mapping	CV-SIB5- MD		AC-to-ASC mapping 10.3.6.1	Only present in SIB 5 <u>and in SIB 5bis</u> . Default value is the value of "AC-to-ASC mapping" for the previous PRACH in the list. NOTE: The first occurrence is then MP in SIB5 <u>and in SIB5bis</u> .
>CHOICE mode	MP			
>>FDD				
>>>Primary CPICH TX power	MD		Primary CPICH TX power 10.3.6.61	Default value is the value of "Primary CPICH TX power" for the previous PRACH in the list. NOTE: The first occurrence is then MP.
>>>Constant value	MD		Constant value 10.3.6.11	Default value is the value of "Constant value" for the previous PRACH in the list. NOTE: The first occurrence is then MP.
>>>PRACH power offset	MD		PRACH power offset 10.3.6.54	Default value is the value of "PRACH power offset" for the previous PRACH in the list. NOTE: The first occurrence is then MP.

Information element	Need	Multi	Type and reference	Semantics description
>>>RACH transmission parameters	MD		RACH transmission parameters 10.3.6.67	Default value is the value of "RACH transmission parameters" for the previous PRACH in the list. NOTE: The first occurrence is then MP.
>>>AICH info	MD		AICH info 10.3.6.2	Default value is the value of "AICH info" for the previous PRACH in the list. NOTE: The first occurrence is then MP.
>>TDD				(no data)

Condition	Explanation
SIB5-MD	The information element is present only in SIB 5 <u>and in SIB 5bis.</u> and in In SIB 5 <u>and in SIB 5bis</u> it is mandatory with default.

NOTE: If the setting of the PRACH information results in that a combination of a signature, preamble scrambling code and subchannel corresponds to a RACH with different TFS and/or TFCS, then for that combination only the TFS/TFCS of the PRACH listed first is valid, where PRACHs listed in System Information Block type 5 or 5bis shall be counted first.

10.3.8.18a SIB and SB type

The SIB type identifies a specific system information block.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB and SB type	MP		Enumerated, see below	

The list of values to encode is:

System Information Type 1,
 System Information Type 2,
 System Information Type 3,
 System Information Type 4,
 System Information Type 5,
 System Information Type 6,
 System Information Type 7,
 System Information Type 8,
 System Information Type 9,
 System Information Type 10,
 System Information Type 11,
 System Information Type 12,
 System Information Type 13,
 System Information Type 13.1,
 System Information Type 13.2,
 System Information Type 13.3,
 System Information Type 13.4,
 System Information Type 14,
 System Information Type 15,
 System Information Type 15.1,
 System Information Type 15.2,
 System Information Type 15.3,
 System Information Type 15.4,
 System Information Type 15.5,
 System Information Type 16,
 System Information Type 17,
 System Information Type 18,
 Scheduling Block 1,
 Scheduling Block 2.

System Information Type 5bis.

In addition, ~~two~~three spare values are needed.

10.3.8.21 SIB type

The SIB type identifies a specific system information block.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB type	MP		Enumerated, see below	

The list of values to encode is:

Master information block,
 System Information Type 1,
 System Information Type 2,
 System Information Type 3,
 System Information Type 4,
 System Information Type 5,
 System Information Type 6,
 System Information Type 7,
 System Information Type 8,
 System Information Type 9,
 System Information Type 10,
 System Information Type 11,
 System Information Type 12,
 System Information Type 13,
 System Information Type 13.1,
 System Information Type 13.2,
 System Information Type 13.3,
 System Information Type 13.4,
 System Information Type 14,
 System Information Type 15,
 System Information Type 15.1,
 System Information Type 15.2,
 System Information Type 15.3,
 System Information Type 15.4,
 System Information Type 15.5,
 System Information Type 16,
 System Information Type 17,
 System Information Type 18,
 Scheduling Block 1,

Scheduling Block 2,-

System Information Type 5bis.

In addition, ~~one~~two spare values ~~is~~are needed.

