**TSG-RAN Meeting #7**
**Madrid, Spain, 13 – 15 March 2000**

*RP-000045*

**Title:** **Agreed CRs to TS 25.331 (3)**

**Source:** **TSG-RAN WG2**

**Agenda item: 6.3.3**

| Doc-1st- | Spec | CR | Rev | Subject | Cat | Version | Versio |
|---|---|---|---|---|---|---|---|
| R2-000259 | 25.331 | 172 | 1 | Measurement control message | C | 3.1.0 | 3.2.0 |
| R2-000490 | 25.331 | 173 | 2 | Reporting cell status | C | 3.1.0 | 3.2.0 |
| R2-000201 | 25.331 | 174 | | Additional IE for RB release | C | 3.1.0 | 3.2.0 |
| R2-000202 | 25.331 | 175 | | Available SF in PRACH info | C | 3.1.0 | 3.2.0 |
| R2-000203 | 25.331 | 176 | | Traffic volume measurement event | C | 3.1.0 | 3.2.0 |
| R2-000204 | 25.331 | 177 | | Report of multiple cells on an event | C | 3.1.0 | 3.2.0 |
| R2-000205 | 25.331 | 178 | | Editorial modification on Direct Transfer | C | 3.1.0 | 3.2.0 |
| R2-000206 | 25.331 | 179 | | Correction of the Security Mode Control | F | 3.1.0 | 3.2.0 |
| R2-000286 | 25.331 | 180 | 1 | Maximum calculated Transport Format | F | 3.1.0 | 3.2.0 |
| R2-000233 | 25.331 | 183 | | Additional DPCH IEs to align 25.331 with | F | 3.1.0 | 3.2.0 |
| R2-000287 | 25.331 | 184 | 1 | RB – DCH mapping | F | 3.1.0 | 3.2.0 |
| R2-000624 | 25.331 | 188 | 1 | Modifications related to FDD mode | C | 3.1.0 | 3.2.0 |
| R2-000547 | 25.331 | 189 | 1 | Identification of Shared Channel Physical | C | 3.1.0 | 3.2.0 |
| R2-000549 | 25.331 | 192 | 1 | Uplink Outer Loop Power Control During | C | 3.1.0 | 3.2.0 |
| R2-000357 | 25.331 | 193 | | Support of Multiple CCTrCH's in TDD | C | 3.1.0 | 3.2.0 |
| R2-000592 | 25.331 | 194 | 1 | Uplink Physical Channel Control in TDD | C | 3.1.0 | 3.2.0 |
| R2-000630 | 25.331 | 201 | 1 | Transfer of initial information from UE to | D | 3.1.0 | 3.2.0 |
| R2-000675 | 25.331 | 202 | 1 | CN information elements | F | 3.1.0 | 3.2.0 |
| R2-000387 | 25.331 | 203 | | UTRAN mobility  information elements | F | 3.1.0 | 3.2.0 |
| R2-000625 | 25.331 | 204 | 1 | RB information elements | F | 3.1.0 | 3.2.0 |

# CHANGE REQUEST

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

| **25.331** | CR | **172r1** | Current Version: | 3.1.0 |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN #7 | for approval | X | Strategic | | *(for SMG* |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here* ↑ | | for information | | non-strategic | | *use only)* |

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

**Proposed change affects:**
*(at least one should be marked with an X)*

(U)SIM ☐    ME ☐    UTRAN / Radio **X**    Core Network ☐

| **Source:** | TSG-RAN WG2 | **Date:** | 17th Jan 2000 |
|---|---|---|---|

| **Subject:** | Measurement Control message |
|---|---|

| **Work item:** | |
|---|---|

**Category:** *(only one category Shall be marked With an X)*

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

| **Reason for change:** | Assuming the case of setting "Modify" in IE "Measurement Command", all the IEs besides IE "Message type", IE "Measurement ID" and IE "Measurement Command" in the Measurement Control message maybe optional. Therefore "Presence column" and "Multi column" are modified accordingly. |
|---|---|

| **Clauses affected:** | 10.1.12,  8.4.1.2 |
|---|---|

**Other specs Affected:**

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

| **Other comments:** | |
|---|---|

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

## 8.4.1 Measurement control



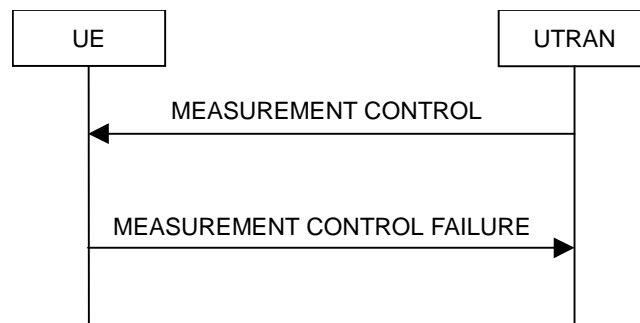**Figure 43: Measurement Control, normal case**



**Figure 44: Measurement Control, UE reverts to old measurements**

### 8.4.1.1 General

The purpose of the measurement control procedure is to Setup, modify or release a measurement in the UE.

#### 8.4.1.2 Initiation

The UTRAN may request a measurement in the UE to be setup, modified or released with a MEASUREMENT CONTROL message, which is transmitted on the downlink DCCH using AM RLC.

When a new measurement is setup, UTRAN should set the IE "Measurement identity number" to a value, which is not used for other measurements. UTRAN may use several "Measurement identity number" within a same "Measurement type". In case of setting several "Measurement identity numbers" within a same "Measurement type", "Measurement object" can be set differently for each measurement with different "Measurement identity numbers". If no "Measurement object" is indicated for additional measurement within a same "Measurement type" in case of "Measurement type" = "Intra-frequency", it implies that only active set cells are the "Measurement objects".

When a current measurement is modified or released, UTRAN should set the IE "Measurement identity number" to a value, which is used for the current measurement. In case of modifying IEs within a "Measurement identity number", it is not needed for UTRAN to indicate the IEs other than modifying IEs, and the UE continuously uses the current values of the IEs which are not modified.

UTRAN should take the UE capabilities into account when a measurement is assigned to the UE.

## 10.1.12 MEASUREMENT CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Integrity check info | O | | | |
| **Measurement Information elements** | | | | |
| Measurement Identity Number | M | | | |
| Measurement Command | M | | | |
| Measurement Type | C Setup | | | |
| Measurement Reporting Mode | ~~C NotReleas e~~O | | | |
| Additional measurement identity number | | 0 to <MaxAdditionalMeas> | | |
| **CHOICE Measurement** | | | | |
| >**Intra-frequency** | | | | |
| >>Intra-frequency cell info | | ~~1~~0 to <MaxIntraCells> | | ~~Measurement object~~ |
| >>Intra-frequency measurement quantity | ~~C event trigger~~O | | | |
| >>Intra-frequency measurement reporting quantity | O | | | |
| >>Maximum number of reporting cells | O | | | |
| >>Measurement validity | O | | | |
| >>**CHOICE report criteria** | O | | | |
| >>>Intra-frequency measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| >**Inter-frequency** | | | | |
| >>Inter-frequency cell info | | ~~1~~0 to <MaxInterCells> | | ~~Measurement object~~ |
| >>Inter-frequency measurement quantity | ~~C event trigger~~o | | | |
| >>Inter-frequency measurement reporting quantity | O | | | |
| >>Maximum number of reporting cells | O | | | |
| >>Measurement validity | O | | | |
| >>Inter-frequency set Update | O | | | |
| >>**CHOICE report criteria** | O | | | |
| >>>Intra-frequency measurement | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| reporting criteria | | | | |
| >>>Inter-frequency measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| >**Inter-system** | | | | |
| >>Inter-system cell info | | ~~1~~0 to \<MaxInterSysCells> | | ~~Measurement object~~ |
| >>Inter-system measurement quantity | ~~C event trigger~~O | | | |
| >>Inter-system measurement reporting quantity | O | | | |
| >>Maximum number of reporting cells | O | | | |
| >>**CHOICE report criteria** | | | | |
| >>>Inter-system measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| | | | | |
| >**Traffic Volume** | | | | |
| >>Traffic volume measurement Object | O | | | |
| >>Traffic volume measurement quantity | ~~C event trigger~~O | | | |
| >>Traffic volume measurement reporting quantity | O | | | |
| >>Measurement validity | O | | | |
| >>**CHOICE report criteria** | O | | | |
| >>>Traffic volume measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| | | | | |
| >**Quality** | | | | |
| >>Quality measurement Object | O | | | |
| >>Quality measurement quantity | ~~C event trigger~~O | | | |
| >>Quality measurement reporting quantity | O | | | |
| >>**CHOICE report criteria** | O | | | |
| >>>Quality measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| | | | | |
| >**UE internal** | | | | |
| >>UE internal measurement quantity | ~~C event trigger~~O | | | |
| >>UE internal measurement reporting quantity | O | | | |
| >>**CHOICE report criteria** | O | | | |
| >>>UE internal measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >>>No reporting | | | NULL | |

| Condition | Explanation |
|---|---|
| *Setup* | This IE is only included if measurement command is Setup |
| *NotRelease* | This IE is only included if measurement command is Setup or Modify |
| *Event trigger* | This element is only included if the Reporting mode IE is set to event trigger reporting mode. |

| Multi Bound | Explanation |
|---|---|
| *MaxIntraCells* | Maximum number of Intra-frequency cells in a measurement control |
| *MaxInterCells* | Maximum number of Inter-frequency cells in a measurement control |
| *MaxInterSysCells* | Maximum number of Inter-System cells in a measurement control |
| *MaxAdditionalMeas* | Maximum number of additional measurements for a given measurement identity |

| CHOICE *Measurement* | Condition under which the given *Measurement* is chosen |
|---|---|
| Intra-frequency | if measurement type=Intra-frequency measurement |
| Inter-frequency | if measurement type=Inter-frequency measurement |
| Inter-system | if measurement type=Intra-system measurement |
| Traffic volume | if measurement type=traffic volume measurement |
| Quality | if measurement type=Quality measurement |
| UE internal | if measurement type=UE internal measurement |
| **CHOICE *reporting criteria*** | **Condition under which the given *reporting criteria* is chosen** |
| ******* measurement reporting criteria | Chosen when event triggering is required |
| Periodical reporting criteria | Chosen when periodical reporting is required |
| No reporting | Chosen when this measurement only is used as additional measurement to another measurement |

| Multi Bound | Explanation |
|---|---|
| *MaxAdditionalMeas* | Maximum number of additional measurements for a given measurement identity |

# CHANGE REQUEST

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

| **25.331** | CR | **173r2** | Current Version: | 3.1.0 |
|---|---|---|---|---|

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

For submission to:  **TSG-RAN #7**   for approval **X**    strategic ☐ *(for SMG*
*list expected approval meeting # here*   for information ☐    non-strategic ☐ *use only)*
*↑*

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

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

| **Source:** | TSG-RAN WG2 | **Date:** | 17th Jan 2000 |
|---|---|---|---|

| **Subject:** | Reporting Cell Status |
|---|---|

| **Work item:** | |
|---|---|

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

| **Reason for change:** | "Reporting cell status" is proposed to add in MEASUREMENT REPORT message, which indicate UE to report the quantities of the necessary cells.<br>The order of cell in the reporting cell list of Measured results is clearly defined that they should be listed in the order of the measured quantity.<br>Modification is made on Measured results on RACH. Currently, "measured results for current cell" and "measured results for neighbouring cells" is separated. It is proposed to change "measured results for neighbouring cells" to "measured results for monitored cells" in order for UTRAN to know the ranking of the current cell based on measured quantity. |
|---|---|

| **Clauses affected:** | 10, 14 |
|---|---|

**Other specs**
**Affected:**
| Other 3G core specifications | ☐ | → List of CRs: | |
|---|---|---|---|
| Other GSM core specifications | ☐ | → List of CRs: | |
| MS test specifications | ☐ | → List of CRs: | |
| BSS test specifications | ☐ | → List of CRs: | |
| O&M specifications | ☐ | → List of CRs: | |

| **Other comments:** | |
|---|---|

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## 10.1.12  MEASUREMENT CONTROL

NOTE:    Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Integrity check info | O | | | |
| **Measurement Information elements** | | | | |
| Measurement Identity Number | M | | | |
| Measurement Command | M | | | |
| Measurement Type | C Setup | | | |
| Measurement Reporting Mode | C NotRelease | | | |
| Additional measurement identity number | | 0 to <MaxAdditionalMeas> | | |
| **CHOICE Measurement** | | | | |
| >Intra-frequency | | | | |
| >>Intra-frequency cell info | | 1 to <MaxIntraCells> | | Measurement object |
| >>Intra-frequency measurement quantity | C event trigger | | | |
| >>Intra-frequency measurement reporting quantity | O | | | |
| >> Reporting cell status~~Maximum number of reporting cells~~ | O | | | |
| >>Measurement validity | O | | | |
| >>**CHOICE report criteria** | | | | |
| >>>Intra-frequency measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| >Inter-frequency | | | | |
| >>Inter-frequency cell info | | 1 to <MaxInterCells> | | Measurement object |
| >>Inter-frequency measurement quantity | C event trigger | | | |
| >>Inter-frequency measurement reporting quantity | O | | | |
| >>Reporting cell status~~Maximum number of reporting cells~~ | O | | | |
| >>Measurement validity | O | | | |
| >>Inter-frequency set Update | | | | |
| >>**CHOICE report criteria** | | | | |
| >>>Intra-frequency measurement reporting criteria | | | | |
| >>>Inter-frequency measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >>>No reporting | | | NULL | |
| >Inter-system | | | | |
| >>Inter-system cell info | | 1 to <MaxInterSysCells> | | Measurement object |
| >>Inter-system measurement quantity | C event trigger | | | |
| >>Inter-system measurement reporting quantity | O | | | |
| >>Reporting cell status~~Maximum number of reporting cells~~ | O | | | |
| >>**CHOICE report criteria** | | | | |
| >>>Inter-system measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| >Traffic Volume | | | | |
| >>Traffic volume measurement Object | | | | |
| >>Traffic volume measurement quantity | C event trigger | | | |
| >>Traffic volume measurement reporting quantity | O | | | |
| >>Measurement validity | O | | | |
| >>**CHOICE report criteria** | | | | |
| >>>Traffic volume measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| >Quality | | | | |
| >>Quality measurement Object | | | | |
| >>Quality measurement quantity | C event trigger | | | |
| >>Quality measurement reporting quantity | O | | | |
| >>**CHOICE report criteria** | | | | |
| >>>Quality measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |
| >UE internal | | | | |
| >>UE internal measurement quantity | C event trigger | | | |
| >>UE internal measurement reporting quantity | O | | | |
| >>**CHOICE report criteria** | | | | |
| >>>UE internal measurement reporting criteria | | | | |
| >>>Periodical reporting criteria | | | | |
| >>>No reporting | | | NULL | |

| Condition | Explanation |
|---|---|
| *Setup* | This IE is only included if measurement command is Setup |
| *NotRelease* | This IE is only included if measurement command is Setup or Modify |
| *Event trigger* | This element is only included if the Reporting mode IE is set to event trigger reporting mode. |

| Multi Bound | Explanation |
|---|---|
| *MaxIntraCells* | Maximum number of Intra-frequency cells in a measurement control |
| *MaxInterCells* | Maximum number of Inter-frequency cells in a measurement control |
| *MaxInterSysCells* | Maximum number of Inter-System cells in a measurement control |

| CHOICE *Measurement* | Condition under which the given *Measurement* is chosen |
|---|---|
| Intra-frequency | if measurement type=Intra-frequency measurement |
| Inter-frequency | if measurement type=Inter-frequency measurement |
| Inter-system | if measurement type=Intra-system measurement |
| Traffic volume | if measurement type=traffic volume measurement |
| Quality | if measurement type=Quality measurement |
| UE internal | if measurement type=UE internal measurement |
| **CHOICE *reporting criteria*** | **Condition under which the given *reporting criteria* is chosen** |
| Intra-frequency measurement reporting criteria | Chosen when Intra-frequency measurement event triggering is required |
| Inter-frequency measurement reporting criteria | Chosen when Inter-frequency measurement event triggering is required |
| Inter-system measurement reporting criteria | Chosen when Inter-system measurement event triggering is required |
| Traffic volume measurement reporting criteria | Chosen when Traffic volume measurement event triggering is required |
| Quality measurement reporting criteria | Chosen Quality measurement event triggering is required |
| UE internal measurement reporting criteria | Chosen when UE internal measurement event triggering is required |
| ~~******* measurement reporting criteria~~ | ~~Chosen when event triggering is required~~ |
| Periodical reporting criteria | Chosen when periodical reporting is required |
| No reporting | Chosen when this measurement only is used as additional measurement to another measurement |

| Multi Bound | Explanation |
|---|---|
| *MaxAdditionalMeas* | Maximum number of additional measurements for a given measurement identity |

### 10.2.7.19 Maximum number of reported cells on RACH

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Maximum nNumber of reported cells | M | | Enumerated (no report, current cell, current cell + best neighbour, current cell+2 best neighbours, …, current cell+6 best neighbours) | |

### 10.2.7.34.xx  Reporting Cell Status

Indicates maximum allowed number of cells to report and whether active set cells and/or monitored set cells should/should not be included in the IE "Measured results".

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Maximum number of reporting cells | M | | Enumerated (mandatory cells only, mandatory cells+1, mandatory cells+2,.. mandatory cells+6) | For other measurement type than intra-frequency measurement, "mandatory cell" = 0. |
| **Choice measurement** | | | | |
| >intra-frequency | | | | |
| >>Active set cell report | M | | Enumerated (include all, exclude all, other) | |
| >>Monitored set cell report | M | | Enumerated (exclude all, other) | |

## 10.2.7.20    Measured results

Contains the measured results of the quantity indicated optionally by Reporting Quantity in Measurement Control. "Measured results" can be used for both event trigger mode and periodical reporting mode. The list should be in the order of the value of the measurement quality (the first cell should be the best cell). The "best" cell has the largest value when the measurement quantity is "Ec/No", "RSCP" or "SIR". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss".

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| **Choice measurement** | | | | |
| >**Intra-frequency** | | | | |
| >>Intra-frequency measurement results | | 0 to <maxIntraCells> | | |
| >>>Cell Identity | O | | | |
| >>>SFN-SFN observed time difference | O | | | |
| >>>CHOICE *mode* | | | | |
| >>>>FDD | | | | |
| >>>>>Primary CPICH info | M | | | |
| >>>>>CPICH Ec/N0 | O | | Enumerated(-20..0) | In dB |
| >>>>>CPICH RSCP | O | | Enumerated(-115..-40) | In dBm |
| >>>>>CPICH SIR | O | | Enumerated(-10..20) | In dB Note 1 |
| >>>>>Pathloss | O | | Enumerated(46..158) | In dB |
| >>>>>CFN-SFN observed time difference | O | | | |
| >>>>TDD | | | | |
| >>>>>Primary CCPCH info | M | | | |
| >>>>>Primary CCPCH RSCP | O | | | |
| >>>>>DL CCTrCH SIR | | 0 to <maxCCTrCHcount> | | SIR measurements for each DL CCTrCH |
| >>>>>>Timeslot | | 0 to <maxTSperCCTrCHcount | | All timeslots on which the CCTrCH is mapped on |
| >>>>>>>ISCP | O | | | |
| >>>>>>>RSCP | O | | | |
| >>>>>DL Timeslot ISCP | | 0 to <maxTStoMEASURE count> | | ISCP measurements for each timeslot indicated by the UTRAN |
| >>>>>>ISCP | O | | | |
| | | | | |
| >**Inter-frequency** | | | | |
| >>Inter-frequency measurement results | | 0 to <maxNumFreq> | | |
| >>>UTRA carrier | M | | | |
| >>>UTRA carrier RSSI | O | | Enumerated(-95..-30) | In dBm |
| >>>Inter-frequency cell measurement results | | 0 to <maxInterCells> | | |
| >>>>Cell Identity | O | | | |
| >>>>SFN-SFN observed time difference | O | | | |
| >>>>CHOICE *mode* | | | | |
| >>>>>FDD | | | | |
| >>>>>>Primary CPICH info | M | | | |
| >>>>>>CPICH Ec/N0 | O | | Enumerated( | In dB |

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| | | | -20..0) | |
| >>>>>>>CPICH RSCP | O | | Enumerated( -115..-40) | In dBm |
| >>>>>>>Pathloss | O | | Enumerated( 46..158) | In dB |
| >>>>>>>CFN-SFN observed time difference | O | | | |
| >>>>>>TDD | | | | |
| >>>>>>>Primary CCPCH info | M | | | |
| >>>>>>>Primary CCPCH RSCP | O | | | |
| | | | | |
| >**Inter-system** | | | | |
| >>Inter-system measurement results | | 0 to <maxInterSys> | | |
| >>CHOICE *system* | | | | |
| >>>GSM | | | | |
| >>>>Frequency | M | | | |
| >>>>GSM carrier RSSI | O | | Enumerated( 0..63) | RXLEV GSM TS 05.08 |
| >>>>Pathloss | O | | Enumerated( 46..158) | In dB |
| >>>>BSIC | O | | Bitstring(6) | GSM TS 03.03 |
| >>>>Observed time difference to GSM cell | O | | Enumerated( 0..4095*3060/(4096*13) | In steps of 3060/(4096*13) ms |
| | | | | |
| > **Traffic volume** | | | | |
| >>Traffic volume measurement results | | 0 to <MaxTraf> | | |
| >>>RB Identity | M | | | |
| >>>RLC buffers payload | O | | Enumerated( 0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K, 32K, 64K, 128K, 256K, 512K, 1024K) | In bytes And Kbytes = N*1024 bytes |
| >>>Average RLC buffer payload | O | | Enumerated( 0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K, 32K, 64K, 128K, 256K, 512K, 1024K) | In bytes And Kbytes = N*1024 bytes |
| >>>Variance of RLC buffer payload | O | | Enumerated( 0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K) | In bytes And Kbytes = N*1024 bytes |
| | | | | |
| >**Quality** ~~measurement results~~ | | | | |
| >>BLER measurement results | | 0 to <MaxBLER> | | |
| >>>Transport channel identity | M | | | |
| >>>DL Transport Channel BLER | O | | Enumerated( 0, 0.02 | dB%=-Log10(Transport channel BLER) |

