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

TSGRP#6(99)651

Title: **Agreed CRs of category "C" (Modification) and "F" (Correction) to TS 25.331 v3.0.0**

Source: **TSG-RAN WG2**

Agenda item: 5.2.3

Doc-1st-	Status-	Spec	CR	Rev	Subject	Cat	Versio	Versio
R2-99e67	agreed	25.331	018		Corrections and editorial changes	F	3.0.0	interm
R2-99f20	agreed	25.331	025		Logical CH for RRC Connection Re-	C	3.0.0	interm
R2-99f23	agreed	25.331	028		Cell Update Cause	C	3.0.0	interm
R2-99f73	agreed	25.331	039		Information elements for RLC reset	C	3.0.0	interm

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Document **(R2-99e67)**

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**	**018**	Current Version:	**3.0.0**

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

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

Subject: Proposed CR to 25.331on corrections and editorial changes

Work item:

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

Reason for change:

This CR contains a number of unrelated editorial changes and minor corrections. An overview of the most important changes is given below.

- Some references added in chapter 2.
- Delete C-RNTI and suspend data transmission when the cell update procedure has been started. If the UE reverts back to old cell before the cell update procedure has been completed, it should restart the cell update procedure (to acquire new C-RNTI) before sending data on old cell again.
- Remove FFS for usage of inter radio access system cell re- selection in URA PCH, since there is no reason to exclude URA_PCH or to treat it different from CELL_FACH and CELL_PCH.
- Inclusion of paging record should be optional in the PAGING TYPE 1 message, since the indication of change of system information can be done independently on any present paging records.
- Specification of the final state for procedures that reconfigures the physical layer. The current specification method is error- prone and hence there are several errors in the current specification. A proposal is to specify the transitions in a new common section e.g. 8.5.8 and to refer to it in the procedure specifications in a similar manner, as done for the generic IE actions. In the procedure specifications additional requirements may be specified e.g. that certain cases do not apply for the concerned procedure.
- "RNTI" changed to "New RNTI" in messages where a new value is assigned to the UE.
- Removed "Secondary CCPCH info" for PCH and PICH in PHYSICAL CHANNEL RECONFIGURATION.
- Removal of timer TDCH as a criteria for leaving CELL_DCH state, since there are no UE requirements or RRC procedures using that timer.
- Removal of text on Localised Service Area support on state CELL_DCH, since there are no strict UE or UTRAN requirements for LSA in that state.
- Removal of the description of state transition from CELL_PCH to URA_PCH, since the direct transition is not possible (always done via CELL_FACH).

- Other, minor changes on the protocol states (chapter 9).

Clauses affected: 1, 2, 3, 8, 9, 10

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

Other comments: **The changes on chapter 8, RRC procedures, are shown relatively to the CR 001, R2-99e52, with the changes highlighted.**

help.doc

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

1.   Scope

The scope of this specification is to ~~describe~~ specify the Radio Resource Control protocol for the ~~3GPP~~ UE-UTRAN radio ~~system~~interface.

2.   References

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply;

b) all versions up to and including the identified version (identified by "up to and including" before the version identity);

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1]   3GPP ~~UM~~ T~~R~~S 25.990~~XX~~, "~~"~~Vocabulary"~~ for the UTRAN~~'

[2]   3GPP TS -25.301, "~~"~~Radio Interface Protocol Architecture"~~

[3]   3GPP TS -25.303, "Inter-layer procedures in connected mode~~Description of UE states and procedures in connected mode~~"~~'~~

[4]   3GPP TS 25.304, "UE procedures in idle mode"

[5]   3GPP TS 24.008, "Mobile radio interface layer 3 specification, Core Network Protocols - Stage 3"

[6]   3GPP TS 25.103, "RF Parameters in Support of RRM"

[7]   3GPP TS 25.215, "Physical layer – Measurements (FDD)"

[8]   3GPP TS 25.225, "Physical layer – Measurements (TDD)"

[9]   3GPP TS 25.401, "UTRAN overall description"

[10]   3GPP TS 25.402, "Synchronisation in UTRAN, stage 2"

3.   Definitions, Symbols and abbreviations

3.1   Definitions

See [1] for definition of fundamental concepts and vocabulary

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	~~CRNC~~ 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