10.3.8.22 SIB type SIBs only

The SIB type identifies a specific system information block.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
SIB type SIBs only	MP		Enumerated, see below	

The list of values to encode is:

System Information Type 1,
 System Information Type 2,
 System Information Type 3,
 System Information Type 4,
 System Information Type 5,
 System Information Type 6,
 System Information Type 7,
 System Information Type 8,
 System Information Type 9,
 System Information Type 10,
 System Information Type 11,
 System Information Type 12,
 System Information Type 13,
 System Information Type 13.1,
 System Information Type 13.2,
 System Information Type 13.3,
 System Information Type 13.4,
 System Information Type 14,
 System Information Type 15,
 System Information Type 15.1,
 System Information Type 15.2,
 System Information Type 15.3,
 System Information Type 15.4,
 System Information Type 15.5,
 System Information Type 16,

System Information Type 17,

System Information Type 18,-

System Information Type 5bis.

In addition, ~~four~~five spare values are needed.

11.3 Information element definitions

```

-- *****
--
--     USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
--
-- *****

RadioFrequencyBandFDD ::=          ENUMERATED {
                                     fdd2100,
                                     fdd1900,
                                     fdd1800,
                                     fdd800bandVI,
                                     spare4bandIV, spare3, spare2, spare1 }

-- *****
--
--     OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::=                              INTEGER (0..7)

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

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::=          INTEGER (0..511)

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

CDMA2000-UMTS-Frequency-List ::=   SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
                                     FrequencyInfoCDMA2000

CellValueTag ::=                   INTEGER (1..4)

--Actual value = 2^(IE value)
ExpirationTimeFactor ::=           INTEGER (1..8)

FDD-UMTS-Frequency-List ::=       SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
                                     FrequencyInfoFDD

FrequencyInfoCDMA2000 ::=          SEQUENCE {
                                     band-Class                    BIT STRING (SIZE (5)),
                                     cdma-Freq                    BIT STRING (SIZE(11))
}

GERAN-SystemInfoBlock ::=          OCTET STRING (SIZE (1..23))

GERAN-SystemInformation ::=        SEQUENCE (SIZE (1..maxGERAN-SI)) OF GERAN-SystemInfoBlock

GSM-BA-Range ::=                   SEQUENCE {
    gsmLowRangeUARFCN             UARFCN,
    gsmUpRangeUARFCN              UARFCN
}

GSM-BA-Range-List ::=              SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                                     GSM-BA-Range

```

```
-- This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2
-- information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value
-- shall be set to 33H. The second octet is the Length of mobile station classmark 2 and its value
-- shall be set to 3. The octet 3 contains the first octet of the value part of the Mobile Station
-- Classmark 2 information element, the octet 4 contains the second octet of the value part of the
-- Mobile Station Classmark 2 information element and so on. For each of these octets, the first/
-- leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile
-- Station Classmark 2.
GSM-Classmark2 ::= OCTET STRING (SIZE (5))
```

```
-- This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station
-- classmark 3 information element in [5]
-- The value part is specified by means of CSN.1, which encoding results in a bit string, to which
-- final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the
-- CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first
-- octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/
-- rightmost/ least significant bit of the last octet.
GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))
```

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

```
GsmSecurityCapability ::= BIT STRING {
    -- For each bit value "0" means false/ not supported
    a5-7(0),
    a5-6(1),
    a5-5(2),
    a5-4(3),
    a5-3(4),
    a5-2(5),
    a5-1(6)
} (SIZE (7))
```

```
IdentificationOfReceivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    receivedMessageType ReceivedMessageType
}
```

```
InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable NULL,
    physicalChannelFailure NULL,
    protocolError ProtocolErrorInformation,
    unspecified NULL,
    spare4 NULL,
    spare3 NULL,
    spare2 NULL,
    spare1 NULL
}
```

```
GERANIu-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..32768))
```

```
GERANIu-RadioAccessCapability ::= BIT STRING (SIZE (1..170))
```

```
InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    cdma2000 SEQUENCE {
        cdma2000-MessageList CDMA2000-MessageList
    }
}
```

```
InterRAT-UE-RadioAccessCapability-r5 ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    geranIu SEQUENCE {
        geranIu-RadioAccessCapability GERANIu-RadioAccessCapability
    },
    cdma2000 SEQUENCE {
        cdma2000-MessageList CDMA2000-MessageList
    }
}
```

```

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
                                           InterRAT-UE-RadioAccessCapability

InterRAT-UE-RadioAccessCapabilityList-r5 ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
                                           InterRAT-UE-RadioAccessCapability-r5

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm                               SEQUENCE {
        gsmSecurityCapability         GsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
                                InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable         NULL,
    physicalChannelFailure           NULL,
    protocolError                    ProtocolErrorInformation,
    interRAT-ProtocolError           NULL,
    unspecified                       NULL,
    spare11                          NULL,
    spare10                          NULL,
    spare9                           NULL,
    spare8                           NULL,
    spare7                           NULL,
    spare6                           NULL,
    spare5                           NULL,
    spare4                           NULL,
    spare3                           NULL,
    spare2                           NULL,
    spare1                           NULL
}

MasterInformationBlock ::= SEQUENCE {
    mib-ValueTag                     MIB-ValueTag,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    plmn-Type                        PLMN-Type,
    sibSb-ReferenceList              SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions            SEQUENCE {} OPTIONAL
}

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

NCC ::= INTEGER (0..7)

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

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity         PredefinedConfigIdentity,
    predefinedConfigValueTag        PredefinedConfigValueTag
}

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

ReceivedMessageType ::= ENUMERATED {
    activeSetUpdate,
    cellChangeOrderFromUTRAN,
    cellUpdateConfirm,
    counterCheck,
    downlinkDirectTransfer,
    interRATHandoverCommand,
    measurementControl,
    pagingType2,
    physicalChannelReconfiguration,
    physicalSharedChannelAllocation,
    radioBearerReconfiguration,
    radioBearerRelease,
}

