# TSG-RAN Meeting #6
# Nice, France, 13 – 15 December 1999

*TSGRP#6(99)657*

**Title:** **Agreed CRs of category "B" (New feature) to TS 25.331 v"Intermediate", 2nd set**

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

**Agenda item:** **5.2.3**

| Doc-1st- | Status- | Spec | CR | Rev | Subject | Cat | Versio | Versio |
|---|---|---|---|---|---|---|---|---|
| R2-99i11 | agreed | 25.331 | 067 | | Selection of initial UE identity | B | interm | 3.1.0 |
| R2-99i13 | agreed | 25.331 | 069 | | UE capability verification in the | B | interm | 3.1.0 |
| R2-99j90 | agreed | 25.331 | 070 | 1 | DPCH initial power | B | interm | 3.1.0 |
| R2-99i15 | agreed | 25.331 | 071 | | Actions when entering idle mode | B | interm | 3.1.0 |
| R2-99i17 | agreed | 25.331 | 072 | | Specification of inter-frequency and | B | interm | 3.1.0 |
| R2-99j92 | agreed | 25.331 | 073 | 1 | Signalling radio bearers | B | interm | 3.1.0 |
| R2-99k43 | agreed | 25.331 | 077 | 1 | Radio bearer, transport channel and | B | interm | 3.1.0 |
| R2-99k28 | agreed | 25.331 | 079 | 2 | RRC signalling for PDCP | B | interm | 3.1.0 |
| R2-99k47 | agreed | 25.331 | 082 | 1 | Signalling connection release | B | interm | 3.1.0 |
| R2-99k38 | agreed | 25.331 | 083 | 1 | Addition of cell access restriction | B | interm | 3.1.0 |
| R2-99k34 | agreed | 25.331 | 092 | 1 | Support of UE autonomous update | B | interm | 3.1.0 |
| R2-99k39 | agreed | 25.331 | 095 | 1 | TPC combining for power control | B | interm | 3.1.0 |
| R2-99j85 | agreed | 25.331 | 100 | 1 | Support of physical channel | B | interm | 3.1.0 |
| R2-99j96 | agreed | 25.331 | 106 | 1 | System information on FACH | B | interm | 3.1.0 |
| R2-99j94 | agreed | 25.331 | 108 | 1 | SAPs and Primitives for DS-41 mode | B | interm | 3.1.0 |
| R2-99k50 | agreed | 25.331 | 110 | 1 | RACH message length signaling on | B | interm | 3.1.0 |
| R2-99j80 | agreed | 25.331 | 113 | 1 | Routing of NAS messages in | B | interm | 3.1.0 |
| R2-99j95 | agreed | 25.331 | 117 | 1 | Merging the hard handover and | B | interm | 3.1.0 |
| R2-99k88 | agreed | 25.331 | 121 | | Efficient rate command signalling | B | interm | 3.1.0 |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document* (R2-99i11)**
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# CHANGE REQUEST

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| 25.331 | CR | 067 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN #6 | for approval | X | strategic | | (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:** 1999-11-29

**Subject:** Selection of initial UE identity

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:** The UE shall select one among a number of possible UE identities during RRC connection establishment. This CR proposes a text for how the selection is made.

**Clauses affected:** 8.5.1, 10.2.3.4

**Other specs affected:**

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

**Other comments:**

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# 8.5 General procedures

## 8.5.1 Selection of initial UE identity

~~FFS~~

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

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

1. TMSI (GSM-MAP): The TMSI (GSM-MAP) shall be chosen if available. The IE "LAI" in the IE "Initial UE identity" shall also be present when TMSI (GSM-MAP) is used, for making it unique.
2. P-TMSI (GSM-MAP): The P-TMSI (GSM-MAP) shall be chosen if available and no TMSI (GSM-MAP) is available. The IE "RAI" in the IE "Initial UE identity" shall in this case also be present when P-TMSI (GSM-MAP) is used, for making it unique.
3. IMSI (GSM-MAP): The IMSI (GSM-MAP) shall be chosen if available and no TMSI (GSM-MAP) or P-TMSI is available.
4. IMEI: The IMEI shall be chosen when none of the above three conditions are fulfilled..

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

### 10.2.3.4 Initial UE identity

This information element identifies the UE at a request of an RRC connection.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| **CHOICE** UE id type | M | | | |
| IMSI (GSM-MAP) | | | ~~TS 24.008~~IMSI (GSM-MAP) | |
| TMSI (GSM-MAP) | | | ~~TS 24.008~~TMSI (GSM-MAP) | |
| P-TMSI (GSM-MAP) | | | ~~TS 24.008~~P-TMSI (GSM-MAP) | |
| IMEI | | | ~~TS 24.008~~IMEI | |
| LAI | ~~C newLA~~O | | ~~TS 24.008~~Location Area Identification | |
| RAI | ~~C newRA~~O | | ~~TS 24.008~~Routing Area Identification | |

| **CHOICE** *UE Id Type* | **Condition under which the given** *UE Id Type* **is used** |
|---|---|
| IMSI (GSM-MAP) | See section 8.5.1 |
| TMSI (GSM-MAP) | See section 8.5.1 |
| P-TMSI (GSM-MAP) | See section 8.5.1 |
| IMEI | See section 8.5.1 |

| ~~**Condition**~~ | ~~**Explanation**~~ |
|---|---|
| ~~*NewLA*~~ | ~~See section 8.5.1~~ |
| ~~*NewRA*~~ | ~~See section 8.5.1~~ |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document (R2-99i13)***
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| 25.331 | CR | 069 | Current Version: | Intermediate |
|---|---|---|---|---|

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

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**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:** 99-11-29

**Subject:** UE capability verification in the security mode control procedure

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:**
In the LS from TSG-RAN WG3, R2-99d60, the necessity of a UE classmark verification mechanism was identified. In S3, this has now been decided and the CR S3-99333 states that the UE shall verify UE classmark in received message 'Security Mode Control'.
The verification of UE classmark for security is proposed to be added in the Security Mode Control procedure. If the received UE classmark is not the same as was sent by the UE, the UE releases the RRC connection and enters idle mode.
In this CR, the existing IE "ciphering capability" is used. However, the integrity protection capability is also needed and the changes needs in any case be aligned with any new structure of the information elements for UE capabilities.

**Clauses affected:** 8.1.10, 10.1.7.5

**Other specs affected:**

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

**Other comments:**


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## 8.1.10 Security mode control

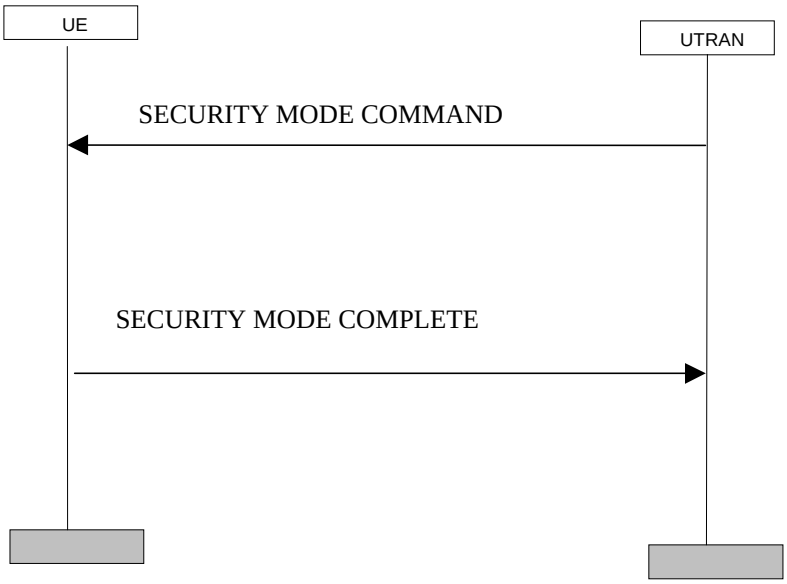


**Figure 1***) Security mode control procedure*

### 8.1.10.1 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.

### 8.1.10.2 Initiation

The UTRAN sends a SECURITY MODE COMMAND message on the downlink DCCH in AM RLC, using the old ciphering configuration.

For the signalling link, the UTRAN starts to cipher the messages, when the layer 2 acknowledgement for the SECURITY MODE COMMAND is received.

For radio bearers in TM RLC, the UTRAN may set the IE "Activation Time", both in uplink and in downlink, in order to synchronise the time instant at which the cipher key shall be switched.

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

For the signalling link, the UE shall start to transmit using the new cipher configuration, and to receive and decipher messages.

If the IE "Activation Time" is included for radio bearers in TM RLC, the UE shall switch to the new cipher configuration at the specified time.

If the IE 'ciphering capabilities' is the same as indicated by variable UE_CAPABILITY_TRANSFERRED, t~~T~~he UE shall send a SECURITY MODE COMPLETE message on the uplink DCCH in AM RLC, using the new cipher configuration. When the transmission of the SECURITY MODE COMPLETE message has been confirmed by RLC, the procedure ends.

### 8.1.10.4 Activation time too short

If the time specified by the IE "Activation Time" has elapsed, the UE shall switch immediately to the new cipher configuration.

### 8.1.10.5 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.

### 8.1.10.6~~5~~ Reception of SECURITY MODE COMPLETE message by the UTRAN

*Note : The same procedure can be used for integrity control. But this is FFS.*

## 10.1.7.5 SECURITY MODE CONTROL COMMAND

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN to UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN Information elements** | | | | |
| CN domain identity | M | | | Indicates which cipher key is Applicable |
| | | | | |
| | | | | |
| **UE information elements** | | | | |
| Ciphering capability | M | | | |
| Ciphering mode info | O | | | Only present if ciphering shall be controlled |
| | | | | |

| Range Bound | Explanation |
|---|---|
| *MaxReconRBs* | For each radio bearer that is reconfigured |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document* (R2-99j90)**
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| 25.331 | CR | 070r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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**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:** 2 Dec 1999

**Subject:** DPCCH initial power

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:**

In the current specification a heading for general action when entering CELL_DCH is stated in 8.5.3. However, that clause is not referred to in any of the current specified procedures. It is therefor proposed to remove this clause.

What should be specified is how the UE shall set the power when establish a dedicated physical channel, i.e. that an outer loop estimate is performed. This was also indicated in Liaison statement R2-99d94 from RAN-WG1 which treated the open loop estimate for RACH.

Since, the parameters to be used in the outer loop estimate for DPCCH is signalled in dedicated messages to the UE, it is proposed to only have one general offset parameter instead of separate parameters (e.g. SIR-target, DL Tx Power, UL load and so on).

**Clauses affected:**

8.5.3, 10.2.6.9
New sub clause:
8.5.7.6.x Uplink DPCH power control info

**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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### 8.5.7.6.x Uplink DPCH power control info

If the IE "Uplink DPCH power control info" is included the UE shall

- Start inner loop power control as specified in 8.5.3
- For the UL inner loop power control use the step size in IE "TPC step size"

***** Next modified section *****

## 8.5.3 Open loop power control upon establishment of DPCCH~~Actions when entering CELL_DCH state~~

~~FFS~~

When establishing the first DPCCH the UE shall start the UL inner loop power control at a power level according to:

DPCCH_Initial_power = DPCCH_Power_offset – CPICH_RSCP

Where

DPCCH_Power_offset shall have the value of IE "DPCCH Power offset" in IE "Uplink DPCH power control info

The value for the CPICH_RSCP shall be measured by the UE.

***** Next modified section *****

### 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~~Constant value~~ | M | | Enumerated( -164, -162..-6) | ~~Necessity is ffs~~In dB |
| ~~UL interference~~ | | | | ~~Necessity is ffs~~ |
| TPC step size | M | | Enumerated (1dB, 2dB) | |
| TDD | | | | |
| UL target SIR | M | | | |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

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**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:** Nov 26 1999

**Subject:** Actions when entering idle mode

**Work item:**

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

| | | |
|---|---|---|
| F | Correction | |
| A | Corresponds to a correction in an earlier release | |
| B | Addition of feature | X |
| 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:** Text about general actions when entering idle mode from connected mode is proposed.

**Clauses affected:** 8.5.2

**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:**

## 8.5.2 Actions when entering idle mode from connected mode

~~FFS~~

When entering idle mode from connected mode, the UE shall attempt to select a suitable cell to camp on. The UE shall perform cell selection when leaving connected mode according to [25.304].

While camping on a cell, the UE shall acquire system information according to the system information procedure in section [8.1], perform measurements according to the measurement control procedure specified in section [8.4] and, if registered, be prepared to receive paging and notification messages according to the paging procedure in section [8.2].

The UE shall compare the 20 most significant bits of the ciphering hyper frame number for each radio bearer and store the highest value in the USIM.

The UE shall store the integrity protection hyper frame number in the USIM.

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**Nice, France, 13-15 December 1999**

***Document (R2-99i17)***
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|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | |

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**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:** 1999-11-29

**Subject:** Support of Inter-frequency and Inter-System reporting events for FDD

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:** There is a need for specifying Inter-frequency measurements and events in UTRAN

**Clauses affected:** New chapters 14.x.x added

**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.x Inter-frequency reporting events for FDD

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. Examples of inter-frequency reporting events that would be useful for inter-frequency handover evaluation are given below. Note that normally the UEs do not need to report all these events. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are evaluated with respect to one of the measurement quantities given in section 14.x.x. The measurement objects are the monitored primary common pilot channels (CPICH). A “non-used frequency” is a frequency that the UE have been ordered to measure upon but are not used of the active set. A “used frequency” is a frequency that the UE have been ordered to measure upon and is also currently used for the connection.

### 14.x.x.x Event 2a: Change of best frequency.

If any of the non- used frequencies quality estimate becomes better than the currently used frequency quality estimate, and event 2a has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) the best primary CPICH on the non-used frequency that triggered the event.

### 14.x.x.x Event 2b: The estimated quality of the currently used frequency is below a certain threshold **and** the estimated quality of a non-used frequency is above a certain threshold.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE “ Threshold used frequency” and the estimated quality of a non-used frequency is above the value of the IE “Threshold non-used frequency” and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the non-used frequency that triggered the event.

### 14.x.x.x Event 2c: The estimated quality of a non-used frequency is above a certain threshold

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is above the value of the IE “Threshold non-used frequency” and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the non-used frequency.

### 14.x.x.x Event 2d: The estimated quality of the currently used frequency is below a certain threshold

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE “ Threshold used frequency” and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the used frequency.

### 14.x.x.x Event 2e: The estimated quality of a non-used frequency is below a certain threshold

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is below the value of the IE “Threshold non-used frequency”and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the non-used frequency.

### 14.x.x.x Event 2 f: The estimated quality of the currently used frequency is above a certain threshold

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is above the value of the IE “ Threshold used frequency” and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the used frequency.

## 14.x.x Inter-System reporting events for FDD

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message the UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. Examples of inter-system reporting events that would be useful for inter-system handover evaluation are given below. Note that normally the UEs do not need to report all these events. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are measured with respect to one of the measurement quantities given in section 14.x.x The measurement objects are the monitored primary common pilot channels (CPICH) for UTRAN and objects specific for other systems. A "used UTRAN frequency" is a frequency that the UE have been ordered to measure upon and is also currently used for the connection to UTRAN. "Other system" is e.g. GSM.

### 14.x.x.x Event 3a: The estimated quality of the currently used UTRAN frequency is below a certain threshold **and** the estimated quality of the other system is above a certain threshold.

When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE " Threshold own system" and the hysteresis and time to trigger conditions are fulfilled and the estimated quality of the other system is above the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system and the best primary CPICH on the used frequency.

### 14.x.x.x Event 3b: The estimated quality of other system is below a certain threshold

When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is below the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system and the best primary CPICH on the non-used frequency.

### 14.x.x.x Event 3c: The estimated quality of other system is above a certain threshold

When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is above the value of the IE " Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system and the best primary CPICH on the non-used frequency.

### 14.x.x.x Event 3d: Change of best cell in other system

If any of the quality estimates for the cells in the other system becomes better than the quality estimate for the currently best cell in the other system, and event 3d has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) information the best cell in the other system.

## 1.1 14.2 Traffic Volume Measurements

### *1.1.1 14.2.1 Traffic Volume Measurement Quantity*

For traffic volume measurements in the UE only one quantity is measured. This quantity is RLC buffer payload in number of bytes. In order to support a large variation of bit rates and RLC buffer size capabilities, a non-linear scale should be used *[Note: details are FFS]*. Since, the expected traffic includes both new and retransmitted RLC payload units all these should be included in the payload measure. It should also be noted that traffic volume measurements are only applicable for acknowledged and unacknowledged mode.
According to what is stated in the Measurement Control message, the UE should support measuring of buffer payload for a specific RB, RBs multiplexed onto the same Transport channel and the total UE buffer payload (the same as one transport channel for a UE that uses RACH).

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document* (R2-99j92)**
*e.g. for 3GPP use the format TP-99xxx*
*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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

| 25.331 | CR | 073r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN #6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 1999-12-02

**Subject:** Signalling radio bearers

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:**

On the RAN2#8 meeting it was agreed to include a number of radio bearers for signalling ("signalling radio bearers") based on the contribution R2-99e53. In this CR, the following modifications to TS 25.331 are proposed:

1. At RRC connection (re-) establishment, three or optionally four, signalling radio bearers can be established as selected by UTRAN.
2. The radio bearer identity values 0-3 are reserved for usage by signalling radio bearers, according to the following: RB#0: UM for RRC, RB#1: AM for RRC, RB#2: NAS high priority, RB#3: NAS low priority. Note: The radio bearer for transparent mode signalling (e.g. for rate control) can use any value above 3.
3. A text specifying which signalling radio bearer to use by different messages is added in section 10.1.
4. The IE "signalling link type" is removed. The only available option to configure signalling radio bearers is using the IE "RLC info", but extensions for using e.g. "Signalling link type" can be added in later protocol versions.
5. The Radio bearer establishment and reconfiguration procedures are modified to be able to establish and reconfigure signalling radio bearers. (Note: No modifications are needed on the Radio bearer release procedure for releasing a signalling radio bearer.)
6. In the Direct transfer procedure a selection on RB #2 or #3 is specified, based on priority indication from the non-access stratum.
7. In the RRC connection re-establishment, cell update and hard handover procedures the suspension and resumption of data transmission on AM and UM radio bearer #2 and upwards is made to avoid the loss of user data and NAS messages,.

**Clauses affected:** 8.1.8.2, 8.1.8.3, 8.3.1.2, 8.3.1.5, 8.3.5.3, 8.3.5.4, 8.3.5.5, 10.1.4.1, 10.1.4.7, 10.1.5.4, 10.1.5.10, 10.2.4.1, 10.2.4.3 (deleted)

**Other specs affected:**

| | | |
|---|---|---|
| Other 3G core specifications | [ ] | → List of CRs: |
| Other GSM core specifications | [ ] | → List of CRs: |
| MS test specifications | [ ] | → List of CRs: |

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

**Other comments:** The addition of suspend and resume of data transmission into the radio bearer control procedures is proposed by CR 117.

help.doc

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

### 8.1.8.2 Initiation of direct transfer procedure in the UE

In the UE, the direct transfer procedure shall be initiated, when the upper layers request a transfer of a NAS message. The UE shall transmit the 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 shall, if available, be selected when “SAPI 3” is requested.
- 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 IE "CN domain identity" to indicate which CN node the NAS message is destined to.