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| | | | ..5.10) | Granularity 0.02 |
| >>DL Physical Channel BER | O | | Enumerated( 0, 0.02 ..5.10) | dB%=-Log10(Physical channel BER) Granularity 0,02 |
| >>SIR | O | | Enumerated( -10..20) | In dB |
| | | | | |
| >UE Internal measurement results | | | | |
| >>UE Position | O | | | |
| >>CHOICE mode | | | | |
| >>>FDD | | | | |
| >>>>UE Transmitted Power | O | | Enumerated( -50..33) | UE transmitted power In dBm |
| >>>TDD | | | | |
| >>>>UE transmitted Power | O | 0 to <maxUsed UplTScount > | | UE transmitted power for each used timeslot (TDD) |

| Range Bound | Explanation |
|---|---|
| MaxCCTrCHcount | Maximum number of DL CCTrCH allocated to an UE |
| MaxTSperCCTrCHcount | Maximum number of TS on which a single DL CCTrCH is mapped on |
| MaxTStoMEASUREcount | Maximum number of TS on which the UE has to measure |
| maxUsedUplTScount | Maximum number of TS used for UL transmissions |
| MaxIntraCells | Maximum number of Intra-frequency cells that can be included in a measurement report |
| MaxNumFreq | Maximum number of frequencies with intra-frequency cells that can be included in a measurement report |
| MaxInterCells | Maximum number of Inter-frequency cells for one frequency that can be included in a measurement report |
| MaxInterSys | Maximum number of Inter-system cells that can be included in a measurement report |
| MaxTraf | Maximum number of radio bearers with traffic volume measurements that can be included in a measurement report |
| MaxBLER | Maximum number of transport channels with BLER measurements that can be included in a measurement report |

NOTE 1:  If CPICH SIR can be used has not been concluded in WG4

## 10.2.7.24    Measuredment results on RACH

Contains the measured results on RACH of the quantity indicated optionally by Reporting Quantity in the system information broadcasted on BCH. The list should be in the order of the value of the measurement quality (the first cell should be the best cell). The "best" cell has the largest value when the measurement quantity is "Ec/No", "RSCP" or "SIR". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss".

| Information Element/group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Measurement result for current cell | | | | |
| CHOICE *mode* | | | | |
| >FDD | | | | |
| >>CHOICE measurement quantity | M | | | |
| >>>CPICH Ec/N0 | | | Enumerated( -20..0) | In dB |
| >>>CPICH RSCP | | | Enumerated( -115..-40) | In dBm |
| >>>CPICH SIR | | | Enumerated( -10..20) | In dB Note 1 |
| >>>Pathloss | | | Enumerated( 46..158) | In dB |
| >TDD | | | | |
| >>Timeslot ISCP | | | | |
| >>Primary CCPCH RSCP | | | | |
| Measurement results for neighbouring monitored cells | | 0 to 76 | | |
| >SFN-SFN observed time difference | O | | | It is absent for current cell |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>Primary CPICH info | M | | | |
| >>>CHOICE measurement quantity | O | | | It is absent for current cell |
| >>>>CPICH Ec/N0 | | | Enumerated( -20..0) | In dB |
| >>>>CPICH RSCP | | | Enumerated( -115..-40) | In dBm |
| >>>>CPICH SIR | | | Enumerated( -10..20) | In dB Note 1 |
| >>>>Pathloss | | | Enumerated( 46..158) | In dB |
| >>TDD | | | | |
| >>>Primary CCPCH info | M | | | |
| >>>Primary CCPCH RSCP | O | | | It is absent for current cell |

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

Note 2: Monitored cells consist of current cell and neighbouring cells.

## 14.10.1 RRC Initialisation Information

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| **Non RRC IEs** | | | | |
| State of RRC | M | | Enumerated (CELL_DCH, CELL_FACH,CELL_PCH, URA_PCH) | |
| State of RRC procedure | M | | Enumerated (await no RRC message, await RRC Connection Re-establishment Complete, await RB Setup Complete, await RB Reconfiguration Complete, await RB Release Complete, await Transport CH Reconfiguration Complete, await Physical CH Reconfiguration Complete, await Active Set Update Complete, await Handover Complete, others) | |
| Variable RLC parameters | M | | | |
| Security related Variable parameters | M | | | |
| Implementation specific parameters | O | | Bitstring (1..512) | |
| **RRC IEs** | | | | |
| **UE Information elements** | | | | |
| | | | | |
| U-RNTI | | | | |
| C-RNTI | | | | |
| UE radio Capability | | | | |
| Ciphering mode info | | | | |
| **Other Information elements** | | | | |
| Inter System message (inter system classmark) | | | | |
| **UTRAN Mobility Information elements** | | | | |
| URA Identifier | | | | |
| CN Information Elements | | | | |
| CN Domain Identity | | | | |
| NAS System Info | | | | |
| **Measurement Related Information elements** | | | | |
| For each ongoing measurement reporting | | | | |
| Measurement Identity Number | | | | |
| Measurement Command | | | | |
| Measurement Type | | | | |
| Measurement Reporting Mode | | | | |
| Additional Measurement Identity number | | | | |
| **CHOICE Measurement** | | | | |
| Intra-frequency | | | | |
| Intra-frequency cell info | | | | |
| Intra-frequency measurement quantity | | | | |
| Intra-frequency measurement reporting quantity | | | | |
| Reporting cell statusMaximum | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| ~~number of reporting cells~~ | | | | |
| Measurement validity | | | | |
| **CHOICE report criteria** | | | | |
| Intra-frequency measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Inter-frequency | | | | |
| Inter-frequency cell info | | | | |
| Inter-frequency measurement quantity | | | | |
| Inter-frequency measurement reporting quantity | | | | |
| Reporting cell status~~Maximum number of reporting cells~~ | | | | |
| Measurement validity | | | | |
| **CHOICE report criteria** | | | | |
| Inter-frequency measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Inter-system | | | | |
| Inter-system cell info | | | | |
| Inter-system measurement quantity | | | | |
| Inter-system measurement reporting quantity | | | | |
| Reporting cell status~~Maximum number of reporting cells~~ | | | | |
| Measurement validity | | | | |
| **CHOICE report criteria** | | | | |
| Inter-system measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Traffic Volume | | | | |
| Traffic volume measurement Object | | | | |
| Traffic volume measurement quantity | | | | |
| Traffic volume measurement reporting quantity | | | | |
| **CHOICE report criteria** | | | | |
| Traffic volume measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Quality | | | | |
| Quality measurement Object | | | | |
| Quality measurement quantity | | | | |
| Quality measurement reporting quantity | | | | |
| **CHOICE report criteria** | | | | |
| Quality measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| UE internal | | | | |
| UE internal measurement quantity | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| UE internal measurement reporting quantity | | | | |
| **CHOICE report criteria** | | | | |
| UE internal measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| **Radio Bearer Information Elements** | | | | |
| For each Radio Bearer | | | | |
| RB Identity | | | | |
| RLC Info | | | | |
| RB mapping info | | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS (UL DCHs) | | | | |
| TFCS (DL DCHs) | | | | |
| TFC subset (UL DCHs) | | | | |
| TFCS (USCHs) | | | | |
| TFCS (DSCHs) | | | | |
| TFC subset (USCHs) | | | | |
| **For each uplink transport channel** | | | | |
| Transport channel identity | | | | |
| TFS | | | | |
| **DRAC Information** | | | | |
| Dynamic Control | | | | |
| Transmission Time validity | | | | |
| Time duration before retry | | | | |
| Silent Period duration before release | | | | |
| **For each downlink transport channel** | | | | |
| Transport channel identity | | | | |
| TFS | | | | |
| **Physical Channel Information Elements** | | | | |
| Frequency info | | | | |
| Uplink DPCH power control info | | | | |
| SSDT Indicator | | | | FFS |
| CPCH SET info | | | | |
| Gated Transmission Control info | | | | FFS |
| Default DPCH Offset value | | | | |
| **Uplink radio resource information** | | | | |
| **Choice channel requirement** | | | | |
| Uplink DPCH info | | | | |
| PUSCH info | | | | |
| PRACH info (for RACH) | | | | |
| PRACH info (for FAUSCH) | | | | |
| **Downlink Radio Resource Information** | | | | |
| Downlink DPCH power control info | | | | |
| Downlink DPCH compressed mode info | | | | |
| **Downlink Information** | | | | |
| Primary CCPCH Info | | | | |
| Downlink DPCH info | | | | |
| PDSCH info | | | | |
| Secondary CCPCH info | | | | |

# CHANGE REQUEST

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

| | | |
|---|---|---|
| **25.331** CR **174** | Current Version: | **3.1.0** |

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

For submission to:     **TSG-RAN #7**       for approval **X**            strategic ☐    *(for SMG*
*list expected approval meeting # here*          for information ☐       non-strategic ☐   *use only)*
            *↑*

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

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

| | | | |
|---|---|---|---|
| **Source:** | TSG-RAN WG2 | **Date:** | 17th Jan 2000 |

| | |
|---|---|
| **Subject:** | Additional IE for RB Release |

| | |
|---|---|
| **Work item:** | |

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

| | |
|---|---|
| **Reason for change:** | In RAN WG2#9, it was decided that Hard Handover is initiated by using RB control message. Especially in partial relocation case, RB Release message is used. But in the current specification, there is no power control info. Therefore it is proposed to add this IE. |

| | |
|---|---|
| **Clauses affected:** | 10.1.25 |

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

| | |
|---|---|
| **Other comments:** | |

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

## 10.1.25  RADIO BEARER RELEASE

NOTE:    Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Integrity check info | O | | | |
| Integrity protection mode info | O | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| New U-RNTI | O | | U-RNTI | |
| UTRAN DRX cycle length coefficient | O | | DRX cycle length coefficient | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | O | | | |
| PLMN identity | O | | | (Note1) |
| CN common GSM-MAP NAS system information | O | | GSM-MAP NAS system information | |
| CN domain related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| >CN domain identity | O | | | (Note1) |
| CN domain specific GSM-MAP NAS system info | O | | GSM-MAP NAS system information | (Note1) |
| **RB information elements** | | | | |
| RB information to release | | 1 to <MaxRBcount> | | |
| >RB identity | M | | | |
| RB information to be affected | | 0 to <MaxOtherRBcount> | | |
| >RB identity | M | | | |
| >RB mapping info | O | | | |
| **TrCH Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| TFCS | O | | | For SCCPCH TFCS |
| CHOICE *mode* | | | | |
| >TDD | | | | |
| >>TFCS Identity | O | | | Uplink TFCS |
| >>TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for  TFC subset in uplink |
| **Uplink transport channels** | | | | |
| Deleted TrCH information Transport channel identity | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddFFST | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| | | rCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>CPCH set ID | O | | | |
| >>DRAC information | C DRAC | 1 to <MaxReconAddFFSTrCH> | | |
| >>Dynamic Control | | | | |
| >>Transmission time validity | | | | |
| >>Time duration before retry | | | | |
| >>Silent period duration before release | | | | |
| **Downlink transport channels** | | | | |
| Deleted TrCH information | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | Editor: this limit should probably also be MaxReconAddFFSTrCH |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| **PhyCH  information elements** | | | | |
| Frequency info | O | | | |
| **Uplink radio resources** | | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| CHOICE channel requirement | O | | | |
| >Uplink DPCH info | | | | |
| >PRACH info (for RACH) | | | | |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>PRACH info (for FAUSCH) | | | | |
| **Downlink radio resources** | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink information per radio link | | 0 to <Max RLcount> | | Send downlink information for each radio link to be set-up |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>TPC combination index | C-ifDPCH | | | |
| >>>Primary CPICH info | | | | |
| >>TDD | | | | |
| >>>Primary CCPCH info | O | | | |
| >Downlink DPCH info | O | | | |
| >Secondary CCPCH info | O | | | |
| >References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 3 |
| >Scheduling information | | | | Note 3 |
| Choice *mode* | | | | |
| >FDD | | | | |
| >>SSDT indicator | | | | |
| >>CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| >>Gated Transmission Control info | O, FFS | | | Note 3 |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >>PDSCH with SHO DCH Info | O | | | |
| >>PDSCH code mapping | O | | | |
| >TDD | | | | |
| >>Uplink Timing Advance | O | | | |

| Condition | Explanation |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *DRAC* | These information elements are only sent for transport channels which use the DRAC procedure |
| *IfDPCH* | This IE is only sent if IE "Downlink DPCH info" is present |

| Multi Bound | Explanation |
|---|---|
| *MaxRLcount* | Maximum number of radio links |
| *MaxDelRBcount* | Maximum number of RBs to be released |
| *MaxOtherRBcount* | Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure |
| *MaxDelTrCHcount* | Maximum number of Transport CHannels to be removed |
| *MaxSysInfoFACHCount* | Maximum number of references to system information blocks on the FACH |
| *MaxReconAddFFSTrCH* | Maximum number of transport channels to add and reconfigure |

| CHOICE *channel requirement* | Condition under which the given *channel requirement* is chosen |
|---|---|
| Uplink DPCH info | |
| PRACH Info (for RACH) | |
| PRACH info (for FAUSCH) | |

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

# CHANGE REQUEST

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

| | | | | |
|---|---|---|---|---|
| **25.331** | CR | **175** | Current Version: | **3.1.0** |

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

For submission to:   **TSG-RAN #7**    for approval   **X**      Strategic     *(for SMG*
*list expected approval meeting # here*    for information        non-strategic     *use only)*
↑

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

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

| | | | |
|---|---|---|---|
| **Source:** | TSG-RAN WG2 | **Date:** | 17th Jan 2000 |

| | |
|---|---|
| **Subject:** | Available SF in PRACH info |

| | |
|---|---|
| **Work item:** | |

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

**Release:**   Phase 2 ☐
           Release 96 ☐
           Release 97 ☐
           Release 98 ☐
           Release 99   **X**
           Release 00 ☐

| | |
|---|---|
| **Reason for change:** | "Available SF" is modified since it is sufficient enough to set one smallest SF to covers larger SFs as same as in DPDCH case. The value range of "Scrambling code word" is corrected according to R1 specification. |

| | |
|---|---|
| **Clauses affected:** | 10.2.6.23 |

**Other specs Affected:**

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

| | |
|---|---|
| **Other comments:** | |

help.doc

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## 10.2.6.23    PRACH info (for RACH)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Persistence factor N | M | | | 0-1 step ffs |
| CHOICE *mode* | | | | |
| >FDD | | | | |
| >>Available Signature | | 1 to <maxSigNum> | | |
| >>>Signature | M | | Enumerated (0,1.2…..15) | |
| >>Available SF | | ~~1 to <maxSf>~~ | Enumerated (32,64,128,256 chip/sym) | |
| ~~>>>SF~~ | ~~M~~ | | ~~Enumerated (32,64,128,256 chip/sym)~~ | |
| >>Scrambling code word number | M | | Enumerated (0,1.2…..2^24-1~~255~~) | |
| >>Puncturing Limit | M | | Enumerated( 0.40, 0.44..1) | Granularity of 0.04 |
| >>Available Sub Channel number | | 1 to < maxSubChNum > | | |
| >>>Sub Channel number | M | | Enumerated (0,1,2,….11) | |
| >>>RACH message length | M | | Enumerated (10 ms, 20 ms) | The 20 ms length is only used for minimum RACH payload (ffs) |
| >TDD | | | | |
| >>Timeslot | M | | Integer (0...14) | |
| >>Channelisation code | M | | Enumerated ((8/1)...(8/8), (16/1)...(16/16) | 1:1 mapping between spreading code and midamble shift |
| >>Max PRACH Midamble Shifts | O | | Enumerated (4,8) | The maximum number of midamble shifts for the PRACH: 4 or 8. If no number is specified the default value 8 applies. |
| >>PRACH Midamble | O | | Enumerated (1,2) | Direct or inverted midamble |

| Range Bound | Explanation |
|---|---|
| *MaxSubChNum* | Maximum number of available sub channels = 12 |
| *MaxSigNum* | Maximum number of available signatures = 16 |
| *MaxSf* | Maximum number of available SF = 4 |

**3GPP TSG-RAN Meeting #7**
**Madrid, Spain, 13 - 15 March 2000**

*Document*  **R2-000203**
*e.g. for 3GPP use the format TP-99xxx*
*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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| **25.331** | CR | **176** | Current Version: | 3.1.0 |
|---|---|---|---|---|

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

For submission to:  **TSG-RAN #7**       for approval **X**       strategic ☐  *(for SMG*
*list expected approval meeting # here*       for information ☐       non-strategic ☐  *use only)*
*↑*

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

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

| **Source:** | TSG-RAN WG2 | | **Date:** | 17th Jan 2000 |
|---|---|---|---|---|

**Subject:**  Traffic volume measurement event

**Work item:**

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

**Reason for change:**  Traffic volume measurement 4a can be triggered when RLC buffer payload becomes smaller than the value defined in IE "lower threshold".  We propose to make it a separate event 4b, to make it in line with other measurement events.

**Clauses affected:**   10.2.7.37, 10.2.7.40, 14.2.4.X

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

**Other comments:**

help.doc

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

## 10.2.7.37    Traffic volume measurement event results

Contains the event result for a traffic volume measurement.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Transport Channel ID | M | | Enumerated( 1..64) | |
| Event ~~type~~ID | O | | Enumerated( ~~Overflow, Underflow~~4a , 4b) | |

## 10.2.7.40 Traffic volume measurement reporting criteria

Contains the measurement reporting criteria information for a traffic volume measurement.

Event 4a: RLC buffer payload exceeds an absolute threshold

Event 4b: RLC buffer payload becomes smaller than an absolute threshold

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Parameters sent for each transport channel | | 10 to <maxTrCH count> | | |
| >Transport Channel ID | M | | Enumerated( 1..64) | |
| **>Parameters required for each Event** | | 1 to 2 | | |
| >>Event ID | M | | Enumerated( 4a, 4b) | |
| >>Upper Reporting Threshold | M | | Enumerated( 8,16,32,64,1 28,256,512,1 024,1536,20 48,3072,409 6,6144,8192 ) | Threshold in bytes |
| >Lower Threshold | O | | Enumerated( 8,16,32,64,1 28,256,512,1 024,1536,20 48,3072,409 6,6144,8192 ) | Threshold in bytes |
| Time to trigger | M | | Enumerated( 0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000) | Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms |
| Pending time after trigger | M | | Enumerated( 0.25, 0.5, 1, 2, 4, 8, 16) | Indicates the period of time during which it is forbidden to send any new measurement reports with the same measurement ID even if the triggering condition is fulfilled again. Time in seconds |
| Tx interruption after trigger | M | | Enumerated( 0.25, 0.5, 1, 2, 4, 8, 16) | Indicates whether or not the UE shall block DTCH transmissions on the RACH after a measurement report is triggered. Time in seconds |
| Amount of reporting | M | | Enumerated( 1, 2, 4, 8, 16, 32, 64, Infinity) | Measurement is "released" after the indicated amount of reporting from the UE itself. |
| Reporting interval | M | | Enumerated( 0, 0.25, 0.5, 1, 2, 4, 8, 16) | Indicates the interval of periodical report during the event is in the detected state. Interval in seconds. |

| Range Bound | Explanation |
|---|---|
| *MaxTrCHcount* | Maximum number of transport channels = 64 |

## 14.4.2.X          Reporting event 4 B: RLC buffer payload becomes smaller than an absolute threshold
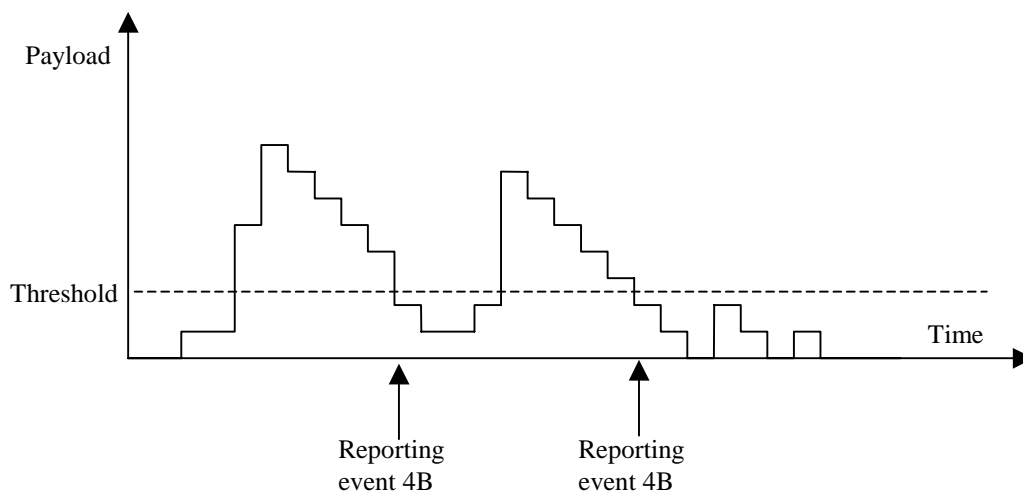


**Figure X: Event triggered report when RLC buffer payload becomes smaller than certain threshold**

If the monitored payload becomes smaller than an absolute threshold, this is an event that could trigger a report. The corresponding report contains at least which transport channel triggered the report.