```

```

        radioBearerSetup,
        rrcConnectionRelease,
        rrcConnectionReject,
        rrcConnectionSetup,
        securityModeCommand,
        signallingConnectionRelease,
        transportChannelReconfiguration,
        transportFormatCombinationControl,
        ueCapabilityEnquiry,
        ueCapabilityInformationConfirm,
        uplinkPhysicalChannelControl,
        uraUpdateConfirm,
        utranMobilityInformation,
        assistanceDataDelivery,
        spare5, spare4, spare3, spare2,
        spare1
    }
}

Rplmn-Information ::= SEQUENCE {
    gsm-BA-Range-List GSM-BA-Range-List OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List
    OPTIONAL,
    tdd-UMTS-Frequency-List TDD-UMTS-Frequency-List
    OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-
List OPTIONAL
}

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List GSM-BA-Range-List OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List OPTIONAL
}

SchedulingInformation ::= SEQUENCE {
    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),
            rep4096 INTEGER (0..2047)
        },
        sib-PosOffsetInfo SibOFF-List OPTIONAL
    }
}

SchedulingInformationSIB ::= SEQUENCE {
    sib-Type SIB-TypeAndTag,
    scheduling SchedulingInformation
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type SIBSb-TypeAndTag,
    scheduling SchedulingInformation
}

SegCount ::= INTEGER (1..16)

SegmentIndex ::= INTEGER (1..15)

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

SIB-Data-fixed ::= BIT STRING (SIZE (222))

```



```

SIB-Data-variable ::=          BIT STRING (SIZE (1..214))

SIBOccurIdentity ::=          INTEGER (0..15)

SIBOccurrenceIdentityAndValueTag ::=  SEQUENCE {
    sibOccurIdentity          SIBOccurIdentity,
    sibOccurValueTag         SIBOccurValueTag
}

SIBOccurValueTag ::=          INTEGER (0..15)

SIB-ReferenceList ::=          SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIB

SIBSb-ReferenceList ::=        SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIBSb

SIB-ReferenceListFACH ::=      SEQUENCE (SIZE (1..maxSIB-FACH)) OF
    SchedulingInformationSIB

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,
    systemInformationBlockType15-1,
    systemInformationBlockType15-2,
    systemInformationBlockType15-3,
    systemInformationBlockType16,
    systemInformationBlockType17,
    systemInformationBlockType15-4,
    systemInformationBlockType18,
    schedulingBlock1,
    schedulingBlock2,
    systemInformationBlockType15-5,
    systemInformationBlockType5bis, spare1,
    spare12 }

SIB-TypeAndTag ::=            CHOICE {
    sysInfoType1              PLMN-ValueTag,
    sysInfoType2              CellValueTag,
    sysInfoType3              CellValueTag,
    sysInfoType4              CellValueTag,
    sysInfoType5              CellValueTag,
    sysInfoType6              CellValueTag,
    sysInfoType7              NULL,
    sysInfoType8              CellValueTag,
    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             CellValueTag,
    sysInfoType16             PredefinedConfigIdentityAndValueTag,
    sysInfoType17             NULL,
    sysInfoType15-1           CellValueTag,