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

### 8.1.8.3 Initiation of direct transfer procedure in the UTRAN

In the UTRAN, the direct transfer procedure shall be initiated, when the upper layers request the transfer of a NAS message or the release of a signalling connection (FFS) The UTRAN shall transmit the 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 should, if available, be selected when “SAPI 3” is requested.
- 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.

### 8.3.1.2 Initiation

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

- In CELL_FACH or CELL_PCH state, the UE shall perform the cell update procedure when selecting another cell (cell reselection)
- In CELL_FACH and CELL_PCH state, the UE shall perform the cell update procedure upon expiry of T305 while the UE is in the service area. The UE shall only perform this periodic cell updating if configured by means of the IE "Information for periodical cell and URA update" in System Information Block Type 2. The UE shall initially start timer T305 upon entering CELL_FACH or CELL_PCH state
- In CELL_PCH state and URA_PCH state, the UE shall initiate the cell update procedure if it wants to transmit UL data
- In CELL_PCH and URA_PCH state, the UE shall perform the cell update procedure when receiving a PAGING TYPE 1 message as in subclause 8.1.2.3

- moving to CELL_FACH state, if not already in that state
- delete any C-RNTI and suspend data transmission on ~~any DTCH(s)~~RB 2 and upwards, if RLC-AM or RLC-UM is used on those radio bearers
- sending a CELL UPDATE message on the uplink CCCH,
- starting timer T302 and resetting counter V302

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

- In case of cell reselection: "cell reselection",
- In case of periodic cell updating: "periodic cell update",
- In case of UL data transmission: "UL data transmission",
- In case of paging response: "paging response".

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

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

### 8.3.1.5 Reception of the CELL UPDATE CONFIRM message by the UE

Upon receiving the CELL UPDATE CONFIRM message, the UE shall stop timer T302.

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

If the CELL UPDATE CONFIRM message includes the IE "CN domain identity" and the IE "NAS system information", the UE shall forward the content of the IE "NAS system information" to the non-access stratum entity of the UE identified by the IE "CN domain identity".

If the CELL UPDATE CONFIRM message includes the IE "URA-Id" the UE shall store this URA identity.

If the CELL UPDATE CONFIRM message does not include IE "new C-RNTI", IE "new U-RNTI", IE "PRACH info" nor IE "Secondary CCPCH info", no RRC response message is sent to the UTRAN.

If the CELL UPDATE CONFIRM message includes the IE "newC-RNTI" and optionally the IE "new U-RNTI" but does not include IE "PRACH info" or IE "Secondary CCPCH info", the UE shall update its identities and transmit an RNTI REALLOCATION COMPLETE message on the uplink DCCH using the PRACH indicated in the broadcasted system information.

If the CELL UPDATE CONFIRM message includes the IE "PRACH info" and/or the IE "Secondary CCPCH info", the UE shall

- Perform the actions stated in subclauses 8.5.7.6.2 and 8.5.7.6.3
- update its identities if the CELL UPDATE CONFIRM message includes the IE new C-RNTI" and optionally the IE "newU-RNTI"
- transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using the PRACH indicated in CELL UPDATE CONFIRM message

The UE shall enter a state according to subclause 8.5.8 applied on the CELL UPDATE CONFIRM message, unless specified otherwise below.

If the IE "Cell update cause" in CELL UPDATE message was set to "UL data transmission" or "paging response", the UE shall remain in CELL_FACH state.

If the IE "Cell update cause" in CELL UPDATE message was set to "periodic cell update" or "cell reselection", the UE shall return to the state it was in before initiating the cell update procedure.

If the CELL UPDATE CONFIRM message includes the IE "DRX cycle length", the UE shall update DRX cycle length.

In case none of the above conditions apply, the UE shall return to the state it was in before initiating the cell update procedure.

In case the UE ends in CELL_FACH or CELL_PCH state and periodic cell updating is configured, it shall reset timer T305.

In case the UE does not end in CELL_FACH state, it shall delete its C-RNTI.

If the UE remains in CELL_FACH state and the CELL UPDATE CONFIRM message includes the IE "New C-RNTI" the UE shall then resume data transmission on ~~any DTCH(s)~~RB 2 and upwards , if RLC-AM or RLC-UM is used on those radio bearers.

# 10.1 Radio Resource Control messages

In connected mode, RB 0,1,2 and optionally 3 are available for usage by RRC messages using RLC-UM and RLC-AM on the DCCH. The UE and UTRAN shall select radio bearer for RRC messages using RLC-UM or RLC-AM on the DCCH, according to the following:

- RB 0 shall be used for all messages sent on the DCCH, when using RLC unacknowledged mode (RLC-UM).
- RB 1 shall be used for all messages sent on the DCCH, when using RLC acknowledged mode (RLC-AM), except for the DIRECT TRANSFER message.
- RB 2 or 3 shall be used by the DIIRECT TRANSFER message sent on the DCCH in RLC acknowledged mode (RLC-AM), as specified in subclause 8.1.8.

For RRC messages on the DCCH using RLC transparent mode (RLC-TM), the transparent signalling DCCH shall be used.

### 10.1.4.1 RRC CONNECTION RE-ESTABLISHMENT

*<Functional description of this message to be included here>*

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| New U-RNTI | O | | | |
| New C-RNTI | O | | | |
| Activation time | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note1) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| CN domain identity | O | | | (Note1) |
| NAS system info | O | | | (Note1) |

| **RB information elements** | | | | |
|---|---|---|---|---|
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| CHOICE *RLC info type* | O | | | For the first release this choice has only one possible value. This choice type may be extended in future releases. |
| RLC info | ~~O~~ | | | ~~FFS~~ |
| RB multiplexing info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | For uplink TFCSs |
| TFCS | O | | | For downlink TFCSs |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | For TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPDCH info | | | | |
| PRACH info | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <MaxRlcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | | | | |
| Downlink DPDCH info | | | | |
| Secondary CCPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |

| | | | | |
|---|---|---|---|---|
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET info | O | | | UL/DL radio resource for CPCH control (Note3) |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
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[Note1: 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 |
| *IfSSDT* | This IE is sent only when SSDT is to be used |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

| **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 |
| | |

| Range Bound | Explanation |
|---|---|
| *MaxNoCN domains* | Maximum number of CN domains |
| *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 |
| *MaxRLcount* | Maximum number of radio links |

## 10.1.4.7 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Initial UE identity | M | | | |
| U-RNTI | M | | | |
| | | | | |
| C-RNTI | O | | | Only if assigned to a common transport channel |
| Activation time | O | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| ~~RB identity~~ | ~~M~~ | | | ~~Indicates the signalling link~~ |
| Signalling radio bearers | | 3 to 4 | | Information for signalling radio bearers, in the order RB 0 up to 3. |
| > 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 | | | | |
| ~~Signalling link type~~ | ~~M~~ | | | |
| > RB mapping info | M | | | ~~For the signalling link~~ |
| **TrCH information elements** | | | | |
| TFCS | O | | | Uplink TFCS |
| TFCS | O | | | Downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | |
| Uplink transport channel information | | 0 to <MaxULTrCHCount> | | Send transport channel information for each new Uplink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Downlink transport channel information | | 0 to <MaxDLTrCHCount> | | Send transport channel information for each new downlink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Transparent mode signalling info | C if TM_DCH | 0 or 1 | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRLcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | | | | |

| | | | | |
|---|---|---|---|---|
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is sent only when SSDT is to be used |
| *IfTM_DCH* | This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands. |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxULTrCHCoun* | Maximum number of new uplink transport channels |
| *MaxDLTrCHCount* | Maximum number of new downlink transport channels |
| *MaxRLcoun* | Maximum number of radio links to be set up |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.4 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| 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~~ | | | ~~FFS~~ |
| 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 |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |

| | | | | |
|---|---|---|---|---|
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | 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 |

| **Range 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 |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.10 RADIO BEARER SETUP

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| NAS binding info | M | | | |
| CN domain identity | | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C – RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| Information for new RBs | | 1 to <MaxNewRBcount> | | |
| 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 | ~~M~~ | | | |
| RB mapping info | M | | | |
| Information for other RB's affected by this message | | 0 to <MaxOtherRBcount> | | |
| RB identity | M | | | |
| RB mapping info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | editor should this be FFS also? |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | FFS |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |

| | | | | |
|---|---|---|---|---|
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| **Condition** | **Explanation** |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| **Range 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 |
| *MaxNewRBcount* | Maximum number of RBs that could be setup with this message |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.2.4.1 RB identity

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

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

~~10.2.4.3 Signalling link type~~

~~The purpose of the Signalling Link Type information element is to indicate the RLC parameters needed for the signalling link.~~

~~Each possible value of Signalling Link Type information element refers to a predefined set of parameters. Details FFS.~~

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document (R2-99k43)***
*e.g. for 3GPP use the format TP-99xxx*
*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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

| 25.331 | CR | 077r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: TSG-RAN#6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 3rd Dec 1999

**Subject:** Radio Bearer, Transport channel and Physical channel Information Elements

**Work item:**

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

| | | |
|---|---|---|
| F | Correction | |
| A | Corresponds to a correction in an earlier release | |
| B | Addition of feature | X |
| 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:**

There is a need to have value range for the Information elements used in the RRC signalling in order to have possibilities to start specifying the coding.

Also values for the presence column is being proposed.

As a result of the Liaison Statement received from WG1, R2-99d88, WG2 decided to include the use of a mixture of primary and secondary scrambling codes for one CCTrCH. A reply LS R2-99(8)g60 to RAN WG2 has been sent.
This has been included in this proposed CR.

**Clauses affected:**

10.1.4.1, 10.1.4.7, 10.1.5.1, 10.1.5.4, 10.1.5.7, 10.1.5.10, 10.1.5.13
10.2.4
10.2.5.2 to 10.2.5.3, 10.2.5.10
10.2.6.1 to 10.2.6.8, 10.2.6.10, 10.2.6.15, 10.2.6.17, 10.2.6.18, 10.2.6.23 to 10.2.6.24, 10.2.6.31

**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.

### 10.1.4.1 RRC CONNECTION RE-ESTABLISHMENT

*<Functional description of this message to be included here>*

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

| **Information Element** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| New U-RNTI | O | | | |
| New C-RNTI | O | | | |
| Activation time | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note1) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| CN domain identity | O | | | (Note1) |
| NAS system info | O | | | (Note1) |

| | | | | |
|---|---|---|---|---|
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| RB multiplexing info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | For uplink TFCSs |
| TFCS | O | | | For downlink TFCSs |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | For TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPDCH info | | | | |
| PRACH info | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <MaxRlcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | O | | | |
| Downlink DPDCH info | O | | | |
| Secondary CCPCH info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET info | O | | | UL/DL radio resource for CPCH control (Note3) |
| Gated Transmission Control info | O | | | FFS |

| | | | | |
|---|---|---|---|---|
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

[Note1: 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 |
| *IfSSDT* | This IE is sent only when SSDT is to be used |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxNoCN domains* | Maximum number of CN domains |
| *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 |
| *MaxRLcount* | Maximum number of radio links |

## 10.1.4.7 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Initial UE identity | M | | | |
| U-RNTI | M | | | |
| | | | | |
| C-RNTI | O | | | Only if assigned to a common transport channel |
| Activation time | O | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB identity | M | | | Indicates the signalling link |
| Signalling link type | M | | | |
| RB mapping info | M | | | For the signalling link |
| **TrCH information elements** | | | | |
| TFCS | O | | | Uplink TFCS |
| TFCS | O | | | Downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | |
| Uplink transport channel information | | 0 to <MaxULTrCHCount> | | Send transport channel information for each new Uplink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Downlink transport channel information | | 0 to <MaxDLTrCHCount> | | Send transport channel information for each new downlink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Transparent mode signalling info | C if TM_DCH | 0 or 1 | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRLcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | O | | | |
| Downlink DPCH info | O | | | |
| Secondary CCPCH info | O | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH |

| | | | | |
|---|---|---|---|---|
| | | | | control (Note2) |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is sent only when SSDT is to be used |
| *IfTM_DCH* | This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands. |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxULTrCHCoun* | Maximum number of new uplink transport channels |
| *MaxDLTrCHCount* | Maximum number of new downlink transport channels |
| *MaxRLcoun* | Maximum number of radio links to be set up |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.1 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| **Information Element** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| | | | | |
| | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | O | | | |
| Downlink DPCH info | O | | | |
| Secondary CCPCH info | O | | | For FACH |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only included in the sent message when using RACH/FACH |
| | |

| Range Bound | Explanation |
|---|---|
| *MaxRLcount* | Maximum number of radio links to be set up |

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

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

### 10.1.5.4 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 $\rightarrow$ UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| 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 |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| CHOICE *mode* | | | | |

| | | | | |
|---|---|---|---|---|
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | O | | | |
| Downlink DPCH info | O | | | |
| Secondary CCPCH info | O | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | 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 |

| **Range 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 |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.7 RADIO BEARER RELEASE

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB identity | | 1 to <MaxRelRBcount> | | |
| RB identity | | 0 to <MaxOtherRBcount> | | |
| RB mapping info | O | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddFFSTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| DRAC information | C DRAC | 1 to <MaxReconAddFFSTrCH> | | |
| Dynamic Control | | | | |
| Transmission time validity | | | | |
| Time duration before retry | | | | |
| Silent period duration before release | | | | |
| Downlink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | Editor : this limit should probably also be MaxReconAddFFSTrCH |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |

| | | | | |
|---|---|---|---|---|
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | O | | | |
| Downlink DPCH info | O | | | |
| Secondary CCPCH 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 |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxRLcount* | Maximum number of radio links |
| *MaxDelRBcount* | Maximum number of RBs to be released/deleted |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |
| *MaxDelTrCHcount* | Maximum number of Transport CHannels to be removed |
| *MaxReconAddFFSTrCH* | Maximum number of transport channels to add (FFS) 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 2: How to map UL and DL radio resource in the message is FFS.

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.10 RADIO BEARER SETUP

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| NAS binding info | M | | | |
| CN domain identity | | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C – RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| Information for new RBs | | 1 to <MaxNewRBcount> | | |
| RB identity | M | | | |
| RLC info | M | | | |
| RB mapping info | M | | | |
| Information for other RB's affected by this message | | 0 to <MaxOtherRBcount> | | |
| RB identity | M | | | |
| RB mapping info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | editor should this be FFS also? |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | FFS |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource | O | | | |

| | | | | |
|---|---|---|---|---|
| information | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | O | | | |
| Downlink DPCH info | O | | | |
| Secondary CCPCH info | O | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| **Condition** | **Explanation** |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| **Range 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 |
| *MaxNewRBcount* | Maximum number of RBs that could be setup with this message |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.13 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| | | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Reconfigured TrCH information | | 0 to <MaxReconTrCH> | | |
| Transport channel identity | | | | |
| TFS | | | | |
| DRAC information | C DRAC | 1 to <MaxReconTrCHDRAC> | | |
| 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 | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | O | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |

| | | | | |
|---|---|---|---|---|
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | O | | | |
| Downlink DPCH info | O | | | |
| Secondary CCPCH info | O | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only sent when using RACH/FACH |

| **Range 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 |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

# 10.2.4 Radio Bearer Information elements

## 10.2.4.1 RB identity

An identification number for the RB affected by a certain message.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| RB Identity | M | | Integer(0..31) | |

## 10.2.4.2 RLC info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Uplink RLC info | | | | |
| RLC mode | M | | enumerated (Acknowledged, Non Acknowledged, Transparent) | ~~Note 1~~ |
| | | | | |
| ~~PU size~~ | ~~O~~ | | ~~Integer~~ | |
| 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 | | | | |
| RLC mode | M | | enumerated (Acknowledged, Non Acknowledged,Transparent ) | Indicates if Acknowledged, Unacknowledged or Transparent mode RLC should be used.<br>Note 1 |
| In-sequence delivery | M | | Boolean | Indication if RLC should preserve the order of higher layer PDUs when these are delivered. |
| ~~PU Size~~ | ~~)~~ | | ~~Integer~~ | ~~Indicates the size of RLC Payload Units.~~ |
| 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 ~~(FFS – Note 2)~~ | 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" |

~~*Note 1: It is FFS if this IE always includes the same parameter values for both uplink and downlink RLC.*~~

~~*Note 2:It is FFS whether "Receiving window size" is necessary or not.*~~

### 10.2.4.2.1 Transmission RLC Discard

| Information Element/Group name | Presence | Range | 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 the RLC buffer on the transmitter side;<br>Timer based with explicit signalling, Timer based without explicit signalling or Discard after Max_DAT retransmissions.<br>For unacknowledged mode only Timer based without explicit signalling is applicable.<br>If No_discard is used, reset procedure shall be done after Max_DAT retransmissions. |
| Timer_discard | 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. |
| Max_DAT | C-discard | | 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. |
| Max_RST | C-no_discard | | Enumerated( 1, 4, 6, 8, 12 16, 24, 32) | The muximum number of retransmission of RESET PDU. |

| Condition | Explanation |
|---|---|
| *Timer* | This IE is only sent if timer based discard is used without explicit signalling |
| *Discard* | This IE is only sent when the SDU discard technique is to discard SDU's after a given number of PU re-transmissions |
| *No_discard* | This IE is only sent when the SDU discard is not used. |

### 10.2.4.2.2 Polling info

| Information Element/Group name | Presence | Range | 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) | Minimum time between polls in ms |
| Timer_poll | O | | Enumerated( 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000) | Started when poll is transmitted. New poll when timer expires and no STATUS received. Time in ms. |
| Poll_PU | O | | Enumerated( 1,2,4,8,16,32 ,64,128) | Poll at every Poll_PU PU |
| Poll_SDU | O | | Enumerated( 1,4,16,64) | Poll at every Poll_SDU SDU |
| 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 ) | Poll at Poll_Window % of transmission window |
| Timer_poll_periodic | O | | Enumerated( 0.1,0.2, 0.3, 0.4, 0.5, 0.75, 1, 2) | Timer for periodic polling. Timer in seconds. |

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

#### 10.2.4.2.3 Downlink RLC STATUS info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Timer_Status_Prohibit | O | | Enumerated( 160, 320, 640, 1280) | Minimum time in ms between STATUS reports |
| Timer_EPC | O | | Enumerated( 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000) | Timer for EPC. Timer in ms. |
| Missing PU Indicator | M | | Boolean | Indicates if UE should send a STATUS report for each missing PU that is detected |
| Timer_STAUS_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. |

### 10.2.4.3 Signalling link type

The purpose of the Signalling Link Type information element is to indicate the RLC parameters needed for the signalling link.

Each possible value of Signalling Link Type information element refers to a predefined set of parameters. Details FFS.