# CHANGE REQUEST

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| **25.331** | CR | **177** | Current Version: | 3.1.0 |
|---|---|---|---|---|

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

For submission to:     TSG-RAN #7          for approval     **X**          Strategic          *(for SMG*
*list expected approval meeting # here*          for information          non-strategic          *use only)*
*↑*

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

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

**Source:**          TSG-RAN WG2          **Date:**  17th Jan 2000

**Subject:**          Report of multiple cells on an event result

**Work item:**

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

**Reason for change:**          There maybe some cases that the UE detects more than one cell and reports them simultaneously in one event result such as in street corner effect case. Therefore it proposes to make modification in the IE "event results".

**Clauses affected:**          10.2.7.3, 10.2.7.14, 10.2.7.9

| **Other specs Affected:** | | | | |
|---|---|---|---|---|
| | Other 3G core specifications | ☐ | → List of CRs: | |
| | Other GSM core specifications | ☐ | → List of CRs: | |
| | MS test specifications | ☐ | → List of CRs: | |
| | BSS test specifications | ☐ | → List of CRs: | |
| | O&M specifications | ☐ | → List of CRs: | |

**Other comments:**

help.doc

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

### 10.2.7.3    Inter-frequency measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-frequency measurements.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Event ID | M | | | |
| Frequency info | | 1 to <maxFreqCount> | | |
| >Choice mode | | | | |
| >>FDD | | | | |
| >>>Primary CPICH info | O | 1 to <maxCellCount> | | |
| >>TDD | | | | |
| >>>Primary CCPCH info | O | 1 to <maxCellCount> | | |

| Range Bound | Explanation |
|---|---|
| MaxFreqCount | Maximum number of frequencies to report. |
| MaxCellCount | Maximum number of cells to report within a frequency. |

### 10.2.7.14    Intra-frequency measurement event results

This IE contains the measurement event results that are reported to UTRAN for intra-frequency measurements.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Event ID | M | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>Primary CPICH info | O | 1 to <maxCellCount> | | |
| >TDD | | | | |
| >>Primary CCPCH info | O | 1 to <maxCellCount> | | |

| Range Bound | Explanation |
|---|---|
| MaxCellCount | Maximum number of cells to report. |

### 10.2.7.9    Inter-system measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-system measurements.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Event ID | M | | | |
| Cells to report | | 1 to <maxCellCount> | | |
| >>Frequency | M | | | |
| >>BSIC | M | | | |

| Range Bound | Explanation |
|---|---|
| MaxCellCount | Maximum number of cells to report. |

| Condition | Explanation |
|---|---|
| *GSM* | This information element is only sent when the system being measured is a GSM system |

# CHANGE REQUEST

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

| | | | | | |
|---|---|---|---|---|---|
| **25.331** | CR | **178** | | Current Version: | 3.1.0 |

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

| For submission to: | TSG-RAN #7 | for approval | **X** | strategic | | *(for SMG* |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here* ↑ | | for information | | non-strategic | | *use only)* |

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

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

| **Source:** | TSG-RAN WG2 | **Date:** | 19ʰ Jan 2000 |
|---|---|---|---|

**Subject:**    Editorial modification on Direct Transfer

**Work item:**

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

| **Reason for change:** | Editorial mistakes are corrected. SAPI=0 corresponds to "high priority" and mapped to RB2 and SAPI=3 corresponds to "low priority" and mapped to RB3, if available. |
|---|---|

**Clauses affected:**    8.1.9.2, 8.1.10.2

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

**Other comments:**

help.doc

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

## 8.1.9.2 Initiation of downlink direct transfer procedure in the UTRAN

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

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

- If the non-access stratum indicates "high priority" for this message, RB 2 should be selected. Specifically, for a GSM-MAP based CN, RB 2 should be selected when "SAPI 0" is requested. ~~RB 2 should also be selected when RB 3 is not available.~~

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

## 8.1.10.2 Initiation of uplink direct transfer procedure in the UE

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

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

- If the non-access stratum indicates "high priority" for this message, RB 2 shall be selected. Specifically, for a GSM-MAP based CN, RB 2 shall be selected when "SAPI 0" is requested. ~~RB 2 shall also be selected when RB 3 is not available.~~

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

## CHANGE REQUEST

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| | | | | | | |
|---|---|---|---|---|---|---|
| **25.331** | CR | **179** | | Current Version: | **3.1.0** | |

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

| For submission to: | TSG-RAN #7 | for approval | **X** | strategic | | *(for SMG* |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here* ↑ | | for information | | non-strategic | | *use only)* |

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

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

| **Source:** | TSG-RAN WG2 | | **Date:** | 2000-01-20 |
|---|---|---|---|---|

| **Subject:** | Correction of the security mode control procedure |
|---|---|

| **Work item:** | |
|---|---|

**Category:**    F Correction

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

| **Reason for change:** | The procedure is not in-line with the agreements made on the RAN WG2#9 meeting that were based on R2-99k58. The following corrections are proposed: |
|---|---|
| | 1. Also the signalling radio bearer carrying RRC signalling is suspended during the procedure. |
| | 2. The RRC messages of the security mode control procedure are transmitted using the old ciphering configuration and nothing else. |
| | 3. Means for synchronisation of change of cipher key and stop of ciphering is needed. The same scheme as when ciphering is started is used. |
| | 4. A few editorial corrections. |

| **Clauses affected:** | 8.1.12, 8.5.7.3.4, 10.2.3.7 |
|---|---|

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

| **Other comments:** | |
|---|---|

help.doc

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

## 8.1.12    Security mode control
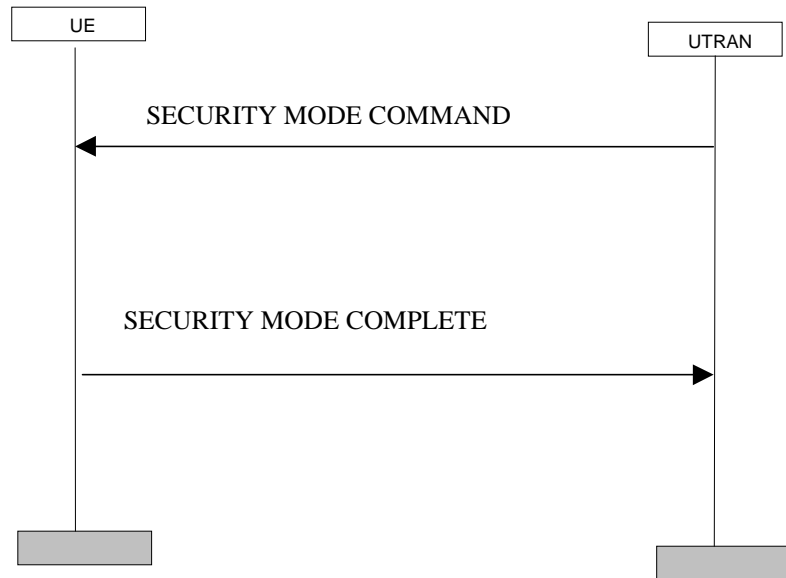


**Figure 16: Security mode control procedure**

### 8.1.12.1      General

The purpose of this procedure is to trigger the start of ciphering or to command the change of the cipher key, both for the signalling link and for any of the radio bearers.

It is also used to start integrity protection or to restart integrity protection for uplink and downlink signalling.

### 8.1.12.2      Initiation

Prior to UTRAN initiates a security mode control procedure for control of ciphering and if the UE has radio bearers using RLC-AM or RLC-UM, UTRAN should suspends all radio bearers belonging to the CN domain for which the security mode control procedure is initiated. Also the signalling radio bearers, except the one used for RRC messages using RLC AM, used by the security mode procedure itself, are suspended. For each suspended radio bearer, UTRAN includes the current RLC send sequence number in the IE "Radio bearer downlink activation time info" in the IE "Ciphering mode info".

Further, if the UE has radio bearers using RLC-TM, UTRAN sets the IE "Activation time for DPCH" in the IE "Ciphering mode info" to the CFN at which the new ciphering configuration shall become active.

To start or reconfigure ciphering and/or integrity protection, the UTRAN sends a SECURITY MODE COMMAND message on the downlink DCCH in AM RLC using the present ciphering and/or integrity protection configuration.

When the transmission of the SECURITY MODE COMMAND has been confirmed by RLC, and if the security mode control procedure is used to control ciphering, UTRAN starts to cipher the messages on the signalling radio bearer used for RRC messages using RLC AM, with the new ciphering configurationshould resume all the suspended radio bearers using RLC-AM or RLC-UM, that use the old ciphering configuration for the transmission of RLC PDUs with RLC sequence number less than the RLC sequence number indicated in the IE "Radio bearer downlink ciphering activation time info" sent to the UE, and the new ciphering configuration for the transmission of RLC PDUs with RLC sequence number greater than or equal to the RLC sequence number indicated in the IE "Radio bearer downlink ciphering activation time info" sent to the UE..

### 8.1.12.3      Reception of SECURITY MODE COMMAND message by the UE

Upon reception of the SECURITY MODE COMMAND message, the UE shall perform the actions for the received information elements according to 8.5.7.

If the IE "ciphering capabilities" is the same as indicated by variable UE_CAPABILITY_TRANSFERRED, the UE shall suspend (from sequence numbers on, which are greater than or equal to each radio bearer's downlink ciphering

activation time) all radio bearers using RLC-AM or RLC-UM that belongs to the CN domain indicated in the IE " CN domain identity", received in the message SECURITY MODE COMMAND. The UE shall also suspend all the signalling radio bearers. When the radio bearers have been suspended, the UE shall send a SECURITY MODE COMPLETE message on the uplink DCCH in AM RLC, using ~~any new~~the old ciphering and/or the new integrity protection configuration.

For each radio bearer mapped on RLC-UM or RLC-AM, for which the ciphering configuration was changed, the UE shall include the current value of the RLC send state variable, VT(S), in the IE "Radio bearer uplink ciphering activation time info".

When the transmission of the SECURITY MODE COMPLETE message has been confirmed by RLC, the UE shall resume data transmission on any suspended radio bearers mapped on RLC-UM or RLC-AM and the procedure ends.

### 8.1.12.4 Cipher activation time too short

If the time specified by the IE "Activation time for DPCH" or the IE "Radio bearer downlink ciphering activation time info" contained in the IE "Ciphering mode info" has elapsed, the UE shall switch immediately to the new cipher configuration.

### 8.1.12.5 Unsuccessful verification of IE 'UE ciphering capabilities'

If the received IE 'UE ciphering capabilities' is not the same as indicated by variable UE_CAPABILITY_TRANSFERRED, the UE shall release all its radio resources, enter idle mode and the procedure ends on the UE side. Actions the UE shall perform when entering idle mode are given in subclause 8.5.2.

### 8.1.12.6 Reception of SECURITY MODE COMPLETE message by the UTRAN

UTRAN should apply integrity protection on the received SECURITY MODE COMPLETE message and all subsequent messages. When UTRAN has received a SECURITY MODE COMPLETE message and the integrity protection has successfully been applied, UTRAN shall use

for radio bearers using RLC-AM or RLC-UM,

- the old ciphering configuration for received RLC PDUs with RLC sequence number less than the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" sent by the UE.

- the new ciphering configuration for received RLC PDUs with RLC sequence number greater than or equal to the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" sent by the UE

for radio bearers using RLC-TM,

- the new ciphering configuration for the received RLC PDUs at the CFN as indicated in the IE "Activation time for DPCH" in the IE "Ciphering mode info".

and the procedure ends.

### 8.5.7.3.4          Ciphering mode info

If the IE "Ciphering mode info" is present, the UE shall check the IE "Ciphering mode command" as part of the IE "Ciphering mode info", and perform the following:

1.  If IE "Ciphering mode command" has the value "start/restart", the UE shall

    1.1 Start or restart ciphering, using the ciphering algorithm (UEA [TS 33.102]) indicated by the IE "Ciphering algorithm", ~~if that IE is present. If the IE "Ciphering algorithm" is not present, the current algorithm shall be used~~ as part of the new ciphering configuration.

    1.2 If a new ciphering key is available, the new ciphering key shall be used at a restart as part of the new ciphering configuration and the ciphering hyperframe number shall be set to zero.

2.  If the IE "Ciphering mode command" has the value "modify", the UE shall

    2.1 Use the ciphering algorithm (UEA [TS 33.102]) indicated by the IE "Ciphering algorithm" contained in the IE "Ciphering mode info" as part of the new ciphering configuration.

3.  If the IE "Ciphering mode command" has the value "stop", the UE shall

    3.1 Stop using ciphering as the new ciphering configuration.

4.  In all cases, the new ciphering configuration shall be applied using the synchronisation procedure as follows:

    ~~1.3~~4.1 If the IE "Activation time for DPCH" is present in the IE "Ciphering mode info", the UE shall apply the new configuration at that time for radio bearers using RLC-TM.

    ~~1.4~~4.2 If the IE "Radio bearer downlink ciphering activation time info" is present in the IE "Ciphering mode info", the UE shall apply the following procedure for each radio bearer using RLC-AM and RLC-UM indicated by the IE "RB identity":

    ~~1.4.1~~4.2.1 Suspend data transmission on the radio bearer

    ~~1.4.2~~4.2.2 Store the current RLC send state variable, VT(S), for that radio bearer

    ~~1.4.3~~4.2.3 When the data transmission of that radio bearer is resumed, the UE shall switch to the new ciphering configuration according to the following:

    ~~1.4.3.1~~4.2.3.1 Use the old ciphering configuration for the transmitted ~~and~~ resp. received RLC PDUs with RLC sequence number less than the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN resp. in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN.

    ~~1.4.3.2~~4.2.3.2 Use the new ciphering configuration ~~shall be used~~ for the transmitted ~~and~~ resp. received RLC PDUs with RLC sequence number greater than or equal to the RLC sequence number indicated in the ~~IE~~ IE "Radio bearer uplink ciphering activation time info" sent to UTRAN resp. in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN.

    ~~1.4.3.3~~4.2.3.3 For a radio bearer using RLC-AM, when the RLC sequence number indicated in the IE "Radio bearer downlink ciphering activation time info" is not included in the RLC transmission window, the UE may release the old ciphering configuration for that radio bearer.

    ~~1.5 For the signalling radio bearer for RRC signalling using RLC-AM, the UE shall apply the new ciphering configuration directly.~~

~~2.  If IE "Ciphering mode command" has the value "modify", the UE shall change to the ciphering algorithm (UEA [TS 33.102]) indicated by the IE "Ciphering algorithm" contained in the IE "Ciphering mode info".~~

~~3.  If the IE "Ciphering mode command" has the value "stop", the UE shall stop using ciphering.~~

If the IE "Ciphering mode info" is not present, the UE shall not change the ciphering configuration.

## 10.2.3.7     Ciphering mode info

This information element contains the ciphering specific security mode control information.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Ciphering mode command | M | | Enumerated (start/restart, modify, stop) | |
| Ciphering algorithm | C-*notStop* | | UEA [TS 33.102] | |
| Ciphering activation time information | C-*start/restart* M | | | |
| >Activation time for DPCH | O | | Activation time | Used for radio bearers mapped on RLC-TM |
| >Radio bearer downlink ciphering activation time info | O | | Radio bearer activation time info | Used for radio bearers mapped on RLC-AM or RLC-UM |

| Condition | Explanation |
|---|---|
| *nNotStop* | The IE is present only when the IE "Ciphering mode command" has the values "start/restart" or "modify". |

| 3GPP TSG-RAN Meeting #7 | *Document* | **R2-000286** |
|---|---|---|
| **Madrid, Spain, 13 - 15 March 2000** | | *e.g. for 3GPP use the format TP-99xxx or for SMG, use the format P-99-xxx* |

# CHANGE REQUEST

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| | **25.331** | CR | **180r1** | Current Version: | 3.1.0 |
|---|---|---|---|---|---|

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

| For submission to: | TSG-RAN #7 | For approval | **X** | strategic | | *(for SMG* |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here* ↑ | | for information | | non-strategic | | *use only)* |

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

| **Source:** | TSG-RAN WG2 | **Date:** | 17 Jan 2000 |
|---|---|---|---|

| **Subject:** | Maximum Calculated Transport Format Combination |
|---|---|

| **Work item:** | |
|---|---|

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

**Reason for change:**

In section 10.2.5.7 of the RRC Protocol Specification it is written that the CTFC (Calculated Transport Format Combination) can have integer values between 0 and MaxCTFC - 1, where

$$\text{MaxCTFC} = \sum_{i=1}^{I}(L_i - 1)P_i.$$ In Section 14.8 the CTFC is defined as:

$$CTFC(TFI_1, TFI_2, \ldots, TFI_I) = \sum_{i=1}^{I} TFI_i \cdot P_i \quad \text{where} \quad TFI_i \in \{0,1,2,\ldots,L_i - 1\}$$

The maximum value of CTFC is the one where all the $TFI_i = (L_i - 1)$, i.e. $\sum_{i=1}^{I}(L_i - 1)P_i$.

It is here proposed to correct section 10.2.5.7 by replacing:

- "MaxCTFC – 1" with "MaxCTFC"

- "MaxCTFC_DCH – 1" with "MaxCTFC_DCH"

- "MaxCTFC_DSCH – 1" with "MaxCTFC_DSCH".

| **Clauses affected:** | 10.2.5.7 |
|---|---|

| **Other specs affected:** | Other 3G core specifications | | → List of CRs: | |
|---|---|---|---|---|
| | Other GSM core specifications | | → List of CRs: | |
| | MS test specifications | | → List of CRs: | |

| | → List of CRs: | |
|---|---|---|
| O&M specifications | → List of CRs: | |

**Other comments:**

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

## 10.2.5.7 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats and the mapping between these allowed TFCs and the corresponding TFCI values.

For FDD, Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:

Method #1 - TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC_DSCH). The CTFC_DSCH value specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2) value'. The CTFC_DSCH value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.

Method #2 - Explicit

The mapping between TFCI(field 2) value and CTFC_DSCH is spelt out explicitly for each value of TFCI (field2).

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *DSCH* | | | | |
| >FDD without access to DSCH assigned or TDD | | | | This choice is made if the UE is not assigned any DSCH transport channels |
| >>CHOICE TFCS representation | M | | | |
| >>>Complete reconfiguration | | 1 to MaxTFCcount | | |
| >>>>CTFC | | 1 to MaxTFCcount | Integer(0..MaxCTFC-1) | The first instance of the parameter *Transport format combination* corresponds to Transport format combination 0, the second to transport format combination 1 and so on. Integer number calculated according to clause 14. |
| >>>>Gain Factor $\beta_c$ | O | | Integer (0.. 15) | For DPCCH or control part of PRACH |
| >>>>Gain Factor $\beta_d$ | O | | Integer (0..15) | For DPCCH or data part of PRACH |
| >>>Removal | | 1 to MaxDelTFCcount | | |
| >>>>TFCI | | 1 to MaxDelTFCcount | Integer(0..MaxTFCIValue) | Removal of TFCI. The integer number(s) is a reference to the transport format combinations to be removed. |
| >>>Addition | | 1 to MaxAddTFCcount | | |
| >>>>AddCTFC | | 1 to MaxAddTFCcount | Integer(0..MaxCTFC-1) | Addition of TFCI. The integer number(s) is the calculated transport format combination that is added. The new TFC(s) is inserted into the first available position(s) in the TFCI (counting from zero). |
| >>>>Gain Factor $\beta_c$ | O | | Integer (0.. 15) | For DPCCH or control part of PRACH |
| >>>>Gain Factor $\beta_d$ | O | | Integer (0..15) | For DPCCH or data part of PRACH |
| >FDD with access to DSCH | | | | This choice is made if the UE |

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| assigned | | | | is assigned one or more DSCH transport channels |
| >>Length of TFCI2 | M | | Integer (1..9) | This IE indicates the length measured in number of bits of TFCI(field2) |
| >>Transport format combination_DCH | | 1 to <MaxTFCI_1_Combs> | | The first instance of the parameter *Transport format combination_DCH* corresponds to TFCI (field 1) = 1, the second to TFCI (field 1) = 2 and so on. |
| >>>CTFC_DCH | M | | Integer(0..MaxCTFC_DCH-1) | Integer number calculated according to clause 14. The calculation of CTFC ignores any DSCH transport channels which may be assigned |
| >>Choice *Signalling method* | | | | |
| >>>TFCI range | | | | |
| >>>>TFC mapping on DSCH | | 1 to <MaxNoTFCIGroups> | | |
| >>>>>Max TFCI(field2) value | M | | Integer(1..512) | This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC_DSCH applies |
| >>>>>>CTFC_DSCH | M | | Integer(0..MaxCTFC_DSCH-1) | Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned |
| >>>Explicit | | | | |
| >>>>Transport format combination_DSCH | | 1 to <MaxTFCI_2_Combs> | | The first instance of the parameter *Transport format combination_DSCH* corresponds to TFCI (field2) = 1, the second to TFCI (field 2) = 2 and so on. |
| >>>>>CTFC_DSCH | M | | Integer(0..MaxCTFC_DSCH-1) | Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned |

| Range Bound | Explanation |
|---|---|
| *MaxCTFC* | Maximum value number of the CTFC value is calculated according to the following:<br><br>$$\sum_{i=1}^{I}(L_i-1)P_i$$<br><br>with the notation according to clause 14. |
| *MaxTFCCount* | Maximum number of Transport Format Combinations. |
| *MaxTFCValue* | The max value of the Transport Format Combinations that currently is defined for this UE. |
| *MaxAddTFCIcount* | Maximum number of Transport Format Combinations to be added. |
| *MaxDelTFCcount* | Maximum number of Transport Format Combinations to be removed. |
| *MaxTFCI_1_Combs* | Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1)) |
| *MaxTFCI_2_Combs* | Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI (field 2)) |
| *MaxNoTFCIGroups* | Maximum number of groups, each group described in |

| Range Bound | Explanation |
|---|---|
| | terms of a range of TFCI(field 2) values for which a single value of CTFC_DSCH applies |
| *MaxCTFC_DCH* | Maximum value of CTFC_DCH is calculated according to the following: $$\sum_{i=1}^{I} (L_i - 1)P_i$$ with the notation according to clause 14 where only the DCH transport channels are taken into account in the calculation. |
| *MaxCTFC_DSCH* | Maximum value of CTFC_DSCH is calculated according to the following: $$\sum_{i=1}^{I} (L_i - 1)P_i$$ with the notation according to clause 14 where only the DSCH transport channels are taken into account in the calculation.. |