```

```

sysInfoType15-2          SIBOccurrenceIdentityAndValueTag,
sysInfoType15-3          SIBOccurrenceIdentityAndValueTag,
sysInfoType15-4          CellValueTag,
sysInfoType18            CellValueTag,
sysInfoType15-5          CellValueTag,
sysInfoType5bis         CellValueTag, spare5 NULL,
spare4                   NULL,
spare3                   NULL,
spare2                   NULL,
spare1                   NULL
}

SIBSb-TypeAndTag ::=
  sysInfoType1           PLMN-ValueTag,
  sysInfoType2           CellValueTag,
  sysInfoType3           CellValueTag,
  sysInfoType4           CellValueTag,
  sysInfoType5           CellValueTag,
  sysInfoType6           CellValueTag,
  sysInfoType7           NULL,
  sysInfoType8           CellValueTag,
  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          CellValueTag,
  sysInfoType16          PredefinedConfigIdentityAndValueTag,
  sysInfoType17          NULL,
  sysInfoTypeSB1         CellValueTag,
  sysInfoTypeSB2         CellValueTag,
  sysInfoType15-1        CellValueTag,
  sysInfoType15-2        SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-3        SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-4        CellValueTag,
  sysInfoType18          CellValueTag,
  sysInfoType15-5        CellValueTag,
sysInfoType5bis         CellValueTag, spare3 NULL,
spare2                   NULL,
spare1                   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-ConnTimersAndConstants      UE-ConnTimersAndConstants      OPTIONAL,
    ue-IdleTimersAndConstants      UE-IdleTimersAndConstants      OPTIONAL,
    -- Extension mechanism for non- release99 information
    v3a0NonCriticalExtensions      SEQUENCE {
      sysInfoType1-v3a0ext        SysInfoType1-v3a0ext-IEs,
      nonCriticalExtensions        SEQUENCE {} OPTIONAL
    }
  }
  OPTIONAL

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
  ue-ConnTimersAndConstants-v3a0ext  UE-ConnTimersAndConstants-v3a0ext,
  ue-IdleTimersAndConstants-v3a0ext  UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType2 ::=
  SEQUENCE {
    -- UTRAN mobility IEs
    ura-IdentityList              URA-IdentityList,

```

```

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

SysInfoType3 ::=
    sib4indicator              BOOLEAN,
-- UTRAN mobility IEs
cellIdentity                  CellIdentity,
cellSelectReselectInfo        CellSelectReselectInfoSIB-3-4,
cellAccessRestriction         CellAccessRestriction,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions     SEQUENCE {
    sysInfoType3-v4xyext       SysInfoType3-v4xyext-IEs,
    v5xyNonCriticalExtension    SEQUENCE {
        sysInfoType3-v5xyext   SysInfoType3-v5xyext,
        nonCriticalExtensions  SEQUENCE {}                                OPTIONAL
    }
}
}
OPTIONAL

SysInfoType3-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR                Mapping-LCR-r4                                OPTIONAL
}

SysInfoType3-v5xyext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyext CellSelectReselectInfo-v5xyExt    OPTIONAL
}

SysInfoType4 ::=
    -- UTRAN mobility IEs
    cellIdentity                CellIdentity,
    cellSelectReselectInfo      CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction       CellAccessRestriction,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions     SEQUENCE {
    sysInfoType4-v4xyext       SysInfoType4-v4xyext-IEs,
    v5xyNonCriticalExtension    SEQUENCE {
        sysInfoType4-v5xyext   SysInfoType4-v5xyext,
        nonCriticalExtensions  SEQUENCE {}                                OPTIONAL
    }
}
}
OPTIONAL

SysInfoType4-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR                Mapping-LCR-r4                                OPTIONAL
}

SysInfoType4-v5xyext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyext CellSelectReselectInfo-v5xyExt    OPTIONAL
}

-- SysInfoType5bis uses the same structure as SysInfoType5
SysInfoType5 ::=
    sib6indicator              BOOLEAN,
-- Physical channel IEs
pich-PowerOffset              PICH-PowerOffset,
modeSpecificInfo              CHOICE {
    fdd                        SEQUENCE {
        aich-PowerOffset       AICH-PowerOffset
    },
    tdd                        SEQUENCE {
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
-- and the info included in the tdd128SpecificInfo instead.
-- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
-- included.
        pusch-SysInfoList-SFN   PUSCH-SysInfoList-SFN    OPTIONAL,
        pdsch-SysInfoList-SFN   PDSCH-SysInfoList-SFN    OPTIONAL,
        openLoopPowerControl-TDD OpenLoopPowerControl-TDD
    }
},
primaryCCPCH-Info             PrimaryCCPCH-Info                                OPTIONAL,
prach-SystemInformationList    PRACH-SystemInformationList,
sccpch-SystemInformationList    SCCPCH-SystemInformationList,
-- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
-- sccpch-SystemInformationList
cbs-DRX-Level1Information      CBS-DRX-Level1Information    OPTIONAL,
-- Extension mechanism for non- release99 information

