TSG-RAN Meeting #16
Marco Island, FL, USA, 4 - 7 June 2002

RP-020332

Title: **Agreed CRs (Release '99 and Rel-4/Rel-5 category A) to TS 25.331 (3)**

Source: **TSG-RAN WG2**

Agenda item: **7.2.3**

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-021296	agreed	25.331	1408		R99	Clarification to Compressed Mode Status Info	F	3.10.0	3.11.0
R2-021297	agreed	25.331	1409		Rel-4	Clarification to Compressed Mode Status Info	A	4.4.0	4.5.0
R2-021298	agreed	25.331	1410		Rel-5	Clarification to Compressed Mode Status Info	A	5.0.0	5.1.0
R2-021299	agreed	25.331	1411		R99	Clarification of OTDOA quality figure	F	3.10.0	3.11.0
R2-021300	agreed	25.331	1412		Rel-4	Clarification of OTDOA quality figure	A	4.4.0	4.5.0
R2-021301	agreed	25.331	1413		Rel-5	Clarification of OTDOA quality figure	A	5.0.0	5.1.0
R2-021305	agreed	25.331	1414		R99	Correction to Cell Access Restriction for SIB4	F	3.10.0	3.11.0
R2-021306	agreed	25.331	1415		Rel-4	Correction to Cell Access Restriction for SIB4	A	4.4.0	4.5.0
R2-021307	agreed	25.331	1416		Rel-5	Correction to Cell Access Restriction for SIB4	A	5.0.0	5.1.0
R2-021308	agreed	25.331	1417		R99	Corrections concerning spare values and comments	F	3.10.0	3.11.0
R2-021309	agreed	25.331	1418		Rel-4	Corrections concerning spare values and comments	A	4.4.0	4.5.0
R2-021310	agreed	25.331	1419		Rel-5	Corrections concerning spare values and comments	A	5.0.0	5.1.0
R2-021311	agreed	25.331	1420		R99	Removal of the obsolete IE "Transparent mode signalling info"	F	3.10.0	3.11.0
---	---	---	---		---	<no Rel-4 shadow>	---	---	---
---	---	---	---		---	<no Rel-5 shadow>	---	---	---
R2-021312	agreed	25.331	1421		R99	Variable for shared channel configurations	F	3.10.0	3.11.0
R2-021313	agreed	25.331	1422		Rel-4	Variable for shared channel configurations	A	4.4.0	4.5.0
R2-021314	agreed	25.331	1423		Rel-5	Variable for shared channel configurations	A	5.0.0	5.1.0
R2-021425	agreed	25.331	1424	1	R99	Integrity protection on RB0	F	3.10.0	3.11.0
R2-021426	agreed	25.331	1425	1	Rel-4	Integrity protection on RB0	A	4.4.0	4.5.0
R2-021427	agreed	25.331	1426	1	Rel-5	Integrity protection on RB0	A	5.0.0	5.1.0

3GPP TSG-RAN2 Meeting #29
Gyeongju, Korea, 14th – 17th May 2002

Tdoc R2-021296

CR-Form-v5

CHANGE REQUEST

⌘ **25.331** **CR** **1408** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Clarification to Compressed Mode Status Info
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13. May 2002
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change: ⌘ Ambiguous and misleading description of transmission gap pattern sequence status handling.

- Currently the same name "TGPS Status Flag" is used in the UE internal state variable TGPS_IDENTITY and in several messages like MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION. The first one holds the current status of the pattern sequences while the later ones indicate the future state of the patterns after a reconfiguration has taken place. This could lead to confusion in the procedural descriptions because both flags are mentioned without proper explanation which one is which.
- It is currently specified that the UE shall deactivate any pattern sequence that is included in the IE "DPCH Compressed Mode Status Info". It is not checked whether the flag indicates that the corresponding pattern sequence shall be active or inactive after the configuration. This could be misinterpreted as an error in the specification but it is in fact the intended behaviour. It gives the network the possibility to align already active with newly configured patterns.

Summary of change: ⌘ The IE "TGPS Status Flag" in the variable TGPS_IDENTITY is renamed to "Current TGPS Status Flag" to distinguish it from the IE "TGPS Status Flag" in the MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION messages.

The "TGPS Status Flag" in the MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION messages indicates the future status of the pattern sequence after the reconfiguration. The flags are therefore renamed from "active" / "inactive" to "activate" / "deactivate". This is also in line with the ASN.1

The procedural description in sections 8.4.1.3 and 8.6.6.15 are extended to clarify the intended behaviour.

Backward compatibility analysis:
This CR does not intend to change the UE behaviour, it should only clarify the functionality. UE implementations that behave accordingly are not affected and

		they will offer the network all reconfiguration possibilities. UEs which behave differently might permanently deactivate a pattern sequence although the network just intended to align it with a new pattern. The UE could also let the pattern run without the needed alignment, which would probably lead to overlapping compressed mode gaps. If the network is not implemented accordingly then it could only use pattern sequences which do not need re-alignment.
Consequences if not approved:	⌘	The description of transmission gap pattern sequence status handling remains unclear. This could potentially lead to wrong implementations and cause overlapping compressed mode pattern sequences.

Clauses affected:	⌘	8.4.1.3, 8.6.6.15, 10.3.6.33, 10.3.6.34, 13.4.25		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v4.4.0, CR 1409 25.331 v5.0.0, CR 1410
Other comments:	⌘			

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

1> read the IE "Measurement command";

1> if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":

3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or

3> if the IE "Inter-frequency cell info list" for that measurement identity is empty; or

3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

4> if the measurement is valid in the current RRC state of the UE:

5> begin measurements according to the stored control information for this measurement identity.

2> for measurement type "UE positioning measurement":

3> if the UE is in CELL_FACH state:

4> if IE "Positioning Method" is set to "OTDOA":

5> if IE "Method Type" is set to "UE assisted":

6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:

7> if System Information Block type 15.4 is broadcast:

8> read System Information Block type 15.4.

7> act as specified in subclause 8.6.7.19.2.

5> if IE "Method Type" is set to "UE based":

6> if IE "UE positioning OTDOA assistance data for UE based" is not included:

7> if System Information Block type 15.5 is broadcast:

8> read System Information Block type 15.5.

7> act as specified in subclause 8.6.7.19.2a.

2> for any other measurement type:

3> if the measurement is valid in the current RRC state of the UE:

4> begin measurements according to the stored control information for this measurement identity.

1> if the IE "Measurement command" has the value "modify":

2> for all IEs present in the MEASUREMENT CONTROL message:

3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

4> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:

5> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; and

5> if the IE "Inter-frequency cell info list" for that measurement identity is empty; or

5> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

6> replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated with the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

6> resume the measurements according to the new stored measurement control information.

4> for any other measurement type:

5> replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

5> resume the measurements according to the new stored measurement control information.

3> otherwise:

4> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> for all optional IEs that are not present in the MEASUREMENT CONTROL message:

3> leave the currently stored information elements unchanged in the variable MEASUREMENT_IDENTITY if not stated otherwise for that IE.

1> if the IE "measurement command" has the value "release":

2> terminate the measurement associated with the identity given in the IE "measurement identity";

2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.

1> if the IE "DPCH Compressed Mode Status Info" is present:

2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS_IDENTITY):

3> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

4~~3~~> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message and~~.~~

4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:

3> activate the pattern sequence ~~stored in the variable TGPS_IDENTITY~~ corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and

3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active" and

3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:

4> start the concerned pattern sequence immediately at that CFN.

2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identitifed in IE "TGPSI" in the received message.

1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:

2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and

2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.

1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;

The UE may:

1> if the IE "Measurement command" has the value "setup":

2> for measurement type "UE positioning measurement":

3> if the UE is CELL_FACH state:

4> if IE "Positioning Method" is set to "GPS":

5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:

6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:

7> read System Information Block types 15, 15.1, 15.2 and 15.3.

6> act as specified in subclause 8.6.7.19.3.

1> and the procedure ends.

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires UL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'DL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires DL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'UL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:

2> set the variable INVALID_CONFIGURATION to TRUE.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3~~2~~> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";

1> update into the variable TGPS_IDENTITY the configuration information defined by IE group" transmission gap pattern sequence configuration parameters ";

1> after the new configuration has been taken into use:

2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "Current TGPS status flag" in the variable TGPS_IDENTITY is set to "activ~~ate~~" at the time indicated by IE "TGCFN"; and

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use. and

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> after the new configuration has been taken into use:

2> activate, at the time indicated by IE "TGCFN", the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI", the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and

2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.

1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

10.3.6.33 DPCH compressed mode info

NOTE: Only for FDD.

This information element indicates the parameters of the compressed mode to be used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission gap pattern	MP	1 to		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
sequence		<maxTGPS>		
>TGPSI	MP		TGPSI 10.3.6.82	
>TGPS Status Flag	MP		Enumerated(activate~~e~~, ~~in~~deactivate~~e~~)	This flag indicates whether the ~~current status of the~~ Transmission Gap Pattern Sequence~~, whether it~~ shall be activated or deactivated.
>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.
>Transmission gap pattern sequence configuration parameters	OP			
>>TGMP	MP		Enumerated(TDD measurement, FDD measurement, GSM carrier RSSI measurement, GSM Initial BSIC identification, GSM BSIC re-confirmation, Multi-carrier measurement)	Transmission Gap pattern sequence Measurement Purpose.
>>TGPRC	MP		Integer (1..511, Infinity)	The number of transmission gap patterns within the Transmission Gap Pattern Sequence.
>>TGSN	MP		Integer (0..14)	Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.
>>TGL1	MP		Integer(1..14)	The length of the first Transmission Gap within the transmission gap pattern expressed in number of slots
>>TGL2	MD		Integer (1..14)	The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1.
>>TGD	MP		Integer(15..269, undefined)	Transmission gap distance indicates the number of slots between starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to zero.
>>TGPL1	MP		Integer (1..144)	The duration of transmission gap pattern 1.
>>TGPL2	MD		Integer (1..144)	The duration of transmission gap pattern 2. If omitted, then

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				TGPL2=TGPL1.
>>RPP	MP		Enumerated (mode 0, mode 1).	Recovery Period Power control mode during the frame after the transmission gap within the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied
>>ITP	MP		Enumerated (mode 0, mode 1).	Initial Transmit Power is the uplink power control method to be used to compute the initial transmit power after the compressed mode gap.
>>CHOICE *UL/DL mode*	MP			
>>>DL only				Compressed mode used in DL only
>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap
>>>UL only				Compressed mode used in UL only
>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap
>>>UL and DL				Compressed mode used in UL and DL
>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap
>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap
>>Downlink frame type	MP		Enumerated (A, B)	
>>DeltaSIR1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase)
>>DeltaSIRafter1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.
>>DeltaSIR2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1.
>>DeltaSIRafter2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1.
>>N Identify abort	CV-*Initial BSIC*		Integer(1..128)	Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure
>>T Reconfirm abort	CV-*Re-confirm BSIC*		Real(0.5..10.0 by step of 0.5)	Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.

Condition	Explanation
Active	This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activate~~e~~" and not needed otherwise.
Initial BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM Initial BSIC identification" and not needed otherwise.
Re-confirm BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM BSIC re-confirmation" and not needed otherwise.

10.3.6.34 DPCH Compressed Mode Status Info

This information element indicates status information of the compressed mode used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS reconfiguration CFN	MP		Integer (0..255)	Connection Frame Number of the frame where already active Transmission Gap Pattern Sequences shall be deactivated
Transmission gap pattern sequence	MP	1 to <maxTGPS>		
>TGPSI	MP		TGPSI 10.3.6.82	Transmission Gap Pattern Sequence Identifier
>TGPS Status Flag	MP		Enumerated(activate~~e~~, ~~in~~deactivate~~e~~)	This flag indicates whether the ~~current status of the~~ Transmission Gap Pattern Sequence~~, whether it~~ shall be activated~~e~~ or ~~in~~deactivated~~e~~.
>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.

Condition	Explanation
Active	This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activatee" and not needed otherwise.

11.3 Information element definitions

```
TGP-Sequence ::=                    SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    },
    tgps-ConfigurationParams            TGPS-ConfigurationParams            OPTIONAL
}



TGP-SequenceShort ::=               SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    }
}
```

13.4.25 TGPS_IDENTITY

This variable contains the configuration parameters of a compressed mode transmission gap pattern sequence

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS_IDENTITY	OP		DPCH compressed mode info 10.3.6.33	Information as contained in the IE group "Transmission gap pattern sequence configuration parameters". Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
Current TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it is active or inactive.

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Gyeongju, Korea, 14th – 17th May 2002

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CR-Form-v5

CHANGE REQUEST

⌘ **25.331** **CR** **1409** ⌘ **rev** **-** ⌘ Current version: **4.4.0** ⌘

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

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

Title:	⌘	Clarification to Compressed Mode Status Info
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13. May 2002
Category:	⌘	**A**
Release:	⌘	REL-4

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

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

Reason for change: ⌘ Ambiguous and misleading description of transmission gap pattern sequence status handling.

- Currently the same name "TGPS Status Flag" is used in the UE internal state variable TGPS_IDENTITY and in several messages like MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION. The first one holds the current status of the pattern sequences while the later ones indicate the future state of the patterns after a reconfiguration has taken place. This could lead to confusion in the procedural descriptions because both flags are mentioned without proper explanation which one is which.
- It is currently specified that the UE shall deactivate any pattern sequence that is included in the IE "DPCH Compressed Mode Status Info". It is not checked whether the flag indicates that the corresponding pattern sequence shall be active or inactive after the configuration. This could be misinterpreted as an error in the specification but it is in fact the intended behaviour. It gives the network the possibility to align already active with newly configured patterns.

Summary of change: ⌘ The IE "TGPS Status Flag" in the variable TGPS_IDENTITY is renamed to "Current TGPS Status Flag" to distinguish it from the IE "TGPS Status Flag" in the MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION messages.

The "TGPS Status Flag" in the MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION messages indicates the future status of the pattern sequence after the reconfiguration. The flags are therefore renamed from "active" / "inactive" to "activate" / "deactivate". This is also in line with the ASN.1

The procedural description in sections 8.4.1.3 and 8.6.6.15 are extended to clarify the intended behaviour.

Backward compatibility analysis:
This CR does not intend to change the UE behaviour, it should only clarify the functionality. UE implementations that behave accordingly are not affected and

		they will offer the network all reconfiguration possibilities. UEs which behave differently might permanently deactivate a pattern sequence although the network just intended to align it with a new pattern. The UE could also let the pattern run without the needed alignment, which would probably lead to overlapping compressed mode gaps. If the network is not implemented accordingly then it could only use pattern sequences which do not need re-alignment.
Consequences if not approved:	⌘	The description of transmission gap pattern sequence status handling remains unclear. This could potentially lead to wrong implementations and cause overlapping compressed mode pattern sequences.

Clauses affected:	⌘	8.4.1.3, 8.6.6.15, 10.3.6.33, 10.3.6.34, 13.4.25		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1408 25.331 v5.0.0, CR 1410
Other comments:	⌘			

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

1> read the IE "Measurement command";

1> if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":

3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or

3> if the IE "Inter-frequency cell info list" for that measurement identity is empty; or

3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

4> if the measurement is valid in the current RRC state of the UE:

5> begin measurements according to the stored control information for this measurement identity.

2> for measurement type "UE positioning measurement":

3> if the UE is in CELL_FACH state:

4> if IE "Positioning Method" is set to "OTDOA":

5> if IE "Method Type" is set to "UE assisted":

6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:

7> if System Information Block type 15.4 is broadcast:

8> read System Information Block type 15.4.