# CHANGE REQUEST

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

| **25.331** | **CR** | **183** | Current Version: | **3.1.0** |

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

| For submission to: | **TSG-RAN #7** | for approval | **X** | | strategic | | *(for SMG* |
| *list expected approval meeting # here* | | for information | | | non-strategic | | *use only)* |
| *↑* | | | | | | | |

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

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

| **Source:** | TSG-RAN WG2 | | **Date:** | Jan. 17, 2000 |

| **Subject:** | Additional DPCH IEs to align TS25.331with TS25.214. |

| **Work item:** | |

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

| **Reason for change:** | • This CR contains additional information elements related to DPCH uplink power control info in order to be aligned with TS25.214. |

| **Clauses affected:** | 10.2.6.9 |

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

| **Other comments:** | |

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## 10.2.6.9    Uplink DPCH power control info

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

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| >FDD | | | | |
| >>DPCCH Power offset | M | | Enumerated( -164, -162..-6) | In dB |
| >> PCPreamble | M | | Enumerated( 0, 8) | Number of power control preamble slots |
| >>Power Control Algorithm | M | | Enumerated (algorithm 1 or algorithm 2) | Specifies algorithm to be used by UE to interpret TPC commands |
| >>TPC step size | C-algorithm1 | | Enumerated (1dB, 2dB) | |
| | | | | |
| >TDD | | | | |
| >>UL Maximum SIR | M | | Enumerated (.1dB steps) | Maximum UE transmit power limit |
| >>UL target SIR | O | | | |
| >>UL Minimum SIR | O | | | |

| Condition | Explanation |
|---|---|
| C-algorithm1 | This IE shall be present when the PC algorithm equals algorithm 1 |

# CHANGE REQUEST

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

| **25.331** | CR | **184r1** | Current Version: | 3.1.0 |

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

| For submission to: | TSG-RAN #7 | for approval | **X** | strategic | | (for SMG |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here* ↑ | | for information | | non-strategic | | *use only)* |

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

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

| **Source:** | TSG-RAN WG2 | | **Date:** | 2000-02-08 |
|---|---|---|---|---|

| **Subject:** | RB – DCH mapping |
|---|---|

| **Work item:** | |
|---|---|

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

| **Reason for change:** | This CR proposes changes in several IEs in order to simplify the setup of an asymmetric RB that has zero rate in one direction. Changes: |
|---|---|
| | 1. For  UM or TM, RLC entities need not be set up if the RB has zero rate in the corresponding direction |
| | 2. RBs with zero rate in one direction need not be mapped onto logical or transport channels in case of TM and UM. |

| **Clauses affected:** | 10.2.4 |
|---|---|

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

| **Other comments:** | |
|---|---|

help.doc

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

## 10.2.4    Radio Bearer Information elements

### 10.2.4.2    RLC info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Uplink RLC info | O | | | |
| >RLC mode | M | | enumerated (Acknowledged, Non Acknowledged, Transparent) | |
| >Transmission RLC discard | C-*NonTrOp* | | | |
| >Transmission window size | C-*ACK* | | Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072,3584,4096) | Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used. |
| >Polling info | C-*ACKOp* | | | |
| | | | | |
| Downlink RLC info | O | | | |
| >RLC mode | M | | enumerated (Acknowledged, Non Acknowledged,Transparent ) | Indicates if Acknowledged, Unacknowledged or Transparent mode RLC should be used. Note 1 |
| >In-sequence delivery | M | | Boolean | Indication if RLC should preserve the order of higher layer PDUs when these are delivered. |
| | | | | |
| >Reception RLC discard timer | C-*timer* | | Enumerated(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5) | Elapsed time in seconds before a SDU is discarded. Only present if timer based discard mode without explicit signalling is chosen. |
| >Receiving window size | C-*ACK* | | Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072,3584,4096) | Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used.(Necessity is FFS.) |
| >Downlink RLC status Info | C-*ACKOp* | | | |

| Condition | Explanation |
|---|---|
| *Timer* | This IE is only sent if timer based discard is used without explicit signalling |
| *NonTrOp* | This IE is optional for UTRAN to send if IE "RLC mode" is "acknowledged" or "non-acknowledged" |
| *AckOp* | This IE is optional for UTRAN to send if IE "RLC mode" is "acknowledged" |
| *Ack* | This IE is only present if IE "RLC mode" is "acknowledged mode" |

### 10.2.4.3    RB mapping info

A multiplexing option for each possible transport channel this RB can be multiplexed on.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Information for each multiplexing option | | 1 to <maxMux OptionsCo unt> | | |
| >Number of RLC logical channels | *C-UL-RLC-Info* | minlogCh to maxlogCh1 to 2 | | ~~1 or 2~~ Number of logical channels per RLC entity or radio bearer |
| >>Uplink transport channel type | M | | Enumerated( DCH,RACH, CPCH,USC H) | CPCH is FDD only USCH is TDD only |
| >>Transport channel identity | O | | | This is the ID of a transport channel that this RB could be mapped onto. |
| >>Logical channel identity | O | | Integer(1..16 ) | This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel. |
| >>MAC logical channel priority | O | | Enumerated( 1..8) | This is priority between a user's different RBs (or logical channels). The different priorities for this user's RBs are mapped (through the MAC's C/T MUX) to the TFC selection algorithm. Priority 1 shall have the highest priority and priority 8 the lowest. |
| >Number of RLC logical channels | *C-DL-RLC-Info* | ~~1 to 2~~minlogCh to maxlogCh | | 1 or 2 logical channels per RLC entity or radio bearer |
| >>Downlink transport channel type | M | | Enumerated( DCH,FACH, DSCH) | |
| >>Transport channel identity | O | | | |
| >>Logical channel identity | O | | Integer(1..16 ) | |

| Range Bound | Explanation |
|---|---|
| *MaxMuxOptionsCount* | Maximum number of allowed multiplexing options that can be sent is 8 |
| *minlogCh* | Minimum number of logical channels is 1 |
| *maxlogCh* | Maximum number of logical channels is 2 |

| Condition | Explanation |
|---|---|
| *UL-RLC-Info* | This IE is only sent if  Uplink  RLC Info is present |
| *DL-RLC-info* | This IE is only sent if  Downlink RLC Info is present |

| 3GPP TSG-RAN Meeting #7 | Document | **RP-000624** |
|---|---|---|

**Madrid, Spain; 13-15 Mar 2000**

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

# CHANGE REQUEST

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| **25.331** | CR | **188r1** | Current Version: | 3.1.0 |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN #7 | for approval | **X** | strategic | | *(for SMG* |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | *use only)* |

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

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

| **Source:** | TSG-RAN WG2 | **Date:** | 28 Feb 2000 |
|---|---|---|---|

| **Subject:** | Modifications related to FDD mode DSCH |
|---|---|

| **Work item:** | |
|---|---|

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

| **Reason for change:** | • Inclusion of DSCH related IE's in 'RRC connection re-establishment' and 'RRC initialisation' messages<br>• Modification to PDSCH code mapping IE to permit addition and deletion of individual rows in the mapping table and to support multi-code transmission on the DSCH. |
|---|---|

| **Clauses affected:** | 8.2.2.4, 8.5.7.6.8, 10.1.33, 10.2.6.17, 10.2.6.19, 10.2.6.38, 14.10.1 |
|---|---|

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

| **Other comments:** | Original version CR 188 is contained in R2-000347 |
|---|---|

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## 8.2.2.4    Reception of an RADIO BEARER RECONFIGURATION message by the UE in CELL_FACH state

Upon reception of a RADIO BEARER RECONFIGURATION message in CELL_FACH state, the UE shall perform actions specified below.

The UE shall store the received physical channel configuration and the activation time in the variable ORDERED_CONFIG.

The UE shall act upon all received information elements as specified in 8.5.7, unless specified otherwise in the following.

The UE shall

-         For each reconfigured radio bearer or signalling link, use the multiplexing option applicable for the transport channels used according to the IE "RB mapping info"

-         Configure MAC multiplexing if that is needed in order to use said transport channel(s).

-         Use MAC logical channel priority when selecting TFC in MAC.

-         Suspend or resume uplink transmission for each radio bearer, as indicated by the IE "RB suspend/resume".

If the IE "New C-RNTI" is included, the UE shall

-         Use that C-RNTI when using common transport channels of type RACH, FACH and CPCH in the current cell.

If neither the IE "PRACH info" nor the IE "Uplink DPCH info" is included, the UE shall

-         Let the physical channel of type PRACH that is given in system information be the default in uplink

If neither the IE "Secondary CCPCH info" nor the IE "Downlink DPCH info" is included, the UE shall

-         Start to receive the physical channel of type Secondary CCPCH that is given in system information.

If the IE 'PDSCH code mapping' is included but the IE 'PDSCH with SHO DCH Info' is not included then the UE shall act upon the 'PDSCH code mapping' IE as specified in Section 8.5.7 and:

-         Infer that the PDSCH will be transmitted from the BS from which the downlink DPCH is transmitted (there being only one link in the active set).

-         ~~Start to receive the physical channel of type Secondary CCPCH that is given in system information.~~

The UE shall use the transport channel(s) applicable for the physical channel types that is used. If neither the IE "TFS" is included or previously stored in the UE for that transport channel(s), the UE shall

-         Use the TFS given in system information

If none of the TFS stored is compatible with the physical channel, the UE shall

-         Delete stored TFS and use the TFS given in system information

The UE shall enter a state according to 8.5.8.

The UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the RADIO BEARER RECONFIGURATION COMPLETE message has been confirmed by RLC, the UE shall clear the variable ORDERED_CONFIG and the procedure ends.

### 8.5.7.6.8    PDSCH with SHO DCH Info (FDD only)

If the IE 'PDSCH with SHO DCH Info' is included, the UE shall

- Configure itself such that when an allocation on the DSCH is made it will receive the PDSCH from the specified BS within the active set.

and in cases where the TFCI for the user in question has a 'hard' split (meaning that TFCI(field 1) and TFCI (field 2) have their own individual block coding):

- Configure the Layer 1 to only soft combine the DPCCH TFCI(field 2) of the radio links within the associated DCH active set which are specified.

- Infer that the set of radio links for which TFCI (field 2) should be soft combined will include all radio links within the active set if the IE 'TFCI combining set' is not included and the sending of the message in which the IE 'PDSCH with SHO DCH Info' is being used will result in a transport channel switch from a state in which the DSCH transport channel was not available to a state in which it is available.

## 10.1.33　RRC CONNECTION RE-ESTABLISHMENT

NOTE:　Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Integrity check info | O | | | |
| New U-RNTI | O | | | |
| New C-RNTI | O | | | |
| Activation time | O | | | |
| Re-establishment timer | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note1) |
| CN common GSM-MAP NAS system information | O | | GSM-MAP NAS system information | |
| CN domain related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| >CN domain identity | O | | GSM-MAP NAS system information | (Note1) |
| >CN domain specific GSM-MAP NAS system info | O | | | (Note1) |
| NAS binding info | C-RBsetup | | | |
| CN domain identity | C-RBsetup | | | |
| RB information to setup | | 0 to <MaxSetupRBcount> | | |
| >RB identity | M | | | |
| >CHOICE *RLC info type* | M | | | For the first release this choice has only one possible value. This choice type may be extended in future releases. |
| >>RLC info | | | | |
| >RB mapping info | M | | | |
| RB information to release | | 0 to <MaxRetRBcount> | | |
| >RB identity | M | | | |
| RB information to reconfigure | | 0 to <MaxReconRBcount> | | |
| >RB identity | M | | | |
| >CHOICE *RLC info type* | O | | | |
| >>RLC info | | | | FFS |
| >>Signalling radio bearer type | | | | |
| >RB mapping info | O | | | |
| >RB suspend/resume | O | | | Not applicable to the signalling bearer. |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | For uplink  TFCS |
| TFCS | O | | | For downlink TFCS |
| TFCS | O | | | For SCCPCH TFCS |
| CHOICE *mode* | | | | |
| >TDD | | | | |
| >>TFCS Identity | O | | | Uplink TFCS |
| >>TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | For TFC subset in uplink |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Uplink transport channels | | | | |
| Deleted TrCH information | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>CPCH set ID | O | | | |
| >>DRAC information | C DRAC | 1 to <MaxReconAddTrCH> | | |
| >>>Dynamic Control | | | | |
| >>>Transmission time validity | | | | |
| >>>Time duration before retry | | | | |
| >>>Silent period duration before release | | | | |
| Downlink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >>Transport channel identity | M | | | |
| >>TFS | M | | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| **Uplink radio resources** | | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| **CHOICE channel requirement** | O | | | |
| >Uplink DPCH info | | | | |
| >PRACH info (for RACH) | | | | |
| **Downlink radio resources** | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink information per radio link | | 0 to <Max Rlcount> | | Send downlink information for each radio link to be set-up |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>TPC combination index | C-ifDPCH | | | |
| >>>Primary CPICH info | | | | |
| >>TDD | | | | |
| >>>Primary CCPCH info | O | | | |
| >Downlink DPCH info | O | | | |
| >Secondary CCPCH info | O | | | |
| CHOICE *mode* | | | | |
| >FDD | | | | |
| >>PDSCH with SHO DCH Info | O | | | |
| >>PDSCH code mapping | O | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >>SSDT indicator | O | | | |
| >>CPCH SET info | O | | | UL/DL radio resource for CPCH control (Note3) |
| >>Default DPCH Offset Value | O | | | |
| >>Downlink DPCH compressed mode info | O | | | |
| >TDD | | | | |
| >>Uplink Timing Advance | O | | | |
| >>PUSCH power control info | O | | | |

NOTE 1:   Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3:   How to map UL and DL radio resource in the message is FFS.

| Condition | Explanation |
|---|---|
| *DRAC* | These information elements are only sent for transport channels which use the DRAC procedure |
| *RBsetup* | This information element is only sent when RB information to setup exists |
| *IfDPCH* | This IE is only sent if IE "Downlink DPCH info" is present |

| CHOICE channel requirement | Condition under which the given channel requirement is chosen |
|---|---|
| Uplink DPCH info | |
| PRACH info (for RACH) | |

| CHOICE RLC info type | Condition under which the given RLC info type is chosen |
|---|---|
| RLC info | Allowed when the value of IE "RB identity" is between 0 and 31, inclusive |
| Signalling radio bearer type | |

| Multi Bound | Explanation |
|---|---|
| MaxNoCN domains | Maximum number of CN domains |
| MaxSetupRBcount | Maximum number of RBs to be setup |
| MaxRelRBcount | Maximum number of RBs to be released |
| MaxReconRBcount | Maximum number of RBs to be reconfigured |
| MaxDelTrCHcount | Maximum number of Transport CHannels to be removed |
| MaxReconAddTrCH | Maximum number of transport channels to add and reconfigure |
| MaxRLcount | Maximum number of radio links |

### 10.2.6.17 PDSCH code mapping (FDD only)

This IE indicates the association between each possible value of TFCI(field 2) and the corresponding PDSCH channelisation code(s). There are three fundamentally different ways that the UTRAN must choose between in order to signal the mapping information, these are described below. The signalling capacity consumed by the different methods will vary depending on the way in which the UTRAN configures usage of the DSCH. A fourth option is also provided which allows the UTRAN to replace individual entries in the TFCI(field 2) to PDSCH code mapping table with new PDSCH code values.In each case the location of the PDSCH code tree root is signalled. A given PDSCH channelisation code within the PDSCH code tree is then identified by spreading factor, SF$_\alpha$ and code number (0..(SF$_\alpha$/SF$_{root}$)-1), where SF$_{root}$ is the SF of the root of the PDSCH code sub tree.

Method #1 - Using code range

The mapping is described in terms of a number of groups, each group associated with a given spreading factor. The UE maps TFCI(field2) values to PDSCH codes in the following way. The PDSCH code used for TFCI(field 2) = 01 , is given by the SF and code number = 'PDSCH code start' of Group = 1. The PDSCH code used for TFCI( field 2) = 12 , is given by the SF and code number = 'PDSCH code start' + 1. This continues, with unit increments in the value of TFCI(field 2) mapping to unit increments in code number up until the point that code number = 'PDSCH code stop'. The process continues in the same way for the next group with the TFCI(field 2) value used by the UE when constructing its mapping table starting at the largest value reached in the previous group plus one. In the event that 'PDSCH code start' = 'PDSCH code stop' (as may occur when mapping the PDSCH root code to a TFCI (field 2) value) then this is to be interpreted as defining the mapping between the channelisation code and a single TFCI (i.e., TFCI(field 2) should not be incremented twice).

Note that each value of TFCI (field 2) is associated with a given 'code number' and when the 'multi-code info' parameter is greater than 1, then each value of TFCI (field 2) actually maps to a set of PDSCH codes. In this case contiguous codes are assigned, starting at the channelisation code denoted by the 'code number' parameter and including all codes with code numbers up to and including 'code number' - 1 + the value given in the parameter 'multi-code info'.

Method #2 - Using TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code. The PDSCH code specified in the first group applies for all values of TFCI(field 2) between 01 and the specified 'Max TFCI(field2)'. The PDSCH code specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2)' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value starting at the largest value reached in the previous group plus one.

Method #3 - Explicit

The mapping between TFCI(field 2) value and PDSCH channelisation code is spelt out explicitly for each value of TFCI (field2)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| DL Scrambling Code | M | | INTEGER (0..15) | Scrambling code on which PDSCH is transmitted. 0= Primary scrambling code of the cell 1…15 = Secondary scrambling codes |
| Root of PDSCH sub tree | | | | |
| >Spreading factor | M | | Enumerated( 4, 8, 16, 32, 64, 128, 256, 512) | |
| >Code number | M | | Integer(0..m axCodeNum Comp-1) | |
| Choice *signalling method* | | | | |
| >code range | | | | |
| >>PDSCH code mapping | | 1 to <MaxNoCo | | |

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| | | deGroups> | | |
| >>>Spreading factor | M | | Enumerated( 4, 8, 16, 32, 64, 128, 256, 512) | |
| >>>multi-code info | M | | Integer(1..16) | This parameter indicates the number of PDSCH transmitted to the UE.  The PDSCH codes all have the same SF as denoted by the 'Spreading factor' parameter.  Contiguous codes are assigned,  starting at the channelisation code denoted by the spreading factor and code number parameter and including all codes, with code numbers up to and including 'code number' - 1 + 'multi-code info'.  Note that 'code number'-1+'multi-code info' will not be allowed to exceed 'maxCodeNumComp' |
| >>>PDSCH code start | | | | |
| >>>>Code number | M | | Integer(0..maxCodeNumCompDSCH-1) | |
| >>>PDSCH code stop | | | | |
| >>>>Code number | M | | Integer(0..maxCodeNumCompDSCH-1) | |
| >TFCI range | | | | |
| >>DSCH mapping | | 1 to <MaxNoTFCIGroups> | | |
| >>>Max TFCI(field2) value | M | | Integer(1..1023512) | This is the maximum value in the range of TFCI(field 2) values for which the specified PDSCH code applies |
| >>>PDSCH code | | | | |
| >>>>Spreading factor | M | | Enumerated( 4, 8, 16, 32, 64, 128, 256, 512) | |
| >>>>>Code number | M | | Integer(0..maxCodeNumCompDSCH-1) | |
| >>>>>multi-code info | M | | Integer(1..16) | Semantics as described for this parameter above |
| >Explicit | | | | |
| >>>PDSCH code | | 1 to MaxTFCI_2_Combs | | The first instance of the parameter *PDSCH code* corresponds to TFCI (field2) = 01, the second to TFCI(field 2) = 12 and so on. |
| >>>>Spreading factor | M | | Enumerated( 4, 8, 16, 32, 64, 128, 256, 512) | |
| >>>>>Code number | M | | Integer(0..maxCodeNumCompDSCH- | |

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| | | | 1) | |
| >>>>multi-code info | M | | Integer(1..16) | Semantics as described for this parameter above |
| >Replace | | 1 to MaxReplaceCount | | This choice is made if the PDSCH code(s) associated with a given value of TFCI(field 2) is to be replaced. |
| >>TFCI (field 2) | M | | Integer (0..1023) | Value of TFCI(field 2) for which PDSCH code mapping will be changed |
| >>PDSCH code | | | | Identity of the PDSCH code(s) to be used for the specified value of TFCI(field 2). These code identity(s) replace any that had been specified before. |
| >>>Spreading factor | M | | Enumerated( 4, 8, 16, 32, 64, 128, 256) | |
| >>>Code number | M | | Integer(0..maxCodeNumComp-1) | |
| >>>multi-code info | M | | Integer(1..16) | Semantics as described for this parameter above |

| Range Bound | Explanation |
|---|---|
| *MaxCodeNumComp* | Maximum number of codes at the defined spreading factor, within the complete code tree. |
| ~~*MaxCodeNumDSCH*~~ | ~~Maximum number of codes at the defined spreading factor within the part of the code tree occupied by the PDSCH sub-tree.~~ |
| *MaxTFCI_2_Combs* | Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI field 2) |
| *MaxNoTFCIGroups* | Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single PDSCH code (or multi-code) applies. |
| *MaxNoCodeGroups* | Maximum number of groups, each group described in terms of a range of PDSCH channelisation code values for which a single spreading factor applies. |
| *MaxReplaceCount* | Maximum number of entries in the TFCI(field 2) to PDSCH code mapping table to be replaced |

| CHOICE *Signalling Method* | Condition under which the given *Signalling Method* is chosen |
|---|---|
| *Code range* | Selected by UTRAN when the code mapping is to be signalled using the 'code range' method. |
| *TFCI range* | Selected by UTRAN when the code mapping is to be signalled using the 'code range' method. |
| *Explicit* | Selected by UTRAN when the code mapping is to be signalled by an explicit mapping table. |
| *Replace* | Selected by UTRAN when individual entries of the code mapping are to be replaced. |

## 10.2.6.19  PDSCH with SHO DCH Info (FDD only)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| DSCH radio link identifier | M | | Integer(0..51 1) | This parameter indicates on which radio link the user will be allocated resource on the DSCH. The CPICH scrambling code will be used for this purpose. |
| TFCI Combining set | | | | This is used to indicate which of the downlink TFCI(field 2) transmissions made on the DPCCHs within the active set should be soft combined on the physical layer.  This parameter may only be sent if there is a 'hard' split of the TFCI field and in this case the sending of the parameter is optional. |
| >Radio link identifier | | 0 to <MaxCom bineSet> | Integer(0..51 1) | The CPICH scrambling code is used for this purpose |

| Range Bound | Explanation |
|---|---|
| MaxCombineSet | Maximum number of radio links in the DCH active set transmitted from BS's under the CRNC from which the DSCH is being scheduled |

### 10.2.6.38  TFCI Combining Indicator (FDD only)

This IE indicates whether the TFCI (field 2) which will be transmitted on the DPCCH of a newly added radio link should be soft combined with the others in the TFCI (field 2) combining set.   This IE ~~is~~ can only be sent when the UE is in Cell_DCH state with a DSCH transport channel assigned and when there is a 'hard' split in the TFCI field (such that TFCI1 and TFCI2 have their own separate block coding).