```

```

v4xyNonCriticalExtensions      SEQUENCE {
  sysInfoType5-v4xyext          SysInfoType5-v4xyext-IEs      OPTIONAL,
  -- Extension mechanism for non- rel-4 information
  v5xyNonCriticalExtensions      SEQUENCE {
    sysInfoType5-v5xyext          SysInfoType5-v5xyext-IEs      OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}                  OPTIONAL
  }
}
OPTIONAL
}

SysInfoType5-v4xyext-IEs ::= SEQUENCE {
  --The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
  pNBSCH-Allocation-r4          PNBSCH-Allocation-r4          OPTIONAL,
  -- In case of TDD, the following IE is included instead of the
  -- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
  openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
  -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
  -- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
  -- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
  -- PRACH-SystemInformationList-LCR-r4 shall be used
  prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
  tdd128SpecificInfo              SEQUENCE {
    pusSch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pCCPCH-LCR-Extensions          PrimaryCCPCH-Info-LCR-r4-ext  OPTIONAL,
    sCCPCH-LCR-ExtensionsList      SCCPCH-SystemInformationList-LCR-r4-ext
  }
}
OPTIONAL

SysInfoType5-v5xyext-IEs ::= SEQUENCE {
  hcr-r5-SpecificInfo            SEQUENCE {
    pusSch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-HCR-r5  OPTIONAL,
    pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-HCR-r5  OPTIONAL
  }
}
OPTIONAL

SysInfoType5-v6xyext-IEs ::= SEQUENCE {
  frequencyBandIndicator         RadioFrequencyBandFDD
}

SysInfoType6 ::= SEQUENCE {
  -- Physical channel IEs
  pich-PowerOffset               PICH-PowerOffset,
  modeSpecificInfo               CHOICE {
    fdd                           SEQUENCE {
      aich-PowerOffset             AICH-PowerOffset,
      -- dummy is not used in this version of specification, it should
      -- not be sent and if received it should be ignored.
      dummy                        CSICH-PowerOffset          OPTIONAL
    },
    tdd                           SEQUENCE {
      -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusSch-SysInfoList-SFN,
      -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
      -- and the info included in the tdd128SpecificInfo instead.
      -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
      -- also be included.
      pusSch-SysInfoList-SFN        PUSCH-SysInfoList-SFN          OPTIONAL,
      pdsch-SysInfoList-SFN        PDSCH-SysInfoList-SFN          OPTIONAL,
      openLoopPowerControl-TDD      OpenLoopPowerControl-TDD
    }
  },
  primaryCCPCH-Info              PrimaryCCPCH-Info          OPTIONAL,
  prach-SystemInformationList     PRACH-SystemInformationList  OPTIONAL,
  sCCPCH-SystemInformationList    SCCPCH-SystemInformationList  OPTIONAL,
  cbs-DRX-Level1Information       CBS-DRX-Level1Information  OPTIONAL,
  -- Conditional on any of the CTCH indicator IEs in
  -- sCCPCH-SystemInformationList
  -- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions      SEQUENCE {
    sysInfoType6-v4xyext          SysInfoType6-v4xyext-IEs      OPTIONAL,
    -- Extension mechanism for non- rel-4 information
    v5xyNonCriticalExtensions      SEQUENCE {
      sysInfoType6-v5xyext          SysInfoType6-v5xyext-IEs      OPTIONAL,
      v6xyNonCriticalExtensions      SEQUENCE {
        sysInfoType6-v6xyext          SysInfoType6-v6xyext-IEs      OPTIONAL,
        nonCriticalExtensions          SEQUENCE {}                  OPTIONAL
      }
    }
  }
}
OPTIONAL
}
OPTIONAL
}