### 10.2.4.4 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 <maxMuxOptionsCount> | | |
| Number of RLC logical channels | | 1 to 2 | | 1 or 2 logical channels per RLC entity or radio bearer |
| Uplink transport channel type | M | | Enumerated( DCH,RACH, CPCH,USCH) | CPCH is FDD only<br>USCH is TDD only |
| Transport channel identity | O~~M~~ | | ~~Integer(0..maxTrChNum)~~ | 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~~includes both~~ priority between ~~different~~ a users' ~~traffic when using a common or shared channel, and between~~ different RBs (or logical channels). ~~Traffic for a certain user~~. The ~~D~~different priorities for ~~one~~ this users´ RBs are mapped (through the MAC´s ~~T and~~ C/T MUX~~es~~) to the TFC selection algorithm.<br><br>Priority 1 shall have the highest priority and priority 8 the lowest.<br>~~*[Note: Usage and precise meaning of this is FFS.]*~~ |
| Number of RLC logical channels | | 1 to 2 | | 1 or 2 logical channels per RLC entity or radio bearer |
| Downlink transport channel type | M | | Enumerated( DCH,FACH, DSCH) | |
| Transport channel identity | O | | ~~Integer(0..maxTrChNum)~~ | |
| Logical channel identity | O | | Integer(1..16) | |

| Range Bound | Explanation |
|---|---|
| *MaxMuxOpti~~i~~tonsCount* | Maximum number of allowed multiplexing options that can be sent is 8. |

~~Note: The necessity of dividing RB multiplexing into in uplink and downlink is FFS.~~

# 10.2.5 Transport CH Information elements

## 10.2.5.2 Transport Format Combination Subset

Indicates which Transport format combinations in the already defined Transport format combination set that are allowed.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE Subset representation | M | | | |
| Minimum allowed Transport format combination number | | | Integer(0..MaxTFCValue-1) | The integer number is a reference to the *Transport format combination,* that arrived at that position in the *Transport Format Combination Set.* |
| Transport format combination | | 1 to <maxTFCcount> | Integer(0..MaxTFCValue-1) | The integer number(s) is a reference to the *Transport format combination,* that arrived at that position in the *Transport Format Combination Set.* |

| Range Bound | Explanation |
|---|---|
| *MaxTFCcount* | Maximum number of Transport Format Combinations that could be sent as the limited set that the UE is allowed to use is 1023. |
| *MaxTFCValue* | The max value of the Transport Format Combinations that currently is defined for this UE. |

## 10.2.5.3 Transport channel identity

This information element is used to distinguish transport channels (both common and dedicated transport channels).

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Transport channel identity | M | | Enumerated(1..64) | |

## 10.5.2.10 Transparent mode signalling info

This information element points out a transport channel that is used for transparent mode signalling, and which type of message that is sent on the DCCH mapped on that channel.

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Transport channel identity | M | | | Transport channel used for transparent mode signalling DCCH |
| Message type | M | | Enumerated (TRANSPORT FORMAT COMBINATION CONTROL) | Indicates which type of message sent on the transparent mode signalling DCCH |

# 10.2.6 Physical CH Information elements

## 10.2.6.1 Frequency info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| **CHOICE *mode*** | | | | |
| **FDD** | | | | |
| UARFCN uplink (Nu)~~UTRA RF Channel Number~~ | M | | Enumerated(0..698) | ~~A unique identifier for the channel raster and its associated parameters (as described by the other parameters within this info element)~~[25.101] |
| UARFCN downlink (Nd)~~Raster Position~~ | O | | Enumerated(175..623) | ~~Provided to enable the definition of permitted carrier frequency associated to the specific UTRA RF Channel Number parameter~~[25.101] |
| TDD | | | | |
| UARFCN (Nt) | M | | Enumerated(0..698) | [25.102] |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Duplex distance | O | | | Default = 190 MHz |
| Chip rate | O | | | Default = 3.84 Mcps |
| ~~RF Channel Type~~ Radio Access Mode | O | ~~enumerated (TDD, FDD)~~ | Enumerated (TDD, FDD) | Identifies whether the UTRA RF Channel Number corresponds to FDD or~~/~~ TDD~~/ uplink/ downlink only~~ |

## 10.2.6.2 Primary CPICH info (FDD only)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Primary scrambling code | M | | ~~Integer~~Enumerated(0..511) | |

## 10.2.6.3 Secondary CPICH info (FDD only)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| DL scrambling code | C-*PrimCPICH* | | Enumerated(0..511) | |
| Channelization code | M | | Enumerated(0..255) | |

| Condition | Explanation |
|---|---|
| *PrimCPICH* | This IE is only included if the DL scrambling code is different to that of the primary CPICH |

## 10.2.6.4 Primary CCPCH info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| FDD | | | | |
| | | | | |
| STTD indicator | MO | | Boolean | |
| TDD | | | | |
| Timeslot | M | | | The PSCH timeslot (the value k) |
| Midamble type | O | | | Long or short midamble |
| Cell parameters ID | M | | | For the cell parameter table |
| Sync case | M | | | Case 1,2, or 3 |
| | | | | |

## 10.2.6.5 Secondary CCPCH info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| FDD | | | | |
| Secondary scrambling code | O | | Integer (0..14) | |
| STTD indicator | MO | | Boolean | |
| | | | | |
| Spreading factor | M | | Enumerated( 4, 16, 32, 64, 128, 256) | |
| Code number | M | | Integer(0..maxCodeNum) | |
| Pilot symbol existence | M | | Boolean | |
| TFCI existence | M | | Boolean | |
| Fixed or Flexible Position | M | | Enumerated (Fixed, Flexible) | |
| Timing Offset | O | | | Time difference between PCCPCH |
| TDD | | | | |
| Channelization code | M | | | |
| Time slot | M | | | Timeslot of the Secondary CCPCH |
| Midamble type | O | | | Long or short midamble for each time slot |
| Midamble shift | M | | | Midamble shift of Secondary CCPCH for each timeslot |
| Superframe offset | M | | | Offset of the first CCPCH transmission in a 72 superframe |
| Repetition period | M | | | Repetition period of the CCPCH in the 72 superframe |
| Repetition length | M | | | Length of the allocation for each repetition |
| | | | | |

| Condition | Explanation |
|---|---|
| | |

| Range Bound | Explanation |
|---|---|
| *MaxCodeNum* | Maximum number of codes for one spreading factor (SF) is equal to SF-1. |

## 10.2.6.6 PRACH info (for RACH)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| FDD | | | | |
| Available Signature | | 1 to <maxSigNum> | | |
| Signature | M | | Enumerated (0,1.2…..15) | |
| Available SF | | 1 to <maxSf> | | |
| SF | M | | Enumerated (32,64,128,256 chip/sym) | |
| Scrambling code word number | M | | Enumerated (0,1.2…..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) | |
| Persistence factor N | M | | ffs | 0-1 step ffs |
| | | | | |
| | | | | |
| | | | | |
| TDD | | | | |
| Spreading factor | M | | | Spreading factor 8 or 16 are possible |
| Timeslot | M | | | |
| Channelisation code | M | | | 1:1 mapping between spreading code and midamble shift |
| Midamble | O | | | Basic midamble code for PRACH (two different codes possible) |

| 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 |

| | |
|---|---|
| | |
| | |

## 10.2.6.7 PRACH power control info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| —>FDD | | | | |
| | | | | |
| ——>>Primary CPICH DL TX power | M | | Enumerated(6..43) | In dBm |
| ——>>UL interference | M | | Enumerated(-110..-70) | In dBm |
| ——>>Constant value | M | | Enumerated(-10..10) | In dBm |
| | | | | |
| ——>>Power offset•••• $\Delta P_0$ | M | | Enumerated(-10..10) | Power step when no acquisition indicator is received. In dBm |
| ——>>Power offset•••• $\Delta P_1$ | M | | Enumerated(-10..10) | Power step when negative acquisition is received. In dBm |
| ——>>Power offset•••• $\Delta P_{p-m}$ | M | | Enumerated(-5..10) | Power offset between preamble and the message part in dBm |
| —>TDD | | | | |
| | | | | |

*NOTE: The usage of these parameters needs clarification and are also dependent on the WG1 RACH discussions.*

## 10.2.6.8 Uplink DPCH info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| FDD | | | | |
| UL scrambling code | | | | What short or long uplink scrambling code a certain UE should use |
| Scrambling code type | M | | Enumerated( short, long) | |
| Scrambling code number | M | | Integer(0..16 777215) | (24 bits) |
| | | | | |
| Number of DPDCH | M | | Integer(1.. maxDPDCH count) | |
| —DPDCH channelization code | C-*Single* | | Enumerated( 4, 8, 16, 32, 64, 128, 256) | SF of the channelization code for data part |
| TFCI existence | M | Boolean | | |
| Number of FBI bits | O | | Enumerated (1, 2 bits) | If neither SSDT nor FB Mode Transmit Diversity Signalling is supported, this parameter is not needed and the number of FBI bits is set to “0”. |
| Puncturing Limit | M | | Enumerated( 0.40, 0.44..1) | Granularity of 0.04 |
| TDD | | | | |
| Scrambling code type | M | | Enumerated( short, long) | |
| Scrambling code number | M | | Integer(0..16 777215) | (24 bits) |
| DPCH Activation Time | O | | | Farme number start of allocation period (the Superframe offset can be derived) |
| Duration | O | | | Total number of frames |
| Repetition period | O | | | Repetition period of the DPCH in the 72 Superframe |
| Repetition length | O | | | Length of the allocation for each repetition |
| TFCI presence | O | | | Coding for a TFCI field in a DPCH |
| DPCH channelisation code | M | | | SF of the channelisation code of the data part for each DPCH |
| Timeslot | M | | | Timeslot of DPCH for each DPCH |
| Midamble type | O | | | Short or long, for each time slot, for each DPCH |
| Midamble shift | M | | | Midamble shift for each timeslot for each DPCH |
| DPCH activation time | O | | | Frame number start of allocation (the Superframe OFFset can be derived) for each timeslot for each DPCH |

| Condition | Explanation |
|---|---|
| *Single* | This IE is included if IE “Number of DPDCH” is “1” |

| Range Bound | Explanation |
|---|---|
| *MaxDPDCHcount* | Maximum number of DPDCH's |

## 10.2.6.10 Downlink DPCH info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| FDD | | | | |
| ~~Secondary scrambling code~~ | ~~O~~ | | ~~Integer (0..14)~~ | |
| DL channelization code | | 1 to <maxChan count> | | Channelization codes to be used in the downlink for DPCH |
| Secondary scrambling code | O | | Integer (0..14) | |
| Spreading factor | M | | Enumerated( 4, 16, 32, 64, 128, 256, 512) | |
| Code number | M | | Integer(0..maxCodeNum) | |
| | | | | |
| Fixed or Flexible Position | M | | Enumerated (Fixed, Flexible) | |
| TFCI existence | M | | Boolean | |
| Number of bits for Pilot bits | C-SF | | Enumerated (2,4,8 bits) | |
| STTD Indicator | C-STTD | | | |
| TDD | | | | |
| DPCH Activation Time | O | | | Farme number start of allocation period (the Superframe offset can be derived) |
| Duration | O | | | Total number of frames |
| Repetition period | O | | | Repetition period of the DPCH in the 72 Superframe |
| Repetition length | O | | | Length of the allocation for each repetition |
| TFCI presence | O | | | Coding for a TFCI field in a DPCH |
| DPCH channelisation code | M | | | SF of the channelisation code of the data part for each DPCH |
| Timeslot | M | | | Timeslot of DPCH for each DPCH |
| Midamble type | O | | | Short or long, for each time slot, for each DPCH |
| Midamble shift | M | | | Midamble shift for each timeslot for each DPCH |
| DPCH activation time | O | | | Frame number start of allocation (the Superframe OFFset can be derived) for each timeslot for each DPCH |

| Condition | Explanation |
|---|---|

| | |
|---|---|
| *STTD* | This IE is only sent if STTD is applied |
| | |
| *SF* | This IE is only sent if SF=128 or 256 is applied.<br>If SF=256, value is 2,4 or 8<br>If SF=128, value is 4 or 8 |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxChancount* | Maximum number of channelization codes used for DL DPCH |
| *MaxCodeNum* | Maximum number of codes for one spreading factor (SF) is equal to SF-1. |

## 10.2.6.15 Default DPCH Offset Value (FDD only)

Indicates the default offset value within interleaving size at a resolution of 512chip (1/5 slot) to offset CFN in the UE. This is used to distribute discontinuous transmission periods in time and also to distribute NodeB-RNC transmission traffics in time. Even though the CFN is offset by DOFF, the start timing of the interleaving will be the timing that "CFN mod (interleaving size)"=0 (e.g. interleaving size: 2,4,8) in both UE and SRNC.

| **Information Element/Group name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
|---|---|---|---|---|
| Default DPCH Offset Value | M | | Enumerated (0, 512, 1024..306688) | Number of chip, granularity of 512 chip.<br>0 to 599 times 512 chip. |

## 10.2.6.17 AICH Info (FDD only)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Secondary scrambling code | O | | Integer(0..14) | |
| Channelization code | M | | Integer(0..255) | SF is fixed and equal to 256 |
| STTD indicator | M~~O~~ | | Boolean | |
| AICH transmission timing | M | | Enumerated (0, 1) | |

| | |
|---|---|
| ~~*primCPICH*~~ | |

## 10.2.6.18 PICH Info

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| FDD | | | | |
| Secondary scrambling code | O | | Integer(0..14) | |
| Channelisation code | M | | Integer(0..255) | SF is fixed and equal to 256 |
| Number of PI per frame | M | | Enumerated (18, 36 72 144) | |
| STTD indicator | M~~O~~ | | Boolean | |
| TDD | | | | |
| Channelisation code | M | | | |
| Timeslot | M | | | |
| Midamble type | O | | | |
| Midamble shift | M | | | |
| Superframe offset | M | | | |
| Repetition period | M | | | |
| PICH repetition cycle | M | | | |
| M | FFS | | | |

## 10.2.6.23 Downlink DPCH power control information

This information element indicates the range of ~~Eb/No~~SIR target values and the initial ~~Eb/No~~SIR target value to be set in the UE on this physical, channel for the downlink ~~closed~~ inner loop power control.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| DPC Mode | M | | Enumerated (mode0, mode1) | |
| Initial ~~Eb/No~~SIR target value | M | | Enumerated( -10, -9.5..20) | Initial ~~Eb/No~~SIR value to be used for the DL closed loop power control. Granularity of 0.5 dB. |
| Min ~~Eb/No~~SIR target value | M | | Enumerated( -10, -9.5..20) | Minimum ~~Eb/No~~SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB. |
| Max ~~Eb/No~~SIR target value | M | | Enumerated( -10, -9.5..20) | Maximum ~~Eb/No~~SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB. |

## 10.2.6.24 Downlink Outer Loop Control

This information element indicates whether the UE is allowed or not to increase its downlink ~~Eb/No~~SIR target value above the current value.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| DL Outer loop control | M | | Boolean | |

## 10.2.6.31 Maximum allowed UL TX power

This information element indicates the maximum allowed uplink transmit power.

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Maximum allowed UL TX power | | | Enumerated(-50..33) | In dBm |

**3GPP TSG-RAN Meeting #6** ***Document*** ***(R2-99k28)***

**Nice, France, 13-15 December 1999**

# 3G 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 | 079r2 | Current Version: | Intermediate |
|---|---|---|---|---|

*3G specification number ↑* *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN#6 *list TSG meeting no. here ↑* — for approval [X] / for information [ ] *(only one box should be marked with an X)*

*Form: 3G CR cover sheet, version 1.0* *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

**Proposed change affects:** *(at least one should be marked with an X)* USIM [ ] ME [X] UTRAN [X] Core Network [ ]

**Source:** TSG-RAN WG2 **Date:** 25/11/99

**Subject:** RRC signalling for PDCP

**3G Work item:**

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

| | | |
|---|---|---|
| F | Correction | |
| A | Corresponds to a correction in a 2G specification | |
| B | Addition of feature | X |
| C | Functional modification of feature | |
| D | Editorial modification | |

**Reason for change:**

**Clauses affected:** 3.2, 8.5.7.4, 10.1.5.4, 10.5.1.5.10, 10.2.3

**Other specs affected:**

| | | |
|---|---|---|
| Other 3G core specifications | [ ] | → List of CRs: |
| Other 2G 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.

### Introduction

In our email discussion kickoff document we discussed the PDCP model and introduced a new information element "PDCP info" which is necessary to configure the PDCP. Based on this the following changes to the RRC specification are proposed.

Besides a "PDCP capability" IE is added to the "UE CAPABILITY RADIO" IE to indicate which algorithms and which value range of their parameters are supported by the UE.

The value ranges as well as default values for the algorithm RFC2507 are derived directly from the RFC2507 specification. The only exception here is the parameter EXPECT_REORDERING. That is supposed to be TRUE as default in opposite to RFC2507 which sets the default value as FALSE.

Each algorithm type contains additionally also a boolean type of information element called Reconfiguration reset which is purposed to indicate UE that in the reconfiguration the reset of the algorithm is always performed although the parameters would be the same. The mechanism is supposed to be used e.g. in SRNC relocation in which the target RNC may initiate the compression algorithm reset by applying RADIO BEARER RECONFIGURATION with the new compression parameters (may well be the same as used in source RNC).

It is to be noted also that RFC2507 is currently the only agreed header compression method to be specified in PDCP but some additional methods are expected to be added already in release '99. The details related to those are still FFS.

# 3. Definitions, Symbols and abbreviations

## 3.2 Abbreviations

| | |
|---|---|
| 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 |
| 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 |
| 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 Enitity |
| 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 |

---

# 8.5 General procedures

## 8.5.7.4 Radio bearer information elements

### 8.5.7.4.1 RB mapping info

If the IE “RB identity” and the IE “RB mapping info” are included, the UE shall

- If any, delete all previously stored multiplexing options for that radio bearer.
- Store each new multiplexing option for that radio bearer.

### 8.5.7.4.2 RLC Info

If the IE “RB identity” and the IE “RLC Info” are included, the UE shall

- Configure the transmitting and receiving RLC entities in the UE for that radio bearer accordingly.

### 8.5.7.4.3 PDCP Info

If the IEs "RB identity" and "PDCP info" are included, the UE shall

- Configure the PDCP entity for that radio bearer accordingly

# 10 Message and information element functional definition and content

The function of each Radio Resource Control message together with message contents in the form of a list of information elements is defined in subclause 10.1.

**Functional definitions of the information elements are then described in subclause 10.2.**Information elements are marked as either M- mandatory, O - Optional or C -conditional (see Table 1).

| **Abbreviation** | **Meaning** |
|---|---|
| M | IE's marked as Mandatory (M) will always be included in the message. |
| O | IE's marked as Optional (O) may or may not be included in the message. |
| C | IE's marked as Conditional (C) will be included in a message only if the condition is satisfied otherwise the IE is not included. |

**Table 1) meaning of abbreviations used in RRC messages and information elements**

## 10.1.5 Radio Bearer control messages

### 10.1.5.4 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| PDCP info | O | | | |
| RLC info | O | | | FFS |
| 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 |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| **CHOICE channel** | O | | | |

| | | | | |
|---|---|---|---|---|
| **requirement** | | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | 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 |

| **Range 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 |

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

| | |
|---|---|
| PRACH info (for FAUSCH) | |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

---

## 10.1.5.10 RADIO BEARER SETUP

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| NAS binding info | M | | | |
| CN domain identity | | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C – RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| Information for new RBs | | 1 to <MaxNewRBcount> | | |
| RB identity | M | | | |
| PDCP info | O | | | |
| RLC info | M | | | |
| RB mapping info | M | | | |
| Information for other RB's affected by this message | | 0 to <MaxOtherRBcount> | | |
| RB identity | M | | | |
| RB mapping info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | editor should this be FFS also? |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | FFS |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |

| | | | | |
|---|---|---|---|---|
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| **Condition** | **Explanation** |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| **Range 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 |
| *MaxNewRBcount* | Maximum number of RBs that could be setup with this message |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

---

# 10.2 Information element functional definitions

## 10.2.3 UE Information elements

### 10.2.3.35 UE radio capability

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Power control capability | M | | | |
| Code resource capability | M | | | |
| UE mode capability | M | | | |
| Transport CH support capability | O | | | |
| Ciphering capability | M | | | |
| Macro diversity capability | M | | | |
| FAUSCH usage support | O | | | Indicates true/false for “DCH allocation function”, “USCH capability request function”. |
| PDCP capability | O | | | IE shall be absent if PDCP is not supported by the UE. |

Note: The overall discussion on UE capability parameters should be concluded before the contents of this information element can be finalized.