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| TFCI combining indicator | M | | Boolean | |

## 14.10.1        RRC Initialisation Information

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| **Non RRC IEs** | | | | |
| State of RRC | M | | Enumerated (CELL_DCH, CELL_FACH,CELL_PCH, URA_PCH) | |
| State of RRC procedure | M | | Enumerated (await no RRC message, await RRC Connection Re-establishment Complete, await RB Setup Complete, await RB Reconfiguration Complete, await RB Release Complete, await Transport CH Reconfiguration Complete, await Physical CH Reconfiguration Complete, await Active Set Update Complete, await Handover Complete, others) | |
| Variable RLC parameters | M | | | |
| Security related Variable parameters | M | | | |
| Implementation specific parameters | O | | Bitstring (1..512) | |
| **RRC IEs** | | | | |
| **UE Information elements** | | | | |
| | | | | |
| U-RNTI | | | | |
| C-RNTI | | | | |
| UE radio Capability | | | | |
| Ciphering mode info | | | | |
| **Other Information elements** | | | | |
| Inter System message (inter system classmark) | | | | |
| **UTRAN Mobility Information elements** | | | | |
| URA Identifier | | | | |
| CN Information Elements | | | | |
| CN Domain Identity | | | | |
| NAS System Info | | | | |
| **Measurement Related Information elements** | | | | |
| For each ongoing measurement reporting | | | | |
| Measurement Identity Number | | | | |
| Measurement Command | | | | |
| Measurement Type | | | | |
| Measurement Reporting Mode | | | | |
| Additional Measurement Identity number | | | | |
| **CHOICE Measurement** | | | | |
| Intra-frequency | | | | |
| Intra-frequency cell info | | | | |
| Intra-frequency measurement quantity | | | | |
| Intra-frequency measurement reporting quantity | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Maximum number of reporting cells | | | | |
| Measurement validity | | | | |
| **CHOICE report criteria** | | | | |
| Intra-frequency measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Inter-frequency | | | | |
| Inter-frequency cell info | | | | |
| Inter-frequency measurement quantity | | | | |
| Inter-frequency measurement reporting quantity | | | | |
| Maximum number of reporting cells | | | | |
| Measurement validity | | | | |
| **CHOICE report criteria** | | | | |
| Inter-frequency measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Inter-system | | | | |
| Inter-system cell info | | | | |
| Inter-system measurement quantity | | | | |
| Inter-system measurement reporting quantity | | | | |
| Maximum number of reporting cells | | | | |
| Measurement validity | | | | |
| **CHOICE report criteria** | | | | |
| Inter-system measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Traffic Volume | | | | |
| Traffic volume measurement Object | | | | |
| Traffic volume measurement quantity | | | | |
| Traffic volume measurement reporting quantity | | | | |
| **CHOICE report criteria** | | | | |
| Traffic volume measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| Quality | | | | |
| Quality measurement Object | | | | |
| Quality measurement quantity | | | | |
| Quality measurement reporting quantity | | | | |
| **CHOICE report criteria** | | | | |
| Quality measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| UE internal | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| UE internal measurement quantity | | | | |
| UE internal measurement reporting quantity | | | | |
| **CHOICE report criteria** | | | | |
| UE internal measurement reporting criteria | | | | |
| Periodical reporting | | | | |
| No reporting | | | | |
| **Radio Bearer Information Elements** | | | | |
| For each Radio Bearer | | | | |
| RB Identity | | | | |
| RLC Info | | | | |
| RB mapping info | | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS (UL DCHs) | | | | |
| TFCS (DL DCHs) | | | | |
| TFC subset (UL DCHs) | | | | |
| TFCS (USCHs) | | | | |
| TFCS (DSCHs) | | | | |
| TFC subset (USCHs) | | | | |
| **For each uplink transport channel** | | | | |
| Transport channel identity | | | | |
| TFS | | | | |
| **DRAC Information** | | | | |
| Dynamic Control | | | | |
| Transmission Time validity | | | | |
| Time duration before retry | | | | |
| Silent Period duration before release | | | | |
| **For each downlink transport channel** | | | | |
| Transport channel identity | | | | |
| TFS | | | | |
| **Physical Channel Information Elements** | | | | |
| Frequency info | | | | |
| Uplink DPCH power control info | | | | |
| SSDT Indicator | | | | FFS |
| CPCH SET info | | | | |
| Gated Transmission Control info | | | | FFS |
| Default DPCH Offset value | | | | |
| **Uplink radio resource information** | | | | |
| **Choice channel requirement** | | | | |
| Uplink DPCH info | | | | |
| PUSCH info | | | | |
| PRACH info (for RACH) | | | | |
| PRACH info (for FAUSCH) | | | | |
| **Downlink Radio Resource Information** | | | | |
| Downlink DPCH power control info | | | | |
| Downlink DPCH compressed mode info | | | | |
| **Downlink Information** | | | | |
| Primary CCPCH Info | | | | |
| Downlink DPCH info | | | | |
| PDSCH with SHO DCH Info | | | | |
| PDSCH code mapping | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| PDSCH info | | | | |
| Secondary CCPCH info | | | | |

# CHANGE REQUEST

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

| **25.331** CR | **189r1** | Current Version: | 3.1.0 |
|---|---|---|---|

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

For submission to:  **TSG-RAN #7**         For approval  **X**         strategic  ☐  *(for SMG*
*list expected approval meeting # here*   For information  ☐         Non-strategic  ☐   *use only)*
↑

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

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

| **Source:** | TSG-RAN WG2 | | **Date:** | 23/02/00 |
|---|---|---|---|---|

| **Subject:** | Identification of Shared Channel Physical Configurations |
|---|---|

| **Work item:** | |
|---|---|

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

**Reason for change:**

TDD physical configuration of UL & DL shared channels is currently individually signalled to UE's in RRC Physical Shared Channel Allocation Messages. It is expected that the frequency of shared channel allocations is far greater then the frequency of shared channel physical reconfigurations. Therefore, it is unnecessary and inefficient to indicate physical configurations in each allocation.

The PUSCH IE (sect. 10.2.6.27) and PDSCH IE (sect. 10.2.6.28) define the frame "Activation Time" and "Duration" in frames of the shared physical channel. This information only needs to known to the UE upon the initial allocation and when the physical configuration changes, not for every allocation.

Shared channels are very similar to common channels in the respect that potentially all UE's within a cell need to be aware of the physical configurations and available transport formats. The difference is that shared configurations vary over time. Common channel configurations are broadcast frequently so that UE's can find RACH & FACH rapidly. The requirement for shared channels is similar.

In order to reduce signalling overhead, it is proposed that shared channel physical configurations are broadcast in a similar way as common channels, rather then individually signalled to UE's in each allocation. The physical channel Activation Time and Duration now applies to the physical channel itself, not an individual UE's allocation. The Physical Shared Channel Allocation (sect. 10.1.5.19) will no longer require physical channel IE's in every allocation, and will only require the PUSCH or PDSCH identity and the activation time/duration the channel is allocated for.

Since it is possible for a UE to enter a new cell and receive a shared allocation in advance of reception of broadcast shared channel information, the Physical Shared Channel Allocation will include physical channel IE's conditional on the first allocation within the cell.

It is also proposed to specify TFS definition with USCH and DSCH physical

**Clauses affected:**     8, 10

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

| **Other comments:** | |
|---|---|

## 8.2.7     Physical Shared Channel Allocation [TDD only]



**Figure 29: Physical Shared Channel Allocation**

### 8.2.7.1      General

The purpose of this procedure is to allocate physical resources to USCH or DSCH transport channels in TDD mode, for temporary usage by a UE.

### 8.2.7.2      Initiation

The UE is in the CELL_FACH or CELL_DCH state, and at least one RB using USCH or DSCH has been established. The UTRAN sends the "PHYSICAL SHARED CHANNEL RECONFIGURATIONALLOCATION" message via the SHCCH , to allocate PUSCH or PDSCH resources to exactly one CCTrCH.

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

The UE shall check the C-RNTI to see if the UE is addressed by the message. If so, the UE shall evaluate the message and use the IEs as specified below.

If the CCTrCH addressed by the TFCS-Id in the PHYSICAL SHARED CHANNEL ALLOCATION message is a CCTrCH for DSCH, the UE shall:

-    decode the IE "CCTrCH Allocation Activation TimeCFN" and the IE "CCTrCH Allocation Duration", to determine the time interval for which the allocation shall be valid;

-    configure Layer 1 according to the PDSCH information received in allocation message or in BCCH SIB#6 (as default if not specified in allocation message), for the specified time interval received in allocation message;

-    start receiving the PDSCH where the TFCI is included;

-    receive the PDSCHs, and decode and demultiplex them into the respective DSCH channels according to the TFCI.

If the CCTrCH addressed by the TFCS-Id in the message PHYSICAL SHARED CHANNEL ALLOCATION is a CCTrCH for USCH, the UE shall:

- decode the IE "~~CCTrCH~~Allocation Activation Time~~CFN~~" and the IE "~~CCTrCH~~Allocation Duration", to determine the time interval for which the allocation shall be valid;

- configure Layer 1 according to the PUSCH information received in allocation message or in BCCH SIB#6 (as default if not specified in allocation message), for the specified time interval received in allocation message;

- evaluate and apply the potential Timing Advance value for uplink transmissions;

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

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

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

In addition, the UE shall evaluate the IE "PUSCH Allocation Pending" parameter: If its value is "pending", the UE starts a timer T311. As long as this timer is running, the UE is not allowed to use the RACH for potential USCH capacity requests. See the USCH CAPACITY REQUEST procedure.

In addition if the message contains an optional IE "Timing Advance Information" the UE shall configure the Layer 1 with the new Timing Advance.

Note that the message can also be used to block or enable the UE to issue PUSCH capacity requests, without allocating PUSCH or PDSCH, as shown in the PUSCH capacity request procedure below. In this case, no TFCS-ID and no PUSCH or PDSCH Information is included.

Note: If UE has just entered a new cell and SIB#6 USCH or DSCH information has not yet been scheduled, USCH/DSCH information is specified in allocation message.

## 10.1.20 PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: TM or AM

Logical channel: SHCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Integrity check info | O | | | |
| C-RNTI | M | | | |
| PUSCH allocation pending | O | | | |
| **TrCH information elements** | | | | |
| TFCS identity | O | | | |
| **PhyCH information elements** | | | | |
| PUSCH power control info | O | | | |
| Uplink timing advance info | O | | | |
| Allocation Period info | O | | | |
| PUSCH info | O | | | |
| PDSCH info | O | | | |

## 10.1.47.5.8 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common and shared physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| References to other system information blocks | | 0 .. <maxSysInfoBlockcount> | | |
| >Scheduling information | M | | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Primary CCPCH info | O | | | Note 1 |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>PICH Power offset | M | | | |
| >>AICH Power offset | M | | | |
| >>Secondary CPICH info | O | | | Note 2 |
| PRACH information | | 0 .. <maxPRACHcount> | | |
| >PRACH info | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>FDD | | | | |
| >>>PRACH partitioning | M | | | |
| >>>Primary CPICH DL TX power | M | | | |
| >>>Constant value | M | | | |
| >>>PRACH power offset | M | | | |
| >>>AICH info | M | | | |
| Secondary CCPCH information | | 0 .. <maxSCCPCHcount> | | |
| >Secondary CCPCH info | M | | | |
| >TFCS | M | | | For FACHs and PCH |
| >FACH/PCH information | | 1 .. <maxFACHcount> | | |
| >>TFS | | | | For each FACHs and PCH Note 3 |
| >>CTCH indicator | M | Boolean | | The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped. |
| >PICH info | C-Pich | | | |
| Choice mode | | | | |
| >TDD | | | | |
| >>PUSCH information | O | 1 .. <maxPUSCHcount> | | |
| >>>PUSCH info | M | | | |
| >>>TFS | O | | | |
| >>PDSCH information | O | 1 .. <maxPDSCHcount> | | |
| >>>PDSCH info | M | | | |
| >>>TFS | O | | | |
| CBS DRX Level 1 information | C-CTCH | | | |

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

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

| Condition | Explanation |
|---|---|
| *CTCH* | Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH. |
| *Pich* | PICH info is present only when PCH is multiplexed on Secondary CCPCH |

| Multi Bound | Explanation |
|---|---|
| *MaxPRACHcount* | Maximum number of PRACHs |
| *MaxSCCPCHcount* | Maximum number of secondary CCPCHs |
| *MaxFACHcount* | Maximum number of FACHs mapped onto secondary CCPCHs |
| *MaxPCHcount* | Maximum number of PCHs mapped onto secondary CCPCHs |
| *MaxPUSCHcount* | Maximum number of PUSCHs |
| *MaxPDSCHcount* | Maximum number of PDSCHs |
| *MaxSysInfoBlockcount* | Maximum number of references to other system information blocks. |

## 10.2.6.18   PDSCH info (TDD only)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Activation time | M | | Integer (0...255) | Frame number start of ~~the physical channel existence.~~ allocation period. Default is Activation time in UE information elements |
| Duration | M | | Integer (~~0~~1.. ~~255~~4096) | Total number of frames the physical channel will exist. |
| Repetition Period | O | | Integer (1, 2, 4, 8, 16, 32, 64) | Repetition period Default value is 1 |
| Repetition length | O | | Integer (1 ... Repetition length −1) | . Default value is 1 |
| TFCI coding | O | | Enumerated( 4,8,16,32) | Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits. |
| Puncturing Limit | M | | | |
| Individual Timeslot info | | 1 to <maxTimeslotcount> | | The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on. |
| >channelisation codes | M | 1 to <max codes count> | Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8). (16/1)... (16/16)) | The first instance of the parameter Channelisation code corresponds to the first PDSCH in that timeslot that shall be used first by the physical layer, the second to the PDSCH in that timeslot that shall be used second and so on. |
| >Timeslot | M | | Integer (0...14) | Timeslot within a frame |
| TFCI existence | O | | Boolean | If the TFCI exists it shall be coded in the first PDSCH in this timeslot. Default value is No TFCI. |
| >Burst Type | O | | Enumerated (Typ1, Typ2) | Short or long midamble for this timeslot. Default is burst type 1. |
| >Midamble Shift | O | | Integer (0... max Midamble Shift is −1) | Midamble shift for this timeslot. Layer 1 sets default. |

| Range Bound | Explanation |
|---|---|
| *MaxTimeslotcount* | Maximum number of timeslots used for PDSCHs |
| *Max Codescount* | Maximum number of codes for PDSCH |

## 10.2.6.30 PUSCH info (TDD only)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Activation time | M | | Integer (0..255) | Frame number start of the physical channel existence. allocation period. Default is Activation time in UE information elements |
| Duration | M | | Integer (01.. 2554096) | Total number of frames the physical channel will exist. |
| Puncturing Limit | M | | | |
| TFCI coding | O | | Enumerated( 4,8,16,32) | Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits. |
| Repetition Period | O | | Integer (1, 2, 4, 8, 16, 32, 64) | Repetition period of the DPCHs. Default value 1 |
| Repetition length | O | | Integer (1 ... Repetition length −1) | Length of the allocation for each repetition period. Default value is 1 |
| Individual Timeslot info | | 1 to <maxTime slotcount> | | The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on. |
| >channelisation code | | | Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)... (16/16)) | The first instance of the parameter Channelisation code corresponds to the first PUSCH in that timeslot that shall be used first by the physical layer, the second to the PUSCH in that timeslot that shall be used second and so on. |
| >Timeslot | M | | Integer (0...14) | Timeslot number |
| TFCI existence | O | | Boolean | If the TFCI exists it shall be coded in the first PUSCH in this timeslot. Default value is No TFCI. |
| >Burst Type | M | | Enumerated (Typ1, Typ2) | Short or long midamble for this timeslot. Default is burst type 1. |
| >Midamble Shift | M | | Integer (0...maxMida mbleShift − 1) | Midamble shift for this timeslot. Layer 1 sets default. |

| Range Bound | Explanation |
|---|---|
| *MaxPUSCHTimeslotcount* | Maximum number of timeslots used for PUSCHs |
| *MaxCodesCount* | Maximum number of codes for PUSCH |

## 10.2.6.45 Allocation Period info (TDD only)

Parameters used by UE to determine period of shared channel allocation.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Allocation Activation Time | M | | Integer (1..256) | Frame number start of the allocation period. |
| Allocation Duration | M | | Integer (1..256) | Total number of frames for the allocation period. |

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Allocation Activation Time | M | | Integer (1..256) | Frame number start of the allocation period. |
| Allocation Duration | M | | Integer (1..256) | Total number of frames for the allocation period. |

# CHANGE REQUEST

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

| | | | | | | |
|---|---|---|---|---|---|---|
| **25.331** | CR | **192r1** | | Current Version: | 3.1.0 | |

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

For submission to:    **TSG-RAN #7**          For approval  **X**          Strategic          *(for SMG*
*list expected approval meeting # here*          For information          non-strategic          *use only)*
                         ↑

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

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

| | | | |
|---|---|---|---|
| **Source:** | TSG-RAN WG2 | **Date:** | 23/02/00 |

| | |
|---|---|
| **Subject:** | Uplink Outer Loop Power Control During Hard Handover |

| | |
|---|---|
| **Work item:** | |

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

| | |
|---|---|
| **Reason for change:** | Following hard handover it should not be necessary to read the BCCH for determination of the correct uplink transmit power. This contribution proposes to add UL OL PC parameters to handover commands received in advance of transition to the new cell.

In order to determine uplink transmit power it is necessary to know transmit reference power for calculation of path loss, the "constant value" for the quality margin, and the uplink interference by timeslot. This information is currently only available on the BCCH.

As stated in 25.302 (sect 9), it should not be necessary to decode parameters on the BCCH of monitored neighbour cells (other then SFN when required). If the UL OL PC parameters are not known upon entering a new cell either UL transmission has to be delayed until reception of BCCH SIB #14, or the UL transmit power will potentially cause unacceptable interference.