```

```

}

SysInfoType6-v4xyext-IEs ::= SEQUENCE {
-- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
-- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
-- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
tddl28SpecificInfo  SEQUENCE {
    pusch-SysInfoList-SFN  PUSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pdsch-SysInfoList-SFN  PDSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pCCPCH-LCR-Extensions  PrimaryCCPCH-Info-LCR-r4-ext  OPTIONAL,
    sCCPCH-LCR-ExtensionsList  SCCPCH-SystemInformationList-LCR-r4-ext  OPTIONAL
}
}

SysInfoType6-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo  SEQUENCE {
        pusch-SysInfoList-SFN  PUSCH-SysInfoList-SFN-HCR-r5  OPTIONAL,
        pdsch-SysInfoList-SFN  PDSCH-SysInfoList-SFN-HCR-r5  OPTIONAL
    }
}

SysInfoType6-v6xyext-IEs ::= SEQUENCE {
    frequencyBandIndicator  RadioFrequencyBandFDD
}

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,
expirationTimeFactor  ExpirationTimeFactor  OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions  SEQUENCE {}  OPTIONAL
}

SysInfoType8 ::= SEQUENCE {
-- User equipment IEs
cpch-Parameters  CPCH-Parameters,
-- Physical channel IEs
cpch-SetInfoList  CPCH-SetInfoList,
csich-PowerOffset  CSICH-PowerOffset,
-- Extension mechanism for non- release99 information
nonCriticalExtensions  SEQUENCE {}  OPTIONAL
}

SysInfoType9 ::= SEQUENCE {
-- Physical channel IEs
cpch-PersistenceLevelsList  CPCH-PersistenceLevelsList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions  SEQUENCE {}  OPTIONAL
}

SysInfoType10 ::= SEQUENCE {
-- User equipment IEs
drac-SysInfoList  DRAC-SysInfoList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions  SEQUENCE {}  OPTIONAL
}

SysInfoType11 ::= SEQUENCE {
    sib12indicator  BOOLEAN,
-- Measurement IEs
fach-MeasurementOccasionInfo  FACH-MeasurementOccasionInfo  OPTIONAL,
measurementControlSysInfo  MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions  SEQUENCE {
    sysInfoType11-v4xyext  SysInfoType11-v4xyext-IEs  OPTIONAL,
    v5xyNonCriticalExtension  SEQUENCE {
        sysInfoType11-v5xyext  SysInfoType11-v5xyext-IEs,