7> act as specified in subclause 8.6.7.19.2.

5> if IE "Method Type" is set to "UE based":

6> if IE "UE positioning OTDOA assistance data for UE based" is not included:

7> if System Information Block type 15.5 is broadcast:

8> read System Information Block type 15.5.

7> act as specified in subclause 8.6.7.19.2a.

2> for any other measurement type:

3> if the measurement is valid in the current RRC state of the UE:

4> begin measurements according to the stored control information for this measurement identity.

1> if the IE "Measurement command" has the value "modify":

2> for all IEs present in the MEASUREMENT CONTROL message:

3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

4> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:

5> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; and

5> if the IE "Inter-frequency cell info list" for that measurement identity is empty; or

5> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

6> replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated with the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

6> resume the measurements according to the new stored measurement control information.

4> for any other measurement type:

5> replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

5> resume the measurements according to the new stored measurement control information.

3> otherwise:

4> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> for all optional IEs that are not present in the MEASUREMENT CONTROL message:

3> leave the currently stored information elements unchanged in the variable MEASUREMENT_IDENTITY if not stated otherwise for that IE.

1> if the IE "measurement command" has the value "release":

2> terminate the measurement associated with the identity given in the IE "measurement identity";

2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.

1> if the IE "DPCH Compressed Mode Status Info" is present:

2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS_IDENTITY):

3> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

4~~3~~> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message and~~.~~

4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:

3> activate the pattern sequence ~~stored in the variable TGPS_IDENTITY~~ corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and

3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active" and

3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:

4> start the concerned pattern sequence immediately at that CFN.

2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identitifed in IE "TGPSI" in the received message.

1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:

2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and

2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.

1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;

The UE may:

1> if the IE "Measurement command" has the value "setup":

2> for measurement type "UE positioning measurement":

3> if the UE is CELL_FACH state:

4> if IE "Positioning Method" is set to "GPS":

5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:

6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:

7> read System Information Block types 15, 15.1, 15.2 and 15.3.

6> act as specified in subclause 8.6.7.19.3.

1> and the procedure ends.

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires UL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'DL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires DL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'UL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:

2> set the variable INVALID_CONFIGURATION to TRUE.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3~~2~~> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";

1> update into the variable TGPS_IDENTITY the configuration information defined by IE group" transmission gap pattern sequence configuration parameters ";

1> after the new configuration has been taken into use:

2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "Current TGPS status flag" in the variable TGPS_IDENTITY is set to "activ~~ate~~" at the time indicated by IE "TGCFN"; and

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use. and

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> after the new configuration has been taken into use:

2> activate, at the time indicated by IE "TGCFN", the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI", the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and

2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.

1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

10.3.6.33 DPCH compressed mode info

NOTE: Only for FDD.

This information element indicates the parameters of the compressed mode to be used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission gap pattern	MP	1 to		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
sequence		<maxTGPS>		
>TGPSI	MP		TGPSI 10.3.6.82	
>TGPS Status Flag	MP		Enumerated(activate~~e~~, ~~in~~deactivate~~e~~)	This flag indicates whether the ~~current status of the~~ Transmission Gap Pattern Sequence~~, whether it~~ shall be activated or deactivated.
>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.
>Transmission gap pattern sequence configuration parameters	OP			
>>TGMP	MP		Enumerated(TDD measurement, FDD measurement, GSM carrier RSSI measurement, GSM Initial BSIC identification, GSM BSIC re-confirmation, Multi-carrier measurement)	Transmission Gap pattern sequence Measurement Purpose.
>>TGPRC	MP		Integer (1..511, Infinity)	The number of transmission gap patterns within the Transmission Gap Pattern Sequence.
>>TGSN	MP		Integer (0..14)	Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.
>>TGL1	MP		Integer(1..14)	The length of the first Transmission Gap within the transmission gap pattern expressed in number of slots
>>TGL2	MD		Integer (1..14)	The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1.
>>TGD	MP		Integer(15..269, undefined)	Transmission gap distance indicates the number of slots between starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to zero.
>>TGPL1	MP		Integer (1..144)	The duration of transmission gap pattern 1.
>>TGPL2	MD		Integer (1..144)	The duration of transmission gap pattern 2. If omitted, then

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				TGPL2=TGPL1.
>>RPP	MP		Enumerated (mode 0, mode 1).	Recovery Period Power control mode during the frame after the transmission gap within the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied
>>ITP	MP		Enumerated (mode 0, mode 1).	Initial Transmit Power is the uplink power control method to be used to compute the initial transmit power after the compressed mode gap.
>>CHOICE *UL/DL mode*	MP			
>>>DL only				Compressed mode used in DL only
>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap
>>>UL only				Compressed mode used in UL only
>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap
>>>UL and DL				Compressed mode used in UL and DL
>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap
>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap
>>Downlink frame type	MP		Enumerated (A, B)	
>>DeltaSIR1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase)
>>DeltaSIRafter1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.
>>DeltaSIR2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1.
>>DeltaSIRafter2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1.
>>N Identify abort	CV-*Initial BSIC*		Integer(1..128)	Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure
>>T Reconfirm abort	CV-*Re-confirm BSIC*		Real(0.5..10.0 by step of 0.5)	Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.

Condition	Explanation
Active	This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activatee" and not needed otherwise.
Initial BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM Initial BSIC identification" and not needed otherwise.
Re-confirm BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM BSIC re-confirmation" and not needed otherwise.

10.3.6.34 DPCH Compressed Mode Status Info

This information element indicates status information of the compressed mode used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS reconfiguration CFN	MP		Integer (0..255)	Connection Frame Number of the frame where already active Transmission Gap Pattern Sequences shall be deactivated
Transmission gap pattern sequence	MP	1 to <maxTGPS>		
>TGPSI	MP		TGPSI 10.3.6.82	Transmission Gap Pattern Sequence Identifier
>TGPS Status Flag	MP		Enumerated(activatee, indeactivatee)	This flag indicates whether the current status of the Transmission Gap Pattern Sequence, whether it shall be activatede or indeactivatede.
>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.

Condition	Explanation
Active	This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activatee" and not needed otherwise.

11.3 Information element definitions

```
TGP-Sequence ::=                    SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    },
    tgps-ConfigurationParams            TGPS-ConfigurationParams            OPTIONAL
}



TGP-SequenceShort ::=               SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    }
}
```

13.4.25 TGPS_IDENTITY

This variable contains the configuration parameters of a compressed mode transmission gap pattern sequence

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS_IDENTITY	OP		DPCH compressed mode info 10.3.6.33	Information as contained in the IE group "Transmission gap pattern sequence configuration parameters". Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
Current TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it is active or inactive.

3GPP TSG-RAN2 Meeting #29
Gyeongju, Korea, 14th – 17th May 2002

Tdoc R2-021298

CR-Form-v5

CHANGE REQUEST

⌘ **25.331** **CR** **1410** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

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

Title:	⌘	Clarification to Compressed Mode Status Info
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13. May 2002
Category:	⌘	**A**
Release:	⌘	REL-5

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

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

Reason for change: ⌘ Ambiguous and misleading description of transmission gap pattern sequence status handling.

- Currently the same name "TGPS Status Flag" is used in the UE internal state variable TGPS_IDENTITY and in several messages like MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION. The first one holds the current status of the pattern sequences while the later ones indicate the future state of the patterns after a reconfiguration has taken place. This could lead to confusion in the procedural descriptions because both flags are mentioned without proper explanation which one is which.
- It is currently specified that the UE shall deactivate any pattern sequence that is included in the IE "DPCH Compressed Mode Status Info". It is not checked whether the flag indicates that the corresponding pattern sequence shall be active or inactive after the configuration. This could be misinterpreted as an error in the specification but it is in fact the intended behaviour. It gives the network the possibility to align already active with newly configured patterns.

Summary of change: ⌘ The IE "TGPS Status Flag" in the variable TGPS_IDENTITY is renamed to "Current TGPS Status Flag" to distinguish it from the IE "TGPS Status Flag" in the MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION messages.

The "TGPS Status Flag" in the MEASUREMENT CONTROL and PHYSICAL CHANNEL RECONFIGURATION messages indicates the future status of the pattern sequence after the reconfiguration. The flags are therefore renamed from "active" / "inactive" to "activate" / "deactivate". This is also in line with the ASN.1

The procedural description in sections 8.4.1.3 and 8.6.6.15 are extended to clarify the intended behaviour.

Backward compatibility analysis:
This CR does not intend to change the UE behaviour, it should only clarify the functionality. UE implementations that behave accordingly are not affected and

		they will offer the network all reconfiguration possibilities. UEs which behave differently might permanently deactivate a pattern sequence although the network just intended to align it with a new pattern. The UE could also let the pattern run without the needed alignment, which would probably lead to overlapping compressed mode gaps. If the network is not implemented accordingly then it could only use pattern sequences which do not need re-alignment.
Consequences if not approved:	⌘	The description of transmission gap pattern sequence status handling remains unclear. This could potentially lead to wrong implementations and cause overlapping compressed mode pattern sequences.

Clauses affected:	⌘	8.4.1.3, 8.6.6.15, 10.3.6.33, 10.3.6.34, 13.4.25		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1408 25.331 v4.4.0, CR 1409
Other comments:	⌘			

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

1> read the IE "Measurement command";

1> if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":

3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or

3> if the IE "Inter-frequency cell info list" for that measurement identity is empty; or

3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

4> if the measurement is valid in the current RRC state of the UE:

5> begin measurements according to the stored control information for this measurement identity.

2> for measurement type "UE positioning measurement":

3> if the UE is in CELL_FACH state:

4> if IE "Positioning Method" is set to "OTDOA":

5> if IE "Method Type" is set to "UE assisted":

6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:

7> if System Information Block type 15.4 is broadcast:

8> read System Information Block type 15.4.

7> act as specified in subclause 8.6.7.19.2.

5> if IE "Method Type" is set to "UE based":

6> if IE "UE positioning OTDOA assistance data for UE based" is not included:

7> if System Information Block type 15.5 is broadcast:

8> read System Information Block type 15.5.

7> act as specified in subclause 8.6.7.19.2a.

2> for any other measurement type:

3> if the measurement is valid in the current RRC state of the UE:

4> begin measurements according to the stored control information for this measurement identity.

1> if the IE "Measurement command" has the value "modify":

2> for all IEs present in the MEASUREMENT CONTROL message:

3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

4> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:

5> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; and

5> if the IE "Inter-frequency cell info list" for that measurement identity is empty; or

5> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

6> replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated with the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

6> resume the measurements according to the new stored measurement control information.

4> for any other measurement type:

5> replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

5> resume the measurements according to the new stored measurement control information.

3> otherwise:

4> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> for all optional IEs that are not present in the MEASUREMENT CONTROL message:

3> leave the currently stored information elements unchanged in the variable MEASUREMENT_IDENTITY if not stated otherwise for that IE.

1> if the IE "measurement command" has the value "release":

2> terminate the measurement associated with the identity given in the IE "measurement identity";

2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.

1> if the IE "DPCH Compressed Mode Status Info" is present:

2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS_IDENTITY):

3> set the variable CONFIGURATION_INCOMPLETE to TRUE.

2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

43>~~—~~ deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message and~~.~~

4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:

3> activate the pattern sequence ~~stored in the variable TGPS_IDENTITY~~ corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and

3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active" and

3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:

4> start the concerned pattern sequence immediately at that CFN.

2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identitifed in IE "TGPSI" in the received message.

1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:

2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and

2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.

1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;

The UE may:

1> if the IE "Measurement command" has the value "setup":

2> for measurement type "UE positioning measurement":

3> if the UE is CELL_FACH state:

4> if IE "Positioning Method" is set to "GPS":

5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:

6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:

7> read System Information Block types 15, 15.1, 15.2 and 15.3.

6> act as specified in subclause 8.6.7.19.3.

1> and the procedure ends.

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires UL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'DL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires DL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'UL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:

2> set the variable INVALID_CONFIGURATION to TRUE.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3~~2~~> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";

1> update into the variable TGPS_IDENTITY the configuration information defined by IE group" transmission gap pattern sequence configuration parameters ";

1> after the new configuration has been taken into use:

2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "Current TGPS status flag" in the variable TGPS_IDENTITY is set to "activ~~at~~e" at the time indicated by IE "TGCFN"; and

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):

2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use~~.~~ and

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> after the new configuration has been taken into use:

2> activate, at the time indicated by IE "TGCFN", the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and

2> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI", the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and

2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.

1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

10.3.6.33 DPCH compressed mode info

NOTE: Only for FDD.

This information element indicates the parameters of the compressed mode to be used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Transmission gap pattern	MP	1 to		

Information Element/Group name	Need	Multi	Type and reference	Semantics description
sequence		<maxTGPS>		
>TGPSI	MP		TGPSI 10.3.6.82	
>TGPS Status Flag	MP		Enumerated(activate~~d~~, ~~in~~deactivate~~d~~)	This flag indicates whether the ~~current status of the~~ Transmission Gap Pattern Sequence~~, whether it~~ shall be activated or deactivated.
>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.
>Transmission gap pattern sequence configuration parameters	OP			
>>TGMP	MP		Enumerated(TDD measurement, FDD measurement, GSM carrier RSSI measurement, GSM Initial BSIC identification, GSM BSIC re-confirmation, Multi-carrier measurement)	Transmission Gap pattern sequence Measurement Purpose.
>>TGPRC	MP		Integer (1..511, Infinity)	The number of transmission gap patterns within the Transmission Gap Pattern Sequence.
>>TGSN	MP		Integer (0..14)	Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.
>>TGL1	MP		Integer(1..14)	The length of the first Transmission Gap within the transmission gap pattern expressed in number of slots
>>TGL2	MD		Integer (1..14)	The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1.
>>TGD	MP		Integer(15..269, undefined)	Transmission gap distance indicates the number of slots between starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to zero.
>>TGPL1	MP		Integer (1..144)	The duration of transmission gap pattern 1.
>>TGPL2	MD		Integer (1..144)	The duration of transmission gap pattern 2. If omitted, then

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				TGPL2=TGPL1.
>>RPP	MP		Enumerated (mode 0, mode 1).	Recovery Period Power control mode during the frame after the transmission gap within the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied
>>ITP	MP		Enumerated (mode 0, mode 1).	Initial Transmit Power is the uplink power control method to be used to compute the initial transmit power after the compressed mode gap.
>>CHOICE *UL/DL mode*	MP			
>>>DL only				Compressed mode used in DL only
>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap
>>>UL only				Compressed mode used in UL only
>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap
>>>UL and DL				Compressed mode used in UL and DL
>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap
>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap
>>Downlink frame type	MP		Enumerated (A, B)	
>>DeltaSIR1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase)
>>DeltaSIRafter1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.
>>DeltaSIR2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1.
>>DeltaSIRafter2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second

Information Element/Group name	Need	Multi	Type and reference	Semantics description
				transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1.
>>N Identify abort	CV-*Initial BSIC*		Integer(1..128)	Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure
>>T Reconfirm abort	CV-*Re-confirm BSIC*		Real(0.5..10.0 by step of 0.5)	Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.

Condition	Explanation
Active	This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activate~~e~~" and not needed otherwise.
Initial BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM Initial BSIC identification" and not needed otherwise.
Re-confirm BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM BSIC re-confirmation" and not needed otherwise.