### 10.2.3.36 PDCP capability~~ies~~

Indicates which algorithms and which value range of their parameters are supported by the UE.

| **Information Element/Group name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
|---|---|---|---|---|
| S~~s~~upported algorithms~~ types~~ | M | ~~1~~0~~0~~ to <maxAlgoTypeCount> | Enumerated (RFC2507) | |
| CHOICE *algorithm type* | | | | |
| ~~Parameters for~~ RFC2507 | | | | |
| Maximum_MAX_HEADER | O | | integer (60..65535) | The largest header size in octets that may be compressed ~~-~~by the UE Default value is 65535. |
| Maximum TCP_SPACE | O | | integer (3..255) | Maximum stored number of headers for TCP connections. Default value is 255. |
| Maximum NON_TCP_SPACE | O | | integer (3..65535) | Maximum stored number of headers for non-TCP connections. Default value is 65535. |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxAlgoTypeCount* | Maximum number of algorithm~~s~~ types specified in TS 25.323. |
| | |

## 10.2.4 Radio Bearer Information elements

The purpose of the Signalling Link Type information element is to indicate the RLC parameters needed for the signalling link.

Each possible value of Signalling Link Type information element refers to a predefined set of parameters. Details FFS.

### 10.2.4.5 PDCP info

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

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| ~~algorithm type~~Header compression information | ~~M~~ | ~~1~~0 to <Algorithm Count> | ~~Enumerated (RFC2507, others)~~ | |
| 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* | | | | |
| ~~Parameters for~~ 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). |

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

**3GPP TSG-RAN Meeting #6** ***Document (R2-99k47)***
**Nice, France, 13-15 December 1999**

# CHANGE REQUEST

**25.331** **CR** **082r1** Current Version: Intermediate

For submission to: TSG-RAN#6 for approval [X] strategic [ ] *(for SMG use only)*
for information [ ] non-strategic [ ]

**Proposed change affects:** (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

**Source:** TSG-RAN WG2 **Date:** 3.12.1999

**Subject:** Signalling Connection Release

**Work item:**

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

| | | |
|---|---|---|
| F | Correction | [ ] |
| A | Corresponds to a correction in an earlier release | [ ] |
| B | Addition of feature | [X] |
| 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:** Currently the possibility of releasing a signalling connection is lacking in 25.331. The addition of this procedure is proposed.

**Clauses affected:** 8.1, 10.1

**Other specs affected:**

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

**Other comments:**

## 8.1.X Signalling connection release procedure

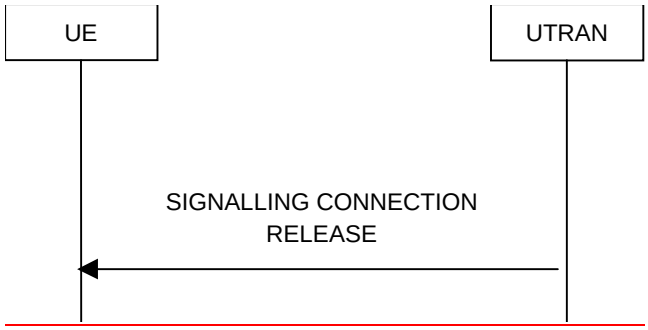


**Figure x. Signalling connection release procedure, normal case**

### 8.1.X.1 General

The signalling connection release procedure is used to notify to the UE that one of its ongoing signalling connections to a CN domain has been released. The procedure does not initiate the release of the RRC connection.

### 8.1.X.2 Initiation of SIGNALLING CONNECTION RELEASE by the UTRAN

The UTRAN may initiate the signalling connection release procedure, if it receives a signalling connection release request from one CN domain and if the UE remains engaged in a signalling connection to another CN domain.

To initiate the procedure, the UTRAN transmits a SIGNALLING CONNECTION RELEASE message on DCCH using AM RLC.

The IE "Flow Identifier" indicates the signalling flow identities which are released when the CN domain releases the signalling connection to the UE.

### 8.1.X.3 Reception of SIGNALLING CONNECTION RELEASE by the UE

Upon reception of a SIGNALLING CONNECTION RELEASE message, the UE shall indicate the release of all signalling flows identified by the values of the IE “Flow identifier”to the corresponding higher layer entities.

## 10.1.x.x SIGNALLING CONNECTION RELEASE

*<Functional description of this message to be included here>*

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element | Presence | Mult | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| Signalling Flow related information | | 1 to <maxFlowID> | | Flow identifier to be provided for each signalling flow to be released. |
| Flow Identifier | M | | | |

| Range Bound | Explanation |
|---|---|
| *MaxFlowId* | Maximum number of flow identifiers |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document* *(R2-99k38)***
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*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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| 25.331 | CR | 083r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN#6 | for approval | X | strategic | | (for SMG Use only) |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | |

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| **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:** 1999-12-03

**Subject:** Addition of cell access restriction information elements to System Information

**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 | X | Release 97 | |
| C | Functional modification of feature | | Release 98 | |
| D | Editorial modification | | Release 99 | X |
| | | | Release 00 | |

**Reason for change:** Addition of Cell Barred, Cell access restricted to Operator use only and Cell access exclusively to SoLSA compliant terminals to SIB types 3 and 4.

**Clauses affected:** 10.1.6.4.5,10.1.6.4.6, 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:**

help.doc

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

### 10.1.6.4.5 System Information Block type 3

The system information block type 3 contains parameters for cell selection and re-selection. The block may also contain scheduling information for other system information blocks.

Area scope: cell

UE mode: idle mode (and connected mode)

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| **Other information elements** | | | | |
| Value tag | M | | | |
| References to other system information blocks | | 0 .. <maxSysInfoBlockcount> | | |
| | | | | |
| | | | | |
| Scheduling information | M | | | |
| **UTRAN mobility information elements** | | | | |
| Cell identity | M | | | The necessity and usage of cell identity is FFS. |
| Cell selection and re-selection info | M | | | |
| Cell Access Restriction | M | | | |

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

### 10.1.6.4.6 System Information Block type 4

The system information block type 4 contains parameters for cell selection and re-selection to be used in connected mode. The block may also contain scheduling information for other system information blocks. The block is optional. When not sent, the MS the MS shall apply in connected mode the values of the similar information indicated for idle mode.

Area scope: cell

UE mode: connected mode

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| **Other information elements** | | | | |
| Value tag | M | | | |
| References to other system information blocks | | 0 .. <maxSysInfoBlockcount> | | |
| | | | | |
| | | | | |
| Scheduling information | M | | | |
| **UTRAN mobility information elements** | | | | |
| Cell identity | M | | | The necessity and usage of cell identity is FFS. |
| Cell selection and re-selection info | M | | | |
| Cell Access Restriction | M | | | |

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

### 10.2.2.5 Cell Access Restriction

Indicates the restrictions to cell access.

| Information Element/Group name | Presence | Range | 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 | |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document (R2-99k34)***
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# CHANGE REQUEST

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| 25.331 | CR | 092r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN#6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 1999-12-02

**Subject:** Support of UE autonomous update of a active set on a non-used frequency

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:** UE autonomous update of active set on non-used frequency will reduce RRC signalling.

**Clauses affected:** 10.2.7.40, New section14.x.x added

**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.

## 10.2.7.40 Inter-frequency SET UPDATE (FDD only)

Contains the changes of the active set associated with a non-used frequency. This information makes it possible to use events defined for Intra-frequency measurement within the same non-used frequency for Inter-frequency measurement reporting criteria. This information also controls if the UE should use autonomous updating of the active set associated with a non-used frequency.

| Information Element/group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| UE autonomous update mode | M | | Enumerated (On, On with no reporting, Off) | |
| Radio link addition information | | 0 to <MaxAddRLcount> | | Radio link addition information required for each RL to add |
| CPICH info | ~~M~~C-Update | | | Note 1 |
| Radio link removal information | | 0 to <MaxDelRLcount> | | Radio link removal information required for each RL to remove |
| CPICH info | ~~M~~C-Update | | | Note 1 |

| **Condition** | **Explanation** |
|---|---|
| Update | This IE is only present if IE"UE autonomous update mode" is set to "Off". |

| **Range bound** | **Explanation** |
|---|---|
| *MaxAddRLcount* | Maximum number of radio links which can be added |
| *MaxDelRLcount* | Maximum number of radio links which can be removed/deleted |

*Note 1: If it is assumed that CPICH downlink scrambling code is always allocated with sufficient reuse distances, CPICH downlink scrambling code will be enough for designating the different radio links.*

## 14.6 Calculated Transport Format Combination

The Calculated Transport Format Combination (CTFC) is a tool for efficient signalling of transport format combinations.

Let *I* be the number of transport channels that are included in the transport format combination. Each transport channel $TrCH_i$, $i$ = 1, 2, …, *I*, has $L_i$ transport formats, i.e. the transport format indicator $TFI_i$ can take $L_i$ values,

$TFI_i \in \{0,1,2,...,L_i - 1\}$.

Define $P_i = \prod_{j=0}^{i-1} L_j$, where $i$ = 1, 2, …, *I*, and $L_0 = 1$.

Let $TFC(TFI_1, TFI_2, …, TFI_I)$ be the transport format combination for which $TrCH_1$ has transport format $TFI_1$, $TrCH_2$ has transport format $TFI_2$, etc. The corresponding $CTFC(TFI_1, TFI_2, …, TFI_I)$ is then computed as:

$$CTFC(TFI_1, TFI_2, \ldots, TFI_I) = \sum_{i=1}^{I} TFI_i \cdot P_i .$$

## 14.x UE autonomous update of active set on non-used frequency (FDD only)

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message the UTRAN notifies the UE which events should trigger a measurement report. For inter frequency measurements it is possible to specify intra-frequency measurements reporting events for support of maintenance of a active set associated with a non-used frequency, a "virtual active set". A “non-used frequency” is a frequency that the UE has been ordered to measure upon but are not used by the active set. A “used frequency” is a frequency that the UE has been ordered to measure upon and is also currently used for the connection.

The autonomous update is controlled by the IE "UE autonomous update mode" that can be set to the following values.

- On: Do the autonomous updates of the "virtual active set" according to the described rules below and also report the events that trigger the update of the "virtual active set".
- On with no reporting: Do the autonomous updates of the "virtual active set" according to the described rules below.
- Off : Only report the events and do no updates of the "virtual active set" unless ordered to do so by the IE “ Inter-frequency set update”.

If the IE "UE autonomous update mode" is set to "on" or "on with no reporting" the UE shall evaluate the following intra-frequency events and update the "virtual active set" associated with the frequency measured upon, according to the following rules:

- Event 1a shall make the UE add the primary CPICH that enters the reporting range to the "virtual active set".
- Event 1b shall make the UE remove a primary CPICH that leaves the reporting range from the "virtual active set".
- Event 1c shall make the UE replace a active primary CPICH in the "virtual active set" with a non-active primary CPICH that have become better than the active primary CPICH.

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**Nice, France, 13-15 December 1999**

***Document* *(R2-99k39)***
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# CHANGE REQUEST

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| **25.331** | **CR** | **095r1** | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: TSG-RAN#6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 3 Dec 1999

**Subject:** TPC combining for power control

**Work item:**

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

| | | |
|---|---|---|
| F | Correction | |
| A | Corresponds to a correction in an earlier release | |
| B | Addition of feature | X |
| 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:**

In WG1 in 25.214 there are ways to combine TPC bits described. One scheme if the TPC bits are known to be the same and another scheme if the TPC bits are not known to be the same. In the current specifications it is not possible to tell the UE which scheme to use.

In this proposed CR it is proposed that all radio links gets an index number. This index number is between 0 and 5 if the maximum allowed number of radio links in soft handover is 6. Then if the indices are the same for two radio links, the UE shall combine them as having TPC bits known to be the same according to the WG1 specifications.

**Clauses affected:**

**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.

## 10.1.1.1 ACTIVE SET UPDATE (FDD only)

*<Functional description of this message to be included here>*

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| U-RNTI | O | | | New U-RNTI |
| Activation time | O | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note3) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| CN domain identity | O | | | (Note3) |
| NAS system info | O | | | (Note3) |
| | | | | |
| **Phy CH information elements** | | | | |
| Maximum allowed UL TX power | O | | | |
| Radio link addition information | | 0 to <MaxAddRLcount> | | Radio link addition information required for each RL to add |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | M | | | |
| Primary CCPCH info | M | | | Note 1 |
| SSDT cell identity | C - ifSSDT | | | |
| Downlink DPCH info | M | | | |
| Radio link removal information | | 0 to <MaxDelRLcount> | | Radio link removal information required for each RL to remove |
| Primary CCPCH info | M | | | Note 1 |
| Gated Transmission Control Info | O | | | FFS, Note 2 |
| SSDT indicator | O | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is being used and a new radio link is added |

| Range bound | Explanation |
|---|---|
| *MaxAddRLcount* | Maximum number of radio links which can be added |
| *MaxDelRLcount* | Maximum number of radio links which can be removed/deleted |

*Note 1: If it is assumed that primary CCPCH downlink scrambling code is always allocated with sufficient reuse distances, primary CCPCH downlink scrambling code will be enough for designating the different radio links.*

*Note 2: The activation time should be present when the Gated Transmission control info is present in this message.*Note3: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

## 10.1.1.6 HANDOVER COMMAND

*<Functional description of this message to be included here>*

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| New U-RNTI | O | | | |
| CHOICE *mode* | | | | |
| TDD | | | | |
| New C-RNTI | | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | O | | | |
| PLMN identity | O | | | (Note2) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| CN domain identity | O | | | (Note2) |
| NAS system info | O | | | (Note2) |
| **Phy CH information elements** | | | | |
| Frequency info | M | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink radio resources | | | | |
| UL DPCH power control info | M | | | |
| UL DPCH info | M | | | |
| | | | | |
| Downlink radio resources | | | | |
| Link specific information | | 1 to <MaxHoRLcount> | | Provide information for each DL radio link. (Note 1) |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | M | | | |
| Primary CCPCH info | M | | | |
| DL DPCH info | M | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | |
| SSDT Cell ID | C ifSSDT | | | FFS |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used |

| Range Bound | Explanation |
|---|---|
| *MaxHoRLcount* | Maximum number of DL radio links which can be established on handover |

Note1: The possibility to request the establishment of several radio links simultaneously with this message is FFS.

Note2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

### 10.1.4.1 RRC CONNECTION RE-ESTABLISHMENT

*<Functional description of this message to be included here>*

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| New U-RNTI | O | | | |
| New C-RNTI | O | | | |
| Activation time | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note1) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| CN domain identity | O | | | (Note1) |
| NAS system info | O | | | (Note1) |

| | | | | |
|---|---|---|---|---|
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| RB multiplexing info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | For uplink TFCSs |
| TFCS | O | | | For downlink TFCSs |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | For TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPDCH info | | | | |
| PRACH info | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <MaxRlcount> | | Send downlink information for each radio link to be set-up |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | C-ifDPDCH | | | |
| Primary CCPCH info | | | | |
| Downlink DPDCH info | | | | |
| Secondary CCPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET info | O | | | UL/DL radio resource for |

| | | | | |
|---|---|---|---|---|
| | | | | CPCH control (Note3) |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
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[Note1: 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 |
| *IfSSDT* | This IE is sent only when SSDT is to be used |
| *IfDPDCH* | This IE is only sent if IE “Downlink DPDCH info” is present |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxNoCN domains* | Maximum number of CN domains |

| | |
|---|---|
| *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 |
| *MaxRLcount* | Maximum number of radio links |

### 10.1.4.7 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Initial UE identity | M | | | |
| U-RNTI | M | | | |
| | | | | |
| C-RNTI | O | | | Only if assigned to a common transport channel |
| Activation time | O | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB identity | M | | | Indicates the signalling link |
| Signalling link type | M | | | |
| RB mapping info | M | | | For the signalling link |
| **TrCH information elements** | | | | |
| TFCS | O | | | Uplink TFCS |
| TFCS | O | | | Downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | |
| Uplink transport channel information | | 0 to <MaxULTrCHCount> | | Send transport channel information for each new Uplink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Downlink transport channel information | | 0 to <MaxDLTrCHCount> | | Send transport channel information for each new downlink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Transparent mode signalling info | C if TM_DCH | 0 or 1 | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRLcount> | | Send downlink information for each radio link to be set-up |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | C-ifDPDCH | | | |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |

| | | | | |
|---|---|---|---|---|
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is sent only when SSDT is to be used |
| *IfTM_DCH* | This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands. |
| *IfDPDCH* | This IE is only sent if IE "Donwlink DPDCH info" is present |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxULTrCHCoun* | Maximum number of new uplink transport channels |
| *MaxDLTrCHCount* | Maximum number of new downlink transport channels |
| *MaxRLcoun* | Maximum number of radio links to be set up |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.1 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| | | | | |
| | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | C-ifDPDCH | | | |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | For FACH |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| | |
|---|---|
| *RACH/FACH* | This information element is only included in the sent message when using RACH/FACH |
| IfDPDCH | This IE is only sent if IE "Downlink DPDCH info" is present |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxRLcount* | Maximum number of radio links to be set up |

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

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

### 10.1.5.4 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| 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 |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| CHOICE *mode* | | | | |

| | | | | |
|---|---|---|---|---|
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | C-ifDPDCH | | | |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | 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 |
| *IfDPDCH* | This IE is only sent if IE "Downlink DPDCH info" is present |

| **Range 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 |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.7 RADIO BEARER RELEASE

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB identity | | 1 to <MaxRelRBcount> | | |
| RB identity | | 0 to <MaxOtherRBcount> | | |
| RB mapping info | O | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddFFSTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| DRAC information | C DRAC | 1 to <MaxReconAddFFSTrCH> | | |
| Dynamic Control | | | | |
| Transmission time validity | | | | |
| Time duration before retry | | | | |
| Silent period duration before release | | | | |
| Downlink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | Editor : this limit should probably also be MaxReconAddFFSTrCH |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |

| | | | | |
|---|---|---|---|---|
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link to be set-up |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | C-ifDPDCH | | | |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |

| **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 |
| *IfDPDCH* | This IE is only sent if IE "Downlink DPDCH info" is present |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxRLcount* | Maximum number of radio links |
| *MaxDelRBcount* | Maximum number of RBs to be released/deleted |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |
| *MaxDelTrCHcount* | Maximum number of Transport CHannels to be removed |
| *MaxReconAddFFSTrCH* | Maximum number of transport channels to add (FFS) 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 2: How to map UL and DL radio resource in the message is FFS.