```

```

        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }
}
}
}

SysInfoType11-v4xyext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
    measurementControlSysInfo-LCR          MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType11-v5xyext-IEs ::= SEQUENCE {
    --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
    newIntraFrequencyCellInfoList-v5xyext  SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
    newInterFrequencyCellInfoList-v5xyext  SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
    newInterRATCellInfoList-v5xyext       SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt  OPTIONAL,
    intraFreqEventCriteriaList-v5xyext     Intra-FreqEventCriteriaList-v5xyext  OPTIONAL,
    intraFreqReportingCriteria-lb-r5ext    IntraFreqReportingCriteria-lb-r5ext  OPTIONAL,
    intraFreqEvent-ld-r5ext                IntraFreqEvent-ld-r5ext              OPTIONAL
}

SysInfoType12 ::= SEQUENCE {
    -- Measurement IEs
    fach-MeasurementOccasionInfo          FACH-MeasurementOccasionInfo          OPTIONAL,
    measurementControlSysInfo              MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions              SEQUENCE {
        sysInfoType12-v4xyext              SysInfoType12-v4xyext-IEs            OPTIONAL,
        v5xyNonCriticalExtension            SEQUENCE {
            sysInfoType12-v5xyext          SysInfoType12-v5xyext-IEs,
            nonCriticalExtensions          SEQUENCE {}                          OPTIONAL
        }
    }
}

SysInfoType12-v4xyext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
    measurementControlSysInfo-LCR          MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12-v5xyext-IEs ::= SEQUENCE {
    --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
    newIntraFrequencyCellInfoList-v5xyext  SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
    newInterFrequencyCellInfoList-v5xyext  SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
    newInterRATCellInfoList-v5xyext       SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt  OPTIONAL,
    intraFreqEventCriteriaList-v5xyext     Intra-FreqEventCriteriaList-v5xyext  OPTIONAL,
    intraFreqReportingCriteria-lb-r5ext    IntraFreqReportingCriteria-lb-r5ext  OPTIONAL,
    intraFreqEvent-ld-r5ext                IntraFreqEvent-ld-r5ext              OPTIONAL
}

SysInfoType13 ::= SEQUENCE {
    -- Core network IEs
    cn-DomainSysInfoList                  CN-DomainSysInfoList,
    -- User equipment IEs
    ue-IdleTimersAndConstants              UE-IdleTimersAndConstants              OPTIONAL,
    capabilityUpdateRequirement            CapabilityUpdateRequirement              OPTIONAL,
    -- Extension mechanism for non- release99 information
    v3a0NonCriticalExtensions              SEQUENCE {
        sysInfoType13-v3a0ext              SysInfoType13-v3a0ext-IEs,
        v4xyNonCriticalExtensions          SEQUENCE {
            sysInfoType13-v4xyext          SysInfoType13-v4xyext-IEs,
            -- Extension mechanism for non- release99 information
            nonCriticalExtensions          SEQUENCE {}                          OPTIONAL
        }
    }
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
    ue-IdleTimersAndConstants-v3a0ext      UE-IdleTimersAndConstants-v3a0ext
}