PDSCH   Physical Downlink Shared Channel

PDU   Protocol Data Unit

PLMN   Public Land Mobile Network

PNFE   Paging and Notification Control Functional Entity

PRACH   Physical Random Access CHannel

P-TMSI   Packet Temporary Mobile Subscriber Identity

PUSCH   Physical Uplink Shared Channel

QoS   Quality of Service

RAB   Radio access bearer

RB   Radio bearer

RAI   Routing Area Identity

RACH   Random Access CHannel

RB   Radio Bearer

RFE   Routing Functional Entity

RL   Radio Link

RLC   Radio Link Control

RNTI   Radio Network Temporary Identifier

RNC   Radio Network Controller

RRC   Radio Resource Control

RSCP   Received Signal Code Power

RSSI   Received Signal Strength Indicator

SAP   Service Access Point

SCFE   Shared Control Function Entity

SF   Spreading Factor

SHCCH   Shared Control Channel

SIR   Signal to Interference Ratio

SSDT   Site Selection Diversity Transmission

S-RNTI   SRNC - RNTI

tbd   to be decided

TDD   Time Division Duplex

TF   Transport Format

TFCS   Transport Format Combination Set

TFS   Transport Format Set

TME   Transfer Mode 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

8.1.2.2   Initiation

Upper layers in the network may request paging of a UE. UTRAN initiates the paging procedure by broadcasting a PAGING TYPE 1 message on an appropriate paging occasion on the PCCH.

UTRAN may repeat paging of a UE in several paging occasions to increase the probability of proper reception of a page. This is a UTRAN option.

8.1.2.2.1   Message PAGING TYPE 1 contents to set

UTRAN may page several UEs in the same paging occasion by including one IE "Paging record" for each UE in the PAGING TYPE 1 message. The identity shall be set according to the following:

- For an idle mode UE the identity shall be set to a CN UE identity given by the non-access stratum.

- For an UE in connected mode (CELL_PCH or URA_PCH state) the identity shall be set to a U-RNTI.

UTRAN may also indicate that updated system information has been updated, by including the value tag of the master information block in the IE "BCCH modification information" in the PAGING TYPE 1 message. In this case, UTRAN may omit the IEs "Paging record".

UTRAN shall not set more than one IE "Paging record" for same UE in one PAGING TYPE 1 message.

8.1.3.4   Reception of a RRC CONNECTION SETUP message by the UE

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" in the most recent RRC CONNECTION REQUEST message sent by the UE.

- If the values are identical, the UE shall stop timer T300, and perform the following actions according . to subclause 8.1.3.4.1 and transmit an RRC CONNECTION SETUP COMPLETE message on the uplink DCCH. When the transmission of the RRC CONNECTION SETUP COMPLETE message has been confirmed by RLC the procedure ends.

- If the values are different, the UE shall ignore the rest of the message

8.1.3.4.1   Message RRC CONNECTION SETUP contents to use

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

The UE shall

- store the values of the IE "U-RNTI" and

- initiate the signalling link parameters according to the IEs "Signalling link type" and the IE "RAB multiplexing mapping info".

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

- use that C-RNTI on common transport channels in the current cell.

If neither the IEs "PRACH info (for RACH)",nor the IE "Uplink DPCH info" is included, the UE shall

- let the physical channel of type PRACH that is given in system information to be the default in uplink for RACH

If neither the IEs "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 to be used as default by FACH, and enter the CELL_FACH state.

The UE shall enter a state according to 8.5.8.

The UE shall transmit an RRC CONNECTION SETUP COMPLETE message on the uplink DCCH, with contents as specified below. Actions that shall be performed by the UE for other IEs are specified in subclause 8.5.7

8.1.3.4.2   Message RRC CONNECTION SETUP COMPLETE contents to set

The UE shall include its capabilities in the RRC CONNECTION SETUP COMPLETE message, according to instructions in the system informationthe IE "Capability update requirement" in system information block type 1..

When the transmission of the RRC CONNECTION SETUP COMPLETE message has been confirmed by RLC the UE shall update its variable UE_CAPABILITY_TRANSFERRED which UE capabilities it has transmitted to the UTRAN and the procedure ends.

-

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

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

- Stop timer T301

- Re-establish the RRC cConnection according to the IEs included in the RRC CONNECTION RE-ESTABLISHMENT message

- Tand transmit a RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.

8.1.5.4.1 Message RRC CONNECTION RE-ESTABLISHMENT contents to use

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 multiplexing mapping option applicable for the transport channels used according to the IE "RB multiplexing 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 and enter the CELL_FACH state.

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

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

- Fforward the content of the IE to the non-access stratum entity of the UE indicated by the IE "CN domain identity".

Actions that shall be performed by the UE, for other IEs are specified in chapter 8.5.7.

The UE shall enter a state according to 8.5.8.

8.1.5.1.2 Message RRC CONNECTION RE-ESTABLISHMENT COMPLETE contents to set

The UE shall

- FFS.

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~~according to subclause 8.2.1.3.1~~ 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 procedure ends.

8.2.1.3.1 ~~Message RADIO BEARER SETUP contents to use~~

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 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.

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

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

If neither the IEs "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 ~~and enter the CELL_FACH state.~~

If neither the IEs "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

~~Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7~~

The UE shall enter a state according to 8.5.8.