For correct determination of transmit power in the new cell and to avoid unnecessary delays following handover it is proposed to add transmit reference power, quality margin, and uplink timeslot interference information to RRC handover commands. Note that the received Primary CCPCH power for path loss determination is always known in advance of handover. |

| | |
|---|---|
| **Clauses affected:** | 10.2.6.44 |

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

## 10.2.6.44   Uplink DPCH power control info

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

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| >FDD | | | | |
| >>DPCCH Power offset | M | | Enumerated( -164, -162..-6) | In dB |
| >>Power Control Algorithm | M | | Enumerated (algorithm 1 or algorithm 2) | Specifies algorithm to be used by UE to interpret TPC commands |
| >>TPC step size | C-algorithm1 | | Enumerated (1dB, 2dB) | |
| >TDD | | | | |
| >>UL Maximum SIR | M | | Enumerated (.1dB steps) | Maximum UE transmit power limit |
| >>UL target SIR | O | | | |
| >>UL Minimum SIR | O | | | |
| >>Individual Timeslot Info | C-HO case | 1 to...<TS Count> | | |
| >>>Timeslot | | | | |
| >>>UL Interference | | | | Timeslot Interference |
| >>DPCH Constant Value | C-HO case | | | Quality Margin |

| Condition | Explanation |
|---|---|
| C-HO case | This IE shall be present in the case of handover |
| C-algorithm1 | This IE shall be present when the PC algorithm equals algorithm 1 |

| Range Bound | Explanation |
|---|---|
| *TS Count* | Number of uplink timeslots used for this dedicated CCTrCH |

# CHANGE REQUEST

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

| | **25.331** | CR | **193** | Current Version: | 3.1.0 |
|---|---|---|---|---|---|

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

For submission to: **TSG-RAN #7**

*list expected approval meeting # here*
↑

| For approval | **X** | | Strategic | | *(for SMG* |
|---|---|---|---|---|---|
| For information | | | non-strategic | | *use only)* |

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

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

**Source:**     TSG-RAN WG2          **Date:** 23/02/00

**Subject:**     Support of Multiple CCTrCH's in TDD Mode

**Work item:**

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

**Release:**
| Phase 2 | |
|---|---|
| Release 96 | |
| Release 97 | |
| Release 98 | |
| Release 99 | **X** |
| Release 00 | |

**Reason for change:**

In order to support multiple CCTrCH's in TDD mode for a specific UE it is necessary to define mapping between TFCS identities, TrCH's within each CCTrCH, and physical channel descriptions in RRC signalling messages.

The Hard Handover Command/Complete is now represented by several radio bearer procedures, which must define the relationship between TFCS Identities for each CCTrCH, and the TRCH's. TDD DPCH physical channel IE's use the TFCS Identity to group physical resource units for each CCTrCH. A similar approach is needed to group TrCH Identities for each CCTrCH.

Therefore, it is proposed to identify TrCH Identities for each TFCS Identity in the UL & DL transport channel IE sections of RRC messages used to invoke hard handover.

**Clauses affected:**          10

**Other specs Affected:**

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

**Other comments:**

## 10.1.22 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Integrity check info | O | | | |
| Integrity protection mode info | O | | | |
| Activation time | O | | | |
| New C-RNTI | C RACH/FACH | | | |
| New U-RNTI | O | | U-RNTI | |
| UTRAN DRX cycle length coefficient | O | | DRX cycle length coefficient | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | O | | | |
| PLMN identity | O | | | (Note1) |
| CN common GSM-MAP NAS system information | O | | GSM-MAP NAS system information | |
| CN domain related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| >CN domain identity | O | | | (Note1) |
| CN domain specific GSM-MAP NAS system info | O | | GSM-MAP NAS system information | (Note1) |
| **RB information elements** | | | | |
| RB information to reconfigure | | 0 to <MaxRBcount> | | |
| >RB identity | M | | | |
| >PDCP info | O | | | |
| >CHOICE *RLC info type* | O | | | Presence is FFS. For the first release this choice has only one possible value. This choice type may be extended in future releases. |
| >>RLC info | O | | | |
| >RB mapping info | O | | | |
| >RB suspend/resume | O | | | Not applicable to the signalling bearer. |
| **TrCH Information Elements** | | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>TFCS | O | | | For uplink TFCS |
| >>TFCS | O | | | For downlink TFCS |
| TFCS | O | | | For SCCPCH TFCS |
| ~~CHOICE mode~~ | | | | |
| ~~>TDD~~ | | | | |
| ~~>>TFCS Identity~~ | ~~O~~ | | | ~~Uplink TFCS~~ |
| ~~>>TFCS Identity~~ | ~~O~~ | | | ~~Downlink TFCS~~ |
| TFC subset | O | | | For TFC subset in uplink |
| **Uplink transport channels** | | | | |
| Deleted TrCH information | | 0 to <MaxDelTrCH> | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Uplink TFCS |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>CPCH set ID | O | | | |
| >>DRAC information | C DRAC | 1 to <MaxReconAddTrCH> | | |
| >>Dynamic Control | | | | |
| >>Transmission time validity | | | | |
| >>Time duration before retry | | | | |
| >>Silent period duration before release | | | | |
| **Downlink transport channels** | | | | |
| Deleted TrCH information | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Downlink TFCS |
| **PhyCH  information elements** | | | | |
| Frequency info | O | | | |
| **Uplink radio resources** | | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| CHOICE channel requirement | O | | | |
| >Uplink DPCH info | | | | |
| >PRACH info (for RACH) | | | | |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>PRACH info (for FAUSCH) | | | | |
| **Downlink radio resources** | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink information per radio link | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>TPC combination index | C-ifDPCH | | | |
| >>>Primary CPICH info | | | | |
| >>TDD | | | | |
| >>>Primary CCPCH info | O | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >Downlink DPCH info | O | | | |
| >Secondary CCPCH info | O | | | |
| >References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 3 |
| >>Scheduling information | | | | Note 3 |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>SSDT indicator | O | | | |
| >>CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| >>Default DPCH Offset Value | O | | | |
| >>Downlink DPCH compressed mode info | O | | | |
| >>PDSCH with SHO DCH Info | O | | | |
| >>PDSCH code mapping | O | | | |
| >TDD | | | | |
| >>Uplink Timing Advance | O | | | |
| >>PUSCH power control info | O | | | |

| Condition | Explanation |
|---|---|
| RACH/FACH | This information element is only sent when using RACH/FACH |
| DRAC | These information elements are only sent for transport channels which use the DRAC procedure |
| IfDPCH | This IE is only sent if IE "Downlink DPCH info" is present |

| Multi Bound | Explanation |
|---|---|
| MaxRLcount | Maximum number of radio links |
| MaxRBcount | Maximum number of RBs to be reconfigured |
| MaxDelTrCHcount | Maximum number of Transport Channels to be removed |
| MaxReconAddTrCH | Maximum number of transport channels to add and reconfigure |
| MaxSysInfoFACHCount | Maximum number of references to system information blocks on the FACH |

| CHOICE channel requirement | Condition under which the given channel requirement is chosen |
|---|---|
| Uplink DPCH info | |
| PRACH info (for RACH) | |
| PRACH info (for FAUSCH) | |

| CHOICE RLC info type | Condition under which the given RLC info type is chosen |
|---|---|
| RLC info | Allowed when the value of IE "RB identity" is between 0 and 31, inclusive |

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

## 10.1.25 RADIO BEARER RELEASE

NOTE:    Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Integrity check info | O | | | |
| Integrity protection mode info | O | | | |
| Activation time | O | | | |
| New C-RNTI | C RACH/FACH | | C-RNTI | |
| New U-RNTI | O | | U-RNTI | |
| UTRAN DRX cycle length coefficient | O | | DRX cycle length coefficient | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | O | | | |
| PLMN identity | O | | | (Note1) |
| CN common GSM-MAP NAS system information | O | | GSM-MAP NAS system information | |
| CN domain related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| >CN domain identity | O | | | (Note1) |
| CN domain specific GSM-MAP NAS system info | O | | GSM-MAP NAS system information | (Note1) |
| **RB information elements** | | | | |
| RB information to release | | 1 to <MaxRBcount> | | |
| >RB identity | M | | | |
| RB information to be affected | | 0 to <MaxOtherRBcount> | | |
| >RB identity | M | | | |
| >RB mapping info | O | | | |
| **TrCH Information Elements** | | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>TFCS | O | | | for uplink TFCS |
| >>TFCS | O | | | for downlink TFCS |
| TFCS | O | | | For SCCPCH TFCS |
| CHOICE *mode* | | | | |
| >TDD | | | | |
| >>TFCS Identity | O | | | Uplink TFCS |
| >>TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for  TFC subset in uplink |
| **Uplink transport channels** | | | | |
| Deleted TrCH information Transport channel identity | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | | | | |
| Added or Reconfigured TrCH | | 0 to | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| information | | <MaxReconAddFFSTrCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Uplink TFCS |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>CPCH set ID | O | | | |
| >>DRAC information | C DRAC | 1 to <MaxReconAddFFSTrCH> | | |
| >>Dynamic Control | | | | |
| >>Transmission time validity | | | | |
| >>Time duration before retry | | | | |
| >>Silent period duration before release | | | | |
| **Downlink transport channels** | | | | |
| Deleted TrCH information | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | Editor: this limit should probably also be MaxReconAddFFSTrCH |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Downlink TFCS |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| **Uplink radio resources** | | | | |
| Maximum allowed UL TX power | O | | | |
| CHOICE channel requirement | O | | | |
| >Uplink DPCH info | | | | |
| >PRACH info (for RACH) | | | | |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>PRACH info (for FAUSCH) | | | | |
| **Downlink radio resources** | | | | |
| Downlink information per radio link | | 0 to <MaxRLcount> | | Send downlink information for each radio link to be set-up |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>TPC combination index | C-ifDPCH | | | |
| >>>Primary CPICH info | | | | |
| >>TDD | | | | |
| >>>Primary CCPCH info | O | | | |
| >Downlink DPCH info | O | | | |
| >Secondary CCPCH info | O | | | |
| >References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 3 |
| >Scheduling information | | | | Note 3 |
| Choice *mode* | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >FDD | | | | |
| >>SSDT indicator | | | | |
| >>CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| >>Gated Transmission Control info | O, FFS | | | Note 3 |
| >>PDSCH with SHO DCH Info | O | | | |
| >>PDSCH code mapping | O | | | |
| >TDD | | | | |
| >>Uplink Timing Advance | O | | | |

| Condition | Explanation |
|---|---|
| RACH/FACH | This information element is only sent when using RACH/FACH |
| DRAC | These information elements are only sent for transport channels which use the DRAC procedure |
| IfDPCH | This IE is only sent if IE "Downlink DPCH info" is present |

| Multi Bound | Explanation |
|---|---|
| MaxRLcount | Maximum number of radio links |
| MaxDelRBcount | Maximum number of RBs to be released |
| MaxOtherRBcount | Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure |
| MaxDelTrCHcount | Maximum number of Transport CHannels to be removed |
| MaxSysInfoFACHCount | Maximum number of references to system information blocks on the FACH |
| MaxReconAddFFSTrCH | Maximum number of transport channels to add and reconfigure |

| CHOICE *channel requirement* | Condition under which the given *channel requirement* is chosen |
|---|---|
| Uplink DPCH info | |
| PRACH Info (for RACH) | |
| PRACH info (for FAUSCH) | |

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

## 10.1.28  RADIO BEARER SETUP

NOTE:    Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Integrity check info | O | | | |
| Integrity protection mode info | O | | | |
| **CN information elements** | | | | |
| NAS binding info | M | | | |
| CN domain identity | | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C – RACH/FACH | | C-RNTI | |
| New U-RNTI | O | | U-RNTI | |
| UTRAN DRX cycle length coefficient | O | | DRX cycle length coefficient | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | O | | | |
| PLMN identity | O | | | (Note1) |
| CN common GSM-MAP NAS system information | O | | GSM-MAP NAS system information | |
| CN domain related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| >CN domain identity | O | | | (Note1) |
| >CN domain specific GSM-MAP NAS system info | O | | GSM-MAP NAS system information | (Note1) |
| **RB information elements** | | | | |
| RB information to setup | | 1 to <MaxRBcount> | | |
| >RB identity | M | | | |
| >PDCP info | O | | | |
| >CHOICE *RLC info type* | M | | | For the first release this choice has only one possible value. This choice type may be extended in future releases. |
| >>RLC info | | | | |
| >RB mapping info | M | | | |
| RB information to be affected | | 0 to <MaxOtherRBcount> | | |
| >RB identity | M | | | |
| >RB mapping info | M | | | |
| **TrCH Information Elements** | | | | |
| CHOICE mode | | | | |
| FDD | | | | |
| >TFCS | O | | | for uplink TFCS |
| >TFCS | O | | | for downlink TFCS |
| TFCS | O | | | For SCCPCH TFCS |
| CHOICE *mode* | | | | |
| >TDD | | | | |
| >>TFCS Identity | O | | | Uplink TFCS |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >>TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFC subset in uplink |
| **Uplink transport channels** | | | | |
| Deleted TrCH information | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Uplink TFCS |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>CPCH set ID | O | | | |
| >>DRAC information | C DRAC | 1 to <MaxReconAddTrCH> | | |
| >>>Dynamic Control | | | | |
| >>>Transmission time validity | | | | |
| >>>Time duration before retry | | | | |
| >>>Silent period duration before release | | | | |
| **Downlink transport channels** | | | | |
| Deleted TrCH informationTransport channel identity | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Downlink TFCS |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| **Uplink radio resources** | | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| **CHOICE channel requirement** | O | | | |
| >Uplink DPCH info | | | | |
| >PRACH Info (for RACH) | | | | |
| >CHOICE mode | | | | |
| >>FDD | | | | |
| >>>PRACH info (for FAUSCH) | | | | |
| **Downlink radio resources** | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink information per radio | | 0 to <Max | | Send downlink information for |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| link | | RLcount> | | each radio link |
| >CHOICE mode | | | | |
| >>FDD | | | | |
| >>>TPC combination index | ifDPCH | | | |
| >>>Primary CPICH info | | | | |
| >>TDD | | | | |
| >>>Primary CCPCH info | O | | | |
| >Downlink DPCH info | O | | | |
| >Secondary CCPCH info | O | | | |
| >References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 3 |
| >>Scheduling information | | | | Note 3 |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>SSDT indicator | O | | | |
| >>CPCH SET Info | O | | | |
| >>Gated Transmission Control info | O | | | |
| >>Default DPCH Offset Value | O | | | |
| >>Downlink DPCH compressed mode info | O | | | |
| >>PDSCH with SHO DCH Info | O | | | |
| >>PDSCH code mapping | O | | | |
| >TDD | | | | |
| >>Uplink Timing Advance | O | | | |
| >>PUSCH power control info | O | | | |

| Condition | Explanation |
|---|---|
| RACH/FACH | This information element is only sent when using RACH/FACH |
| IfDPCH | This IE is only sent if "Downlink DPCH info" is present |

| Multi Bound | Explanation |
|---|---|
| MaxRLcount | Maximum number of radio links |
| MaxDelTrCHcount | Maximum number of Transport CHannels to be removed |
| MaxReconAddcount | Maximum number of Transport CHannels reconfigured or added |
| MaxRBcount | Maximum number of RBs that could be setup with this message |
| MaxOtherRBcount | Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure |
| MaxSysInfoFACHCount | Maximum number of references to system information blocks on the FACH |

| CHOICE channel requirement | Condition under which the given channel requirement is chosen |
|---|---|
| Uplink DPCH info | |
| PRACH info (for FAUSCH) | |
| PRACH info (for RACH) | |

| CHOICE RLC info type | Condition under which the given RLC info type is chosen |
|---|---|
| RLC info | Allowed when the value of IE "RB identity" is between 0 and 31, inclusive |

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

## 10.1.33  RRC CONNECTION RE-ESTABLISHMENT

NOTE:    Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Integrity check info | O | | | |
| New U-RNTI | O | | | |
| New C-RNTI | O | | | |
| Activation time | O | | | |
| Re-establishment timer | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note1) |
| CN common GSM-MAP NAS system information | O | | GSM-MAP NAS system information | |
| CN domain related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| >CN domain identity | O | | GSM-MAP NAS system information | (Note1) |
| >CN domain specific GSM-MAP NAS system info | O | | | (Note1) |
| NAS binding info | C-RBsetup | | | |
| CN domain identity | C-RBsetup | | | |
| RB information to setup | | 0 to <MaxSetupRBcount> | | |
| >RB identity | M | | | |
| >CHOICE *RLC info type* | M | | | For the first release this choice has only one possible value. This choice type may be extended in future releases. |
| >>RLC info | | | | |
| >RB mapping info | M | | | |
| RB information to release | | 0 to <MaxRetRBcount> | | |
| >RB identity | M | | | |
| RB information to reconfigure | | 0 to <MaxReconRBcount> | | |
| >RB identity | M | | | |
| >CHOICE *RLC info type* | O | | | |
| >>RLC info | | | | FFS |
| >>Signalling radio bearer type | | | | |
| >RB mapping info | O | | | |
| >RB suspend/resume | O | | | Not applicable to the signalling bearer. |
| **Transport Channel Information Elements** | | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>TFCS | O | | | For uplink  TFCS |
| >>TFCS | O | | | For downlink TFCS |
| TFCS | O | | | For SCCPCH TFCS |
| CHOICE *mode* | | | | |
| >TDD | | | | |
| >>TFCS Identity | O | | | Uplink TFCS |
| >>TFCS Identity | O | | | Downlink TFCS |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| TFC subset | O | | | For TFC subset in uplink |
| Uplink transport channels | | | | |
| Deleted TrCH information | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| Added or Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >Transport channel identity | M | | | |
| >TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Uplink TFCS |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>CPCH set ID | O | | | |
| >>DRAC information | C DRAC | 1 to <MaxReconAddTrCH> | | |
| >>>Dynamic Control | | | | |
| >>>Transmission time validity | | | | |
| >>>Time duration before retry | | | | |
| >>>Silent period duration before release | | | | |
| Downlink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| >Transport channel identity | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| >>Transport channel identity | M | | | |
| >>TFS | M | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Downlink TFCS |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| **Uplink radio resources** | | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| **CHOICE channel requirement** | O | | | |
| >Uplink DPCH info | | | | |
| >PRACH info (for RACH) | | | | |
| **Downlink radio resources** | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink information per radio link | | 0 to <Max RIcount> | | Send downlink information for each radio link to be set-up |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>TPC combination index | C-ifDPCH | | | |
| >>>Primary CPICH info | | | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >>TDD | | | | |
| >>>Primary CCPCH info | O | | | |
| >Downlink DPCH info | O | | | |
| >Secondary CCPCH info | O | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>SSDT indicator | O | | | |
| >>CPCH SET info | O | | | UL/DL radio resource for CPCH control (Note3) |
| >>Default DPCH Offset Value | O | | | |
| >>Downlink DPCH compressed mode info | O | | | |
| >TDD | | | | |
| >>Uplink Timing Advance | O | | | |
| >>PUSCH power control info | O | | | |

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3: How to map UL and DL radio resource in the message is FFS.

| Condition | Explanation |
|---|---|
| DRAC | These information elements are only sent for transport channels which use the DRAC procedure |
| RBsetup | This information element is only sent when RB information to setup exists |
| IfDPCH | This IE is only sent if IE "Downlink DPCH info" is present |

| CHOICE channel requirement | Condition under which the given channel requirement is chosen |
|---|---|
| Uplink DPCH info | |
| PRACH info (for RACH) | |

| CHOICE RLC info type | Condition under which the given RLC info type is chosen |
|---|---|
| RLC info | Allowed when the value of IE "RB identity" is between 0 and 31, inclusive |
| Signalling radio bearer type | |

| Multi Bound | Explanation |
|---|---|
| MaxNoCN domains | Maximum number of CN domains |
| MaxSetupRBcount | Maximum number of RBs to be setup |
| MaxRelRBcount | Maximum number of RBs to be released |
| MaxReconRBcount | Maximum number of RBs to be reconfigured |
| MaxDelTrCHcount | Maximum number of Transport CHannels to be removed |
| MaxReconAddTrCH | Maximum number of transport channels to add and reconfigure |
| MaxRLcount | Maximum number of radio links |

## 10.1.49 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Integrity check info | O | | | |
| Integrity protection mode info | O | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FA CH | | C-RNTI | |
| New U-RNTI | O | | U-RNTI | |
| UTRAN DRX cycle length coefficient | O | | DRX cycle length coefficient | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | O | | | |
| PLMN identity | O | | | (Note1) |
| CN common GSM-MAP NAS system information | O | | GSM-MAP NAS system information | |
| CN domain related information | | 0 to \<MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| >CN domain identity | O | | | (Note1) |
| >CN domain specific GSM-MAP NAS system info | O | | GSM-MAP NAS system information | (Note1) |
| **TrCH Information Elements** | | | | |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>TFCS | O | | | for uplink TFCS |
| >>TFCS | O | | | for downlink TFCS |
| TFCS | O | | | For SCCPCH TFCS |
| CHOICE *mode* | | | | |
| >TDD | | | | |
| >>TFCS Identity | O | | | Uplink TFCS |
| >>TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFC subset in uplink |
| Uplink transport channels | | | | |
| Reconfigured TrCH information | | 0 to \<MaxReconTrCH> | | |
| >Transport channel identity | | | | |
| >TFS | | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Uplink TFCS |
| CHOICE mode | | | | |
| >FDD | | | | |
| >>CPCH set ID | O | | | |
| >>DRAC information | C DRAC | 1 to \<MaxReconTrCHDRAC> | | |

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| >>>Dynamic Control | | | | |
| >>>Transmission time validity | | | | |
| >>>Time duration before retry | | | | |
| >>>Silent period duration before release | | | | |
| **Downlink transport channels** | | | | |
| Reconfigured TrCH information | | 0 to <MaxReconTrCH> | | |
| >Transport channel identity | | | | |
| >TFS | | | | |
| >CHOICE mode | | | | |
| >>TDD | | | | |
| >>>TFCS Identity | O | | | |
| >>>TFCS | O | | | Downlink TFCS |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| **Uplink radio resources** | | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| CHOICE channel requirement | O | | | |
| >Uplink DPCH info | | | | |
| >PRACH info (for RACH) | | | | |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>PRACH info (for FAUSCH) | | | | |
| **Downlink radio resources** | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink information per radio link | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| >CHOICE *mode* | | | | |
| >>FDD | | | | |
| >>>TPC combination index | C-ifDPCH | | | |
| >>>Primary CPICH info | | | | |
| >>TDD | | | | |
| >>>Primary CCPCH info | O | | | |
| >Downlink DPCH info | O | | | |
| >Secondary CCPCH info | O | | | |
| >References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 3 |
| >>Scheduling information | | | | Note 3 |
| CHOICE *mode* | | | | |
| >FDD | | | | |
| >>SSDT indicator | O | | | |
| >>CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| >>Gated Transmission Control info | O | | | |
| >>Default DPCH Offset Value | O | | | |
| >>Downlink DPCH compressed mode info | O | | | |
| >>PDSCH with SHO DCH Info | O | | | |
| >>PDSCH code mapping | O | | | |
| >TDD | | | | |
| >>Uplink Timing Advance | O | | | |
| >>PUSCH power control info | O | | | |

| Condition | Explanation |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *DRAC* | These information elements are only sent for transport channels which use the DRAC procedure |
| *IfDPCH* | This IE is only sent if IE "Downlink DPCH info" is present |

| Multi Bound | Explanation |
|---|---|
| *MaxRLcount* | Maximum number of radio links to be set up |
| *MaxReconcount* | Maximum number of Transport Channels reconfigured |
| *MaxReconTrCHDRAC* | Maximum number of Transport CHannels which are controlled by DRAC and which are reconfigured |
| *MaxSysInfoFACHCount* | Maximum number of references to system information blocks on the FACH |

| CHOICE *channel requirement* | Condition under which the given *channel requirement* is chosen |
|---|---|
| Uplink DPCH info | |
| PRACH info (for RACH) | |
| PRACH info (for FAUSCH) | |

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3 The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

# CHANGE REQUEST

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

| | | | |
|---|---|---|---|
| **25.331** | **CR** | **194r1** | Current Version: 3.1.0 |

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

For submission to: **TSG-RAN #7**
*list expected approval meeting # here* ↑

For approval **X**
For information

Strategic
Non-strategic

*(for SMG use only)*

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

---

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

| **Source:** | TSG-RAN WG2 | **Date:** | 01/03/00 |
|---|---|---|---|

| **Subject:** | Uplink Physical Channel Control in TDD Mode |
|---|---|

| **Work item:** | |
|---|---|

**Category:**    F   Correction
*(only one category Shall be marked With an X)*

| | |
|---|---|
| F | Correction |
| A | Corresponds to a correction in an earlier release |
| B | Addition of feature |
| C | Functional modification of feature   **X** |
| D | Editorial modification |

**Release:**

| | |
|---|---|
| Phase 2 | |
| Release 96 | |
| Release 97 | |
| Release 98 | |
| Release 99 | **X** |
| Release 00 | |

**Reason for change:**

In TDD uplink dedicated physical channels will require periodic update of SIR level. Due to the potential frequency of SIR updates, RRC signalling needs to be as efficient as possible and not require layer 3 UE to RNC confirmation in the procedure. The Uplink DPCH Power Control IE is used for setting of UL DPCH SIR, which is used with path loss determination, UL interference and the "constant value" to set UE transmit power level. Based on RNC BLER measurements the UE SIR level will periodically need to be updated.