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.10 RADIO BEARER SETUP

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| NAS binding info | M | | | |
| CN domain identity | | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C – RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| Information for new RBs | | 1 to <MaxNewRBcount> | | |
| RB identity | M | | | |
| RLC info | M | | | |
| RB mapping info | M | | | |
| Information for other RB's affected by this message | | 0 to <MaxOtherRBcount> | | |
| RB identity | M | | | |
| RB mapping info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | editor should this be FFS also? |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | FFS |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource | O | | | |

| | | | | |
|---|---|---|---|---|
| information | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | ifDPDCH | | | |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| **Condition** | **Explanation** |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *IfDPDCH* | This IE is only sent if "Downlink DPDCH info" is present |

| **Range 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 |
| *MaxNewRBcount* | Maximum number of RBs that could be setup with this message |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.13 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| | | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Reconfigured TrCH information | | 0 to <MaxReconTrCH> | | |
| Transport channel identity | | | | |
| TFS | | | | |
| DRAC information | C DRAC | 1 to <MaxReconTrCHDRAC> | | |
| 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 | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | O | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |

| | | | | |
|---|---|---|---|---|
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| CHOICE *mode* | | | | |
| FDD | | | | |
| TPC combination index | C-ifDPDCH | | | |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *IfDPDCH* | This IE is only sent if IE "Downlink DPDCH info" is present |

| **Range 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 |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

## 10.2.6 Physical CH Information elements

### 10.2.6.X TPC combination index (FDD only)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| TPC combination index | M | | Enumerated(0..5) | Radio links with the same index have TPC bits which for the UE are known to be the same. |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document* (R2-99j85)**
*e.g. for 3GPP use the format TP-99xxx*
*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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

| 25.331 | CR | 100r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN#6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 1999-11- 29

**Subject:** Support of physical channel establishment and failure criteria in the UE.

**Work item:**

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

| | | |
|---|---|---|
| F | Correction | |
| A | Corresponds to a correction in an earlier release | |
| B | Addition of feature | X |
| 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:** Radio link failure criteria, physical channel establishment criteria are missing in the current specification. Also the action related to RRC Connection Re-establishment procedure is added. Related timers and counters are added.
It is also proposed that all connected mode timerT314 for detecting “in service area” before RRC Connection Re-establishment procedure is added in the RB control procedure.

**Clauses affected:** 8.5.4, 8.5.5, 8.5.6, 8.3.2.3, 8.1.5, 10.2.3.27, 13.1, 13.3, 13.5, new 8.5.x, new 8.1.5.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.

## 8.5.4 Physical channel establishment criteria

~~FFS~~

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 successive “in sync”indications. At this occasion, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a “physical channel establishment failure”.

## 8.5.5 Detection of out of service area

~~FFS~~

When a suitable cell is not found based on the description in section 5.2.2.1 of TS25.304, the UE considers it as an “out of service area”.

## 8.5.6 Radio link failure criteria

~~FFS~~

In Cell_DCH State the UE shall start timer T313 after receiving N313 consecutive "out of sync" indications for the established DPCCH physical channel from layer 1. The UE shall stop and reset timer T313 upon receiving ~~an~~successive N315 "in sync" indications from layer 1 and upon change of RRC state. If T313 expires, the UE shall consider it as a “Radio link failure”.

## 8.5.X Detection of in service area

When a suitable cell is found based on the description in section 5.2.2.1 of TS25.304, the UE considers it as an “in service area”.

***** Next modified section *****

### 8.3.2.3 T306 expiry and the UE detects that it is out of service area

When the T306 expires and the UE detects that it is out of service area, which is specified in subclause 8.5.~~4~~5, the UE shall

- start timer T307
- search for cell to camp

***** Next modified section *****

### 8.1.5 RRC connection re-establishment

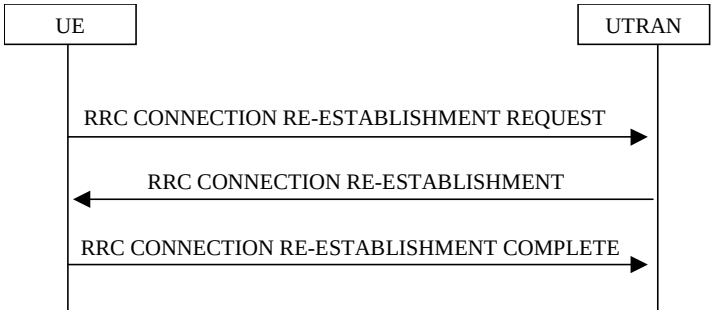

**Figure 1. RRC Connection Re-establishment, successful case**

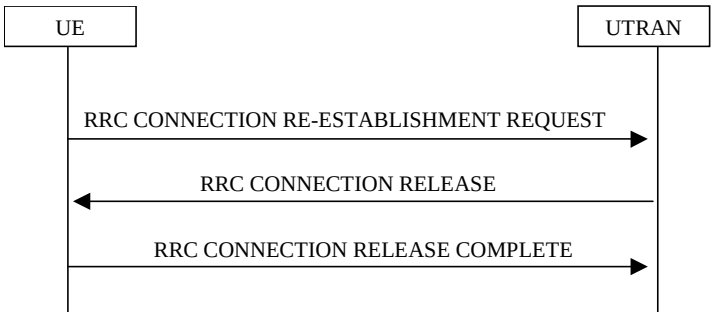


**Figure 2. RRC Connection Re-establishment, failure case**

### 8.1.5.1 General

The purpose of this procedure is to re-establish a lost RRC connection.

### 8.1.5.2 Initiation

When a UE loses the radio connection due to e.g. radio link failure (see 8.5.6) in CELL_DCH state, the UE may initiate a new cell selection by transiting to CELL_FACH state and request re-establishment of an RRC connection.

The UE shall start timer T314.

If the UE detects "in service area"(see8.5.x), t~~T~~he UE shall stop timer T314 and transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message on the uplink CCCH, reset counter V301, and start timer T301.

The UE shall

- Set the IE "U-RNTI" to the value stored in the UE.
- Include an IE "Measured Results", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in system information block type 12.

### 8.1.5.3 Reception of an RRC CONNECTION RE-ESTABLISHMENT REQUEST message by the UTRAN

UTRAN may either

- Initiate the RRC connection re-establishment procedure and transmit an RRC CONNECTION RE-ESTABLISHMENT message on the downlink DCCH on FACH or
- Initiate the RRC connection release procedure in CELL_FACH state.

### 8.1.5.4 Reception of an RRC CONNECTION RE-ESTABLISHMENT message by the UE

Upon reception of the RRC CONNECTION RE-ESTABLISHMENT message the UE shall

- Stop timer T301
- Re-establish the RRC connection according to the IEs included in the RRC CONNECTION RE-ESTABLISHMENT message
- Transmit a RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.

The UE shall use the contents of the RRC CONNECTION RE-ESTABLISHMENT message as specified in clause 8.5.7, unless specified otherwise in the following.

- For each reconfigured radio bearer use the mapping 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.

If neither the IEs “PRACH info” nor “Uplink DPCH info” is included, the UE shall

- Let the physical channel of type PRACH that is given in system information Block Type 7 be the default in uplink.

If neither the IEs “Secondary CCPCH info” nor “Downlink DPCH info” is included, the UE shall

- 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 the IE “TFS” is neither included nor 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 the stored TFS and use the TFS given in system information

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 the the IE "New U-RNTI" is included, the UE shall update its identity.

If the IEs “CN domain identity” and “NAS system information” are included, the UE shall

- Forward the content of the IE to the non-access stratum entity of the UE indicated by the IE “CN domain identity”.

The UE shall enter a state according to 8.5.8.

### 8.1.5.x T314 timeout

- Upon expiry of timer T314

the UE shall enter idle mode. The procedure ends and a connection failure may be indicated to the non-access stratum. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2

### 8.1.5.5 T301 timeout or DPCH failure

- Upon expiry of timer T301, or
- if the UE failed to re-establish the RRC Connection indicated in the RRC CONNECTION RE-ESTABLISHMENT message

the UE shall check the value of V301, and

- if V301 is equal to or smaller or equal than N301, the UE shall transmit a new RRC CONNECTION RE-ESTABLISHMENT REQUEST message on the uplink CCCH, restart timer T301 and increase counter V301. The UE shall set the IEs in the RRC CONNECTION RE-ESTABLISHMENT REQUEST message according to subclause 8.1.5.2.
- If V301 is greater than N301, the UE shall enter idle mode. The procedure ends and a connection failure may be indicated to the non-access stratum. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2

### 8.1.5.6 Reception of an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message by the UTRAN

When UTRAN has received the RRC CONNECTION RE-ESTABLISHMENT COMPLETE message, the procedure ends on the UTRAN side.

***** Next modified section *****

### 10.2.3.27 UE Timers and Counters

This information element indicates timers and maximum values of each counter used in UE.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| T300 | M | | | |
| N300 | M | | | |
| | | | | |
| T307 | M | | | |
| T302 | M | | | |
| T303 | M | | | |
| N303 | M | | | |
| N303 | M | | | |
| | | | | |
| T312 | M | | | In sec |
| T313 | M | | | In sec |
| | | | | |
| N312 | M | | | In sec |
| N313 | M | | | In sec |
| N315 | M | | | In sec |

***** Next modified section *****

## 13.1 Timers for UE

| Timer | Value Range (seconds) | Relations | Start | Stop | At expiry |
|---|---|---|---|---|---|
| T300 | | | Transmission of RRC CONNECTION REQUEST | Reception of RRC CONNECTION SETUP | Retransmit RRC CONNECTION REQUEST if V300 =< N300, else go to Idle mode |
| T301 | | | Transmission of RRC CONNECTION REESTABLISHMENT REQUEST | Reception of RRC CONNECTION REESTABLISHMENT | Retransmit RRC CONNECTION REESTABLISH REQUEST if V301 =< N301, else go to Idle mode |
| T302 | | | Transmission of CELL UPDATE | Reception of CELL UPDATE CONFIRM | Retransmit CELL UPDATE if V302 =< N302, else, go to Idle mode |
| T303 | | | Transmission of URA UPDATE | Reception of URA UPDATE CONFIRM | Retransmit URA UPDATE if V303 =< N303, else go to Idle mode |
| T304 | | | Transmission of UE CAPABILITY INFORMATION | Reception of UE CAPABILITY INFORMATION CONFIRM | Retransmit UE CAPABILITY INFORMATION if V304 =< N304, else initiate RRC connection reestablishment |
| T305 | | | Entering CELL_FACH or CELL_PCH state. Reception of CELL UDPATE CONFIRM. | Entering another state. | Transmit CELL UPDATE if T307 is not activated. |

| Timer | Value Range (seconds) | Relations | Start | Stop | At expiry |
|---|---|---|---|---|---|
| T306 | | | Entering URA_PCH state. Reception of URA UDPATE CONFIRM. | Entering another state. | Transmit URA UPDATE if T307 is not activated. |
| T307 | | | When the timer T305 or T306 has expired and the UE detects ~~that it is~~ "out of service area". | When the UE detects ~~that it is no longer out of~~ " in service area". Or,<br>~~Initiate~~ initiate cell update or URA update procedure depending on state | Transit to idle mode |
| T308 | | | Transmission of RRC CONNECTION RELEASE COMPLETE | Not stopped | Transmit RRC CONNECTION RELEASE COMPLETE if V308 =< N308, else go to idle mode. |
| T309 | | | Upon reselection of a cell belonging to another radio access system from connected mode | Successful establishment of a connection in the new cell | Resume the connection to UTRAN |
| T310 | | | Transmission of PUSCH CAPACITY REQUEST | Reception of PHYSICAL SHARED CHANNEL ALLOCATION | Transmit PUSCH CAPACITY REQUEST if V310 =< N310, else procedure stops. |
| T311 | | | Reception of PHYSICAL SHARED CHANNEL ALLOCATION message with the parameter "PUSCH Allocation Pending" set to "pending". | Reception of PHYSICAL SHARED CHANNEL ALLOCATION message with parameter "PUSCH Allocation Pending" set to "not pending". | UE may initiate a PUSCH capacity request procedure. |
| T312 | Integer (1..16) | | When the UE starts to establish dedicated CH | When the UE detects consecutive N312 "in sync" indication from L1. | The criteria for physical channel establishment failure is fulfilled |
| T313 | Integer (1..16) | | When the UE detects consecutive N313 "out of sync" indication from L1. | When the UE detects consecutive N315 "in sync" indication from L1. | The criteria for Radio Link failure is fulfilled |
| T314 | Integer (0..4095) | | When the UE detects that it is out of sync. | When the UE detects suitable cell and RRC Connection Re-establishment Request message is sent. | Transit to idle mode |

## 13.3 Counters for UE

| Counter | Reset | Incremented | When reaching max value |
|---|---|---|---|
| V300 | When initiating the procedure RRC connection establishment | Upon expiry of T300. | When V300 > N300, the UE enters idle mode. |

| Counter | Reset | Incremented | When reaching max value |
|---|---|---|---|
| V301 | When initiating the procedure RRC connection reestablishment | Upon expiry of T301. | When V301 > N301, the UE enters idle mode. |
| V302 | When initiating the procedure Cell update | Upon expiry of T302 | When V302 > N302 the UE enters idle mode. |
| V303 | When initiating the procedure URA update | Upon expiry of T303 | When V302 > N303 the UE enters idle mode. |
| V304 | When sending the first UE CAPABILITY INFORMATION message. | Upon expiry of T304 | When V304 > N304 the UE initiates the RRC connection re-establishment procedure |

| Counter | Reset | Decremented | When reaching zero |
|---|---|---|---|
| V308 | When sending the first RRC CONNECTION RELEASE COMPLETE message in a RRC connection release procedure. | Upon expiry of T308 | When V308 =0 the UE stops re-transmitting the RRC CONNECTION RELEASE COMPLETE message. |

| Counter | Reset | Incremented | When reaching max value |
|---|---|---|---|
| V310 | When sending the first PUSCH CAPACITY REQUEST message in a PUSCH capacity reqest procedure | Upon expiry of T310 | When V310 > N310 the UE stops re-transmitting the PUSCH CAPACITY REQUEST message. |

## 13.5 UE constants and parameters

| Constant | Value | Usage |
|---|---|---|
| N300 | | Maximum number of retransmissions of the RRC CONNECTION REQUEST message |
| N301 | | Maximum number of retransmissions of the RRC CONNECTION REESTABLISHMENT REQUEST message |
| N302 | | Maximum number of retransmissions of the CELL UPDATE message |
| N303 | | Maximum number of retransmissions of the URA UPDATE message |
| N304 | | Maximum number of retransmissions of the UE CAPABILITY INFORMATION message |
| N310 | | Maximum number of retransmission of the PUSCH CAPACITY REQUEST message |
| N312 | Integer (1..1024) | Maximum number of successive “in sync” received from L1. |
| N313 | Integer (1..1024) | Maximum number of successive “out of sync” received from L1. |
| N315 | Integer (1..1024) | Maximum number of successive “in sync” received from L1 during T313 is activated. |

***** Next modified section *****

### 10.1.4.1 RRC CONNECTION RE-ESTABLISHMENT

*<Functional description of this message to be included here>*

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| New U-RNTI | O | | | |
| New C-RNTI | O | | | |
| Activation time | O | | | |
| Re-establishment timer | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note1) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| CN domain identity | O | | | (Note1) |
| NAS system info | O | | | (Note1) |

| | | | | |
|---|---|---|---|---|
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| RB multiplexing info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | For uplink TFCSs |
| TFCS | O | | | For downlink TFCSs |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | For TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPDCH info | | | | |
| PRACH info | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <MaxRlcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | | | | |
| Downlink DPDCH info | | | | |
| Secondary CCPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET info | O | | | UL/DL radio resource for CPCH control (Note3) |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |

| | | | | |
|---|---|---|---|---|
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |
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[Note1: 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 |
| *IfSSDT* | This IE is sent only when SSDT is to be used |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxNoCN domains* | Maximum number of CN domains |
| *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 |
| *MaxRLcount* | Maximum number of radio links |

### 10.1.4.7 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.
RLC-SAP: UM
Logical channel: CCCH
Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Initial UE identity | M | | | |
| U-RNTI | M | | | |
| | | | | |
| C-RNTI | O | | | Only if assigned to a common transport channel |
| Activation time | O | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| **RB information elements** | | | | |
| RB identity | M | | | Indicates the signalling link |
| Signalling link type | M | | | |
| RB mapping info | M | | | For the signalling link |
| **TrCH information elements** | | | | |
| TFCS | O | | | Uplink TFCS |
| TFCS | O | | | Downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | |
| Uplink transport channel information | | 0 to <MaxULTrCHCount> | | Send transport channel information for each new Uplink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Downlink transport channel information | | 0 to <MaxDLTrCHCount> | | Send transport channel information for each new downlink transport channel |
| | | | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| Transparent mode signalling info | C if TM_DCH | 0 or 1 | | |
| **PhyCH information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRLcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH |

| | | | | |
|---|---|---|---|---|
| | | | | control (Note2) |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is sent only when SSDT is to be used |
| *IfTM_DCH* | This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands. |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxULTrCHCoun* | Maximum number of new uplink transport channels |
| *MaxDLTrCHCount* | Maximum number of new downlink transport channels |
| *MaxRLcoun* | Maximum number of radio links to be set up |

| **CHOICE *channel requirement*** | **Condition under which the given *channel requirement* is chosen** |
|---|---|
| Uplink DPCH info | |
| PRACH info | |

Note 2: How to map UL and DL radio resource in the message is FFS.
Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.1 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.
RLC-SAP: AM or UM
Logical channel: DCCH
Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | For FACH |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| | |
|---|---|
| *RACH/FACH* | This information element is only included in the sent message when using RACH/FACH |
| | |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxRLcount* | Maximum number of radio links to be set up |

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

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

### 10.1.5.4 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| 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 |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| CHOICE *mode* | | | | |

| | | | | |
|---|---|---|---|---|
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | 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 |

| **Range 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 |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

### 10.1.5.7 RADIO BEARER RELEASE

*<Functional description of this message to be included here>*
RLC-SAP: AM or UM
Logical channel: DCCH
Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| **RB information elements** | | | | |
| RB identity | | 1 to <MaxRelRBcount> | | |
| RB identity | | 0 to <MaxOtherRBcount> | | |
| RB mapping info | O | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddFFSTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| DRAC information | C DRAC | 1 to <MaxReconAddFFSTrCH> | | |
| Dynamic Control | | | | |
| Transmission time validity | | | | |
| Time duration before retry | | | | |
| Silent period duration before release | | | | |
| Downlink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | Editor : this limit should probably also be MaxReconAddFFSTrCH |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |

| | | | | |
|---|---|---|---|---|
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |

| **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 |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxRLcount* | Maximum number of radio links |
| *MaxDelRBcount* | Maximum number of RBs to be released/deleted |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |
| *MaxDelTrCHcount* | Maximum number of Transport CHannels to be removed |
| *MaxReconAddFFSTrCH* | Maximum number of transport channels to add (FFS) 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 2: How to map UL and DL radio resource in the message is FFS.

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.10 RADIO BEARER SETUP

*<Functional description of this message to be included here>*
RLC-SAP: AM or UM
Logical channel: DCCH
Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| NAS binding info | M | | | |
| CN domain identity | | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C – RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| **RB information elements** | | | | |
| Information for new RBs | | 1 to <MaxNewRBcount> | | |
| RB identity | M | | | |
| RLC info | M | | | |
| RB mapping info | M | | | |
| Information for other RB's affected by this message | | 0 to <MaxOtherRBcount> | | |
| RB identity | M | | | |
| RB mapping info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | editor should this be FFS also? |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | FFS |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource | O | | | |

| | | | | |
|---|---|---|---|---|
| information | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| **Condition** | **Explanation** |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| **Range 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 |
| *MaxNewRBcount* | Maximum number of RBs that could be setup with this message |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.13 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| Re-establishment timer | O | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Reconfigured TrCH information | | 0 to <MaxReconTrCH> | | |
| Transport channel identity | | | | |
| TFS | | | | |
| DRAC information | C DRAC | 1 to <MaxReconTrCHDRAC> | | |
| 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 | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | O | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRLcount> | | Send downlink information for each radio link |

| | | | | |
|---|---|---|---|---|
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only sent when using RACH/FACH |

| **Range 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 |

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

## 10.2.3.xx Re-establishment timer

This information element indicates timerT314.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| T314 | M | | | |

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document (R2-99j96)***
*e.g. for 3GPP use the format TP-99xxx*
*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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

| 25.331 | CR | 106r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN#6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 1999-12-02

**Subject:** System information on FACH

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:** A UE in Cell_DCH state which needs to listen to system information on the FACH, has to be signaled on which code it can receive the FACH, each time it enters a new cell. This CR adds some IE in Radio Bearer Setup, Radio Bearer Reconfiguration, Radio Bearer Release, Transport Channel Reconfiguration, Physical Channel Reconfiguration and Active Set Update messages to provide this information to the UE.