10.3.6.34 DPCH Compressed Mode Status Info

This information element indicates status information of the compressed mode used by the UE in order to perform inter-frequency and inter-RAT measurements.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS reconfiguration CFN	MP		Integer (0..255)	Connection Frame Number of the frame where already active Transmission Gap Pattern Sequences shall be deactivated
Transmission gap pattern sequence	MP	1 to <maxTGPS>		
>TGPSI	MP		TGPSI 10.3.6.82	Transmission Gap Pattern Sequence Identifier
>TGPS Status Flag	MP		Enumerated(activate~~e~~, ~~in~~deactivate~~e~~)	This flag indicates whether the ~~current status of the~~ Transmission Gap Pattern Sequence~~, whether it~~ shall be activated~~e~~ or ~~in~~deactivated~~e~~.
>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.

Condition	Explanation
Active	This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activate~~e~~" and not needed otherwise.

11.3 Information element definitions

```
TGP-Sequence ::=                    SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    },
    tgps-ConfigurationParams            TGPS-ConfigurationParams            OPTIONAL
}



TGP-SequenceShort ::=               SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                         CHOICE {
        activate                            SEQUENCE {
            tgcfn                               TGCFN
        },
        deactivate                          NULL
    }
}
```

13.4.25 TGPS_IDENTITY

This variable contains the configuration parameters of a compressed mode transmission gap pattern sequence

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TGPS_IDENTITY	OP		DPCH compressed mode info 10.3.6.33	Information as contained in the IE group "Transmission gap pattern sequence configuration parameters". Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.
Current TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it is active or inactive.

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Gyeongju, Korea, 13-17 May 2002

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CR-Form-v5

CHANGE REQUEST

⌘ **25.331** **CR** **1411** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Title:	⌘	Clarification of OTDOA quality figure
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	02 May 2002
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change:	⌘	TS 25.331 supports transfer of quality figures for OTDOA measurements. The currently specified sample standard deviation cannot be used when there are only a few measurements. This CR brings more clarity to the definition of quality figure also when number of measurements is low.
Summary of change:	⌘	OTDOA quality figure is defined more precisely. The standard deviation of the reported measurement value has been specified as quality figure. This quality figure can be used irrespective of the number of measurements and gives more freedom in determining the best estimate of the measurement quality. No changes proposed to existing coding. **Impact analysis:** This CR is considered to have isolated impact. If the UE does not implement this CR, it may be difficult to determine a reliable quality figure when number of measurements is low.
Consequences if not approved:	⌘	Difficulties in determining a reliable quality figure when number of measurements is low.

Clauses affected:	⌘	10.3.7.107		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v4.4.0, CR 1412 25.331 v5.0.0, CR 1413
Other comments:	⌘			

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

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

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

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

10.3.7.107 UE positioning OTDOA quality

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Std Resolution	MP		Bit string(2)	Std Resolution field includes the resolution used in Std of OTDOA Measurements field. Encoding on two bits as follows: '00' 10 meters '01' 20 meters '10' 30 meters '11' Reserved
Number of OTDOA Measurements	MP		Bit string(3)	~~Number of measurements field is used together with Std of OTDOA Measurements field to define quality of a reported OTDOA measurement.~~ The 'Number of OTDOA measurements' field indicates how many OTDOA measurements have been used in the UE to determine~~fine~~ the sample standard deviation of the measurements. Following 3 bit encoding is used: ~~'000' 0-4~~ '001' 5-9 '010' 10-14 '011' 15-24 '100' 25-34 '101' 35-44 '110' 45-54 '111' 55 or more Special case: '000' In this case the field 'Std of OTDOA measurements' contains the std of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$, where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x. This std can be used irrespective of the number of measurements and reporting of the number of measurements is not needed. Also other measurements such as Ec/No or Rx levels can be utilized in this case to evaluate the 'Std of OTDOA measurements' reported in this IE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Std of OTDOA Measurements	MP		Bit string(5)	'Std of OTDOA Measurements field' includes sample standard deviation of OTDOA measurements (when number of measurements is reported in 'Number of OTDOA measurements field') or standard deviation of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$, where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x (when '000' is given in 'Number of OTDOA measurements' field). Following linear 5 bit encoding is used: '00000' 0 - (R*1-1) meters '00001' R*1 – (R*2-1) meters '00010' R*2 – (R*3-1) meters … '11111' R*31 meters or more where R is the resolution defined by Std Resolution field. E.g. R=20 m corresponds to 0-19 m, 20-39 m,…,620+ m.

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Gyeongju, Korea, 13-17 May 2002

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CHANGE REQUEST

⌘ **25.331** **CR** **1412** ⌘ **rev** **-** ⌘ Current version: **4.4.0** ⌘

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

Title:	⌘	Clarification of OTDOA quality figure
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	02 May 2002
Category:	⌘	**A**
Release:	⌘	REL-4

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

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

Reason for change:	⌘	TS 25.331 supports transfer of quality figures for OTDOA measurements. The currently specified sample standard deviation cannot be used when there are only a few measurements. This CR brings more clarity to the definition of quality figure also when number of measurements is low.
Summary of change:	⌘	OTDOA quality figure is defined more precisely. The standard deviation of the reported measurement value has been specified as quality figure. This quality figure can be used irrespective of the number of measurements and gives more freedom in determining the best estimate of the measurement quality. No changes proposed to existing coding. **Impact analysis:** This CR is considered to have isolated impact. If the UE does not implement this CR, it may be difficult to determine a reliable quality figure when number of measurements is low.
Consequences if not approved:	⌘	Difficulties in determining a reliable quality figure when number of measurements is low.

Clauses affected:	⌘	10.3.7.107		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1411 25.331 v5.0.0, CR 1413
Other comments:	⌘			

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10.3.7.107 UE positioning OTDOA quality

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Std Resolution	MP		Bit string(2)	Std Resolution field includes the resolution used in Std of OTDOA Measurements field. Encoding on two bits as follows: '00' 10 meters '01' 20 meters '10' 30 meters '11' Reserved
Number of OTDOA Measurements	MP		Bit string(3)	~~Number of measurements field is used together with Std of OTDOA Measurements field to define quality of a reported OTDOA measurement.~~ The 'Number of OTDOA measurements' field indicates how many OTDOA measurements have been used in the UE to ~~define~~ determine the sample standard deviation of the measurements. Following 3 bit encoding is used: ~~'000' 0-4~~ '001' 5-9 '010' 10-14 '011' 15-24 '100' 25-34 '101' 35-44 '110' 45-54 '111' 55 or more Special case: '000' In this case the field 'Std of OTDOA measurements' contains the std of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$, where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x. This std can be used irrespective of the number of measurements and reporting of the number of measurements is not needed. Also other measurements such as Ec/No or Rx levels can be utilized in this case to evaluate the 'Std of OTDOA measurements' reported in this IE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Std of OTDOA Measurements	MP		Bit string(5)	'Std of OTDOA Measurements' field includes sample standard deviation of OTDOA measurements (when number of measurements is reported in 'Number of OTDOA measurements field') or standard deviation of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$, where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x (when '000' is given in 'Number of OTDOA measurements' field). Following linear 5 bit encoding is used: '00000' 0 - (R*1-1) meters '00001' R*1 – (R*2-1) meters '00010' R*2 – (R*3-1) meters … '11111' R*31 meters or more where R is the resolution defined by Std Resolution field. E.g. R=20 m corresponds to 0-19 m, 20-39 m,…,620+ m.

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CHANGE REQUEST

⌘ **25.331** **CR** **1413** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

Title:	⌘	Clarification of OTDOA quality figure
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	02 May 2002
Category:	⌘	**A**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	TS 25.331 supports transfer of quality figures for OTDOA measurements. The currently specified sample standard deviation cannot be used when there are only a few measurements. This CR brings more clarity to the definition of quality figure also when number of measurements is low.
Summary of change:	⌘	OTDOA quality figure is defined more precisely. The standard deviation of the reported measurement value has been specified as quality figure. This quality figure can be used irrespective of the number of measurements and gives more freedom in determining the best estimate of the measurement quality. No changes proposed to existing coding. **Impact analysis:** This CR is considered to have isolated impact. If the UE does not implement this CR, it may be difficult to determine a reliable quality figure when number of measurements is low.
Consequences if not approved:	⌘	Difficulties in determining a reliable quality figure when number of measurements is low.

Clauses affected:	⌘	10.3.7.107		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1411 25.331 v4.4.0, CR 1412
Other comments:	⌘			

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

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

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

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

10.3.7.107 UE positioning OTDOA quality

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Std Resolution	MP		Bit string(2)	Std Resolution field includes the resolution used in Std of OTDOA Measurements field. Encoding on two bits as follows: '00' 10 meters '01' 20 meters '10' 30 meters '11' Reserved
Number of OTDOA Measurements	MP		Bit string(3)	~~Number of measurements field is used together with Std of OTDOA Measurements field to define quality of a reported OTDOA measurement.~~ The 'Number of OTDOA measurements' field indicates how many OTDOA measurements have been used in the UE to ~~define~~ determine the sample standard deviation of the measurements. Following 3 bit encoding is used: ~~'000' 0-4~~ '001' 5-9 '010' 10-14 '011' 15-24 '100' 25-34 '101' 35-44 '110' 45-54 '111' 55 or more Special case: '000' In this case the field 'Std of OTDOA measurements' contains the std of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$, where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x. This std can be used irrespective of the number of measurements and reporting of the number of measurements is not needed. Also other measurements such as Ec/No or Rx levels can be utilized in this case to evaluate the 'Std of OTDOA measurements' reported in this IE.

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Std of OTDOA Measurements	MP		Bit string(5)	'Std of OTDOA Measurements' field includes sample standard deviation of OTDOA measurements (when number of measurements is reported in 'Number of OTDOA measurements field') or standard deviation of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$, where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x (when '000' is given in 'Number of OTDOA measurements' field). Following linear 5 bit encoding is used: '00000' 0 - (R*1-1) meters '00001' R*1 – (R*2-1) meters '00010' R*2 – (R*3-1) meters … '11111' R*31 meters or more where R is the resolution defined by Std Resolution field. E.g. R=20 m corresponds to 0-19 m, 20-39 m,…,620+ m.

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Gyeongju, Korea, 13th – 17th May 2002

Tdoc R2-021305

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1414** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Correction to Cell Access Restriction for SIB4
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13th- May 2002
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change: ⌘ In section 8.5.13 of 25.331 it is clearly specified that the Access Classes shall not be used in connected mode. However in the tabular section 10.3.2.1 it is not reflected that the IE "Access Class Barred List" shall be included in the IE "Cell Access Restriction" only when this IE is included in SIB3.

Isolated impact analysis:

Corrected functionality is Cell Access Restriction in SIB4

« Correction to a function where the specification was :

ambiguous or not sufficiently explicit.

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

Summary of change: ⌘ It is clarified that the IE "Access Class Barred List" shall not be included in the IE "Cell Access Restriction" when included in SIB4.
The correction is done by aligning the tabular on the descriptive section of the specification.

Consequences if not approved: ⌘ Ambigous specification

Clauses affected: ⌘ 10.3.2.1, 11.3

Other specs affected: ⌘

☐	Other core specifications
☒	Test specifications
☐	O&M Specifications

⌘ 25.331 v4.4.0, CR 1415
25.331 v5.0.0, CR 1416

Other comments: ⌘

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

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

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

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

10.3.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Barred	MP		Enumerated(not barred, barred)	
Intra-frequency cell re-selection indicator	CV-*Barred*		Enumerated(not allowed, allowed)	
T_{barred}	CV-*Barred*		Integer (10,20,40,80 ,160,320,640 ,1280)	[4] [s]
Cell Reserved for operator use	MP		Enumerated(reserved, not reserved)	
Cell Reservation Extension	MP		Enumerated(reserved, not reserved)	
Access Class Barred list	CV-*SIB3-MD* ~~MD~~	maxAC		Default is no access class barred is applied. The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15. UE reads this IE of its access class stored in SIM.
>Access Class Barred	MP		Enumerated(not barred, barred)	

Condition	Explanation
Barred	The IE is mandatory present if the IE "Cell Barred" has the value "Barred"; otherwise the element is not needed in the message.
SIB3-MD	The IE is mandatory and has a default value if the IE "Cell Access Restriction" is included in SIB 3. Otherwise the IE is not needed.

11.3 Information element definitions

…

```
-- ************************************************
--
--     UTRAN MOBILITY INFORMATION ELEMENTS (10.3.2)
--
-- ************************************************

AccessClassBarred ::=               ENUMERATED {
                                        barred, notBarred }

AccessClassBarredList ::=           SEQUENCE (SIZE (maxAC)) OF
                                        AccessClassBarred

AllowedIndicator ::=                ENUMERATED {
                                        allowed, notAllowed }

CellAccessRestriction ::=           SEQUENCE {
    cellBarred                          CellBarred,
    cellReservedForOperatorUse          ReservedIndicator,
    cellReservationExtension            ReservedIndicator,
    -- NOTE: IE accessClassBarredList should not be included if the IE CellAccessRestriction
    -- is included in the IE SysInfoType4
    accessClassBarredList               AccessClassBarredList               OPTIONAL
}
```

3GPP TSG-RAN WG2 Meeting #29 ***Tdoc R2-021306***
Gyeongju, Korea, 13th – 17th May 2002

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1415** ⌘ **rev** **-** ⌘ Current version: **4.4.0** ⌘

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

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

Title:	⌘	Correction to Cell Access Restriction for SIB4
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13th- May 2002
Category:	⌘	**A**
Release:	⌘	REL-4

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

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

Reason for change:	⌘	In section 8.5.13 of 25.331 it is clearly specified that the Access Classes shall not be used in connected mode. However in the tabular section 10.3.2.1 it is not reflected that the IE "Access Class Barred List" shall be included in the IE "Cell Access Restriction" only when this IE is included in SIB3.
Summary of change:	⌘	It is clarified that the IE "Access Class Barred List" shall not be included in the IE "Cell Access Restriction" when included in SIB4. The correction is done by aligning the tabular on the descriptive section of the specification.
Consequences if not approved:	⌘	Ambigous specification

Clauses affected:	⌘	10.3.2.1, 11.3		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	25.331 v3.10.0, CR 1414 25.331 v5.0.0, CR 1416
Other comments:	⌘			

How to create CRs using this form:
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Below is a brief summary:

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

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

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

10.3.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Barred	MP		Enumerated(not barred, barred)	
Intra-frequency cell re-selection indicator	CV-*Barred*		Enumerated(not allowed, allowed)	
T_{barred}	CV-*Barred*		Integer (10,20,40,80 ,160,320,640 ,1280)	[4] [s]
Cell Reserved for operator use	MP		Enumerated(reserved, not reserved)	
Cell Reservation Extension	MP		Enumerated(reserved, not reserved)	
Access Class Barred list	CV-*SIB3-MD* ~~MD~~	maxAC		Default is no access class barred is applied. The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15. UE reads this IE of its access class stored in SIM.
>Access Class Barred	MP		Enumerated(not barred, barred)	

Condition	Explanation
Barred	The IE is mandatory present if the IE "Cell Barred" has the value "Barred"; otherwise the element is not needed in the message.
SIB3-MD	The IE is mandatory and has a default value if the IE "Cell Access Restriction" is included in SIB 3. Otherwise the IE is not needed.