The UL DPCH PC IE is included in several RRC procedures, but the signalling overhead associated with these procedures needs to be avoided. Additionally, these procedures generate UE to UTRAN "complete" responses, which due to the signalling latency do not serve any purpose. Therefore, a RRC UL OL PC message indicating new SIR level is proposed. Note that a similar need for PUSCH is not expected since the SIR level is signalled in each allocation.

Additionally, uplink timing advance, interference by timeslot and constant values may need to be updated.

Additionally, in this CR the generic description for "IE" Uplink DPCH power control info is changed in order to be applicable for TDD. Max and Min SIR values are removed in PUSCH power control info and Uplink DPCH power control info because they are not needed for open loop power control.

**Clauses affected:**    8.2.X (new section), 8.5.7.6.10, 10.1.x (new section), 10.2.6.31, 10.2.6.42, 10.2.6.44, 10.2.6.x (new section), 10.2.6.21

**Other specs Affected:**

| Other 3G core specifications | ☐ | → List of CRs: | |
|---|---|---|---|
| Other GSM core specifications | ☐ | → List of CRs: | |

| | | | |
|---|---|---|---|
| MS test specifications | | → List of CRs: | |
| BSS test specifications | | → List of CRs: | |
| O&M specifications | | → List of CRs: | |

**Other comments:** (included during tabular update)

## 8.2.x Uplink Physical Channel Control

```
         ┌──────────┐                        ┌──────────┐
         │    UE    │                        │  UTRAN   │
         └────┬─────┘                        └────┬─────┘
              │                                   │
              │         UPLINK PHYSICAL CHANNEL   │
              │              CONTROL              │
              │<──────────────────────────────────│
              │                                   │
              │                                   │
```
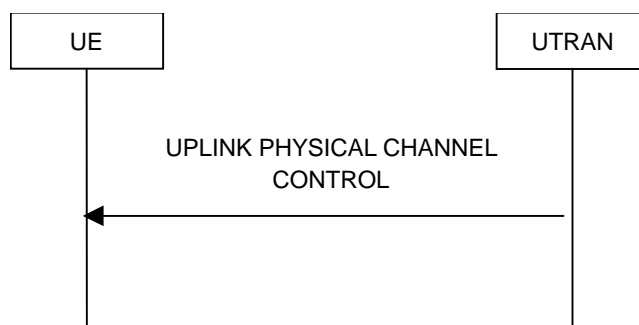
**Figure xx: Uplink Physical Channel Control**

## 8.2.x.1 General

The uplink physical channel control procedure is used to control the uplink outer loop power control and timing advance running in the UE in TDD.

## 8.2.x.2 Initiation

The UTRAN initiates the procedure by transmitting the UPLINK PHYSICAL CHANNEL CONTROL message on the downlink DCCH using AM or UM RLC in order to update parameters for uplink open loop power control in the UE for one CCTrCH or to inform the UE about a new timing advance value to be applied. Especially, uplink interference information measured by the UTRAN can be included for the uplink timeslots used for the CCTrCH.

## 8.2.x.3 Reception of UPLINK PHYSICAL CHANNEL CONTROL message by the UE

Upon reception of the UPLINK PHYSICAL CHANNEL CONTROL message, the UE shall act upon all received information elements as specified in 8.5.7.

If Uplink DPCH Power Control Info, Constant Value, or list of UL Timeslot Interference IE's are transmitted, this information shall be taken into account by the UE for uplink open loop power control as specified in 8.5.9.

## 8.5.7.6.10    Uplink DPCH power control info

In FDD Iff the IE "Uplink DPCH power control info" is included the UE shall

- Start inner loop power control as specified in 8.5.3

- For the UL inner loop power control use the parameters specified in the IE

In TDD if the IE "Uplink DPCH power control info" is included the UE shall

- use the parameters specified in the IE for open loop power control as defined in 8.5.9.

## 10.1.x    UPLINK PHYSICAL CHANNEL CONTROL

In TDD this message is used to transfer uplink physical channel parameters to the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Integrity check info | O | | | |
| **PhyCH information elements** | | | | |
| CCTrCH power control info | O | | CCTrCH power control info 10.2.6.x | Power control information for one CCTrCH |
| Timing Advance | O | | UL Timing Advance 10.2.6.43 | |
| Timeslot List | O | 1 to ….<maxTS count> | | |
| >Individual UL Timeslot interference | M | | Individual Timeslot interference 10.2.6.21 | |
| RACH Constant Value | O | | Constant value 10.2.6.5 | Operator controlled RACH Margin |
| DPCH Constant Value | O | | Constant value 10.2.6.5 | Operator controlled UL DPCH Margin |
| USCH Constant Value | O | | Constant value 10.2.6.5 | Operator controlled USCH Margin |

| Range bound | Explanation |
|---|---|
| *MaxTScount* | Maximum number of reported timeslots = 14 |

## 10.2.6.31   PUSCH power control info (TDD only)

Interference level measured for a frequency at the UTRAN access point used by UE to set PUSCH output power.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| UL Maximum SIR | M | | | |

| | | | | |
|---|---|---|---|---|
| UL target SIR | M | | Enumerated (-11 dB, -10.5 dB .. 20 dB)~~Enumerated (.1dB steps)~~ | |
| ~~UL Minimum SIR~~ | ~~O~~ | | | |

## 10.2.6.42    UL interference ~~(FDD)~~

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| UL interference | M | | | |

Note: UL Interference is a timeslot specific value in TDD

## 10.2.6.44    Uplink DPCH power control info

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

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE mode | | | | |
| >FDD | | | | |
| >>DPCCH Power offset | M | | Enumerated( -164, -162..-6) | In dB |
| >>Power Control Algorithm | M | | Enumerated (algorithm 1 or algorithm 2) | Specifies algorithm to be used by UE to interpret TPC commands |
| >>TPC step size | C-algorithm1 | | Enumerated (1dB, 2dB) | |
| >TDD | | | | |
| ~~>>UL Maximum SIR~~ | ~~M~~ | | | |
| >>UL target SIR | ~~O~~M | | Enumerated (-11 dB, -10.5 dB .. 20 dB)~~Enumerated (.1dB steps)~~ | |
| ~~>>UL Minimum SIR~~ | ~~O~~ | | | |

| Condition | Explanation |
|---|---|
| C-algorithm1 | This IE shall be present when the PC algorithm equals algorithm 1 |

## 10.2.6.x    CCTrCH power control info

Parameters used by UE to set the SIRtarget value for uplink open loop power control in TDD

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| TFCS Identity | O | | Transport Format Combination Set Identity 10.2.5.7 | TFCS Identity of this CCTrCH. Default value is 1. |
| Uplink DPCH power control info | M | | Uplink DPCH power control info 10.2.6.45 | |

## 10.2.6.21    Individual Timeslot Interference

Parameters used by the UE for uplink open loop power control in TDD

| Information element | Needed | Multi | Type and reference | Semantics description |
|---|---|---|---|---|
| Timeslot number | M | | Integer(0..14) | |
| UL Interference | M | | UL Interference 10.2.6.42 | |

**3GPP RAN WG2 Meeting #11**
**Torino, Italy 28<sup>th</sup> Feb – 03rd March 2000**

*Document* **R2-000630**

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

## CHANGE REQUEST

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| 25.331 | CR | 201r1 | Current Version: | 3.1.0 |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN #7 | for approval | X | strategic | | *(for SMG* |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | For information | | non-strategic | | *Use only)* |

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

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

| **Source:** | TSG-RAN WG2 | | **Date:** | 2000-03-03 |
|---|---|---|---|---|

**Subject:** Transfer of initial information from UE to target RNC prior to handover to UTRAN

**Work item:** 7.11

**Category:** 
*(only one category shall be marked with an X)*

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

**Reason for change:**

Justification

- When allocating physical channels upon handover to UTRAN, the target RNC needs to take the UE's radio capabilities into account. Therefore, it needs to obtain UE- capability information.

Therefore this CR includes the following change proposals:

- This CR proposes to create a new subchapter in chapter 14 for specifying RRC information transferred between UE and other systems

- Within the new subchapter the RRC information to be transferred within UE information request and indication are included, which support transfer of UE capabilities and the HFN to another system, via another RAT

**Clauses affected:** 14.X (new)

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

**Other comments:**

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# 14.X RRC information transferred between UE and other systems

This section specifies RRC information that is exchanged between other systems and the UE. This information is transferred via another RAT in accordance with the specifications applicable for those systems. This section specifies the UTRAN RRC information applicable for the different information flows.

## 14.X.1 RRC information, another RAT to UE

### 14. X.1.1 UE information request, handover to UTRAN

Prior to handover to UTRAN, another system has to provide the target RNC with information regarding the UE's radio capabilities and possibly also security information. Therefore, the other system has to retrieve the UE's radio capabilities and possibly also security information from the UE. This UE information request should include the following RRC information.

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| **UE information elements** | | | | |
| Capability update requirement | M | | | |
| Security information requirement | O | | BOOLEAN | TRUE: UE shall include security information |

## 14. X.2 RRC information, UE to another RAT

### 14. X.2.1 UE information indication, handover to UTRAN

Upon receiving a UE information request from another system, the UE shalll indicate its radio capabilities and possibly also the security information. This UE information indication should include the following RRC information.

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| **UE information elements** | | | | |
| Hyper Frame Number | O | | Hyper Frame Number 10.2.3.6 | |
| UE radio capability | O | | | |

# CHANGE REQUEST

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| **25.331** CR | **202r1** | Current Version: | 3.1.0 |
|---|---|---|---|

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

For submission to: **TSG-RAN #7**          for approval **X**          strategic ☐ *(for SMG*
*list expected approval meeting # here*          for information ☐          non-strategic ☐ *use only)*
↑

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

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

**Source:**          TSG-RAN WG2          **Date:**          2000-03-06

**Subject:**          CN information elements

**Work item:**

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

**Reason for change:**          Some minor corrections on value ranges for the CN informaton elements. Introduction of spare values. IE "CN Type" renamed to "PLMN type".

**Clauses affected:**          8.1.1, 10.2.1

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

**Other comments:**          Changes as compared to initial version of this CR are highlighted

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

### 8.1.1.3.1 Reception of SYSTEM INFORMATION messages broadcast on a BCH transport channel

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

On reception of the master information block, the UE shall

- If the "PLMN type" in the variable SELECTED_PLMNCN has the value "GSM-MAP" and the IE "CNPLMN Type" has the value "GSM-MAP" or "GSM-MAP AND and ANSI-41", the UE shall. check the IE "PLMN identity" in the master information block and verify that it is the selected PLMN, stored as "PLMN identity" in the variable SELECTED_PLMN.

- If the "PLMN type" in the variable SELECTED_PLMNCN has the value "ANSI-41 "and the IE "CNPLMN Type" has the value "ANSI-41" or "GSM-MAP AND and ANSI-41", the UE shall store the ANSI-41 Information elements contained in the master information block and perform initial process for ANSI-41.

- store the "value tag" into the variable VALUE TAG for the master information block.

- check and store the IE "value tag" for all system information blocks that are to be used by the UE. If, for any system information blocks, the value tag is different from the value of the variable VALUE_TAG for that system information block or if no IEs from corresponding system information block have been stored, the UE shall read and store the IEs of that system information block.

The UE may use the scheduling information given by the master information to locate each system information block to be acquired.

Upon reception of a system information block, the UE shall perform the actions specified in subclause 8.1.1.5.

### 8.1.1.5.1        System Information Block type 1

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

- forward the content of the IE "NAS system info" to the non-access stratum entity indicated by the IE "CN domain identity".

- use the IE "CN_DRX_cycle length" to calculate frame number for the Paging Occasions and Page indicator as specified in TS 25.304.

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

### 8.1.1.5.13 System Information Block type 13

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

- forward the content of the IE "NAS(ANSI-41) system info" to the non-access stratum entity indicated by the IE "CN domain identity".

- use the IE "CN_DRX_cycle length" to calculate frame number for the Paging Occasions and Page indicator as specified in TS 25.304.

### 10.1.47.5.2　　　Master Information Block

| Information Element | Presence | Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| **Other information elements** | | | | |
| MIB Value tag | M | | | |
| CHOICE mode | | | | |
| >TDD | | | | |
| >>SFNprime | M | | Integer (0,2..4094) | SFN=SFNprime (for first 10ms frame of 20ms TTI), SFN=SFNprime+1 (for last 10ms frame of 20ms TTI) |
| Network capability extension indication | | | | A value of "False" indicates that the Initial UE capability is interpreted according to "Release 99 (first release)". If the value is set to "True", a new definition given in a future release is added to this information element. |
| Capability Extension Info | C-Ind | | | Note 1 |
| References to other system information blocks | | 1 .. <maxSysInfoBlockcount> | | |
| >Scheduling information | M | | | |
| **CN information elements** | | | | |
| ~~CN~~ PLMN Type | M | | ~~Enumerated (GSM-MAP, ANSI-41, GSM-MAP AND ANSI-41)~~ | |
| PLMN Identity | C-GSM | | | |
| ANSI-41 Information elements | C-ANSI | | | |
| >P_REV | M | | | |
| >MIN_P_REV | M | | | |
| >SID | M | | | |
| >NID | M | | | |

NOTE 1:　This information element may be defined in later releases.

| Condition | Explanation |
|---|---|
| *GSM* | This information element shall be present in case (~~CN~~ PLMN Type == "GSM-MAP") or (~~CN~~ PLMN Type == "GSM-MAP ~~AND~~ and ANSI-41") |
| *ANSI* | This information element shall be present in case (~~CN~~ PLMN Type == "ANSI-41") or (~~CN~~ PLMN Type == "GSM-MAP ~~AND~~ and ANSI-41") |

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

# 10.2    Information element functional definitions

## 10.2.1    CN Information elements

### 10.2.1.1    CN domain identity

Identifies the type of core network domain.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| CN domain identity | M | | Enumerated (CS domain, PS domain, Don't care, Spare4) | Criticality: reject |

### 10.2.1.2    ~~CN~~ PLMN Type

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| ~~CN~~ PLMN Type | M | | Enumerated (GSM-MAP, ANSI-41, GSM-MAP and ANSI-41, spare4) | Identifies the type(s) of ~~core network~~Public Land Mobile Network (PLMN). This IE shall be used to control the interpretation of network dependent messages and information elements in the RRC protocol. Criticality: reject |

### 10.2.1.3    Flow Identifier

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Flow Identifier | M | | Enumerated (0…15) | Allocated by UE for a particular session |

### 10.2.1.4    IMEI

This IE contains an International Mobile Equipment Identity.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| IMEI | M | | | Setting specified in [TS 23.003] |
| >IMEI digit | | 15 | INTEGER(0..9) | |

### 10.2.1.5    IMSI (GSM-MAP)

This IE contains an International Mobile Subscriber Identity, used towards a GSM-MAP type of ~~core network~~PLMN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| IMSI (GSM-MAP) | M | | | Setting specified in [TS 23.003] |
| >IMSI digit | | 6 to 15 | INTEGER(0..9) | |

### 10.2.1.6 Location Area Identification

Identifies uniquely a location area for a GSM-MAP type of ~~core network~~PLMN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Location Area Identification | M | | | Setting specified in [TS 23.003] |
| >PLMN identity | M | | PLMN identity | |
| >LAC | M | | Bit string(16) | |

### 10.2.1.7 NAS binding info

A field with non-access stratum information to bind a RB to the non-access stratum. This information is transparent to RRC.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| NAS binding info | M | | Bit string (16) | |

### 10.2.1.8 NAS message

A non-access stratum message to be transferred transparently through UTRAN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| NAS message | M | | ~~Bit~~ Octet string (~~0~~1.. ~~maxNASmessagelength~~ 4095) | |

### 10.2.1.9 NAS system information (GSM-MAP)

This information element contains system information that belongs to the non-access stratum for a GSM-MAP type of ~~core network~~PLMN. This information is transparent to RRC. It may contain either information specific to one CN domain (CS or PS) or information common for both CN domains.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| GSM-MAP NAS system information | M | | ~~Bit~~ Octet string(~~0~~1.. ~~maxNASsysteminfoLength~~ 8) | |

### 10.2.1.10 P-TMSI (GSM-MAP)

This IE contains an Packet Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of ~~core network~~PLMN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| P-TMSI | M | | Bitstring (32) | Setting specified in [TS 23.003] |

### 10.2.1.11    PLMN identity

This information element identifies a Public Land Mobile Network for a GSM-MAP type of ~~core network~~PLMN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| PLMN identity | | | | Setting of digits is defined in [TS 2~~3~~4.003] |
| >MCC, Mobile Country Code | M | | | |
| >>MCC digit | | 3 | INTEGER(0..9) | |
| >MNC, Mobile Network Code | M | | | |
| >>MNC digit | | 3 | INTEGER(0..9) | |

### 10.2.1.12    Routing Area Code

Identifies a routing area within a location area for a GSM-MAP type of ~~core network~~PLMN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Routing Area Code | M | | Bit string(8) | Setting specified in [TS 23.003] |

### 10.2.1.13    Routing Area Identification

Identifies uniquely a routing area for a GSM-MAP type of ~~core network~~PLMN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Routing Area Identification | M | | | Setting specified in [TS 23.003] |
| >LAI | M | | Location Area Identification | |
| >RAC | M | | Routing Area Code | |

### 10.2.1.14    Service Descriptor

Identifies a service and/or a protocol entity in the core network. ~~The value of RR in the reference mentioned below is reserved for paging response.~~

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| Service Descriptor | M | | Bit string(4) ~~Refer to TS24.007 v3.1.0, section 11.2.3.1.1~~ | Protocol discriminator [TS24.007]. The value 'radio resources management messages' is reserved for paging response. |

### 10.2.1.15    TMSI (GSM-MAP)

This IE contains an Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of ~~core network~~PLMN.

| Information Element/Group name | Presence | ~~Range~~Multi | IE type and reference | Semantics description |
|---|---|---|---|---|
| TMSI (GSM-MAP) | M | | Bitstring (32) | Setting specified in [TS 23.003] |

# CHANGE REQUEST

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| | | | | | | |
|---|---|---|---|---|---|---|
| **25.331** | **CR** | **203** | | Current Version: | 3.1.0 | |

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

For submission to:  **TSG-RAN #7**
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    ↑

for approval   **X**
for information   ☐

strategic   ☐
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*(for SMG use only)*

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

**Source:**      TSG-RAN WG2        **Date:**   2000-02-10

**Subject:**      UTRAN mobility information elements

**Work item:**

**Category:**    F   Correction      **X**   **Release:**

*(only one category shall be marked with an X)*

| | | |
|---|---|---|
| F | Correction | **X** |
| A | Corresponds to a correction in an earlier release | |
| B | Addition of feature | |
| C | Functional modification of feature | |
| D | Editorial modification | |

**Release:**

| | |
|---|---|
| Phase 2 | |
| Release 96 | |
| Release 97 | |
| Release 98 | |
| Release 99 | **X** |
| Release 00 | |

**Reason for change:**      The specification of the UTRAN mobility information element needs updating. Updates proposed aligns the IE's with the information given in TS25.304 v3.1.0.