**Clauses affected:** 10.1.1.1, 10.1.5.1, 10.1.5.4, 10.1.5.7, 10.1.5.10, 10.1.5.13

**Other specs affected:**

| | | | |
|---|---|---|---|
| Other 3G core specifications | X | → 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.

*10.1.1.1 ACTIVE SET UPDATE (FDD only)*

*<Functional description of this message to be included here>*
RLC-SAP: AM
Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| U-RNTI | O | | | New U-RNTI |
| Activation time | O | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | | | | |
| PLMN identity | O | | | (Note3) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| CN domain identity | O | | | (Note3) |
| NAS system info | O | | | (Note3) |
| | | | | |
| **Phy CH information elements** | | | | |
| Maximum allowed UL TX power | O | | | |
| Radio link addition information | | 0 to <MaxAddRLcount> | | Radio link addition information required for each RL to add |
| Primary CCPCH info | M | | | Note 1 |
| SSDT cell identity | C – ifSSDT | | | |
| Downlink DPCH info | M | | | |
| Secondary CCPCH Info | O | | | Note 4 |
| References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 4 |
| Scheduling information | | | | Note 4 |
| Radio link removal information | | 0 to <MaxDelRLcount> | | Radio link removal information required for each RL to remove |
| Primary CCPCH info | M | | | Note 1 |
| Gated Transmission Control Info | O | | | FFS, Note 2 |
| SSDT indicator | O | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is being used and a new radio link is added |

| Range bound | Explanation |
|---|---|
| *MaxAddRLcount* | Maximum number of radio links which can be added |
| *MaxDelRLcount* | Maximum number of radio links which can be removed/deleted |

| | |
|---|---|
| *MaxSysInfoFACHCount* | Maximum number of references to system information blocks on the FACH |

*Note 1: If it is assumed that primary CCPCH downlink scrambling code is always allocated with sufficient reuse distances, primary CCPCH downlink scrambling code will be enough for designating the different radio links.*
*Note 2: The activation time should be present when the Gated Transmission control info is present in this message.*
Note3: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.
Note 4 : The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

*10.1.5.1 PHYSICAL CHANNEL RECONFIGURATION*

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.
RLC-SAP: AM or UM
Logical channel: DCCH
Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| | | | | |
| | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRIcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | For FACH |
| References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 3 |
| Scheduling information | | | | Note 3 |
| | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |
| | | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only included in the sent message when using RACH/FACH |
| | |

| Range Bound | Explanation |
|---|---|
| *MaxSysInfoFACHCount* | Maximum number of references to system information blocks on the FACH |
| *MaxRLcount* | Maximum number of radio links to be set up |

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

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.

*10.1.5.4 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB information | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| 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 |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |

| | | | | |
|---|---|---|---|---|
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RIcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 4 |
| Scheduling information | | | | Note 4 |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | 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 |

| **Range 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) | |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

Note 4 : The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

*10.1.5.7 RADIO BEARER RELEASE*

*<Functional description of this message to be included here>*
RLC-SAP: AM or UM
Logical channel: DCCH
Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| RB identity | | 1 to <MaxRelRBcount> | | |
| RB identity | | 0 to <MaxOtherRBcount> | | |
| RB mapping info | O | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddFFSTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| DRAC information | C DRAC | 1 to <MaxReconAddFFSTrCH> | | |
| Dynamic Control | | | | |
| Transmission time validity | | | | |
| Time duration before retry | | | | |
| Silent period duration before release | | | | |
| Downlink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | Editor : this limit should probably also be MaxReconAddFFSTrCH |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |

| | | | | |
|---|---|---|---|---|
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 4 |
| Scheduling information | | | | Note 4 |

| **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 |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxRLcount* | Maximum number of radio links |
| *MaxDelRBcount* | Maximum number of RBs to be released/deleted |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's 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 (FFS) 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 2: How to map UL and DL radio resource in the message is FFS.

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

Note 4 : The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

*10.1.5.10 RADIO BEARER SETUP*

*<Functional description of this message to be included here>*
RLC-SAP: AM or UM
Logical channel: DCCH
Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| NAS binding info | M | | | |
| CN domain identity | | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C – RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| **RB information elements** | | | | |
| Information for new RBs | | 1 to <MaxNewRBcount> | | |
| RB identity | M | | | |
| RLC info | M | | | |
| RB mapping info | M | | | |
| Information for other RB's affected by this message | | 0 to <MaxOtherRBcount> | | |
| RB identity | M | | | |
| RB mapping info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | editor should this be FFS also? |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | FFS |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH | | |

| | | | | |
|---|---|---|---|---|
| | | > | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 4 |
| Scheduling information | | | | Note 4 |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| Condition | Explanation |
|---|---|
| *RACH/FACH* | This information element is only sent when using RACH/FACH |
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| Range 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 |
| *MaxNewRBcount* | Maximum number of RBs that could be setup with this message |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's 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) | |

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

Note 4 : The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

*10.1.5.13 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | O | | | |
| | | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Reconfigured TrCH information | | 0 to <MaxReconTrCH> | | |
| Transport channel identity | | | | |
| TFS | | | | |
| DRAC information | C DRAC | 1 to <MaxReconTrCHDRAC> | | |
| 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 | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | O | | | |

| | | | | |
|---|---|---|---|---|
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RIcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| References to system information blocks | | 0 to <MaxSysInfoBlockFACHCount> | | Note 4 |
| Scheduling information | | | | Note 4 |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only sent when using RACH/FACH |

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

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

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

Note 3: The activation time should be present when the Gated Transmission control info is present in this message.

Note 4 : The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document* (R2-99j94)**
*e.g. for 3GPP use the format TP-99xxx*
*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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

| 25.331 | CR | 108r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN #6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 1999-12-2

**Subject:** SAPs and Primitives for DS-41 mode

**Work item:**

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

| | | |
|---|---|---|
| F | Correction | |
| A | Corresponds to a correction in an earlier release | |
| B | Addition of feature | X |
| 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:** To provide RRC service for DS-41 CC/MM, SAPs and primitives are defined. These will provide the indepedence on standardisation works of 3GPP from those of 3GPP2.

**Clauses affected:** 4, 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:** The changes is based on the 25.331 v-intermediate.

help.doc

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

# 4. General

The functional entities of the RRC layer are described below:

- Routing of higher layer messages to different MM/CM entities (UE side) or different core network domains (UTRAN side) is handled by the Routing Function Entity (**RFE**)

- Broadcast functions are handled in the broadcast control function entity (**BCFE**). The BCFE is used to deliver the RRC services which are required at the GC-SAP. The BCFE can use the lower layer services provided by the Tr-SAP and UM-SAP.

- Paging of idle mode UE(s) is controlled by the paging and notification control function entity (**PNFE**). The PNFE is used to deliver the RRC services which are required at the Nt-SAP. The PNFE can use the lower layer services provided by the Tr-SAP and UM-SAP.

- The Dedicated Control Function Entity (**DCFE**) handles all functions specific to one UE. The DCFE is used to deliver the RRC services which are required at the DC-SAP and can use lower layer services of UM/AM-SAP and Tr-SAP depending on the message to be sent and on the current UE service state.

- In TDD mode, the DCFE is assisted by the Shared Control Function Entity (SCFE) location in the C-RNC, which controls the allocation of the PDSCH and PUSCH using lower layers services of UM-SAP and Tr-SAP.
- The Transfer Mode Entity (TME) handles the mapping between the different entities inside the RRC layer and the SAP's provided by RLC.

*Logical information exchange is necessary also between the RRC sublayer functional entities. Most of that is implementation dependent and not necessary to present in detail in a specification.*

Figure 1 shows the RRC model for the UE side and Figure 2 shows the RRC model for the UTRAN side.

*[Note: Some further clarification in the diagrams may be beneficial to acknowledge the fact that a DC-SAP for example might be offered over a dedicated channel (with RRC terminated in SRNC) whereas GC-SAP and Nt-SAP may be offered over BCCH, PCH respectively in which cases RRC is located in Node B. It could be concluded from the figure that these channels use the same SAP offered by RLC (Tr-SAP, UM-SAP, AM-SAP) whereas in fact they will use different SAP's, though the SAP **type** might be the same]*

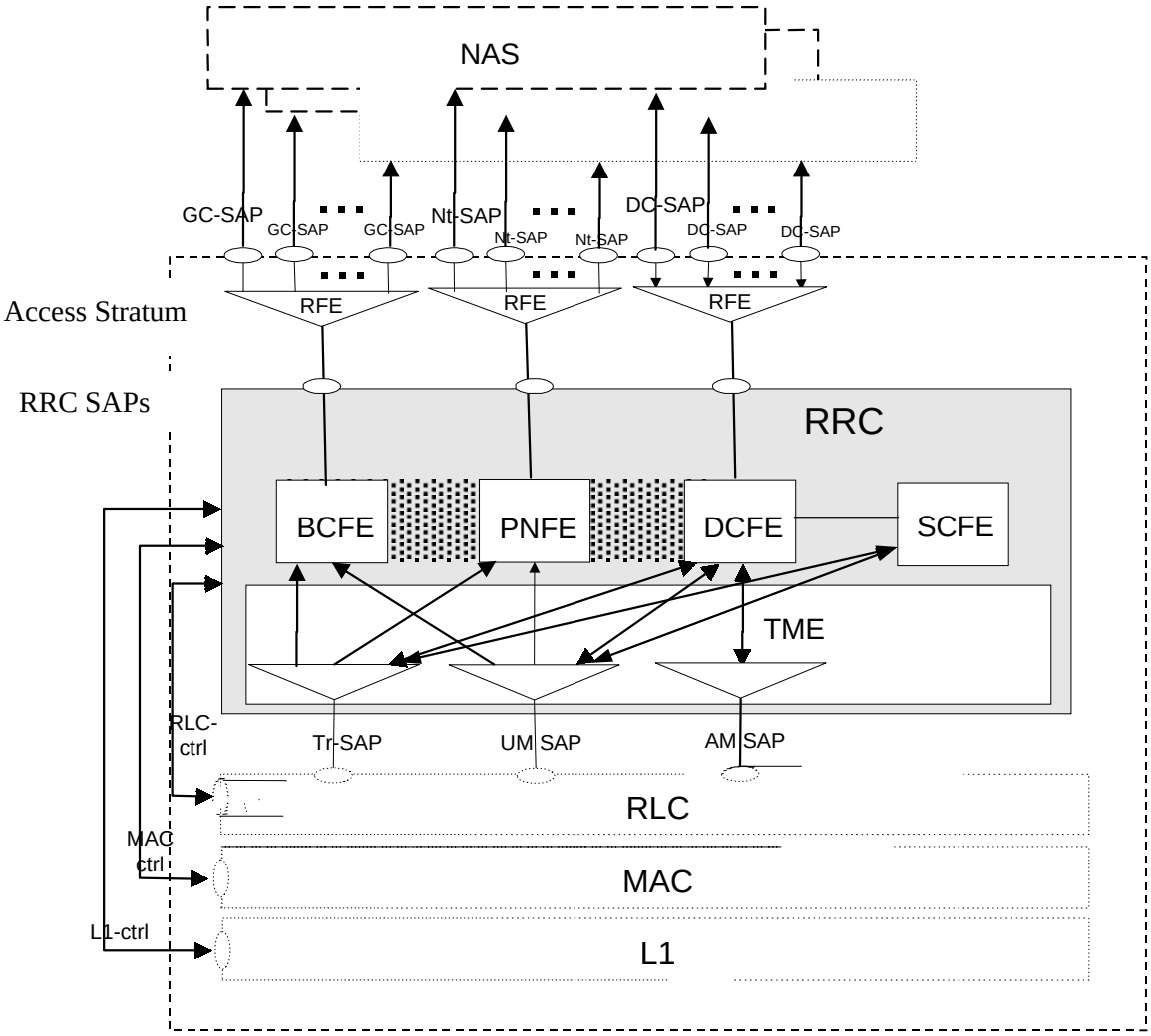


**Figure 1) UE side model of RRC**

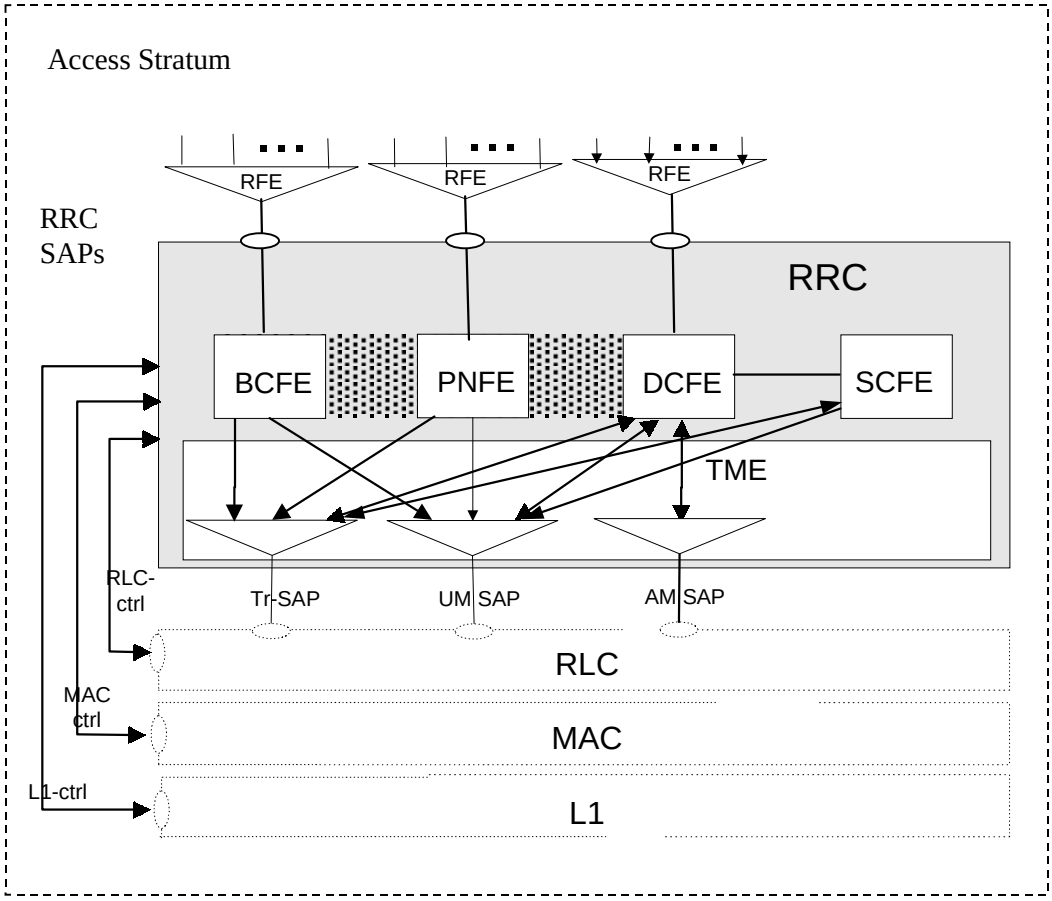


**Figure 2) UTRAN side RRC model (DS-MAP system)**

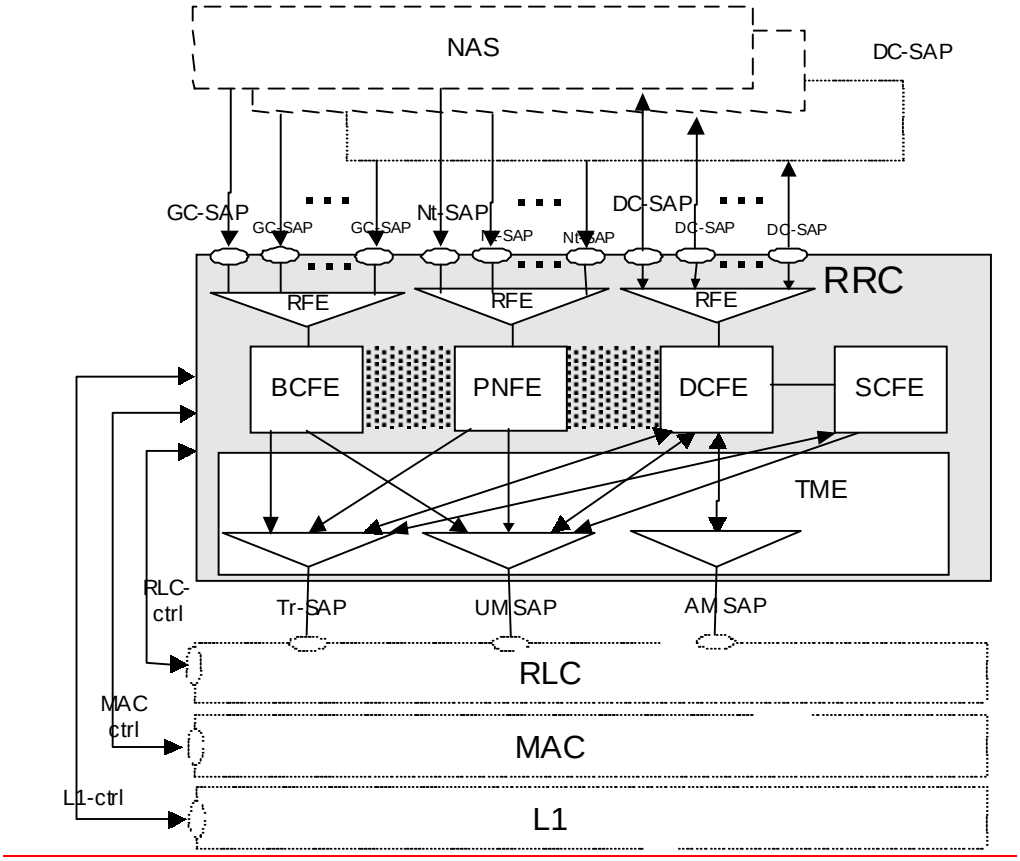


**Figure 3) UTRAN side RRC model (DS-41 System)**

# 5 RRC Services provided to upper layers

The RRC offers the following services to upper layers, a description of these services is provided in [2].

In case of DS-41 system, the SAPs and primitives defined in TS 23.110 will be provided by RRC on UTRAN side as well as on UE side.

- **General Control**
- **Notification**
- **Dedicated control**

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| 25.331 | CR | 110r1 | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN#6 | for approval | X | strategic | | (for SMG Use only) |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | Non-strategic | | |

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| **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:** 1999-11-24

**Subject:** RACH message length signaling on System Information

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:** Enabling the signalling of RACH message length in System Information Block types 4 and 5.