11.3 Information element definitions

…

```
-- ************************************************
--
--     UTRAN MOBILITY INFORMATION ELEMENTS (10.3.2)
--
-- ************************************************

AccessClassBarred ::=               ENUMERATED {
                                        barred, notBarred }

AccessClassBarredList ::=           SEQUENCE (SIZE (maxAC)) OF
                                        AccessClassBarred

AllowedIndicator ::=                ENUMERATED {
                                        allowed, notAllowed }

CellAccessRestriction ::=           SEQUENCE {
    cellBarred                          CellBarred,
    cellReservedForOperatorUse          ReservedIndicator,
    cellReservationExtension            ReservedIndicator,
    -- NOTE: IE accessClassBarredList should not be included if the IE CellAccessRestriction
    -- is included in the IE SysInfoType4
    accessClassBarredList               AccessClassBarredList               OPTIONAL
}
```

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Gyeongju, Korea, 13th – 17th May 2002

Tdoc R2-021307

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1416** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

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

Title:	⌘	Correction to Cell Access Restriction for SIB4
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13th- May 2002
Category:	⌘	**A**
Release:	⌘	REL-5

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

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

Reason for change:	⌘	In section 8.5.13 of 25.331 it is clearly specified that the Access Classes shall not be used in connected mode. However in the tabular section 10.3.2.1 it is not reflected that the IE "Access Class Barred List" shall be included in the IE "Cell Access Restriction" only when this IE is included in SIB3.
Summary of change:	⌘	It is clarified that the IE "Access Class Barred List" shall not be included in the IE "Cell Access Restriction" when included in SIB4. The correction is done by aligning the tabular on the descriptive section of the specification.
Consequences if not approved:	⌘	Ambigous specification

Clauses affected:	⌘	10.3.2.1, 11.3		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	25.331 v3.10.0, CR 1414 25.331 v4.4.0, CR 1415
Other comments:	⌘			

How to create CRs using this form:
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Below is a brief summary:

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

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

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

10.3.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Cell Barred	MP		Enumerated(not barred, barred)	
Intra-frequency cell re-selection indicator	CV-*Barred*		Enumerated(not allowed, allowed)	
T_{barred}	CV-*Barred*		Integer (10,20,40,80 ,160,320,640 ,1280)	[4] [s]
Cell Reserved for operator use	MP		Enumerated(reserved, not reserved)	
Cell Reservation Extension	MP		Enumerated(reserved, not reserved)	
Access Class Barred list	CV-*SIB3-MD* ~~MD~~	maxAC		Default is no access class barred is applied. The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15. UE reads this IE of its access class stored in SIM.
>Access Class Barred	MP		Enumerated(not barred, barred)	

Condition	Explanation
Barred	The IE is mandatory present if the IE "Cell Barred" has the value "Barred"; otherwise the element is not needed in the message.
SIB3-MD	The IE is mandatory and has a default value if the IE "Cell Access Restriction" is included in SIB 3. Otherwise the IE is not needed.

11.3 Information element definitions

…

```
-- ************************************************
--
--     UTRAN MOBILITY INFORMATION ELEMENTS (10.3.2)
--
-- ************************************************

AccessClassBarred ::=               ENUMERATED {
                                        barred, notBarred }

AccessClassBarredList ::=           SEQUENCE (SIZE (maxAC)) OF
                                        AccessClassBarred

AllowedIndicator ::=                ENUMERATED {
                                        allowed, notAllowed }

CellAccessRestriction ::=           SEQUENCE {
    cellBarred                          CellBarred,
    cellReservedForOperatorUse          ReservedIndicator,
    cellReservationExtension            ReservedIndicator,
    -- NOTE: IE accessClassBarredList should not be included if the IE CellAccessRestriction
    -- is included in the IE SysInfoType4
    accessClassBarredList               AccessClassBarredList               OPTIONAL
}
```

3GPP TSG-RAN WG2, Meeting #27
GyeongJu, Korea, May 13th-17th, 2002

Tdoc R2-021308

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1417** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Corrections concerning spare values and comments
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	2002-05-16
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change: ⌘

The changes in this CR are proposed for the following reasons:

- In IE "SIBSb-TypeAndTag" one undefined code points was overlooked in a previous CR on spare values. This has been corrected by introducing a spare value for this undefined code point
- For IE "Paging record type identifier" the tabular was not aligned with the ASN.1 concerning the needed for spare values. This has been corrected by aligning the tabular to the ASN.1
- A previous CR mistakenly changed a general comment in the ASN.1 regarding the actual size for IE "TPC step size" into a comment for TDD only. This has been corrected by changing the comment from a TDD specific comment into a FDD specific comment again

Summary of change: ⌘

The following changes are included in the original version of this CR:

- One missing spare value has been added for SIBSb-TypeAndTag
- For IE "Paging record type identifier" the statement that two spare values are needed has been removed from the tabular
- The comment that the actual value TPC-StepSizeTDD = IE value + 1 has been changed from a TDD specific comment into an FDD specific comment

Impact analysis:

Impacted functionality: Power control both for FDD and TDD. Future extension of system information with an additional SIB type

Correction type: Clarification of a function where the specification is incorrect. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise

Interoperability:

		• Isolated impact: the impact is isolated; only the corrected functionality is affected • Spare: the impact is not noted until the 3rd new SIB types is introduced. In that case all UEs will support the new SIB type except for the UEs conforming to the 3.10.0 version of 25.331. These UEs will ignore the new SIB type • TPC step size: it is most likely that implementations will support the change proposed in this CR since the error was introduced in the 3.10.0 version of 25.331. Furthermore, the error is obvious from the value ranges in tabular in ASN.1. However, if the UE and UTRAN are misaligned regarding the actual value of the signalled IE power control may not work (TPC step size is interpret to be 0) or may not work very well Impact on test specifications: no impact is foreseen on the test specifications
Consequences if not approved:	⌘	An extension option for system information is waisted and a specification error remains that may result in no or poor power control

Clauses affected:	⌘	10.3.1.10, 11.3		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v4.4.0, CR 1418 25.331 v5.0.0, CR 1419
Other comments:	⌘			

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

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

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

10.3.1.10 Paging record type identifier

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Paging record type identifier	MP		Enumerated (IMSI (GSM-MAP), TMSI (GSM-MAP)/ P-TMSI, IMSI (DS-41), TMSI (DS-41))	~~Three spare values are needed.~~

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

<Cut until the next modified version>

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

<Cut until the next modified version>


TPC-CombinationIndex ::=            INTEGER (0..5)

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=                 INTEGER (0..1)

-- Actual value TPC-StepSizeTDD = IE value + 1
TPC-StepSizeTDD ::=                 INTEGER (1..3)
```

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

<Cut until the next modified version>

```
SIBSb-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,
    sysInfoTypeSB1                      CellValueTag,
    sysInfoTypeSB2                      CellValueTag,
    sysInfoType15-1                     CellValueTag,
    sysInfoType15-2                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4                     CellValueTag,
    sysInfoType18                       CellValueTag,
    sysInfoType15-5                     CellValueTag,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}
```

3GPP TSG-RAN WG2, Meeting #27
GyeongJu, Korea, May 13th-17th, 2002

Tdoc R2-021309

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1418** ⌘ **rev** **-** ⌘ Current version: **4.4.0** ⌘

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

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

Title:	⌘	Corrections concerning spare values and comments
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	2002-05-16
Category:	⌘	**A**
Release:	⌘	REL-4

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

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

Reason for change:	⌘	The changes in this CR are proposed for the following reasons: • In IE "SIBSb-TypeAndTag" one undefined code points was overlooked in a previous CR on spare values. This has been corrected by introducing a spare value for this undefined code point • For IE "Paging record type identifier" the tabular was not aligned with the ASN.1 concerning the needed for spare values. This has been corrected by aligning the tabular to the ASN.1 • A previous CR mistakenly changed a general comment in the ASN.1 regarding the actual size for IE "TPC step size" into a comment for TDD only. This has been corrected by changing the comment from a TDD specific comment into a FDD specific comment again
Summary of change:	⌘	The following changes are included in the original version of this CR: • One missing spare value has been added for SIBSb-TypeAndTag • For IE "Paging record type identifier" the statement that two spare values are needed has been removed from the tabular • The comment that the actual value TPC-StepSizeTDD = IE value + 1 has been changed from a TDD specific comment into an FDD specific comment
Consequences if not approved:	⌘	An extension option for system information is waisted and a specification error remains that may result in no or poor power control

Clauses affected:	⌘	10.3.1.10, 11.3		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1417 25.331 v5.0.0, CR 1419

Other comments: ⌘	

How to create CRs using this form:

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

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

10.3.1.10 Paging record type identifier

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Paging record type identifier	MP		Enumerated (IMSI (GSM-MAP), TMSI (GSM-MAP)/ P-TMSI, IMSI (DS-41), TMSI (DS-41))	~~Three spare values are needed.~~

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

<Cut until the next modified version>

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

<Cut until the next modified version>


TPC-CombinationIndex ::=            INTEGER (0..5)

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=                 INTEGER (0..1)

-- Actual value TPC-StepSizeTDD = IE value + 1
TPC-StepSizeTDD ::=                 INTEGER (1..3)
```

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

<Cut until the next modified version>

```
SIBSb-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,
    sysInfoTypeSB1                      CellValueTag,
    sysInfoTypeSB2                      CellValueTag,
    sysInfoType15-1                     CellValueTag,
    sysInfoType15-2                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4                     CellValueTag,
    sysInfoType18                       CellValueTag,
    sysInfoType15-5                     CellValueTag,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}
```

3GPP TSG-RAN WG2, Meeting #27
GyeongJu, Korea, May 13th-17th, 2002

Tdoc R2-021310

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1419** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

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

Title:	⌘	Corrections concerning spare values and comments
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	2002-05-16
Category:	⌘	**A**
Release:	⌘	REL-5

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

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

Reason for change:	⌘	The changes in this CR are proposed for the following reasons: • In IE "SIBSb-TypeAndTag" one undefined code points was overlooked in a previous CR on spare values. This has been corrected by introducing a spare value for this undefined code point • For IE "Paging record type identifier" the tabular was not aligned with the ASN.1 concerning the needed for spare values. This has been corrected by aligning the tabular to the ASN.1 • A previous CR mistakenly changed a general comment in the ASN.1 regarding the actual size for IE "TPC step size" into a comment for TDD only. This has been corrected by changing the comment from a TDD specific comment into a FDD specific comment again
Summary of change:	⌘	The following changes are included in the original version of this CR: • One missing spare value has been added for SIBSb-TypeAndTag • For IE "Paging record type identifier" the statement that two spare values are needed has been removed from the tabular • The comment that the actual value TPC-StepSizeTDD = IE value + 1 has been changed from a TDD specific comment into an FDD specific comment
Consequences if not approved:	⌘	An extension option for system information is waisted and a specification error remains that may result in no or poor power control

Clauses affected:	⌘	10.3.1.10, 11.3		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1417 25.331 v4.4.0, CR 1418

Other comments: ⌘	

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

10.3.1.10 Paging record type identifier

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Paging record type identifier	MP		Enumerated (IMSI (GSM-MAP), TMSI (GSM-MAP)/ P-TMSI, IMSI (DS-41), TMSI (DS-41))	~~Three spare values are needed.~~

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

<Cut until the next modified version>

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

<Cut until the next modified version>


TPC-CombinationIndex ::=            INTEGER (0..5)

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=                 INTEGER (0..1)

-- Actual value TPC-StepSizeTDD = IE value + 1
TPC-StepSizeTDD ::=                 INTEGER (1..3)
```

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

<Cut until the next modified version>