**Clauses affected:**      10.2.2.1 – 10.2.2.5

**Other specs affected:**

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

**Other comments:**

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

## 10.2.2    UTRAN mobility Information elements

### 10.2.2.1    Cell Access Restriction

Indicates the restrictions to cell access.

| Information Element/Group name | Presence | ~~Mult~~Rang e | IE type and reference | Semantics description |
|---|---|---|---|---|
| Cell Barred | M | | Boolean | |
| Cell Reserved for operator use | M | | Boolean | |
| Cell Reserved for SoLSA exclusive use | M | | Boolean | |

### 10.2.2.2    Cell identity

This information element identifies a cell unambiguously within a PLMN.

| Information Element/Group name | Presence | ~~Mult~~Rang e | IE type and reference | Semantics description |
|---|---|---|---|---|
| Cell identity | M | | Integer (0..268 435 455) | |

### 10.2.2.3    Cell selection and re-selection info

| Information Element/Group name | Presence | ~~Mult~~Rang e | IE type and reference | Semantics description |
|---|---|---|---|---|
| ~~Radio link timeout~~ | | | | |
| Cell_selection_and_reselection_ quality_measure | M | | Enumerated (CPICH Ec/N0, CPICH SIR) | Choice of measurement (CPICH ~~Rx~~ Ec/N0 or CPICH ~~Rx~~ SIR) to use as quality measure Q. Note 1. |
| $Qhyst_s$ | M | | Enumerated (0, 0.5, ..7.5) | [dB] |
| $Treselection_s$ | M | | Integer (0-31) | [s] |
| $Qsearch_s$ | M | | Integer (-20..0) | CPICH Ec/N0, [dB] |
| Cell Selection and Reselection parameters | O | | | Used in Alternative 2 in TS 25.304 |
| >Decoding range | O | | | Decoding is done only when the cell measurement exceeds the neighbour cell decoding range. |
| >$Qoffset_s$ | O | | | Offset for UEs decoding this cell for cell reselection measurement |
| >OffsetExp | C – if Qoffset | | | Expiration timer for UEs decoding the $Qoffset_s$ |

NOTE 1:  The work in order to support the CPICH ~~Rx~~ SIR measurement is in progress in RAN WG4 and may impact the use of that measurement in this document

## 10.2.2.4　Information for periodic cell and URA update

This information element indicates information to support mechanisms for periodical cell/URA update procedures. It is mapped on System Information message.

| Information Element/Group name | Presence | Mult~~Range~~ | IE type and reference | Semantics description |
|---|---|---|---|---|
| T_periodical_cell_update | M | | Enumerated (No updating, 1..1023) | Designate the time period between updating in minutes, or if no periodical updating should be done. |
| T_periodical_ura_update | M | | Enumerated (No updating, 1..1023) | Designate the time period between updating in minutes, or if no periodical updating should be done. |

## 10.2.2.5　URA identity

Gives the identity of the UTRAN Registration Area. It can be used to indicate to the UE which URA it shall use in case of overlapping URAs.

| Information Element/Group name | Presence | Mult~~Range~~ | IE type and reference | Semantics description |
|---|---|---|---|---|
| URA identity | M | | Integer~~Enumerated~~ (0..65 535) | |

**3GPP TSG RAN WG2 meeting #11**
**Turin, Italy, 28 February – 3 March 2000**

*Document* **R2-000625**

# CHANGE REQUEST

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| | | | | | | |
|---|---|---|---|---|---|---|
| **25.331** | CR | **204r1** | | Current Version: | 3.1.0 | |

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

For submission to: **TSG-RAN#7**
*list expected approval meeting # here*
　　　　　↑

for approval **X**
for information ☐

strategic ☐
non-strategic ☐

*(for SMG use only)*

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

**Proposed change affects:**
*(at least one should be marked with an X)*

(U)SIM ☐　　ME **X**　　UTRAN / Radio **X**　　Core Network ☐

**Source:** 　TSG-RAN WG2　　　　　　　　　　**Date:** 2000-2-28

**Subject:** 　RB information elements

**Work item:**

**Category:**
*(only one category shall be marked with an X)*

| | | |
|---|---|---|
| F | Correction | **X** |
| A | Corresponds to a correction in an earlier release | ☐ |
| B | Addition of feature | ☐ |
| C | Functional modification of feature | ☐ |
| D | Editorial modification | ☐ |

**Release:**

| | |
|---|---|
| Phase 2 | ☐ |
| Release 96 | ☐ |
| Release 97 | ☐ |
| Release 98 | ☐ |
| Release 99 | **X** |
| Release 00 | ☐ |

**Reason for change:**
- Added IETF to the abbreviations.
- Introduction of spare values, choice and MULT, where appropriate.
- RLC timers Timer_RST, Timer_MRW and RLC parameter MaxMRW were missing and are now included.
- Included the IE "Support for lossless SRNS relocation" in *PDCP info*.

- Clarification of Transmission RLC Discard.

**Clauses affected:** 　3.2, 10.2.4

**Other specs affected:**

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

**Other comments:**

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*3GPP*

## 3.2     Abbreviations

For the purposes of the present document, the following abbreviations apply:

| | |
|---|---|
| ACK | Acknowledgement |
| AICH | Acquisition Indicator CHannel |
| AM | Acknowledged Mode |
| AS | Access Stratum |
| ASN.1 | Abstract Syntax Notation.1 |
| BCCH | Broadcast Control Channel |
| BCFE | Broadcast Control Functional Entity |
| BER | Bite Error Rate |
| BLER | BLock Error Rate |
| BSS | Base Station Sub-system |
| C | Conditional |
| CCPCH | Common Control Physical CHannel |
| CCCH | Common Control Channel |
| CN | Core Network |
| CM | Connection Management |
| CPCH | Common Packet CHannel |
| C-RNTI | Cell RNTI |
| DCA | Dynamic Channel Allocation |
| DCCH | Dedicated Control Channel |
| DCFE | Dedicated Control Functional Entity |
| DCH | Dedicated Channel |
| DC-SAP | Dedicated Control SAP |
| DL | Downlink |
| DRAC | Dynamic Resource Allocation Control |
| DSCH | Downlink Shared Channel |
| DTCH | Dedicated Traffic Channel |
| FACH | Forward Access Channel |
| FAUSCH | Fast Uplink Signalling Channel |
| FDD | Frequency Division Duplex |
| FFS | For Further Study |
| GC-SAP | General Control SAP |
| ID | Identifier |
| IMEI | International Mobile Equipment Identity |
| IMSI | International Mobile Subscriber Identity |
| IE | Information element |
| IETF | Internet Engineering Task Force |
| IP | Internet Protocol |
| ISCP | Interference on Signal Code Power |
| LAI | Location Area Identity |
| L1 | Layer 1 |
| L2 | Layer 2 |
| L3 | Layer 3 |
| M | Mandatory |
| MAC | Media Access Control |
| MCC | Mobile Country Code |
| MM | Mobility Management |
| MNC | Mobile Network Code |
| MS | Mobile Station |
| NAS | Non Access Stratum |
| Nt-SAP | Notification SAP |
| NW | Network |
| O | Optional |
| ODMA | Opportunity Driven Multiple Access |
| PCCH | Paging Control Channel |
| PCH | Paging Channel |
| PDCP | Packet Data Convergence Protocol |
| PDSCH | Physical Downlink Shared Channel |
| PDU | Protocol Data Unit |
| PLMN | Public Land Mobile Network |

| | |
|---|---|
| PNFE | Paging and Notification Control Functional Entity |
| PRACH | Physical Random Access CHannel |
| P-TMSI | Packet Temporary Mobile Subscriber Identity |
| PUSCH | Physical Uplink Shared Channel |
| QoS | Quality of Service |
| RAB | Radio access bearer |
| RB | Radio Bearer |
| RAI | Routing Area Identity |
| RACH | Random Access CHannel |
| RB | Radio Bearer |
| RFE | Routing Functional Entity |
| RL | Radio Link |
| RLC | Radio Link Control |
| RNTI | Radio Network Temporary Identifier |
| RNC | Radio Network Controller |
| RRC | Radio Resource Control |
| RSCP | Received Signal Code Power |
| RSSI | Received Signal Strength Indicator |
| SAP | Service Access Point |
| SCFE | Shared Control Function Entity |
| SF | Spreading Factor |
| SHCCH | Shared Control Channel |
| SIR | Signal to Interference Ratio |
| SSDT | Site Selection Diversity Transmission |
| S-RNTI | SRNC - RNTI |
| tbd | to be decided |
| TDD | Time Division Duplex |
| TF | Transport Format |
| TFCS | Transport Format Combination Set |
| TFS | Transport Format Set |
| TME | Transfer Mode Entity |
| TMSI | Temporary Mobile Subscriber Identity |
| Tr | Transparent |
| Tx | Transmission |
| UE | User Equipment |
| UL | Uplink |
| UM | Unacknowledged Mode |
| UMTS | Universal Mobile Telecommunications System |
| UNACK | Unacknowledgement |
| URA | UTRAN Registration Area |
| U-RNTI | UTRAN-RNTI |
| USCH | Uplink Shared Channel |
| UTRAN | UMTS Terrestrial Radio Access Network |

## 10.2.4 Radio Bearer Information elements

### 10.2.4.1 PDCP info

The purpose of the PDCP info IE is to indicate which algorithms shall be established and to configure the parameters of each of the algorithms.

| Information Element/Group name | Presence | RangeMULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| | | | | |
| Support for lossless SRNS relocation | C-LosslessCriteria | | | |
| PDCP PDU header | O | | boolean | Whether a PDCP PDU header is existent or not. Default is TRUE. |
| Header compression information | | 0 to <Algorithm Count> | | |
| PDCP PDU header | O | | boolean | Whether a PDCP PDU header is existent or not. Default is TRUE. |
| >Algorithm type | M | | Enumerated (RFC2507) | NOTE: The enumerated list contains currently only one specified type. Other values are FFS. |
| >Reconfiguration reset | O | | boolean | Whether the algorithm shall be reset in the reconfiguration. Default value is TRUE. |
| >CHOICE algorithm type | C-AlgorithmExists | | | |
| >>RFC2507 | | | | |
| >>>F_MAX_PERIOD | O | | Integer (1..65535) | Largest number of compressed non-TCP headers that may be sent without sending a full header. Default value is 256. |
| >>>F_MAX_TIME | O | | integer (1..255) | Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5. |
| >>>MAX_HEADER | O | | integer (60..65535) | The largest header size in octets that may be compressed. Default value is 168. |
| >>>TCP_SPACE | O | | integer (3..255) | Maximum CID value for TCP connections. Default value is 15. |
| >>>NON_TCP_SPACE | O | | integer (3..65535) | Maximum CID value for non-TCP connections. Default value is 15. |
| >>>EXPECT_REORDERING | O | | boolean | Whether the algorithm shall reorder PDCP SDUs or not. Default value is TRUE (reordering expected). |
| >>Spare 2 .. Spare 8 | | | | Criticality: reject |

| RangeMULT Bound | Explanation |
|---|---|
| AlgorithmCount | The number of algorithm types configured for PDCP entity. |

| Condition | Explanation |
|---|---|
| *LosslessCriteria* | This IE is present only if the IE "RLC mode" is "Acknowledged" and the IE "In-sequence delivery " is "True". |
| *AlgorithmExists* | The IE is present only if *AlgorithmCount* is not 0. |

| CHOICE *algorithm type* | Condition under which the given *identity* is chosen |
|---|---|
| RFC2507 | when PDCP will perform header compression according to the IETF standard as described in RFC2507 |
| Spare 2 .. Spare 8 | Reserved for future protocol versions |

## 10.2.4.2    Predefined radio configuration identity

This information element identifies a pre- defined radio parameter configuration.

| Information Element/Group name | Presence | ~~Range~~MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| Predefined radio configuration identity | M | | Enumerated (0..15) | |

## 10.2.4.3    Radio bearer activation time info

This IE contains the time, in terms of RLC sequence numbers, when a certain configuration shall be activated, for a number of radio bearers.

| Information Element/Group name | Presence | ~~Range~~MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| Radio bearer activation time | | 0 to <maxReconRBs> | | |
| >RB identity | M | | | |
| >RLC sequence number | M | | Integer (0.. 4095) | RLC SN [TS 25.322] |

## 10.2.4.4    RB identity

An identification number for the radio bearer affected by a certain message.

| Information Element/Group name | Presence | ~~Range~~MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| RB identity | M | | Integer(0..31) | Values 0-3 shall only be used for signalling radio bearers |

## 10.2.4.5    RB mapping info

A multiplexing option for each possible transport channel this RB can be multiplexed on.

| Information Element/Group name | Presence | ~~Range~~MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| Information for each multiplexing option | | 1 to <maxMuxOptionsCount> | | |
| >Number of RLC logical channels | | 1 to 2 | | 1 or 2 logical channels per RLC entity or radio bearer RLC [TS 25.322] |
| >>Uplink transport channel type | M | | Enumerated( DCH,RACH, CPCH,USCH) | CPCH is FDD only USCH is TDD only |
| >>Transport channel identity | O | | | This is the ID of a transport channel that this RB could be mapped onto. |
| >>Logical channel identity | O | | Integer(1..16) | This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel. |
| >>MAC logical channel priority | O | | Enumerated( 1..8) | This is priority between  a user's different RBs (or logical channels). The different priorities for this user's RBs are mapped (through the MAC's C/T MUX) to the TFC selection algorithm. Priority 1 shall have the highest priority and priority 8 the lowest. |
| >Number of RLC logical channels | | 1 to 2 | | 1 or 2 logical channels per RLC entity or radio bearer RLC [TS 25.322] |
| >>Downlink transport channel type | M | | Enumerated( DCH,FACH, DSCH) | |
| >>Transport channel identity | O | | | |
| >>Logical channel identity | O | | Integer(1..16) | |

| ~~Range~~MULT Bound | Explanation |
|---|---|
| *MaxMuxOptionsCount* | Maximum number of allowed multiplexing options that can be sent is 8 |

## 10.2.4.6     RLC info

| Information Element/Group name | Presence | ~~Range~~ MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| Uplink RLC info | | | | |
| >RLC mode | M | | Enumerated (Acknowledged, ~~Non A~~Unacknowledged, Transparent, Spare 4) | Indicates if Acknowledged, Unacknowledged or Transparent mode RLC shall be used. Criticality: reject. |
| >Transmission RLC discard | C-*NonTrOp* | | | |
| >Transmission window size | C-*ACK* | | Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072,3584,4096, Spare 16) | Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used. ~~Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used.~~ Criticality: reject |
| Timer_RST | C-*ACK* | | Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000, Spare 17 .. Spare 32) | It is used to detect the loss of RESET ACK PDU. Criticality: reject |
| Max_RST | C-*ACK* | | Enumerated(1, 4, 6, 8, 12 16, 24, 32, Spare 9 .. Spare 16) | The maximum number of retransmission of RESET PDU. Criticality: reject |
| >Polling info | C-*ACKOp* | | | |
| Downlink RLC info | | | | |
| >RLC mode | M | | Enumerated (Acknowledged, ~~Non A~~Unacknowledged,Transparent, Spare 4 ) | Indicates if Acknowledged, Unacknowledged or Transparent mode RLC ~~should~~ shall be used. Criticality: reject |
| >In-sequence delivery | M | | Boolean | Indication if RLC should preserve the order of higher layer PDUs when these are delivered. |
| ~~>Reception RLC discard timer~~ | ~~C-timer~~ | | ~~Enumerated(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5)~~ | ~~Elapsed time in seconds before a SDU is discarded. Only present if timer based discard mode without explicit signalling is chosen.~~ |
| >Receiving window size | C-*ACK* | | Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072,3584,4096, Spare 16) | Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used.~~(Necessity is FFS.)~~ Criticality: reject |
| >Downlink RLC status Info | C-*ACKOp* | | | |

| Condition | Explanation |
|---|---|
| *Timer* | This IE is only sent if timer based discard is used without explicit signalling |
| *NonTrOp* | This IE is optional for UTRAN to send if IE "RLC mode" is "~~acknowledged~~Acknowledged" or "~~non-~~Unacknowledged" |
| *AckOp* | This IE is optional for UTRAN to send if IE "RLC mode" is "~~acknowledged~~Acknowledged" |
| *Ack* | This IE is only present if IE "RLC mode" is "~~acknowledged~~ Acknowledged~~mode~~" |

## 10.2.4.6.1 Transmission RLC Discard

| Information Element/Group name | Presence | MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| SDU Discard Mode | M | | Enumerated( Timer based explicit, Timer based no explicit, Max_DAT retransmissions, No_discard) | Different modes for discharge of the RLC buffer on the transmitter side; Timer based with explicit signalling, Timer based without explicit signalling or Discard after Max_DAT retransmissions.<br><br>For unacknowledged mode only Timer based without explicit signalling is applicable.<br><br>If No_discard is used, reset procedure shall be done after Max_DAT retransmissions. |
| Timer_discard | C-~~timer~~Timer Based | | Enumerated( 0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5) | Elapsed time in seconds before a SDU is discarded. |
| Timer_MRW | C-*Explicit* | | Enumerated( 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000, Spare 17 .. Spare 32) | It is used to trigger the retransmission of a STATUS PDU containing an MRW SUFI field. Criticality: reject |
| Max_DAT | C-~~discard~~MaxDAT | | Enumerated( 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40) | Number of retransmissions of a PU before a SDU is discarded. |
| MaxMRW | C-*Explicit* | | Enumerated( 1, 4, 6, 8, 12 16, 24, 32, Spare 9 .. Spare 16) | It is the maximum value for the number of retransmissions of a MRW command. |
| ~~Max_RST~~ | ~~C-no_discard~~ | | ~~Enumerated( 1, 4, 6, 8, 12 16, 24, 32)~~ | ~~The maximum number of retransmission of RESET PDU.~~ |

| Condition | Explanation |
|---|---|
| ~~*Timer*~~ | ~~This IE is only sent if timer based discard is used without explicit signalling~~ |
| *Explicit* | This IE is present only if the IE "SDU Discard Mode" has the value "Timer based explicit" |
| *NoExplicit* | This IE is present only if the IE "SDU Discard Mode" has the value "Timer based no explicit" |
| *TimerBased* | This IE is present only if the IE "SDU Discard Mode" has the value "Timer based explicit" or "Timer based no explicit" |
| ~~*Discard*~~ | ~~This IE is only sent when the SDU discard technique is to discard SDUs after a given number of PU re-transmissions~~ |
| *MaxDAT* | This IE is present only if the IE "SDU Discard Mode" has the value "Max_DAT retransmissions" or "No_discard" |
| No_discard | This IE is present only ~~sent~~ if ~~when~~ the IE "SDU ~~discard~~ Discard Mode" is ~~not used~~"No_discard"~~.~~ |

### 10.2.4.6.2 Polling info

| Information Element/Group name | Presence | ~~Range~~MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| Timer_poll_prohibit | O | | Enumerated( 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000, Spare 17 .. Spare 32) | Minimum time between polls in ms. Criticality: reject |
| Timer_poll | O | | Enumerated( 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000, Spare 17 .. Spare 32) | Started when poll is transmitted. New poll when timer expires and no STATUS received. Time in ms. Criticality: reject |
| Poll_PU | O | | Enumerated( 1,2,4,8,16,32,64,128, Spare 9 .. Spare 16) | Poll at every Poll_PU PU. Criticality: reject |
| Poll_SDU | O | | Enumerated( 1,4,16,64, Spare 5 .. Spare 8) | Poll at every Poll_SDU SDU. Criticality: reject |
| Last transmission PU poll | M | | Boolean | Indicates if poll at last PU in transmission buffer |
| Last retransmission PU poll | M | | Boolean | Indicates if poll at last PU in retransmission buffer |
| Poll_Window | O | | Enumerated( 50,60,70,80, 85,90,95,100, Spare 9 .. Spare 16) | Poll at Poll_Window % of transmission window. Criticality: reject |
| Timer_poll_periodic | O | | Enumerated( 0.1,0.2, 0.3, 0.4, 0.5, 0.75, 1, 2, Spare 9 .. Spare 16) | Timer for periodic polling. Timer in seconds. Criticality: reject |

~~NOTE:　At least one or more parameters are necessary when polling info is sent.~~

### 10.2.4.6.3    Downlink RLC STATUS info

| Information Element/Group name | Presence | ~~Range~~MULT | IE type and reference | Semantics description |
|---|---|---|---|---|
| Timer_Status_Prohibit | O | | Enumerated(<u>50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000, Spare 17 .. Spare 32</u>~~160, 320, 640, 1280~~) | Minimum time in ms between STATUS reports<u>. Criticality: reject</u> |
| Timer_EPC | O | | Enumerated( 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000<u>, Spare 17 .. Spare 32</u>) | Timer for EPC. Timer in ms <u>Criticality: reject</u> |
| Missing PU Indicator | M | | Boolean | Indicates if UE should send a STATUS report for each missing PU that is detected |
| Timer_STA<u>T</u>US_periodic | O | | Enumerated( 0.1,0.2, 0.3, 0.4, 0.5, 0.75, 1, 2) | Timer for periodic STATUS reports. Timer in seconds |