**Clauses affected:** 10.2.6.6

**Other specs Affected:**

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

**Other comments:**

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## 10.2.6.6 PRACH info (for RACH)

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| CHOICE *mode* | | | | |
| FDD | | | | |
| Available Signature | | 1 to <maxSigNum> | | |
| Signature | M | | Enumerated (0,1.2…..15) | |
| Available SF | | 1 to <maxSf> | | |
| SF | M | | Enumerated (32,64,128,256 chip/sym) | |
| Scrambling code word number | M | | Enumerated (0,1.2…..255) | |
| Puncturing Limit | M | | | |
| 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) |
| Persistence factor N | M | | ffs | 0-1 step ffs |
| | | | | |
| | | | | |
| | | | | |
| TDD | | | | |
| Spreading factor | M | | | Spreading factor 8 or 16 are possible |
| Timeslot | M | | | |
| Channelisation code | M | | | 1:1 mapping between spreading code and midamble shift |
| Midamble | O | | | Basic midamble code for PRACH (two different codes possible) |

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

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***Document (R2-99j80)***

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| **25.331** | **CR** | **113r1** | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: | TSG-RAN#6 | for approval | X | strategic | | *(for SMG* |
|---|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | | for information | | non-strategic | | *use only)* |

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

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

| | | | | | |
|---|---|---|---|---|---|
| **Source:** | TSG-RAN WG2 | | **Date:** | 29 Nov 1999 | |
| **Subject:** | Routing of NAS messages in UTRAN | | | | |
| **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 | X | Release 97 | |
| | C | Functional modification of feature | | Release 98 | |
| | D | Editorial modification | | Release 99 | X |
| | | | | Release 00 | |

| **Reason for change:** | • This CR contains modifications to the RRC messages in order to enable routing of NAS messages in UTRAN. |
|---|---|
| **Clauses affected:** | 8.1.8, 8.1.X (new), 8.1.X (new), 10.1.7.4, 10.1.7.X (new), 10.1.7.X (new), 10.2.1.1, 10.2.1.X (new), 10.2.1.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: |
| | | | → List of CRs: |
| | O&M specifications | | → List of CRs: |

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

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## 8.1.8 Initial Direct transfer


~~**Figure 1. Direct transfer in the uplink, normal flow**~~


**Figure 1. Initial Direct transfer in the uplink, normal flow**

### 8.1.8.1 General

~~The direct transfer procedure is used in both downlink and uplink to carry all higher layer (NAS) messages over the radio interface. It can also be used to establish and release signalling connections (FFS).~~

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

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

### 8.1.8.2 Initiation of Initial direct transfer procedure in the UE

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request the initialization of a new session. This request also includes a request for the ~~a~~ transfer of a NAS message~~.~~. ~~when signaling connection does not exist for that session~~. The UE shall transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC.

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

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

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

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

### ~~8.1.8.3 Initiation of direct transfer procedure in the UTRAN~~

~~In the UTRAN, the direct transfer procedure shall be initiated, when the upper layers request the transfer of a NAS message or the release of a signalling connection (FFS) The UTRAN shall transmit the DIRECT TRANSFER message on the downlink DCCH using AM RLC.~~
~~The UTRAN sets the IE "CN domain identity" to indicate, which CN domain the NAS message is originated from.~~

### 8.1.8.4 Reception of INITIAL DIRECT TRANSFER ~~in~~ message by the UTRAN

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

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

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

### ~~8.1.8.5 Reception of a DIRECT TRANSFER message by the UE~~

~~Upon reception of the DIRECT TRANSFER message, the UE RRC shall using the IE “CN Domain identity”,~~
~~• route the contents of the higher layer PDU, if any, to the correct higher layer entity.~~

~~• route the signalling connection release indication, if any, to the correct higher layer entity (FFS).~~

## 8.1.X Downlink Direct transfer


**Figure 2. Downlink Direct transfer, normal flow**

### 8.1.X.1 General

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

### 8.1.X.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 shall transmit the DOWNLINK DIRECT TRANSFER message on the downlink DCCH using AM RLC.
The UTRAN sets the IE "CN Domain Identity" to indicate, which CN domain the NAS message is originated from.

### 8.1.X.3 Reception of a DOWNLINK DIRECT TRANSFER message by the UE

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

## 8.1.X Uplink Direct transfer

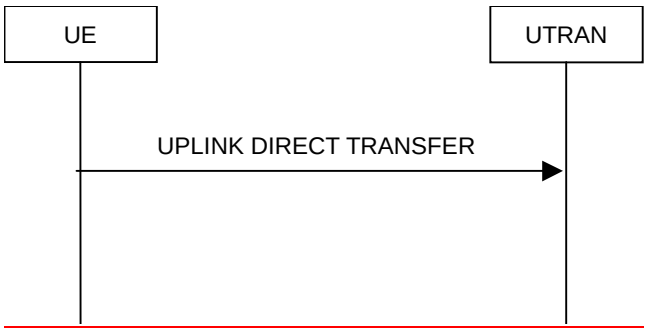


**Figure 3. Uplink Direct transfer, normal flow**

## 8.1.X.1 General

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

## 8.1.X.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. The UE shall transmit the UPLINK DIRECT TRANSFER message on the uplink DCCH using AM RLC.
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.

## 8.1.X.3 Reception of UPLINK DIRECT TRANSFER message by the UTRAN

On reception of the UPLINK DIRECT TRANSFER message the NAS message should be routed using the value indicated in the IE "Flow Identifier".
If the IE "Measured results" is present in the message, the UTRAN shall extract the contents to be used for radio resource control.

## 10.1.7.4 INITIAL DIRECT TRANSFER

*<Functional description of this message to be included here>*
RLC-SAP: AM
Logical channel: DCCH
Direction: ~~both~~UE -> UTRAN

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| CN domain identity | M | | | |
| Service Descriptor | M | | | |
| Flow Identifier | M | | | Allocated by UE for a particular session |
| NAS message | M | | | |
| **Measurement information elements** | | | | |
| Measured results | O | | | |

## 10.1.7.X DOWNLINK DIRECT TRANSFER

*<Functional description of this message to be included here>*
RLC-SAP: AM
Logical channel: DCCH
Direction: UTRAN -> UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| CN Domain Identity | M | | | |
| NAS message | M | | | |

## 10.1.7.X UPLINK DIRECT TRANSFER

*<Functional description of this message to be included here>*
RLC-SAP: AM
Logical channel: DCCH
Direction: UE ->UTRAN

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **CN information elements** | | | | |
| Flow Identifier | M | | | Allocated by UE for a particular session |
| NAS message | M | | | |
| **Measurement information elements** | | | | |
| Measured results | O | | | |

### 10.2.1.1 CN domain identity

Points out the core network domain (e.g. IP or PSTN/ISDN CN domain). One value is reserved for “don’t care”.

## 10.2.1.X Service Descriptor

The value of RR in the reference mentioned below is reserved for paging response.

| Information Element/Group name | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Service Descriptor | M | | Refer to TS24.007 v3.1.0, section 11.2.3.1.1 | |

## 10.2.1.X Flow Identifier

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

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| 25.331 | CR | 117r1 | Current Version: | Intermediate |
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*GSM (AA.BB) or 3G (AA.BBB) specification number ↑* *↑ CR number as allocated by MCC support team*

| For submission to: | TSG-RAN #6 | for approval | X | strategic | | (for SMG use only) |
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**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:** 1999-12-02

**Subject:** Merging the hard handover and some radio bearer control procedures

**Work item:**

**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 | X | | Release 97 | |
| C | Functional modification of feature | | | Release 98 | |
| D | Editorial modification | | | Release 99 | X |
| | | | | Release 00 | |

**Reason for change:**

It is proposed to remove the RRC messages HANDOVER COMMAND and HANDOVER COMPLETE. From the hard handover procedure, a reference is made to the radio bearer control procedures.

- The radio bearer control procedures already can perform hard handover as a side-effect.
- To support partial SRNS relocation, some radio bearer control procedures (e.g. Radio bearer release) should be able to perform hard handover combined with SRNS relocation.

New U-RNTI, Ciphering mode info and NAS system information is added to radio bearer setup, radio bearer release, radio bearer reconfiguration, transport channel reconfiguration and physical channel reconfiguration procedures, to make them compliant with the hard handover procedure.

**Clauses affected:** 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.6, 8.3.5, 8.5.7.1.x (new), 10.1.1.6-8 (deleted), 10.1.5.1, 10.1.5.4, 10.1.5.7, 10.1.5.8, 10.1.5.10, 10.1.5.13

**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:** This CR contains also the addition of suspend and resume of data transmission into the radio bearer control procedures as mentioned in CR 073.


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

### 8.2.1.1 General

The purpose with this procedure is to establish new radio bearer(s). While doing so, the procedure may perform a hard handover, see 8.3.5. The procedure may also be used to establish a transport channel for the transparent transfer of signalling.

### 8.2.1.2 Initiation

The upper layer in the network may request an establishment of radio bearer(s).

To initiate the procedure, UTRAN

- Configures new radio links in any new physical channel configuration and start transmission and reception on the new radio links.
- transmits a RADIO BEARER SETUP message on the downlink DCCH using AM or UM RLC.

If transport channels are added, reconfigured or deleted in uplink and/or downlink, UTRAN shall

- Set TFCS according to the new transport channel(s)

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

### 8.2.1.3 Reception of a RADIO BEARER SETUP message by the UE

Upon reception of a RADIO BEARER SETUP message the UE shall perform actions as specified below and transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the RADIO BEARER SETUP COMPLETE message has been confirmed by RLC the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers and the procedure ends.

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

The UE shall be able to receive an RADIO BEARER SETUP message and perform a hard handover, even if no prior UE measurements have been performed on the target cell and/or frequency

The UE shall

- For the new radio bearer(s), use the multiplexing option applicable for the transport channels used according to the IE "RB mapping info"
- For radio bearer(s) existing prior to the message, use the multiplexing option applicable for the transport channels used, according to their IE "RB mapping info" or their previously stored multiplexing options.
- 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 data transmission on RB 2 and upwards, if RLC-AM or RLC-UM is used on those radio bearers

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.

The UE should turn off the transmitter during the reconfiguration. The UE may first release the current physical channel configuration and shall then establish a new physical channel configuration according to 8.5.7 and the following.

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.

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.

### 8.2.1.4 Unsupported configuration in the UE

If UTRAN instructs the UE to use a configuration that it does not support, the UE transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLCand set the IE "failure cause" the cause value "configuration unacceptable".

When the transmission of the RADIO BEARER SETUP FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers.

The procedure ends.

### 8.2.1.5 Physical channel failure

If the UE failed to establish the physical channel(s) indicated in the RADIO BEARER SETUP message the UE shall

- Revert to the configuration prior to the reception of the RADIO BEARER SETUP message (old configuration) and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. The procedure ends and the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers and resumes the normal operation as if no radio bearer establishment attempt had occurred.

A physical channel failure occurs in case the criteria as defined in 8.5.4 are not fulfilled. If the UE is unable to revert to the old configuration or if used, the activation time has expired, the UE shall

initiate a RRC connection re-establishment procedure according to subclause 8.1and set the IE "failure cause" the cause value "physical channel failure".

### 8.2.2.1 General

The radio bearer reconfiguration procedure is used to reconfigure parameters for a radio bearer or the signalling link to reflect a change in QoS. While doing so, the procedure may perform a hard handover, see 8.3.5.

### 8.2.2.2 Initiation

The UTRAN initiates the procedure by

- Configure new radio links in any new physical channel configuration and start transmission and reception on the new radio links.
- transmitting a RADIO BEARER RECONFIGURATION message on the downlink DCCH using AM or UM RLC.

If transport channels are added, reconfigured or deleted in uplink and/or downlink, the UTRAN shall

- Set TFCS according to the new transport channel(s)

UTRAN should indicate that uplink transmission shall be suspended on certain bearers. Uplink transmission on a radio bearer used by the RRC signalling should not be suspended.

If the IE “Activation Time” is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

If the message is used to initiate a transition from CELL_DCH to CELL_FACH state, the UTRAN may assign a common channel configuration of a given cell and C-RNTI to be used in that cell to the UE.

### 8.2.2.3 Reception of RADIO BEARER RECONFIGURATION by the UE in CELL_DCH state

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

The UE shall be able to receive an RADIO BEARER RECONFIGURATION message and perform a hard handover, even if no prior UE measurements have been performed on the target cell and/or frequency

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" information element.
- Suspend data transmission on RB 2 and upwards, if RLC-AM or RLC-UM is used on those radio bearers

The UE should turn off the transmitter during the reconfiguration. The UE may first release the current physical channel configuration and shall then establish a new physical channel configuration according to 8.5.7 and the following.

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.

If neither the IEs “Secondary CCPCH info” nor “Downlink DPCH info” is included, the UE shall

- 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

If the IE “Primary CCPCH info” and the IE “New C-RNTI” are included, the UE shall

- Select the cell indicated by the IE “Primary CCPCH info”.
- Use the given C-RNTI when using common transport channels of type RACH, FACH and CPCH in that given cell after having completed the transition to that cell.

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 resume data transmission on each radio bearer fulfilling the following criteria:

- The radio bearer identity is RB 2 and upwards
- RLC-AM or RLC-UM is used; and
- The radio bearers was not indicated to be suspended by the IE "RB suspend/resume" information element in the RADIO BEARER RECONFIGURATION message.

The procedure ends.

If the RADIO BEARER RECONFIGURATION message is used to initiate a transition from CELL_DCH to CELL_FACH state, the RADIO BEARER RECONFIGURATION COMPLETE message shall be transmitted on the RACH after the UE has completed the state transition.

### 8.2.2.6 Unsupported configuration in the UE

If the UTRAN instructs the UE to use a configuration which it does not support, the UE shall

- transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC.
- set the cause value in IE "failure cause" to "configuration unacceptable".

When the transmission of the RADIO BEARER RECONFIGURATION FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers. It shall resume the normal operation as if no radio bearer reconfiguration attempt had occurred and the procedure ends.

### 8.2.2.7 Physical channel failure

A physical channel failure occurs in case the criteria as defined in 8.5.4 are not fulfilled.

If the UE failed to establish the physical channel(s) indicated in the RADIO BEARER RECONFIGURATION message the UE shall

- Revert to the configuration prior to the reception of the RADIO BEARER RECONFIGURATION message (old configuration)
- transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC.
- set the cause value in IE "failure cause" to "physical channel failure".
- When the transmission of the RADIO BEARER RECONFIGURATION FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers.~~,~~ ~~t~~The procedure ends and the UE resumes the normal operation as if no radio bearer reconfiguration attempt had occurred.

If the UE is unable to revert to the old configuration or if used, the activation time has expired, the UE shall

- Initiate a RRC connection re-establishment procedure according to subclause 8.1.5

### 8.2.3.1 ~~Purpose~~General

The purpose of this procedure is to release existing radio bearer(s). While doing so, the procedure may perform a hard handover, see 8.3.5.

### 8.2.3.2 Initiation

The upper layer in the network may request a release of radio bearer(s).

To initiate the procedure, UTRAN

- Configures new radio links in any new physical channel configuration and start transmission and reception on the new radio links.
- transmits a RADIO BEARER RELEASE message on the downlink DCCH using AM or UM RLC.

If transport channels are added, reconfigured or deleted in uplink and/or downlink, UTRAN shall

Set TFCS according to the new transport channel(s)

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

### 8.2.3.3 Reception of RADIO BEARER RELEASE by the UE

Upon reception of a RADIO BEARER RELEASE message the UE shall perform the following.

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

The UE shall be able to receive an RADIO BEARER RELEASE message and perform a hard handover, even if no prior UE measurements have been performed on the target cell and/or frequency

The UE shall

- For the released radio bearer(s), delete all stored multiplexing options
- For all remaining radio bearer(s), use the multiplexing option applicable for the transport channels used according to their IE "RB mapping info" or their previously stored multiplexing options.
- 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 data transmission on RB 2 and upwards, if RLC-AM or RLC-UM is used on those radio bearers

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.

The UE should turn off the transmitter during the reconfiguration. The UE may first release the current physical channel configuration and shall then establish a new physical channel configuration according to 8.5.7 and the following.

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.

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

- If the RADIO BEARER RELEASE message is used to initiate a state transition to the CELL_FACH state and if an IE primary CCPCH info and C-RNTI to a given cell is included, the UE shall elect the cell indicated by the PCCPCH info IE.

- Use the C-RNTI when using common transport channels of type RACH, FACH and CPCH in that given cell after having completed the transition to that cell.

The UE shall enter a state according to 8.5.8.

The UE shall transmit a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the RADIO BEARER RELEASE COMPLETE message has been confirmed by RLC the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers and the procedure ends.

If the RADIO BEARER RELEASE message is used to initiate a transition from CELL_DCH to CELL_FACH state, the RADIO BEARER RELEASE COMPLETE message shall be transmitted on the RACH after the UE has completed the state transition.8.2.3.4 Unsupported configuration in the UE

If UTRAN instructs the UE to use a configuration that it does not support, the UE shall Transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLCand set the value of the IE "failure cause" to "configuration unacceptable".

When the transmission of the RADIO BEARER RELEASE FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers. The procedure ends.

### 8.2.3.5 Physical channel failure

If the UE failed to establish the physical channel(s) indicated in the RADIO BEARER RELEASE message the UE shall

- Revert to the configuration prior to the reception of the RADIO BEARER RELEASE message (old configuration) and transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC and set the value of the IE "failure cause" to "physical channel failure". When the transmission of the RADIO BEARER RELEASE FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers. The procedure ends and the UE resumes the normal operation as if no radio bearer release attempt had occurred.

A physical channel failure occurs in case the criteria as defined in 8.5.4 are not fulfilled . If the UE is unable to revert to the old configuration or if used, the activation time has expired, the UE shall

- Initiate a RRC connection re-establishment procedure according to subclause 8.1.5

### 8.2.4.1 General

The transport channel reconfiguration procedure is used to reconfigure transport channel parameters. While doing so, the procedure may perform a hard handover, see 8.3.5.

### 8.2.4.2 Initiation

The UTRAN shall

- Configure new radio links in any new physical channel configuration and start transmission and reception on the new radio links.
- transmit a TRANSPORT CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC.

If transport channels are added, reconfigured or deleted in uplink and/or downlink, the UTRAN shall

- Set TFCS according to the new transport channel(s)

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

### 8.2.4.3 Reception of an TRANSPORT CHANNEL RECONFIGURATION message by the UE in CELL_DCH state

#### Upon reception of a TRANSPORT CHANNEL RECONFIGURATION message in CELL_DCH state, the UE shall perform the following actions.

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

The UE shall be able to receive an TRANSPORT CHANNEL RECONFIGURATION message and perform a hard handover, even if no prior UE measurements have been performed on the target cell and/or frequency

The UE should turn off the transmitter during the reconfiguration. The UE may first release the current physical channel configuration and shall then establish a new physical channel configuration according to 8.5.7 and the following.

The UE shall suspend data transmission on RB 2 and upwards, if RLC-AM or RLC-UM is used on those radio bearers.

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.

The UE shall use the transport channel(s) applicable for the physical channel types that is used. If the IE "TFS" is neither included nor 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

If the TRANSPORT CHANNEL RECONFIGURATION message is used to initiate a state transition to the CELL_FACH state and if the IE "Primary CCPCH info" and IE "New C-RNTI" to a given cell is included, the UE shall

- Select the cell indicated by the IE "Primary CCPCH info".
- Use the C-RNTI when using common transport channels of type RACH, FACH and CPCH in that given cell after having completed the transition to that cell.

The UE shall enter a state according to 8.5.8.

The UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. If the TRANSPORT CHANNEL RECONFIGURATION message is used to initiate a transition from CELL_DCH to CELL_FACH state, the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message shall be transmitted on the RACH after the UE has completed the state transition. When the transmission of the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers and the procedure ends.