```
SIBSb-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,
    sysInfoTypeSB1                      CellValueTag,
    sysInfoTypeSB2                      CellValueTag,
    sysInfoType15-1                     CellValueTag,
    sysInfoType15-2                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4                     CellValueTag,
    sysInfoType18                       CellValueTag,
    sysInfoType15-5                     CellValueTag,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}
```

3GPP TSG-RAN WG2, Meeting #29
GyeongJu, Korea, May 13th-17th, 2002

Tdoc R2-021311

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1420** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Removal of obsolete IE "Transparent mode signalling info"
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	2002-05-16
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change:	⌘	The IE "Transparent mode signalling info" will not be used in future and therefore is best removed completely from 25.331. This will ease referring to 25.331 messages in other specifications e.g. the test specifications (e.g. default messages contents). Moreover, this approach is in accordance with the guidelines for removal of IEs, as specified in TR 25.921.
Summary of change:	⌘	The original version of this CR included the following changes: • The IE "Transparent mode signalling info" is best removed from the tabular and the procedure specifications. (Note that the definitions & the dummy in the ASN.1 are kept for backwards compatibility) **Impact analysis:** Impacted functionality: None; currently it is stated that this IE is not used in this version of the protocol Impact on test specifications: Currently T1 specifications specify for several messages that the IE is not present. Removal of the IE from T1 specifications is covered by another CR
Consequences if not approved:	⌘	Potential problems in other specifications referring to 25.331 messages

Clauses affected:	⌘	8.6.5.6, 10.3.5.1, 10.3.5.17		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	No change to 25.331 v4.4.0! No change to 25.331 v5.0.0!

Other comments: ⌘

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

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

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

8.6.5.6 Added or Reconfigured DL TrCH information

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

1> if the choice "DL parameters" is set to 'explicit':

2> perform the actions for the IE "Transport Format Set" as specified in subclause 8.6.5.1.

1> if the choice "DL parameters" is set to 'same as uplink':

2> if the IE "UL Transport Channel Identity" indicates an existing or a new UL Transport Channel:

3> store as transport format for this transport channel the transport format associated with the transport channel identified by the IE "UL Transport Channel Identity".

2> else:

3> set the variable INVALID_CONFIGURATION to TRUE.

1> if the IE "DCH quality target" is included:

2> perform the actions specified in subclause 8.6.5.4.

~~1> if the IE "Transparent mode signalling info" is included:~~

~~2> ignore the IE "Transparent mode signalling info".~~

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Downlink transport channel type	MP		Enumerated(DCH,DSCH)	
DL Transport channel identity	MP		Transport channel identity 10.3.5.18	
CHOICE *DL parameters*				
>Explicit				
>>TFS	MP		Transport Format Set 10.3.5.23	
>SameAsUL				
>>Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only
>>UL TrCH identity	MP		Transport channel identity 10.3.5.18	Same TFS applies as specified for indicated UL TrCH
DCH quality target	OP		Quality target 10.3.5.10	
~~Transparent mode signalling info~~	~~OP~~		~~Transparent mode signalling info 10.3.5.17~~	~~This IE should not be included in this version of the protocol.~~

10.3.5.17 ~~Transparent mode signalling info~~Void

~~This IE is not used in this version of the protocol.~~

3GPP TSG-RAN WG2 Meeting #29
GyeongJu, Korea, 13 – 17 May 2002

Tdoc R2-021312

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1421** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Variable for shared channel configurations
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	2 May 2002
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change: ⌘

In the clause 8.2.7.3 (Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE) as well as in the clause 8.2.8.3 (PUSCH CAPACITY REQUEST message contents to set) PDSCH and PUSCH are configured, these configuration are stored and reused. Anyhow, there is not defined where to store these configurations (and in what format) in the UE and that is misleading if they are referenced later.

14.1.3.2
Within event 1h, the phrase with "sent reports" does not apply The variable TRIGGERED_1H_EVENT does not contain the IE "sent reports". It is proposed to remove this phrase.

Summary of change: ⌘

New UE variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION is introduced in the clause 13.4.X with all the configuration information needed. Further the descriptions of procedures referring to the stored configurations are corrected accordingly in the clauses 8.2.7.3 and 8.2.8.3.

14.1.3.2
It is proposed to remove the phrase concerning "sent reports".

Isolated Impact Analysis:

Correction to a function where the specification was:

ambiguous or not sufficiently explicit.

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

Affected function: Storing the PDSCH and PUSCH configurations in UE and referencing them within the specification. Affect only the UE side.

		The evaluation of event 1h would not be affected by this change, because since the IE "sent reports" doesn't exist in variable TRIGGERED_1H_EVENT, it wasn't possible to use it in current implementations.
Consequences if not approved:	⌘	Misleading specification - referencing of stored configurations. Misleading specification - referencing a non specified IE in a variable could lead to an unpredictable UE behaviour.

Clauses affected:	⌘	8.2.7.3, 8.2.8.3, 13.4.x (new), 14.1.3.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v4.4.0, CR 1422 25.331 v5.0.0, CR 1423
Other comments:	⌘			

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

8.2.7.3 Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE

Upon reception of a "PHYSICAL SHARED CHANNEL ALLOCATION" message, if the message is received on the downlink SHCCH the UE shall:

1> check the DSCH-RNTI to see if the UE is addressed by the message;

1> if the UE is addressed by the message, or if the message is received on the downlink DCCH:

2> perform the following actions.

1> otherwise:

2> ignore the message.

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

1> if the IE "ISCP Timeslot list" is included:

2> store the timeslot numbers given there for future Timeslot ISCP measurements and reports in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

1> if the IE "PDSCH capacity allocation info" is included:

2> configure the physical resources used for the downlink CCTrCH given by the IE "TFCS ID" according to the following:

3> if the CHOICE "Configuration" has the value "Old configuration":

4> if the UE has stored a PDSCH configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION with the identity given by the IE "PDSCH Identity":

5> configure the physical resources according to that configuration.

4> otherwise:

5> ignore the IE "PDSCH capacity allocation info".

3> if the CHOICE "Configuration" has the value "New configuration":

4> configure the physical resources according to the information given in IE "PDSCH Info". If IE "Common timeslot info" or IE "PDSCH timeslots and codes" IE are not present in IE "PDSCH Info":

5> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~specified in the previous "PHYSICAL SHARED CHANNEL ALLOCATION" message~~ for this CCTrCH.

4> if the IE "PDSCH Identity" is included:

5> store the new configuration into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

2> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

2> if the IE "Confirm request" has the value "Confirm PDSCH" and IE "PDSCH Identity" is included in IE "PDSCH capacity allocation info":

3> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

2> if the IE "PUSCH capacity allocation info" is included:

2> stop the timer T310, if running;

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation pending":

3> start the timer T311.

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation assignment":

3> stop the timer T311, if running;

3> configure the physical resources used for the uplink CCTrCH given by the IE "TFCS ID" according to the following:

4> if the CHOICE "Configuration" has the value "Old configuration":

5> if the UE has stored a PUSCH configuration with the identity given by the IE "PUSCH Identity" in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION:

5> configure the physical resources according to that configuration.

5> otherwise:

5> ignore the IE "PUSCH capacity allocation info".

4> if the CHOICE "Configuration" has the value "New configuration", the UE shall:

5> configure the physical resources according to the information given in IE "PUSCH Info". If IE "Common timeslot info" or IE "PUSCH timeslots and codes" is not present in IE "PUSCH Info":

6> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION ~~specified in the previous "PHYSICAL SHARED CHANNEL ALLOCATION" message~~ for this CCTrCH.

5> if the IE "PUSCH Identity" is included:

5> store the new configuration into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

3> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

3> if the IE "Traffic volume report request " is included:

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8 at the time indicated by the IE "Traffic volume report request".

3> if the IE "Confirm request" has the value "Confirm PUSCH" and IE "PUSCH Identity" is included in IE "PUSCH capacity allocation info":

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

1> determine the TFCS subset and hence the TFCI values which are possible given the PUSCH allocation for that CCTrCH;

1> configure the MAC-c/sh in the UE with this TFCS restriction if necessary;

1> transmit USCH Transport Block Sets as required, within the TFCS limits given by the PUSCH allocation.

NOTE: If the UE has just entered a new cell and System Information Block Type 6has not yet been scheduled, PUSCH/PDSCH information should be specified in the allocation message.

The UE shall:

1> clear the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> and the procedure ends.

[...]

8.2.8.3 PUSCH CAPACITY REQUEST message contents to set

With one PUSCH CAPACITY REQUEST message, capacity for one or more USCH can be requested. It shall include these information elements:

1> C-RNTI to be used as UE identity if the message is sent on RACH;

1> Traffic volume measured results for each radio bearer satisfying the reporting criteria as specified in the MEASUREMENT CONTROL procedure (if no radio bearer satisfies the reporting criteria, traffic volume measured results shall not be included). These results shall include:

2> Radio Bearer ID of the Radio Bearer being reported;

2> RLC buffer payload for these radio bearers, as specified by the MEASUREMENT CONTROL procedure.

The UE shall:

1> if the initiation of the procedure is triggered by the IE "Traffic volume report request" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:

2> report the traffic volume measurement result for the radio bearer mapped on USCH transport channel specified in the received message. These results shall include:

3> Radio Bearer ID of the Radio Bearer being reported;

3> RLC buffer payload for this radio bearer.

1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PDSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message and the IE "PUSCH capacity allocation info" is present in this message:

2> set the CHOICE "Allocation confirmation" to "PDSCH Confirmation" with the value given in the IE "PDSCH Identity" stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~in the received message~~.

1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PUSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:

2> set the CHOICE "Allocation confirmation" to "PUSCH Confirmation" with the value given in the IE "PUSCH Identity" stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~in the received message~~.

1> if the variable PROTOCOL_ERROR_REJECT is set to TRUE:

2> include the IE "RRC transaction identifier" in the response message transmitted below; and

2> set it to the value of "RRC transaction identifier" in the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Rejected transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "protocol error indicator" to TRUE;

2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

1> if the value of the variable PROTOCOL_ERROR_ REJECT is FALSE:

2> set the IE "Protocol error indicator" to FALSE.

As an option, the message may include IE "Timeslot ISCP" and IE "Primary CCPCH RSCP".

The timeslots for which "Timeslot ISCP" may be reported shall have been configured with a previous PHYSICAL SHARED CHANNEL ALLOCATION message and stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

"Primary CCPCH RSCP" is reported when requested with a previous PHYSICAL SHARED CHANNEL ALLOCATION message.

13.4.X PHYSICAL_SHARED_CHANNEL_CONFIGURATION

This variable is used only for TDD to store information about the physical shared channel configuration in the UE. Cleared when entering and leaving UTRA RRC connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PUSCH configuration	OP			
>PUSCH info	MP		PUSCH info 10.3.6.63	
>PUSCH Identity	OP		Integer(1.. hiPUSCHidentities)	
>PUSCH power control info	OP		PUSCH power control info 10.3.6.65	
PDSCH configuration	OP			
>PDSCH Info	MP		PDSCH Info 10.3.6.44	
>PDSCH Identity	OP		Integer(1..hiPDSCHidentities)	
>PDSCH power control info	OP		PDSCH power control info 10.3.6.45	
ISCP Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot number 10.3.6.84	Timeslot numbers, for which the UE shall report the timeslot ISCP in PUSCH CAPACITY REQUEST message

14.1.3.2 Reporting event 1H: Timeslot ISCP below a certain threshold (TDD)

When event 1h is configured in the UE, the UE shall:

1> if equation 1 is fulfilled for a time period indicated by "Time to trigger" and if that P-CCPCH is not included in the IE "cells triggered" in the variable TRIGGERED_1H_EVENT:

2> include that P-CCPCH in the IE "cells triggered" in the variable TRIGGERED_1H_EVENT;

2> send a measurement report with the IEs set as below:

3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1h" and in "cell measurement event results" the "Cell parameters ID" of the P-CCPCH that triggered the report;

3> include in "Cell measured results" the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED_1H_EVENT.

1> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED_1H_EVENT:

~~3> increment the stored counter "sent reports" for that primary CCPCH in "cells triggered" in variable TRIGGERED_1H_EVENT;~~

3> send a measurement report with IEs set as below:

4> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1h" and "cell measurement event results" to the "Cell parameters ID" of the P-CCPCH that triggered the report;

4> set in "measured results " the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED_1H_EVENT and "additional measured results" according to subclause 8.4.2.

1> if Equation 2 below is fulfilled for a primary CCPCH:

2> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED_1H_EVENT:

3> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED_1H_EVENT.

The UE shall use the equations below for evaluation of reporting event 1h:

Equation 1

$$10 \cdot LogM_i + H_{1h} + O_i < T_{1h},$$

Equation 2

$$10 \cdot LogM_i - H_{1h} + O_i > T_{1h},$$

The variables in the formula are defined as follows:

$\boldsymbol{M_i}$ is the Timeslot ISCP of the currently evaluated cell ***i*** expressed in mW

$\boldsymbol{O_i}$ is the cell individual offset of the currently evaluated cell ***i***

$\boldsymbol{T_{1h}}$ is the Threshold for event 1h

$\boldsymbol{H_{1h}}$ is the hysteresis parameter for the event 1h.

Before any evaluation is done, the Timeslot ISCP expressed in mW is filtered according to subclause 8.6.7.2.

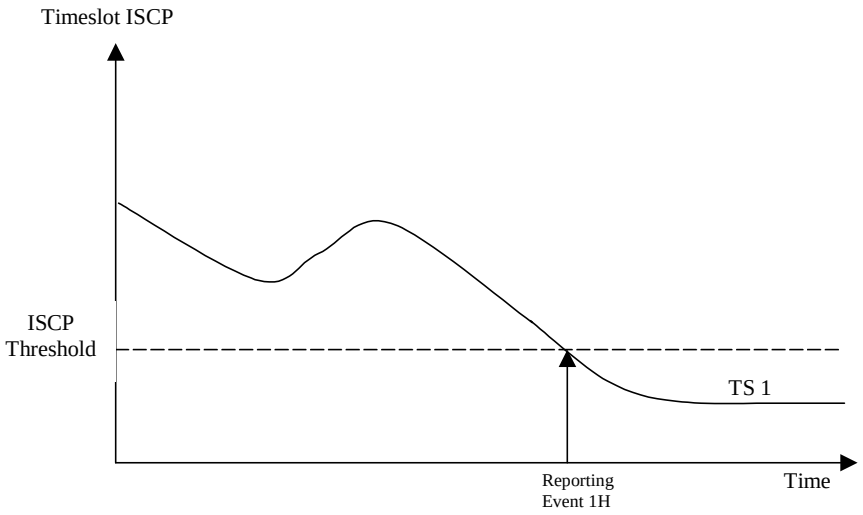

Figure 14.1.3.2-1: An ISCP value of a timeslot drops below an absolute threshold

3GPP TSG-RAN WG2 Meeting #29
GyeongJu, Korea, 13 – 17 May 2002

Tdoc R2-021313

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.331** **CR** **1422** ⌘ **rev** **-** ⌘ Current version: **4.4.0** ⌘

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

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

Title:	⌘	Variable for shared channel configurations
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	2 May 2002
Category:	⌘	**A**
Release:	⌘	REL-4

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

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

Reason for change: ⌘

In the clause 8.2.7.3 (Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE) as well as in the clause 8.2.8.3 (PUSCH CAPACITY REQUEST message contents to set) PDSCH and PUSCH are configured, these configuration are stored and reused. Anyhow, there is not defined where to store these configurations (and in what format) in the UE and that is misleading if they are referenced later.

14.1.3.2
Within event 1h, the phrase with "sent reports" does not apply The variable TRIGGERED_1H_EVENT does not contain the IE "sent reports". It is proposed to remove this phrase.

Summary of change: ⌘

New UE variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION is introduced in the clause 13.4.X with all the configuration information needed. Further the descriptions of procedures referring to the stored configurations are corrected accordingly in the clauses 8.2.7.3 and 8.2.8.3.

14.1.3.2
It is proposed to remove the phrase concerning "sent reports".

Isolated Impact Analysis:

Correction to a function where the specification was:

ambiguous or not sufficiently explicit.

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

Affected function: Storing the PDSCH and PUSCH configurations in UE and referencing them within the specification. Affect only the UE side.

		The evaluation of event 1h would not be affected by this change, because since the IE "sent reports" doesn't exist in variable TRIGGERED_1H_EVENT, it wasn't possible to use it in current implementations.
Consequences if not approved:	⌘	Misleading specification - referencing of stored configurations. Misleading specification - referencing a non specified IE in a variable could lead to an unpredictable UE behaviour.

Clauses affected:	⌘	8.2.7.3, 8.2.8.3, 13.4.x (new), 14.1.3.2		
Other specs affected:	⌘	Other core specifications Test specifications O&M Specifications	⌘	25.331 v3.10.0, CR 1421 25.331 v5.0.0, CR 1423
Other comments:	⌘			

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

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

8.2.7.3 Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE

Upon reception of a "PHYSICAL SHARED CHANNEL ALLOCATION" message, if the message is received on the downlink SHCCH the UE shall:

1> check the DSCH-RNTI to see if the UE is addressed by the message;

1> if the UE is addressed by the message, or if the message is received on the downlink DCCH:

2> perform the following actions.

1> otherwise:

2> ignore the message.

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

1> if the IE "ISCP Timeslot list" is included:

2> store the timeslot numbers given there for future Timeslot ISCP measurements and reports in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

1> if the IE "PDSCH capacity allocation info" is included:

2> configure the physical resources used for the downlink CCTrCH given by the IE "TFCS ID" according to the following:

3> if the CHOICE "Configuration" has the value "Old configuration":

4> if the UE has stored a PDSCH configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION with the identity given by the IE "PDSCH Identity":

5> configure the physical resources according to that configuration.

4> otherwise:

5> ignore the IE "PDSCH capacity allocation info".

3> if the CHOICE "Configuration" has the value "New configuration":

4> configure the physical resources according to the information given in IE "PDSCH Info". If IE "Common timeslot info" or IE "PDSCH timeslots and codes" IE are not present in IE "PDSCH Info":

5> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~specified in the previous "PHYSICAL SHARED CHANNEL ALLOCATION" message~~ for this CCTrCH.

4> if the IE "PDSCH Identity" is included:

5> store the new configuration into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

2> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

2> if the IE "Confirm request" has the value "Confirm PDSCH" and IE "PDSCH Identity" is included in IE "PDSCH capacity allocation info":

3> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

2> if the IE "PUSCH capacity allocation info" is included:

2> stop the timer T310, if running;

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation pending":

3> start the timer T311.

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation assignment":

3> stop the timer T311, if running;

3> configure the physical resources used for the uplink CCTrCH given by the IE "TFCS ID" according to the following:

4> if the CHOICE "Configuration" has the value "Old configuration":

5> if the UE has stored a PUSCH configuration with the identity given by the IE "PUSCH Identity" into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION:

5> configure the physical resources according to that configuration.

5> otherwise:

5> ignore the IE "PUSCH capacity allocation info".

4> if the CHOICE "Configuration" has the value "New configuration", the UE shall:

5> configure the physical resources according to the information given in IE "PUSCH Info". If IE "Common timeslot info" or IE "PUSCH timeslots and codes" is not present in IE "PUSCH Info":

6> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION ~~specified in the previous "PHYSICAL SHARED CHANNEL ALLOCATION" message~~ for this CCTrCH.

5> if the IE "PUSCH Identity" is included:

5> store the new configuration into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

3> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

3> if the IE "Traffic volume report request " is included:

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8 at the time indicated by the IE "Traffic volume report request".

3> if the IE "Confirm request" has the value "Confirm PUSCH" and IE "PUSCH Identity" is included in IE "PUSCH capacity allocation info":

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

1> determine the TFCS subset and hence the TFCI values which are possible given the PUSCH allocation for that CCTrCH;

1> configure the MAC-c/sh in the UE with this TFCS restriction if necessary;

1> transmit USCH Transport Block Sets as required, within the TFCS limits given by the PUSCH allocation.

NOTE: If the UE has just entered a new cell and System Information Block Type 6has not yet been scheduled, PUSCH/PDSCH information should be specified in the allocation message.

The UE shall:

1> clear the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> and the procedure ends.

[…]

8.2.8.3 PUSCH CAPACITY REQUEST message contents to set

With one PUSCH CAPACITY REQUEST message, capacity for one or more USCH can be requested. It shall include these information elements:

1> C-RNTI to be used as UE identity if the message is sent on RACH;

1> Traffic volume measured results for each radio bearer satisfying the reporting criteria as specified in the MEASUREMENT CONTROL procedure (if no radio bearer satisfies the reporting criteria, traffic volume measured results shall not be included). These results shall include:

2> Radio Bearer ID of the Radio Bearer being reported;

2> RLC buffer payload for these radio bearers, as specified by the MEASUREMENT CONTROL procedure.

The UE shall:

1> if the initiation of the procedure is triggered by the IE "Traffic volume report request" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:

2> report the traffic volume measurement result for the radio bearer mapped on USCH transport channel specified in the received message. These results shall include:

3> Radio Bearer ID of the Radio Bearer being reported;

3> RLC buffer payload for this radio bearer.

1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PDSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message and the IE "PUSCH capacity allocation info" is present in this message:

2> set the CHOICE "Allocation confirmation" to "PDSCH Confirmation" with the value given in the IE "PDSCH Identity" stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~in the received message~~.

1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PUSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:

2> set the CHOICE "Allocation confirmation" to "PUSCH Confirmation" with the value given in the IE "PUSCH Identity" stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~in the received message~~.

1> if the variable PROTOCOL_ERROR_REJECT is set to TRUE:

2> include the IE "RRC transaction identifier" in the response message transmitted below; and

2> set it to the value of "RRC transaction identifier" in the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Rejected transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "protocol error indicator" to TRUE;

2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

1> if the value of the variable PROTOCOL_ERROR_ REJECT is FALSE:

2> set the IE "Protocol error indicator" to FALSE.

As an option, the message may include IE "Timeslot ISCP" and IE "Primary CCPCH RSCP".

The timeslots for which "Timeslot ISCP" may be reported shall have been configured with a previous PHYSICAL SHARED CHANNEL ALLOCATION message and stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

"Primary CCPCH RSCP" is reported when requested with a previous PHYSICAL SHARED CHANNEL ALLOCATION message.

13.4.X PHYSICAL_SHARED_CHANNEL_CONFIGURATION

This variable is used only for TDD to store information about the physical shared channel configuration in the UE. Cleared when entering and leaving UTRA RRC connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PUSCH configuration	OP			
>PUSCH info	MP		PUSCH info 10.3.6.63	
>PUSCH Identity	OP		Integer(1.. hiPUSCHidentities)	
>PUSCH power control info	OP		PUSCH power control info 10.3.6.65	
PDSCH configuration	OP			
>PDSCH Info	MP		PDSCH Info 10.3.6.44	
>PDSCH Identity	OP		Integer(1..hiPDSCHidentities)	
>PDSCH power control info	OP		PDSCH power control info 10.3.6.45	
ISCP Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot number 10.3.6.84	Timeslot numbers, for which the UE shall report the timeslot ISCP in PUSCH CAPACITY REQUEST message

14.1.3.2 Reporting event 1H: Timeslot ISCP below a certain threshold (TDD)

When event 1h is configured in the UE, the UE shall:

1> if equation 1 is fulfilled for a time period indicated by "Time to trigger" and if that P-CCPCH is not included in the IE "cells triggered" in the variable TRIGGERED_1H_EVENT:

2> include that P-CCPCH in the IE "cells triggered" in the variable TRIGGERED_1H_EVENT;

2> send a measurement report with the IEs set as below:

3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1h" and in "cell measurement event results" the "Cell parameters ID" of the P-CCPCH that triggered the report;

3> include in "Cell measured results" the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED_1H_EVENT.

1> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED_1H_EVENT:

~~3> increment the stored counter "sent reports" for that primary CCPCH in "cells triggered" in variable TRIGGERED_1H_EVENT;~~

3> send a measurement report with IEs set as below:

4> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1h" and "cell measurement event results" to the "Cell parameters ID" of the P-CCPCH that triggered the report;

4> set in "measured results " the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED_1H_EVENT and "additional measured results" according to subclause 8.4.2.

1> if Equation 2 below is fulfilled for a primary CCPCH:

2> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED_1H_EVENT:

3> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED_1H_EVENT.

The UE shall use the equations below for evaluation of reporting event 1h:

Equation 1

$$10 \cdot LogM_i + H_{1h} + O_i < T_{1h},$$

Equation 2

$$10 \cdot LogM_i - H_{1h} + O_i > T_{1h},$$

The variables in the formula are defined as follows:

$\boldsymbol{M_i}$ is the Timeslot ISCP of the currently evaluated cell ***i*** expressed in mW

$\boldsymbol{O_i}$ is the cell individual offset of the currently evaluated cell ***i***

$\boldsymbol{T_{1h}}$ is the Threshold for event 1h

$\boldsymbol{H_{1h}}$ is the hysteresis parameter for the event 1h.

Before any evaluation is done, the Timeslot ISCP expressed in mW is filtered according to subclause 8.6.7.2.

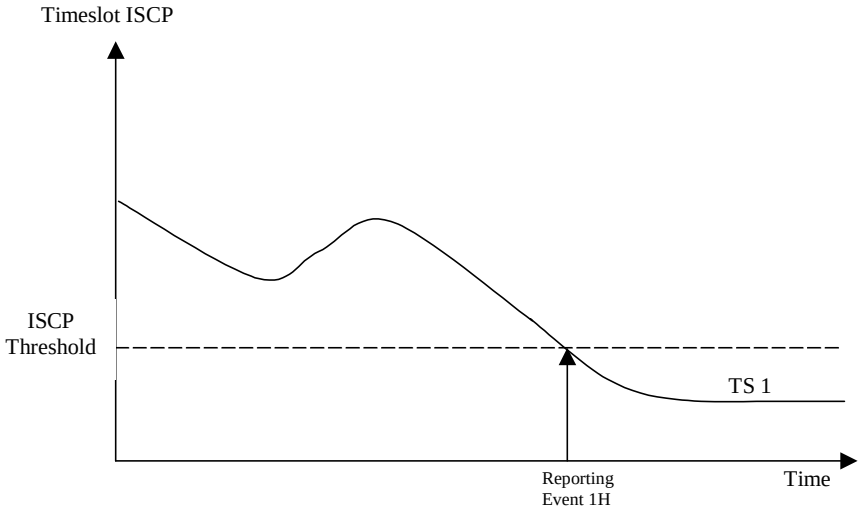

Figure 14.1.3.2-1: An ISCP value of a timeslot drops below an absolute threshold

3GPP TSG-RAN WG2 Meeting #29
GyeongJu, Korea, 13 – 17 May 2002

Tdoc R2-021314

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CHANGE REQUEST

⌘ **25.331** **CR** **1423** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

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

Title:	⌘	Variable for shared channel configurations
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	2 May 2002
Category:	⌘	**A**
Release:	⌘	REL-5

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

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

Reason for change: ⌘

In the clause 8.2.7.3 (Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE) as well as in the clause 8.2.8.3 (PUSCH CAPACITY REQUEST message contents to set) PDSCH and PUSCH are configured, these configuration are stored and reused. Anyhow, there is not defined where to store these configurations (and in what format) in the UE and that is misleading if they are referenced later.

14.1.3.2
Within event 1h, the phrase with "sent reports" does not apply The variable TRIGGERED_1H_EVENT does not contain the IE "sent reports". It is proposed to remove this phrase.

Summary of change: ⌘

New UE variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION is introduced in the clause 13.4.X with all the configuration information needed. Further the descriptions of procedures referring to the stored configurations are corrected accordingly in the clauses 8.2.7.3 and 8.2.8.3.

14.1.3.2
It is proposed to remove the phrase concerning "sent reports".

Isolated Impact Analysis:

Correction to a function where the specification was:

ambiguous or not sufficiently explicit.

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

Affected function: Storing the PDSCH and PUSCH configurations in UE and referencing them within the specification. Affect only the UE side.

		The evaluation of event 1h would not be affected by this change, because since the IE "sent reports" doesn't exist in variable TRIGGERED_1H_EVENT, it wasn't possible to use it in current implementations.
Consequences if not approved:	⌘	Misleading specification - referencing of stored configurations. Misleading specification - referencing a non specified IE in a variable could lead to an unpredictable UE behaviour.

Clauses affected:	⌘	8.2.7.3, 8.2.8.3, 13.4.x (new), 14.1.3.2		
Other specs affected:	⌘	Other core specifications Test specifications O&M Specifications	⌘	25.331 v3.10.0, CR 1421 25.331 v4.4.0, CR 1422
Other comments:	⌘			

How to create CRs using this form:
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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.7.3 Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE

Upon reception of a "PHYSICAL SHARED CHANNEL ALLOCATION" message, if the message is received on the downlink SHCCH the UE shall:

1> check the DSCH-RNTI to see if the UE is addressed by the message;

1> if the UE is addressed by the message, or if the message is received on the downlink DCCH:

2> perform the following actions.

1> otherwise:

2> ignore the message.

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

1> if the IE "ISCP Timeslot list" is included:

2> store the timeslot numbers given there for future Timeslot ISCP measurements and reports in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

1> if the IE "PDSCH capacity allocation info" is included:

2> configure the physical resources used for the downlink CCTrCH given by the IE "TFCS ID" according to the following:

3> if the CHOICE "Configuration" has the value "Old configuration":

4> if the UE has stored a PDSCH configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION with the identity given by the IE "PDSCH Identity":

5> configure the physical resources according to that configuration.

4> otherwise:

5> ignore the IE "PDSCH capacity allocation info".

3> if the CHOICE "Configuration" has the value "New configuration":

4> configure the physical resources according to the information given in IE "PDSCH Info". If IE "Common timeslot info" or IE "PDSCH timeslots and codes" IE are not present in IE "PDSCH Info":

5> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~specified in the previous "PHYSICAL SHARED CHANNEL ALLOCATION" message~~ for this CCTrCH.

4> if the IE "PDSCH Identity" is included:

5> store the new configuration into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

2> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

2> if the IE "Confirm request" has the value "Confirm PDSCH" and IE "PDSCH Identity" is included in IE "PDSCH capacity allocation info":

3> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

2> if the IE "PUSCH capacity allocation info" is included:

2> stop the timer T310, if running;

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation pending":

3> start the timer T311.

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation assignment":

3> stop the timer T311, if running;

3> configure the physical resources used for the uplink CCTrCH given by the IE "TFCS ID" according to the following:

4> if the CHOICE "Configuration" has the value "Old configuration":

5> if the UE has stored a PUSCH configuration with the identity given by the IE "PUSCH Identity" into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION:

5> configure the physical resources according to that configuration.

5> otherwise:

5> ignore the IE "PUSCH capacity allocation info".

4> if the CHOICE "Configuration" has the value "New configuration", the UE shall:

5> configure the physical resources according to the information given in IE "PUSCH Info". If IE "Common timeslot info" or IE "PUSCH timeslots and codes" is not present in IE "PUSCH Info":

6> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION ~~specified in the previous "PHYSICAL SHARED CHANNEL ALLOCATION" message~~ for this CCTrCH.

5> if the IE "PUSCH Identity" is included:

5> store the new configuration into the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

3> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

3> if the IE "Traffic volume report request " is included:

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8 at the time indicated by the IE "Traffic volume report request".

3> if the IE "Confirm request" has the value "Confirm PUSCH" and IE "PUSCH Identity" is included in IE "PUSCH capacity allocation info":

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

1> determine the TFCS subset and hence the TFCI values which are possible given the PUSCH allocation for that CCTrCH;

1> configure the MAC-c/sh in the UE with this TFCS restriction if necessary;

1> transmit USCH Transport Block Sets as required, within the TFCS limits given by the PUSCH allocation.

NOTE: If the UE has just entered a new cell and System Information Block Type 6has not yet been scheduled, PUSCH/PDSCH information should be specified in the allocation message.

The UE shall:

1> clear the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> and the procedure ends.

[…]

8.2.8.3 PUSCH CAPACITY REQUEST message contents to set

With one PUSCH CAPACITY REQUEST message, capacity for one or more USCH can be requested. It shall include these information elements:

1> C-RNTI to be used as UE identity if the message is sent on RACH;

1> Traffic volume measured results for each radio bearer satisfying the reporting criteria as specified in the MEASUREMENT CONTROL procedure (if no radio bearer satisfies the reporting criteria, traffic volume measured results shall not be included). These results shall include:

2> Radio Bearer ID of the Radio Bearer being reported;

2> RLC buffer payload for these radio bearers, as specified by the MEASUREMENT CONTROL procedure.

The UE shall:

1> if the initiation of the procedure is triggered by the IE "Traffic volume report request" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:

2> report the traffic volume measurement result for the radio bearer mapped on USCH transport channel specified in the received message. These results shall include:

3> Radio Bearer ID of the Radio Bearer being reported;

3> RLC buffer payload for this radio bearer.

1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PDSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message and the IE "PUSCH capacity allocation info" is present in this message:

2> set the CHOICE "Allocation confirmation" to "PDSCH Confirmation" with the value given in the IE "PDSCH Identity" stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~in the received message~~.

1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PUSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:

2> set the CHOICE "Allocation confirmation" to "PUSCH Confirmation" with the value given in the IE "PUSCH Identity" stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION~~in the received message~~.

1> if the variable PROTOCOL_ERROR_REJECT is set to TRUE:

2> include the IE "RRC transaction identifier" in the response message transmitted below; and

2> set it to the value of "RRC transaction identifier" in the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Rejected transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "protocol error indicator" to TRUE;

2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

1> if the value of the variable PROTOCOL_ERROR_ REJECT is FALSE:

2> set the IE "Protocol error indicator" to FALSE.

As an option, the message may include IE "Timeslot ISCP" and IE "Primary CCPCH RSCP".

The timeslots for which "Timeslot ISCP" may be reported shall have been configured with a previous PHYSICAL SHARED CHANNEL ALLOCATION message and stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

"Primary CCPCH RSCP" is reported when requested with a previous PHYSICAL SHARED CHANNEL ALLOCATION message.

13.4.X PHYSICAL_SHARED_CHANNEL_CONFIGURATION

This variable is used only for TDD to store information about the physical shared channel configuration in the UE. Cleared when entering and leaving UTRA RRC connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PUSCH configuration	OP			