```

```

}

SysInfoType13-v4xyext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4Ext    CapabilityUpdateRequirement-r4-ext    OPTIONAL
}

SysInfoType13-1 ::=
    SEQUENCE {
        -- ANSI-41 IEs
        ansi-41-RAND-Information          ANSI-41-RAND-Information,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
    }

SysInfoType13-2 ::=
    SEQUENCE {
        -- ANSI-41 IEs
        ansi-41-UserZoneID-Information    ANSI-41-UserZoneID-Information,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
    }

SysInfoType13-3 ::=
    SEQUENCE {
        -- ANSI-41 IEs
        ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
    }

SysInfoType13-4 ::=
    SEQUENCE {
        -- ANSI-41 IEs
        ansi-41-GlobalServiceRedirectInfo
            ANSI-41-GlobalServiceRedirectInfo,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
    }

SysInfoType14 ::=
    SEQUENCE {
        -- Physical channel IEs
        individualTS-InterferenceList     IndividualTS-InterferenceList,
        expirationTimeFactor               ExpirationTimeFactor                    OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
    }

SysInfoType15 ::=
    SEQUENCE {
        -- Measurement IEs

        ue-positioning-GPS-CipherParameters    UE-Positioning-CipherParameters    OPTIONAL,
        ue-positioning-GPS-ReferenceLocation    ReferenceLocation,
        ue-positioning-GPS-ReferenceTime        UE-Positioning-GPS-ReferenceTime,

        ue-positioning-GPS-Real-timeIntegrity    BadSatList                            OPTIONAL,
        -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions              SEQUENCE {
            sysInfoType15-v4xyext              SysInfoType15-v4xyext-IEs,
            -- Extension mechanism for non- release4 information
            nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
        }    OPTIONAL
    }

SysInfoType15-v4xyext-IEs ::= SEQUENCE {
    up-IPDL-Parameters-TDD                UE-Positioning-IPDL-Parameters-TDD-r4-ext    OPTIONAL
}

SysInfoType15-1 ::=
    SEQUENCE {
        -- DGPS corrections
        ue-positioning-GPS-DGPS-Corrections    UE-Positioning-GPS-DGPS-Corrections,

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

SysInfoType15-2 ::=
    SEQUENCE {
        -- Ephemeris and clock corrections
        transmissionTOW                      INTEGER (0..604799),
        satID                                  SatID,
        ephemerisParameter                    EphemerisParameter,

        -- Extension mechanism for non- release99 information
    }

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        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoType15-3 ::=                      SEQUENCE {
    -- Almanac and other data
        transmissionTOW                INTEGER (0.. 604799),
        ue-positioning-GPS-Almanac      UE-Positioning-GPS-Almanac
    OPTIONAL,
        ue-positioning-GPS-IonosphericModel  UE-Positioning-GPS-IonosphericModel
    OPTIONAL,
        ue-positioning-GPS-UTC-Model      UE-Positioning-GPS-UTC-Model
    OPTIONAL,
        satMask                         BIT STRING (SIZE (1..32))  OPTIONAL,
        lsbTOW                           BIT STRING (SIZE (8))    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}          OPTIONAL
    }

SysInfoType15-4 ::=                      SEQUENCE {
    -- Measurement IEs
        ue-positioning-OTDOA-CipherParameters  UE-Positioning-CipherParameters          OPTIONAL,
        ue-positioning-OTDOA-AssistanceData    UE-Positioning-OTDOA-AssistanceData,
        v3a0NonCriticalExtensions             SEQUENCE {
            sysInfoType15-4-v3a0ext           SysInfoType15-4-v3a0ext,
        -- Extension mechanism for non- release99 information
            v4xyNonCriticalExtensions         SEQUENCE {
                sysInfoType15-4-v4xyext       SysInfoType15-4-v4xyext,
                nonCriticalExtensions         SEQUENCE {}          OPTIONAL
            } OPTIONAL
        } OPTIONAL
    }

SysInfoType15-4-v3a0ext ::= SEQUENCE {
    sfm-Offset-Validity                  SFN-Offset-Validity          OPTIONAL
}

SysInfoType15-4-v4xyext ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext  UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

SysInfoType15-5 ::=                      SEQUENCE {
    -- Measurement IEs
        ue-positioning-OTDOA-AssistanceData-UEB  UE-Positioning-OTDOA-AssistanceData-UEB,
        v3a0NonCriticalExtensions             SEQUENCE {
            sysInfoType15-5-v3a0ext           SysInfoType15-5-v3a0ext,
        -- Extension mechanism for non- release99 information
            nonCriticalExtensions             SEQUENCE {}          OPTIONAL
        } OPTIONAL
    }

SysInfoType15-5-v3a0ext ::= SEQUENCE {
    sfm-Offset-Validity                  SFN-Offset-Validity          OPTIONAL
}

SysInfoType16 ::=                      SEQUENCE {
    -- Radio bearer IEs
        preDefinedRadioConfiguration  PreDefRadioConfiguration,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoType17 ::=                      SEQUENCE {
    -- Physical channel IEs
    -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
    -- pdsch-SysInfoList should be absent and the info included in the
    -- tdd128SpecificInfo instead.
    -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
    -- included.
        pusch-SysInfoList                PUSCH-SysInfoList          OPTIONAL,
        pdsch-SysInfoList                PDSCH-SysInfoList        OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions         SEQUENCE {
            sysInfoType17-v4xyext         SysInfoType17-v4xyext-IEs,
            v5xyNonCriticalExtensions     SEQUENCE {
                sysInfoType17-v5xyext     SysInfoType17-v5xyext-IEs          OPTIONAL,
                nonCriticalExtensions     SEQUENCE {}          OPTIONAL
            }
        } OPTIONAL
    }
}

```



```

}

SysInfoType17-v4xyext-IEs ::= SEQUENCE {
    tdd128SpecificInfo          SEQUENCE {
        pusch-SysInfoList      PUSCH-SysInfoList-LCR-r4      OPTIONAL,
        pdsch-SysInfoList      PDSCH-SysInfoList-LCR-r4      OPTIONAL,
    }
}

SysInfoType17-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo        SEQUENCE {
        pusch-SysInfoList      PUSCH-SysInfoList-HCR-r5      OPTIONAL,
        pdsch-SysInfoList      PDSCH-SysInfoList-HCR-r5      OPTIONAL,
    }
}

SysInfoType18 ::=
    SEQUENCE {
        idleModePLMNIdentities PLMNIdentitiesOfNeighbourCells  OPTIONAL,
        connectedModePLMNIdentities PLMNIdentitiesOfNeighbourCells  OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions    SEQUENCE {}          OPTIONAL
    }

SysInfoTypeSB1 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList        SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions    SEQUENCE {}          OPTIONAL
    }

SysInfoTypeSB2 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList        SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions    SEQUENCE {}          OPTIONAL
    }

TDD-UMTS-Frequency-List ::=
    SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
    FrequencyInfoTDD

```