### 8.2.4.6 Unsupported configuration in the UE

If the UTRAN instructs the UE to use a configuration which it does not support, the UE shall

- transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC and set th cause value in IE “Failure Cause” to “configuration unacceptable”.
- When the transmission of the TRANSPORT CHANNEL RECONFIGURATION FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers and the procedure ends.

### 8.2.4.7 Physical channel failure

If the UE failed to establish the physical channel(s) indicated in the TRANSPORT CHANNEL RECONFIGURATION message the UE shall

- Revert to the configuration prior to the reception of the TRANSPORT CHANNEL RECONFIGURATION message (old configuration) and transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC and set the cause value in IE “Failure Cause” to “physical channel failure”. When the transmission of the TRANSPORT CHANNEL RECONFIGURATION FAILURE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers. The procedure ends and the UE resumes the normal operation as if no transport channel reconfiguration attempt had occurred.

A physical channel failure occurs in case the criteria as defined in 8.5.4 are not fulfilled.If the UE is unable to revert to the old configuration or if used, the activation time has expired, the UE shall

- Initiate a RRC connection re-establishment procedure according to subclause 8.1.5

### 8.2.6.1 General

The physical channel reconfiguration procedure is used to establish, reconfigure and release physical channels. While doing so, the procedure may perform a hard handover, see 8.3.5.

### 8.2.6.2 Initiation

To initiate the procedure, the UTRAN ~~-~~should

- Configure new radio links in any new physical channel configuration and start transmission and reception on the new radio links.
- transmit~~s~~ a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC.

UTRAN should take the UE capabilities into account when setting the new configuration.

If the message is used to initiate a transition from CELL_DCH to CELL_FACH state, the UTRAN may assign a common channel configuration of a given cell and C-RNTI to be used in that cell to the UE.

### 8.2.6.3 Reception of a PHYSICAL CHANNEL RECONFIGURATION message by the UE in CELL_DCH state

Upon reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall perform the following actions.

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

The UE shall be able to receive an PHYSICAL CHANNEL RECONFIGURATION message and perform a hard handover, even if no prior UE measurements have been performed on the target cell and/or frequency

The UE shall suspend data transmission on RB 2 and upwards, if RLC-AM or RLC-UM is used on those radio bearers.

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

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

The UE should turn off the transmitter during the reconfiguration. The UE may first release the current physical channel configuration and shall then establish a new physical channel configuration according to 8.5.7 and the following.

If neither the IE “PRACH info” nor 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 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.

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

If the PHYSICAL CHANNEL RECONFIGURATION message is used to initiate a state transition to the CELL_FACH state and if an IE “Primary CCPCH info” and IE “New C-RNTI” to a given cell is included, the UE shall

- Select the cell indicated by the IE “Primary CCPCH info”.

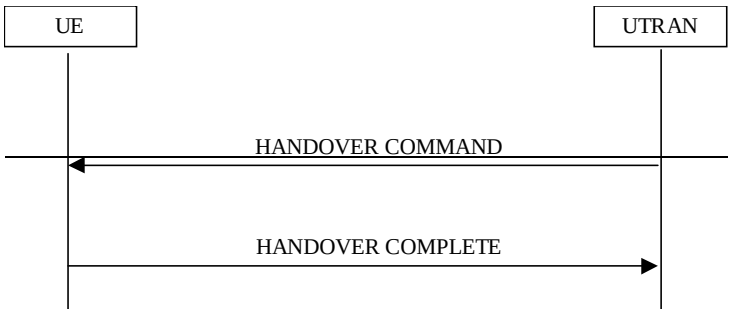
- Use the C-RNTI when using common transport channels of type RACH, FACH and CPCH in that given cell after having completed the transition to that cell.

The UE shall enter a state according to 8.5.8.

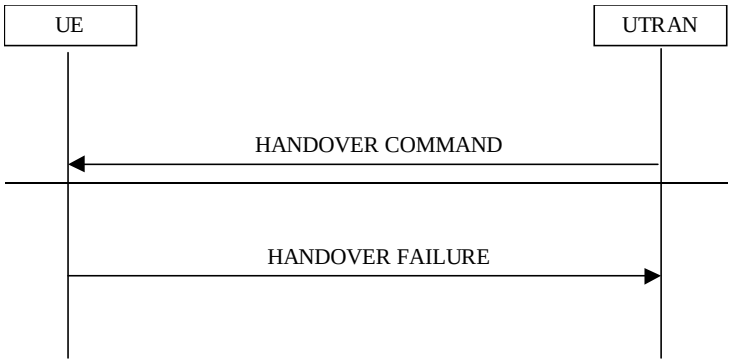
The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message has been confirmed by RLC, the UE shall resume data transmission on RB 2 and upwards if RLC-AM or RLC-UM is used on those radio bearers and the procedure ends.

If the PHYSICAL CHANNEL RECONFIGURATION message is used to initiate a transition from CELL_DCH to CELL_FACH state, the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message shall be transmitted on the RACH after the UE has completed the state transition.

## 8.3.5 Hard handover




~~**Figure 1. Hard handover, successful case**~~




~~**Figure 2. Hard handover, failure case**~~

### 8.3.5.1 General

The purposes of the hard handover procedure are;

- to change the frequency of the connection between the UE and UTRAN
- to change cell in a network that does not support macro diversity, and
- to change the mode between TDD and FDD.

This procedure may be used in CELL_DCH state.

### 8.3.5.2 Initiation

Hard handover initiated by the network is normally performed by the procedure “Physical channel reconfiguration” (8.2.6), but may also be performed by the procedures “radio bearer establishment” (8.2.1), “Radio bearer reconfiguration” (8.2.2), “Radio bearer release” (8.2.3) or “Transport channel reconfiguration” (8.2.4).

~~UTRAN should~~

~~Configure new radio links in new physical configuration and L1 starts TX/RX on the new links immediately.~~

~~Send a HANDOVER COMMAND message on downlink DCCH using AM or UM RLC.~~

~~UTRAN should include the following information:~~

~~IE “physical CH information elements”: frequency info, uplink radio resources, downlink radio resources and other optional parameters relevant for the target physical CH configuration in new physical configuration.~~

~~If SRNC relocation is performed simultaneously during active set update, the UTRAN should include the IE "U-RNTI" and IE “CN related information[]”.”CN domain identity” and IE “CN related information[]”.”NAS system information”~~

in the HANDOVER COMMAND message. The IE "PLMN identity" is optional in the message, but the condition for the presence of this IE is FFS.

### 8.3.5.3 Reception of an HANDOVER COMMAND message by the UE

The UE shall act upon all received information elements as specified in 8.5.7, unless specified otherwise in the following:the UE shall perform actions according below and transmit a HANDOVER COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the HANDOVER COMPLETE message has been confirmed by RLC the procedure ends.

The UE shall be able to receive an HANDOVER COMMAND message and perform an hard handover, even if no prior UE measurements have been performed on the target cell and/or frequency

The UE in CELL_DCH is allowed to release all resources for the old connection before allocation of the new resources. The UE should also turn off the transmitter when the resource reallocation process takes place.

The UE shall

Release the old physical CH configuration.

Re-establish the physical CH configuration on new physical configuration according to the IE "Physical CH Information Element".

If the HANDOVER COMMAND message includes the IE "New U-RNTI" , the UE should update its identity.

If the HANDOVER COMMAND message includes the IEs "CN related information[]"."CN domain identity" and "CN related information[]"."NAS system information", the UE shall forward the content of the IE to the non-access stratum entity of the UE indicated by the IE "CN domain identity".

The UE shall transmit an HANDOVER COMPLETE message on the uplink DCCH, with contents as specified below. When the transmission of HANDOVER COMPLETE message has been confirmed by RLC the procedure ends.

UE shall include the following information:

IE "physical CH information elements": optional parameters relevant for the target physical CH configuration in new physical configuration.

### 8.3.5.4 Unsupported configuration in the UE

If UTRAN instructs the UE to use a configuration that it does not support, the UE shall

Transmit a HANDOVER FAILURE message on the DCCH using AM RLC.

UE shall include the following information:

IE "failure cause" to "configuration unacceptable".

### 8.3.5.5 Physical channel failure

If the UE fails to establish the physical channel(s) indicated in the HANDOVER COMMAND message the UE shall

Revert to the configuration prior to the reception of the HANDOVER COMMAND message (old configuration) and transmit a HANDOVER FAILURE message on the DCCH using AM RLC. The procedure ends and the UE resumes the normal operation as if no hard handover attempt had occurred.

A physical channel failure occurs in case the criteria as defined in 8.5.4 are not fulfilled .If the UE is unable to revert back to the old configuration, the UE shall

Initiate a RRC connection re-establishment procedure according to subclause 8.1.5

UE shall include the following information:

IE "failure cause" to "physical channel failure".

### 8.3.5.6 Reception of the HANDOVER COMPLETE message by the UTRAN

When the UTRAN has received the HANDOVER COMPLETE message, UTRAN may delete any old configuration. The procedure ends on the UTRAN side.

~~8.3.5.7 Reception of the HANDOVER FAILURE message by the UTRAN~~

~~When the UTRAN has received the HANDOVER FAILURE message, UTRAN may delete any new configuration. The procedure ends on the UTRAN side.~~

### 8.5.7.1 CN information elements

#### 8.5.7.1.x NAS system information

If the IE “CN related information”.”CN domain identity” and the IE “CN related information”.”NAS system information” are present in a message, the UE shall forward the content of the IE “NAS system information” to the non-access stratum entity of the UE indicated by the IE “CN domain identity”.

## 10.1.1.6 HANDOVER COMMAND

*<Functional description of this message to be included here>*

RLC SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| New U-RNTI | O | | | |
| CHOICE *mode* | | | | |
| – TDD | | | | |
| – New C-RNTI | | | | |
| Ciphering mode info | O | | | |
| **CN information elements** | O | | | |
| PLMN identity | O | | | (Note2) |
| CN related information | | 0 to <MaxNoCNdomains> | | CN related information to be provided for each CN domain |
| – CN domain identity | O | | | (Note2) |
| – NAS system info | O | | | (Note2) |
| **Phy CH information elements** | | | | |
| Frequency info | M | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink radio resources | | | | |
| – UL DPCH power control info | M | | | |
| – UL DPCH info | M | | | |
| | | | | |
| Downlink radio resources | | | | |
| – Link specific information | | 1 to <MaxHoRLcount> | | Provide information for each DL radio link. (Note 1) |
| – Primary CCPCH info | M | | | |
| – DL DPCH info | M | | | |
| | | | | |
| CHOICE *mode* | | | | |
| – FDD | | | | |
| – SSDT indicator | O | | | |
| – SSDT Cell ID | C ifSSDT | | | FFS |
| – TDD | | | | |
| – Uplink Timing Advance | O | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used |

| Range Bound | Explanation |
|---|---|
| *MaxHoRLcount* | Maximum number of DL radio links which can be established on handover |

Note1: The possibility to request the establishment of several radio links simultaneously with this message is FFS.

Note2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

## 10.1.1.7 HANDOVER COMPLETE

*<Functional description of this message to be included here>*

RLC SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

| **Information Element** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
|---|---|---|---|---|
| Message Type | M | | | |
| **Phy CH information elements** | | | | |
| CHOICE *mode* | | | | |
| TDD | | | | |
| SSDT indicator | O | | | |

## 10.1.1.8 HANDOVER FAILURE

*<Functional description of this message to be included here>*

RLC SAP: AM

Logical channel: DCCH

Direction: UE →UTRAN

| **Information Element** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE information elements** | | | | |
| Failure cause | M | | | |

### 10.1.5.1 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New U-RNTI | O | | U-RNTI | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | 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) |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | For FACH |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| | | | | |
|---|---|---|---|---|
| | | | | |

| Condition | Explanation |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only included in the sent message when using RACH/FACH |
| | |

| Range Bound | Explanation |
|---|---|
| *MaxRLcount* | Maximum number of radio links to be set up |

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

Note1: 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.

### 10.1.5.4 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | | |
| New U-RNTI | O | | U-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | 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 | | 0 to <MaxRBcount> | | RB information is sent for each RB affected by this message |
| RB identity | M | | | |
| RLC info | O | | | FFS |
| 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 |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for TFCSs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |

| | | | | |
|---|---|---|---|---|
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | 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 |

| **Range 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 |

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

Note1: 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 activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.7 RADIO BEARER RELEASE

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| New U-RNTI | O | | U-RNTI | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | 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 identity | | 1 to <MaxRelRBcount> | | |
| RB identity | | 0 to <MaxOtherRBcount> | | |
| RB mapping info | O | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddFFSTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| DRAC information | C DRAC | 1 to <MaxReconAddFFSTrCH> | | |
| Dynamic Control | | | | |
| Transmission time validity | | | | |
| Time duration before retry | | | | |
| Silent period duration before release | | | | |
| Downlink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | Editor : this limit should probably also be MaxReconAddFFSTrCH |
| Transport channel identity | M | | | |

| | | | | |
|---|---|---|---|---|
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Gated Transmission Control info | O, FFS | | | Note 3 |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link to be set-up |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |

| **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 |

| **Range Bound** | **Explanation** |
|---|---|
| *MaxRLcount* | Maximum number of radio links |
| *MaxDelRBcount* | Maximum number of RBs to be released/deleted |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |
| *MaxDelTrCHcount* | Maximum number of Transport CHannels to be removed |
| *MaxReconAddFFSTrCH* | Maximum number of transport channels to add (FFS) 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) | |

Note1: 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 activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.8 RADIO BEARER RELEASE COMPLETE

*<Functional description of this message to be included here>*

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

| **Information Element** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
|---|---|---|---|---|
| Message Type | M | | | |
| **Phy CH information elements** | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | |

## 10.1.5.10 RADIO BEARER SETUP

*<Functional description of this message to be included here>*

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **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 | O | | | |
| DRX Indicator | 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** | | | | |
| Information for new RBs | | 1 to <MaxNewRBcount> | | |
| RB identity | M | | | |
| RLC info | M | | | |
| RB mapping info | M | | | |
| Information for other RB's affected by this message | | 0 to <MaxOtherRBcount> | | |
| RB identity | M | | | |
| RB mapping info | M | | | |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Transport channel identity | | 0 to <MaxDelTrCH> | | editor should this be FFS also? |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| 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> | | FFS |
| Reconfigured TrCH information | | 0 to <MaxReconAddTrCH> | | |
| Transport channel identity | M | | | |
| TFS | M | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| PRACH Info (for RACH) | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| | | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <MaxRLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |
| | | | | |

| **Condition** | **Explanation** |
|---|---|
| *RACH/FACH* | This information element is only sent when using |

| | |
|---|---|
| | RACH/FACH |
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |

| **Range 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 |
| *MaxNewRBcount* | Maximum number of RBs that could be setup with this message |
| *MaxOtherRBcount* | Maximum number of Other RBs (ie RB's not being released) affected by the procedure |

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

Note1: 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 activation time should be present when the Gated Transmission control info is present in this message.

## 10.1.5.13 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 | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Message Type | M | | | |
| **UE Information elements** | | | | |
| Activation time | O | | | |
| New C-RNTI | C - RACH/FACH | | C-RNTI | |
| | | | | |
| UTRAN DRX cycle length | O | | | |
| DRX Indicator | 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) |
| **Transport Channel Information Elements** | | | | |
| TFCS | O | | | for uplink TFCS |
| TFCS | O | | | for downlink TFCS |
| CHOICE *mode* | | | | |
| TDD | | | | |
| TFCS Identity | O | | | Uplink TFCS |
| TFCS Identity | O | | | Downlink TFCS |
| TFC subset | O | | | for DCHs in uplink |
| Uplink transport channels | | | | |
| Reconfigured TrCH information | | 0 to <MaxReconTrCH> | | |
| Transport channel identity | | | | |
| TFS | | | | |
| DRAC information | C DRAC | 1 to <MaxReconTrCHDRAC> | | |
| 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 | | | | |
| **Physical Channel information elements** | | | | |
| Frequency info | O | | | |
| Maximum allowed UL TX power | O | | | |
| Uplink DPCH power control info | O | | | |
| Uplink radio resource information | | | | |
| CPCH SET Info | O | | | UL/DL radio resource for CPCH control (Note2) |
| **CHOICE channel requirement** | O | | | |
| Uplink DPCH info | | | | |
| CHOICE *mode* | | | | |

| | | | | |
|---|---|---|---|---|
| FDD | | | | |
| PRACH info (for FAUSCH) | | | | |
| PRACH info (for RACH) | | | | |
| | O | | | |
| Downlink radio resource information | | | | |
| Downlink DPCH power control info | O | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| Downlink DPCH compressed mode info | O | | | |
| Downlink information | | 0 to <Max RLcount> | | Send downlink information for each radio link |
| Primary CCPCH info | | | | |
| Downlink DPCH info | | | | |
| Secondary CCPCH info | | | | |
| | | | | |
| CHOICE *mode* | | | | |
| FDD | | | | |
| SSDT indicator | O | | | FFS |
| SSDT Cell ID | C ifSSDT | | | FFS |
| Gated Transmission Control info | O | | | FFS, Note 3 |
| Default DPCH Offset Value | O | | | |
| TDD | | | | |
| Uplink Timing Advance | O | | | |

| **Condition** | **Explanation** |
|---|---|
| *IfSSDT* | This IE is only sent when SSDT is used and when a new DCH is being activated |
| *RACH/FACH* | This information element is only sent when using RACH/FACH |

| **Range 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 |

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

| | |
|---|---|
| PRACH info (for FAUSCH) | |

Note1: 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 activation time should be present when the Gated Transmission control info is present in this message.

**3GPP TSG-RAN Meeting #6**
**Nice, France, 13-15 December 1999**

***Document* *(R2-99k88)***
*e.g. for 3GPP use the format TP-99xxx*
*or for SMG, use the format P-99-xxx*

# CHANGE REQUEST

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

| **25.331** | **CR** | **121** | Current Version: | Intermediate |
|---|---|---|---|---|

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

| For submission to: TSG-RAN#6 | for approval | X | strategic | | (for SMG use only) |
|---|---|---|---|---|---|
| *list expected approval meeting # here ↑* | for information | | non-strategic | | |

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

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

**Source:** TSG-RAN WG2 **Date:** 3 Dec 1999

**Subject:** Efficient rate command signalling

**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 | X | Release 97 | |
| C | Functional modification of feature | | Release 98 | |
| D | Editorial modification | | Release 99 | X |
| | | | Release 00 | |

**Reason for change:** The current rate control in RRC specification is not efficient enough for e.g. AMR speech.

**Clauses affected:**

| **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.

## 10.5.2.10 Transparent mode signalling info

This information element points out a transport channel that is used for transparent mode signalling, and which type of message that is sent on the DCCH mapped on that channel.

There are two modes of this transparent mode signaling. Mode 1 controls all transport channels for one UE. Mode 2 only control a subset of the transport channels for one UE.

| Information Element | Presence | Range | IE type and reference | Semantics description |
|---|---|---|---|---|
| Transport channel identity | | | | Transport channel used for transparent mode signalling DCCH |
| CHOICE *Transparent signalling mode* | | | | |
| Mode 1 | | | | |
| Message type | M | | Enumerated (TRANSPORT FORMAT COMBINATION CONTROL) | Indicates which type of message sent on the transparent mode signalling DCCH |
| Mode 2 | | | | |
| Controlled transport channels | M | 1 to <MaxTrChCount> | Enumerated(1..64) | The transport channels that are effected by the rate control commands sent on this transparent mode DCCH |