>PUSCH info	MP		PUSCH info 10.3.6.63	
>PUSCH Identity	OP		Integer(1.. hiPUSCHidentities)	
>PUSCH power control info	OP		PUSCH power control info 10.3.6.65	
PDSCH configuration	OP			
>PDSCH Info	MP		PDSCH Info 10.3.6.44	
>PDSCH Identity	OP		Integer(1..hiPDSCHidentities)	
>PDSCH power control info	OP		PDSCH power control info 10.3.6.45	
ISCP Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot number 10.3.6.84	Timeslot numbers, for which the UE shall report the timeslot ISCP in PUSCH CAPACITY REQUEST message

14.1.3.2 Reporting event 1H: Timeslot ISCP below a certain threshold (TDD)

When event 1h is configured in the UE, the UE shall:

1> if equation 1 is fulfilled for a time period indicated by "Time to trigger" and if that P-CCPCH is not included in the IE "cells triggered" in the variable TRIGGERED_1H_EVENT:

2> include that P-CCPCH in the IE "cells triggered" in the variable TRIGGERED_1H_EVENT;

2> send a measurement report with the IEs set as below:

3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1h" and in "cell measurement event results" the "Cell parameters ID" of the P-CCPCH that triggered the report;

3> include in "Cell measured results" the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED_1H_EVENT.

1> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED_1H_EVENT:

~~3> increment the stored counter "sent reports" for that primary CCPCH in "cells triggered" in variable TRIGGERED_1H_EVENT;~~

3> send a measurement report with IEs set as below:

4> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1h" and "cell measurement event results" to the "Cell parameters ID" of the P-CCPCH that triggered the report;

4> set in "measured results " the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED_1H_EVENT and "additional measured results" according to subclause 8.4.2.

1> if Equation 2 below is fulfilled for a primary CCPCH:

2> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED_1H_EVENT:

3> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED_1H_EVENT.

The UE shall use the equations below for evaluation of reporting event 1h:

Equation 1

$$10 \cdot LogM_i + H_{1h} + O_i < T_{1h},$$

Equation 2

$$10 \cdot LogM_i - H_{1h} + O_i > T_{1h},$$

The variables in the formula are defined as follows:

$\boldsymbol{M_i}$ is the Timeslot ISCP of the currently evaluated cell ***i*** expressed in mW

$\boldsymbol{O_i}$ is the cell individual offset of the currently evaluated cell ***i***

$\boldsymbol{T_{1h}}$ is the Threshold for event 1h

$\boldsymbol{H_{1h}}$ is the hysteresis parameter for the event 1h.

Before any evaluation is done, the Timeslot ISCP expressed in mW is filtered according to subclause 8.6.7.2.

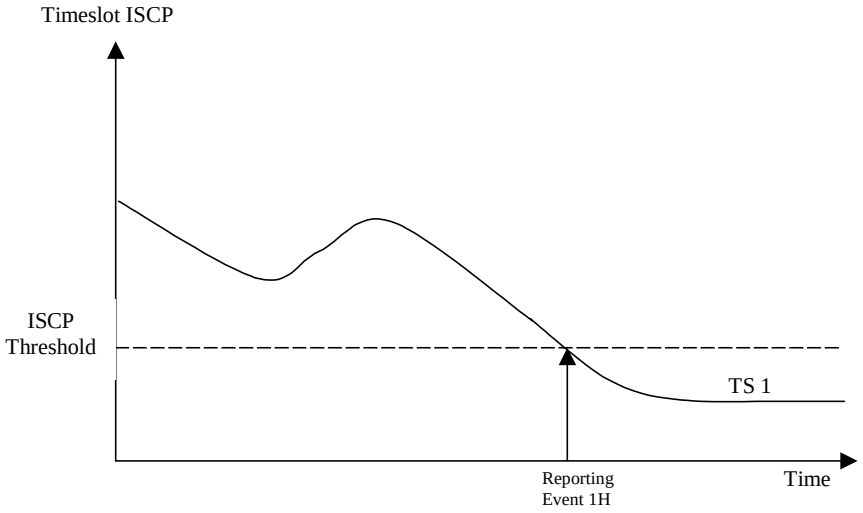

Figure 14.1.3.2-1: An ISCP value of a timeslot drops below an absolute threshold

3GPP TSG-RAN2 Meeting #29 ***R2-021425***
Kyeongju, Korea, 13-17 May, 2002

CR-Form-v5

CHANGE REQUEST

⌘ **25.331** **CR** **1424** ⌘ **rev** **r1** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Integrity protection on RB0
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13 May 2002
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change: ⌘

1. The UE behaviour when receiving DL RB 0 messages is not clear. In section 9 it is stated that the error check should be executed before executed any of the procedures described in section 8 (including integrity), but in section 8 the opposite is stated.
2. It is not clear if UTRAN will always use the same RRC SN when sending the same message multiple times.
3. It is not obvious that UTRAN will use the same RRC SN space for each UE on RB 0.
4. [From Tdoc R2-021083]
8.6.3.11This clause describes the behaviour of the UE for accepting or rejecting transactions based on the message type and the IE "RRC transaction identifier".It is described that for some received messages the variable ORDERED_RECONFIGURATION is checked in 8.6.3.11 whether it is TRUE or FALSE.However, these messages may change the contents of the variable ORDERED_RECONFIGURATION to TRUE . This can cause an erroneous behaviour of the UE.In order to guarantee that the variable ORDERED_RECONFIGURATION is not changed before the transaction is accepted or rejected, it is proposed that the UE shall act upon the IE "RRC transaction identifier" before any other action is performed.

Summary of change: ⌘

1. It is proposed to allow the UE to discard messages that are addressed to other UEs and unsolicited messages, before performing the integrity check procedure.
2. It is proposed to clarify that UTRAN should always use the same RRC SN when sending the same message multiple times.
3. It is proposed to clarify that UTRAN should use a separate RRC SN space for each UE on DL RB 0.
4. [From Tdoc R2-021083]
8.6.3.11Add that the UE shall act upon the IE "RRC transaction identifier" if included in a received message before any other action concerning this message is performed.

Isolated Impact Change Analysis.

This change clarifies the integrity protection on RB 0 procedure.
It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise.

[From Tdoc R2-021083]

Correction to a function where the specification was ambiguous or not sufficiently explicit.

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

Impacted functionality:

Evaluation of IE "RRC transaction identifier"

Note: The corrections have no foreseen impact on the T1 test specifications.

Correction:

If the IE "RRC transaction identifier" is included in a received message the UE shall act upon this IE before any other action concerning this message is performed.

The change has isolated impact to the UE, the UTRAN is not concerned by this change.

Consequences if not approved:	⌘	1. If the integrity check is done before verifying if the message is addressed to other UEs, a message addressed to a different UE may by chance generate a good MAC. If this happened, the Downlink RRC HFN would go out of sync, leading to the loss of the RRC connection. 2. The use of different RRC SN in repeated messages increases the possibility of having Downlink RRC HFNs out of sync between UE and UTRAN. 3. UTRAN implementations not conforming to this statement will not be able to operate integrity protection in CELL_FACH state. Since integrity protection is mandatory, the CELL_FACH state would become unusable. 4. [From Tdoc R2-021083] The wrong handling of UE variables will cause erroneous UE behavior.The variable which is necessary to decide whether the transaction is accepted or not could be changed before this decision is performed. This leads to erroneous UE behaviour.

Clauses affected:	⌘	8, 8.1.4.2, 8.3.1.5, 8.5.10.1, 9.1		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v4.4.0, CR 1425r1 25.331 v5.0.0, CR 1426r1
Other comments:	⌘			

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

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

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

[…]

8 RRC procedures

The UE shall be able to process several simultaneous RRC procedures. After the reception of a message which invoked a procedure, the UE shall be prepared to receive and act on another message which may invoke a second procedure. Whether this second invocation of a procedure (transaction) is accepted or rejected by the UE is specified in the subclauses of this clause, and in particular in subclause 8.6.3.11 (RRC transaction identifier).

On receiving a message the UE ~~shall~~ should first check that the message is addressed to the UE (e.g. by checking the IE "Initial UE identity" or the IE "U-RNTI" for messages on CCCH) and discard the messages addressed to other UEs, then the UE shall apply integrity check as appropriate, ~~and~~ then proceed with error handling as specified in clause 9, then act upon the IE "RRC transaction identifier", before continuing on with the procedure as specified in the relevant subclause. The RRC entity in the UE shall consider PDUs to have been transmitted when they are submitted to the lower layers. If the RRC entity in the UE submits a message for transmission using AM RLC, it shall consider the message successfully transmitted when UTRAN reception of all relevant PDUs is acknowledged by RLC. In the UE, timers are started when the PDUs are sent on the radio interface in the case of the transmission using the CCCH.

[…]

8.1.4.2 Initiation

When the UE is in state CELL_DCH or CELL_FACH, the UTRAN may at anytime initiate an RRC connection release by transmitting an RRC CONNECTION RELEASE message using UM RLC.

When UTRAN transmits an RRC CONNECTION RELEASE message the downlink DCCH should be used, if available. If the downlink DCCH is not available in UTRAN and the UE is in CELL_FACH state, the downlink CCCH may be used.

UTRAN may transmit several RRC CONNECTION RELEASE messages to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages ~~shall~~ should be the same. ~~This shall also apply to the RRC CONNECTION RELEASE COMPLETE message.~~ The number of repeated messages and the interval between the messages is a network option.

[…]

8.3.1.5 Reception of an CELL UPDATE/URA UPDATE message by the UTRAN

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

1> in case the procedure was triggered by reception of a CELL UPDATE:

2> if SRNS relocation was performed:

3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH.

2> otherwise:

3> update the START value for each CN domain as maintained in UTRAN (refer to subclause 8.5.9) with "START" in the IE "START list" for the CN domain as indicated by "CN domain identity" in the IE "START list";

3> if this procedure was triggered while the UE was not in CELL_DCH state, then for each CN domain as indicated by "CN domain identity" in the IE "START list":

4> set the 20 MSB of the MAC-d HFN with the corresponding START value in the IE "START list";

4> set the remaining LSB of the MAC-d HFN to zero.

3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH or optionally on the CCCH but only if ciphering is not required; and

3> optionally include the IE "RLC re-establish indicator (RB5 and upwards)" to request a RLC re-establishment in the UE, in which case the corresponding RLC entities should also be re-established in UTRAN; or

1> in case the procedure was triggered by reception of a URA UPDATE:

2> if SRNS relocation was performed:

3> transmit a URA UPDATE CONFIRM message on the downlink DCCH.

2> otherwise:

3> transmit a URA UPDATE CONFIRM message on the downlink CCCH or DCCH.

2> include the IE "URA identity" in the URA UPDATE CONFIRM message in a cell where multiple URA identifiers are broadcast; or

1> initiate an RRC connection release procedure (see subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH. In particular UTRAN should:

2> if the CELL UPDATE message was sent because of an unrecoverable error in RB2, RB3 or RB4:

3> initiate an RRC connection release procedure (subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

UTRAN may transmit several CELL UPDATE CONFIRM/URA UPDATE CONFIRM messages to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same.

[…]

8.5.10.1 Integrity protection in downlink

If the UE receives an RRC message on signalling radio bearer with RB identity n, the "Status" in the variable INTEGRITY_ PROTECTION_INFO has the value "Started" and the IE 'Integrity check info' is present the UE shall:

1> check the value of the IE "RRC message sequence number" included in the IE "Integrity check info";

2> if the "Downlink RRC Message sequence number" is not present in the variable INTEGRITY_PROTECTION_INFO:

3> initialise the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received message.

2> if the "Downlink RRC Message sequence number" is present in the variable INTEGRITY_PROTECTION_INFO:

3> if the RRC message sequence number is lower than the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO:

4> increment "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with one.

3> if the RRC message sequence number is equal to the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO:

4> discard the message.

1> calculate an expected message authentication code in accordance with subclause 8.5.10.3;

1> compare the expected message authentication code with the value of the received IE "message authentication code" contained in the IE "Integrity check info";

2> if the expected message authentication code and the received message authentication code are the same, the integrity check is successful:

3> update the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received RRC message.

2> if the calculated expected message authentication code and the received message authentication code differ:

3> if the IE "RRC message sequence number" included in the IE "Integrity check info" is lower than the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO (in this case the "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO was incremented by one, as stated above):

4> decrement "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO by one.

3> discard the message.

If the UE receives an RRC message on signalling radio bearer with identity n, the "Status" in the variable INTEGRITY_PROTECTION_INFO has the value "Started" and the IE 'Integrity check info' is not present the UE shall:

1> discard the message.

UTRAN may transmit several copies of the same message in downlink to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same.

[…]

9.1 General

This subclause specifies procedures for the handling of unknown, unforeseen, and erroneous protocol data by the receiving entity. These procedures are called "error handling procedures", but in addition to provide recovery mechanisms for error situations they define a compatibility mechanism for future extensions of the protocol.

The error handling procedures specified in this subclause shall apply to all RRC messages. When there is a specific handling for messages received on different logical channels this is specified.

For system information received on the BCCH, the error handling procedures are applied on the BCCH message SYSTEM INFORMATION, the re-assembled system information segments as well as the system information blocks (including the master information block and the scheduling blocks), with specific error handling as specified below.

When the UE receives an RRC message, it shall set the variable PROTOCOL_ERROR_REJECT to FALSE and then perform the checks in the order as defined below.

~~The procedures specified in clause 8 are applied only for the messages passing the checks as defined below, except when procedure specific handling is used to recover from the error.~~

The error cases specified in the following include the handling upon reception of spare values. This behaviour also applies in case the actual value of the IE results from mapping the originally sent IE value. Moreover, in certain error cases, as specified in the following, default values apply. In this case, the default values specified within the ASN.1, the tabular and the procedure specifications apply.

[…]

3GPP TSG-RAN2 Meeting #29 ***R2-021426***
Kyeongju, Korea, 13-17 May, 2002

CR-Form-v5

CHANGE REQUEST

⌘ **25.331** **CR** **1425** ⌘ **rev** **r1** ⌘ Current version: **4.4.0** ⌘

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

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

Title:	⌘	Integrity protection on RB0
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13 May 2002
Category:	⌘	**A**
Release:	⌘	REL-4

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

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

Reason for change: ⌘

1. The UE behaviour when receiving DL RB 0 messages is not clear. In section 9 it is stated that the error check should be executed before executed any of the procedures described in section 8 (including integrity), but in section 8 the opposite is stated.
2. It is not clear if UTRAN will always use the same RRC SN when sending the same message multiple times.
3. It is not obvious that UTRAN will use the same RRC SN space for each UE on RB 0.
4. [From Tdoc R2-021083]
8.6.3.11This clause describes the behaviour of the UE for accepting or rejecting transactions based on the message type and the IE "RRC transaction identifier".It is described that for some received messages the variable ORDERED_RECONFIGURATION is checked in 8.6.3.11 whether it is TRUE or FALSE.However, these messages may change the contents of the variable ORDERED_RECONFIGURATION to TRUE . This can cause an erroneous behaviour of the UE.In order to guarantee that the variable ORDERED_RECONFIGURATION is not changed before the transaction is accepted or rejected, it is proposed that the UE shall act upon the IE "RRC transaction identifier" before any other action is performed.

Summary of change: ⌘

1. It is proposed to allow the UE to discard messages that are addressed to other UEs and unsolicited messages, before performing the integrity check procedure.
2. It is proposed to clarify that UTRAN should always use the same RRC SN when sending the same message multiple times.
3. It is proposed to clarify that UTRAN should use a separate RRC SN space for each UE on DL RB 0.
4. [From Tdoc R2-021083]
8.6.3.11Add that the UE shall act upon the IE "RRC transaction identifier" if included in a received message before any other action concerning this message is performed.

Isolated Impact Change Analysis.

		This change clarifies the integrity protection on RB 0 procedure. It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise. [From Tdoc R2-021083] Correction to a function where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise. Impacted functionality: Evaluation of IE "RRC transaction identifier" Note: The corrections have no foreseen impact on the T1 test specifications. Correction: If the IE "RRC transaction identifier" is included in a received message the UE shall act upon this IE before any other action concerning this message is performed. The change has isolated impact to the UE, the UTRAN is not concerned by this change.
Consequences if not approved:	⌘	1. If the integrity check is done before verifying if the message is addressed to other UEs, a message addressed to a different UE may by chance generate a good MAC. If this happened, the Downlink RRC HFN would go out of sync, leading to the loss of the RRC connection. 2. The use of different RRC SN in repeated messages increases the possibility of having Downlink RRC HFNs out of sync between UE and UTRAN. 3. UTRAN implementations not conforming to this statement will not be able to operate integrity protection in CELL_FACH state. Since integrity protection is mandatory, the CELL_FACH state would become unusable. 4. [From Tdoc R2-021083] The wrong handling of UE variables will cause erroneous UE behavior.The variable which is necessary to decide whether the transaction is accepted or not could be changed before this decision is performed. This leads to erroneous UE behaviour.

Clauses affected:	⌘	8, 8.1.4.2, 8.3.1.5, 8.5.10.1, 9.1		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1424r1 25.331 v5.0.0, CR 1426r1
Other comments:	⌘			

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

[…]

8 RRC procedures

The UE shall be able to process several simultaneous RRC procedures. After the reception of a message which invoked a procedure, the UE shall be prepared to receive and act on another message which may invoke a second procedure. Whether this second invocation of a procedure (transaction) is accepted or rejected by the UE is specified in the subclauses of this clause, and in particular in subclause 8.6.3.11 (RRC transaction identifier).

On receiving a message the UE shall first check that the message is addressed to the UE (e.g. by checking the IE "Initial UE identity" or the IE "U-RNTI" for messages on CCCH) and discard the messages addressed to other UEs, then apply integrity check as appropriate, ~~and~~ then proceed with error handling as specified in clause 9, then act upon the IE "RRC transaction identifier", before continuing on with the procedure as specified in the relevant subclause. The RRC entity in the UE shall consider PDUs to have been transmitted when they are submitted to the lower layers. If the RRC entity in the UE submits a message for transmission using AM RLC, it shall consider the message successfully transmitted when UTRAN reception of all relevant PDUs is acknowledged by RLC. In the UE, timers are started when the PDUs are sent on the radio interface in the case of the transmission using the CCCH.

[…]

8.1.4.2 Initiation

When the UE is in state CELL_DCH or CELL_FACH, the UTRAN may at anytime initiate an RRC connection release by transmitting an RRC CONNECTION RELEASE message using UM RLC.

When UTRAN transmits an RRC CONNECTION RELEASE message the downlink DCCH should be used, if available. If the downlink DCCH is not available in UTRAN and the UE is in CELL_FACH state, the downlink CCCH may be used.

UTRAN may transmit several RRC CONNECTION RELEASE messages to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages ~~shall~~ should be the same. ~~This shall also apply to the RRC CONNECTION RELEASE COMPLETE message.~~ The number of repeated messages and the interval between the messages is a network option.

[…]

8.3.1.5 Reception of an CELL UPDATE/URA UPDATE message by the UTRAN

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

1> in case the procedure was triggered by reception of a CELL UPDATE:

2> if SRNS relocation was performed:

3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH.

2> otherwise:

3> update the START value for each CN domain as maintained in UTRAN (refer to subclause 8.5.9) with "START" in the IE "START list" for the CN domain as indicated by "CN domain identity" in the IE "START list";

3> if this procedure was triggered while the UE was not in CELL_DCH state, then for each CN domain as indicated by "CN domain identity" in the IE "START list":

4> set the 20 MSB of the MAC-d HFN with the corresponding START value in the IE "START list";

4> set the remaining LSB of the MAC-d HFN to zero.

3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH or optionally on the CCCH but only if ciphering is not required; and

3> optionally include the IE "RLC re-establish indicator (RB5 and upwards)" to request a RLC re-establishment in the UE, in which case the corresponding RLC entities should also be re-established in UTRAN; or

1> in case the procedure was triggered by reception of a URA UPDATE:

2> if SRNS relocation was performed:

3> transmit a URA UPDATE CONFIRM message on the downlink DCCH.

2> otherwise:

3> transmit a URA UPDATE CONFIRM message on the downlink CCCH or DCCH.

2> include the IE "URA identity" in the URA UPDATE CONFIRM message in a cell where multiple URA identifiers are broadcast; or

1> initiate an RRC connection release procedure (see subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH. In particular UTRAN should:

2> if the CELL UPDATE message was sent because of an unrecoverable error in RB2, RB3 or RB4:

3> initiate an RRC connection release procedure (subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

UTRAN may transmit several CELL UPDATE CONFIRM/URA UPDATE CONFIRM messages to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same.

[…]

8.5.10.1 Integrity protection in downlink

If the UE receives an RRC message on signalling radio bearer with RB identity n, the "Status" in the variable INTEGRITY_ PROTECTION_INFO has the value "Started" and the IE 'Integrity check info' is present the UE shall:

1> check the value of the IE "RRC message sequence number" included in the IE "Integrity check info";

2> if the "Downlink RRC Message sequence number" is not present in the variable INTEGRITY_PROTECTION_INFO:

3> initialise the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received message.

2> if the "Downlink RRC Message sequence number" is present in the variable INTEGRITY_PROTECTION_INFO:

3> if the RRC message sequence number is lower than the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO:

4> increment "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with one.

3> if the RRC message sequence number is equal to the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO:

4> discard the message.

1> calculate an expected message authentication code in accordance with subclause 8.5.10.3;

1> compare the expected message authentication code with the value of the received IE "message authentication code" contained in the IE "Integrity check info";

2> if the expected message authentication code and the received message authentication code are the same, the integrity check is successful:

3> update the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received RRC message.

2> if the calculated expected message authentication code and the received message authentication code differ:

3> if the IE "RRC message sequence number" included in the IE "Integrity check info" is lower than the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO (in this case the "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO was incremented by one, as stated above):

4> decrement "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO by one.

3> discard the message.

If the UE receives an RRC message on signalling radio bearer with identity n, the "Status" in the variable INTEGRITY_PROTECTION_INFO has the value "Started" and the IE 'Integrity check info' is not present the UE shall:

1> discard the message.

UTRAN may transmit several copies of the same message in downlink to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same.

[…]

9.1 General

This subclause specifies procedures for the handling of unknown, unforeseen, and erroneous protocol data by the receiving entity. These procedures are called "error handling procedures", but in addition to provide recovery mechanisms for error situations they define a compatibility mechanism for future extensions of the protocol.

The error handling procedures specified in this subclause shall apply to all RRC messages. When there is a specific handling for messages received on different logical channels this is specified.

For system information received on the BCCH, the error handling procedures are applied on the BCCH message SYSTEM INFORMATION, the re-assembled system information segments as well as the system information blocks (including the master information block and the scheduling blocks), with specific error handling as specified below.

When the UE receives an RRC message, it shall set the variable PROTOCOL_ERROR_REJECT to FALSE and then perform the checks in the order as defined below.

~~The procedures specified in clause 8 are applied only for the messages passing the checks as defined below, except when procedure specific handling is used to recover from the error.~~

The error cases specified in the following include the handling upon reception of spare values. This behaviour also applies in case the actual value of the IE results from mapping the originally sent IE value. Moreover, in certain error cases, as specified in the following, default values apply. In this case, the default values specified within the ASN.1, the tabular and the procedure specifications apply.

[…]

3GPP TSG-RAN2 Meeting #29
Kyeongju, Korea, 13-17 May, 2002

R2-021427

CR-Form-v5

CHANGE REQUEST

⌘ **25.331** **CR** **1426** ⌘ **rev** **r1** ⌘ Current version: **5.0.0** ⌘

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

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

Title:	⌘	Integrity protection on RB0
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	13 May 2002
Category:	⌘	**A**
Release:	⌘	REL-5

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

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

Reason for change: ⌘

1. The UE behaviour when receiving DL RB 0 messages is not clear. In section 9 it is stated that the error check should be executed before executed any of the procedures described in section 8 (including integrity), but in section 8 the opposite is stated.
2. It is not clear if UTRAN will always use the same RRC SN when sending the same message multiple times.
3. It is not obvious that UTRAN will use the same RRC SN space for each UE on RB 0.
4. [From Tdoc R2-021083]
8.6.3.11This clause describes the behaviour of the UE for accepting or rejecting transactions based on the message type and the IE "RRC transaction identifier".It is described that for some received messages the variable ORDERED_RECONFIGURATION is checked in 8.6.3.11 whether it is TRUE or FALSE.However, these messages may change the contents of the variable ORDERED_RECONFIGURATION to TRUE . This can cause an erroneous behaviour of the UE.In order to guarantee that the variable ORDERED_RECONFIGURATION is not changed before the transaction is accepted or rejected, it is proposed that the UE shall act upon the IE "RRC transaction identifier" before any other action is performed.

Summary of change: ⌘

1. It is proposed to allow the UE to discard messages that are addressed to other UEs and unsolicited messages, before performing the integrity check procedure.
2. It is proposed to clarify that UTRAN should always use the same RRC SN when sending the same message multiple times.
3. It is proposed to clarify that UTRAN should use a separate RRC SN space for each UE on DL RB 0.
4. [From Tdoc R2-021083]
8.6.3.11Add that the UE shall act upon the IE "RRC transaction identifier" if included in a received message before any other action concerning this message is performed.

Isolated Impact Change Analysis.

		This change clarifies the integrity protection on RB 0 procedure. It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise. [From Tdoc R2-021083] Correction to a function where the specification was ambiguous or not sufficiently explicit. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise. Impacted functionality: Evaluation of IE "RRC transaction identifier" Note: The corrections have no foreseen impact on the T1 test specifications. Correction: If the IE "RRC transaction identifier" is included in a received message the UE shall act upon this IE before any other action concerning this message is performed. The change has isolated impact to the UE, the UTRAN is not concerned by this change.
Consequences if not approved:	⌘	1. If the integrity check is done before verifying if the message is addressed to other UEs, a message addressed to a different UE may by chance generate a good MAC. If this happened, the Downlink RRC HFN would go out of sync, leading to the loss of the RRC connection. 2. The use of different RRC SN in repeated messages increases the possibility of having Downlink RRC HFNs out of sync between UE and UTRAN. 3. UTRAN implementations not conforming to this statement will not be able to operate integrity protection in CELL_FACH state. Since integrity protection is mandatory, the CELL_FACH state would become unusable. 4. [From Tdoc R2-021083] The wrong handling of UE variables will cause erroneous UE behavior.The variable which is necessary to decide whether the transaction is accepted or not could be changed before this decision is performed. This leads to erroneous UE behaviour.

Clauses affected:	⌘	8, 8.1.4.2, 8.3.1.5, 8.5.10.1, 9.1		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.10.0, CR 1424r1 25.331 v4.4.0, CR 1425r1
Other comments:	⌘			

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

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

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

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

[…]

8 RRC procedures

The UE shall be able to process several simultaneous RRC procedures. After the reception of a message which invoked a procedure, the UE shall be prepared to receive and act on another message which may invoke a second procedure. Whether this second invocation of a procedure (transaction) is accepted or rejected by the UE is specified in the subclauses of this clause, and in particular in subclause 8.6.3.11 (RRC transaction identifier).

On receiving a message the UE shall first check that the message is addressed to the UE (e.g. by checking the IE "Initial UE identity" or the IE "U-RNTI" for messages on CCCH) and discard the messages addressed to other UEs, then apply integrity check as appropriate, ~~and~~ then proceed with error handling as specified in clause 9, then act upon the IE "RRC transaction identifier", before continuing on with the procedure as specified in the relevant subclause. The RRC entity in the UE shall consider PDUs to have been transmitted when they are submitted to the lower layers. If the RRC entity in the UE submits a message for transmission using AM RLC, it shall consider the message successfully transmitted when UTRAN reception of all relevant PDUs is acknowledged by RLC. In the UE, timers are started when the PDUs are sent on the radio interface in the case of the transmission using the CCCH.

[…]

8.1.4.2 Initiation

When the UE is in state CELL_DCH or CELL_FACH, the UTRAN may at anytime initiate an RRC connection release by transmitting an RRC CONNECTION RELEASE message using UM RLC.

When UTRAN transmits an RRC CONNECTION RELEASE message the downlink DCCH should be used, if available. If the downlink DCCH is not available in UTRAN and the UE is in CELL_FACH state, the downlink CCCH may be used.

UTRAN may transmit several RRC CONNECTION RELEASE messages to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages ~~shall~~ should be the same. ~~This shall also apply to the RRC CONNECTION RELEASE COMPLETE message.~~ The number of repeated messages and the interval between the messages is a network option.

[…]

8.3.1.5 Reception of an CELL UPDATE/URA UPDATE message by the UTRAN

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

1> in case the procedure was triggered by reception of a CELL UPDATE:

2> if SRNS relocation was performed:

3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH.

2> otherwise:

3> update the START value for each CN domain as maintained in UTRAN (refer to subclause 8.5.9) with "START" in the IE "START list" for the CN domain as indicated by "CN domain identity" in the IE "START list";

3> if this procedure was triggered while the UE was not in CELL_DCH state, then for each CN domain as indicated by "CN domain identity" in the IE "START list":

4> set the 20 MSB of the MAC-d HFN with the corresponding START value in the IE "START list";

4> set the remaining LSB of the MAC-d HFN to zero.

3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH or optionally on the CCCH but only if ciphering is not required; and

3> optionally include the IE "RLC re-establish indicator (RB5 and upwards)" to request a RLC re-establishment in the UE, in which case the corresponding RLC entities should also be re-established in UTRAN; or

1> in case the procedure was triggered by reception of a URA UPDATE:

2> if SRNS relocation was performed:

3> transmit a URA UPDATE CONFIRM message on the downlink DCCH.

2> otherwise:

3> transmit a URA UPDATE CONFIRM message on the downlink CCCH or DCCH.

2> include the IE "URA identity" in the URA UPDATE CONFIRM message in a cell where multiple URA identifiers are broadcast; or

1> initiate an RRC connection release procedure (see subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH. In particular UTRAN should:

2> if the CELL UPDATE message was sent because of an unrecoverable error in RB2, RB3 or RB4:

3> initiate an RRC connection release procedure (subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

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[…]

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If the UE receives an RRC message on signalling radio bearer with RB identity n, the "Status" in the variable INTEGRITY_ PROTECTION_INFO has the value "Started" and the IE 'Integrity check info' is present the UE shall:

1> check the value of the IE "RRC message sequence number" included in the IE "Integrity check info";

2> if the "Downlink RRC Message sequence number" is not present in the variable INTEGRITY_PROTECTION_INFO:

3> initialise the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received message.

2> if the "Downlink RRC Message sequence number" is present in the variable INTEGRITY_PROTECTION_INFO:

3> if the RRC message sequence number is lower than the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO:

4> increment "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with one.

3> if the RRC message sequence number is equal to the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO:

4> discard the message.

1> calculate an expected message authentication code in accordance with subclause 8.5.10.3;

1> compare the expected message authentication code with the value of the received IE "message authentication code" contained in the IE "Integrity check info";

2> if the expected message authentication code and the received message authentication code are the same, the integrity check is successful:

3> update the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received RRC message.

2> if the calculated expected message authentication code and the received message authentication code differ:

3> if the IE "RRC message sequence number" included in the IE "Integrity check info" is lower than the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO (in this case the "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO was incremented by one, as stated above):

4> decrement "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY_PROTECTION_INFO by one.

3> discard the message.

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UTRAN may transmit several copies of the same message in downlink to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same.

[…]

9.1 General

This subclause specifies procedures for the handling of unknown, unforeseen, and erroneous protocol data by the receiving entity. These procedures are called "error handling procedures", but in addition to provide recovery mechanisms for error situations they define a compatibility mechanism for future extensions of the protocol.

The error handling procedures specified in this subclause shall apply to all RRC messages. When there is a specific handling for messages received on different logical channels this is specified.

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When the UE receives an RRC message, it shall set the variable PROTOCOL_ERROR_REJECT to FALSE and then perform the checks in the order as defined below.

~~The procedures specified in clause 8 are applied only for the messages passing the checks as defined below, except when procedure specific handling is used to recover from the error.~~

The error cases specified in the following include the handling upon reception of spare values. This behaviour also applies in case the actual value of the IE results from mapping the originally sent IE value. Moreover, in certain error cases, as specified in the following, default values apply. In this case, the default values specified within the ASN.1, the tabular and the procedure specifications apply.

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