8.2.1.3.2 ~~Message RADIO BEARER SETUP COMPLETE contents to set~~

~~FFS~~

8.2.2.3 Reception of <u>a</u> RADIO BEARER RECONFIGURATION <u>message</u> by the UE in CELL_DCH state

Upon reception of a RADIO BEARER RECONFIGURATION message in CELL_DCH state, the UE shall perform actions ~~according~~ <u>specified</u> ~~below.~~ ~~to subclause 8.2.2.3.1and~~ ~~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 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.~~

~~8.2.2.3.1~~ ~~Message RADIO BEARER RECONFIGURATION contents to use in CELL_DCH state~~

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

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 <u>IE</u> "RB suspend/resume" ~~information element~~.

If neither the IE~~s~~ "PRACH info" nor <u>the IE</u> "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 <mark>~~and enter the CELL_FACH state~~</mark>.

If neither the IE~~s~~ "Secondary CCPCH info" nor <u>the IE</u> "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

~~Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7~~

If the ~~RADIO BEARER RECONFIGURATION message is used to initiate a state transition to the CELL_FACH state and if~~ ~~an~~ IE "~~p~~<u>P</u>rimary CCPCH info~~"~~<u>"</u> and <u>the IE</u> "<mark>New </mark>C-RNTI<u>"</u> ~~to a given cell is~~ <u>are</u> included, the UE shall

- Select the cell indicated by the <u>IE</u> "<u>Primary </u>CCPCH info"~~ IE~~.
- Use the <u>given </u>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.

<mark>The UE shall enter a state according to 8.5.8.</mark>

<u>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 procedure ends.</u>

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.

8.2.2.3.2 ~~Message RADIO BEARER RECONFIGURATION COMPLETE contents to set in CELL_DCH state~~

~~FFS.~~

8.2.2.4 Reception of <u>an</u> RADIO BEARER RECONFIGURATION <u>message</u> by the UE in CELL_FACH state

Upon reception of a RADIO BEARER RECONFIGURATION message in CELL_ ~~DCH~~ <u>FACH</u> state, the UE shall perform actions ~~according~~<u>specified below.</u> ~~to 8.2.2.4.1and 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 procedure ends.~~

8.2.2.4.1 ~~Message RADIO BEARER RECONFIGURATION contents to use in CELL_FACH state.~~

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 <u>IE</u> "RB suspend/resume" ~~information element~~.

If the IE "<mark>New </mark>C-RNTI" is included, the UE shall

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

If neither the IE~~s~~ "PRACH info" nor <u>the IE</u> "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~~s~~ "Secondary CCPCH info" nor <u>the IE</u> "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

<mark>The UE shall enter a state according to 8.5.8.</mark>

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 procedure ends. ~~Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7~~

8.2.2.4.2 ~~Message RADIO BEARER RECONFIGURATION COMPLETE contents to set in CELL_FACH state~~

~~FFS.~~

8.2.3.3   Reception of a RADIO BEARER RELEASE message by the UE

Upon reception of a RADIO BEARER RELEASE message the UE shall perform the following actions ~~according to subclause 8.2.3.3.1~~specified below ~~and 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 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.~~

~~8.2.3.3.1   Message RADIO BEARER RELEASE contents to use~~

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 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.

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

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

If neither the IEs "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 ~~and enter the CELL_FACH state~~.

If neither the IEs "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 ~~s~~Select 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.

~~Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7~~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 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.

8.2.4.3 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. according to subclause 8.2.4.3.1 and transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message has been confirmed by RLC, the procedure ends.

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.

8.2.4.3.1 Message TRANSPORT CHANNEL RECONFIGURATION contents to use in CELL_DCH state

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

If neither the IEs "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 and enter the CELL_FACH state.

If neither the IEs "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 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

Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7

If the TRANSPORT CHANNEL RECONFIGURATION message is used to initiate a state transition to the CELL_FACH state and if an the IE "Pprimary 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" 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 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 procedure ends.

8.2.4.3.2 ~~Message TRANSPORT CHANNEL RECONFIGURATION COMPLETE contents to set in CELL_DCH state~~

~~FFS.~~

8.2.4.4 Reception of <u>an</u> TRANSPORT CHANNEL RECONFIGURATION <u>message</u> by the UE in CELL_FACH state

Upon reception of a TRANSPORT CHANNEL RECONFIGURATION message in CELL_FACH state, the UE shall perform <u>the following</u> ~~actions according to subclause 8.2.4.4.1 and transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message has been confirmed by RLC, the procedure ends.~~

8.2.4.4.1 ~~Message TRANSPORT CHANNEL RECONFIGURATION contents to use in CELL_FACH state~~

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

If the IE "<mark>New</mark> C-RNTI" is included, the UE shall

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

If neither the IE~~s~~ "PRACH info" nor <u>IE</u> "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~~s~~ "Secondary CCPCH info" nor <u>IE</u> "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 <u>neither</u> included <u>nor</u> 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

~~Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7~~

<mark>The UE shall enter a state according to 8.5.8.</mark>

The UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. When the transmission of the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message has been confirmed by RLC, the procedure ends.

8.2.4.4.2 ~~Message TRANSPORT CHANNEL RECONFIGURATION COMPLETE contents to set in CELL_FACH state~~

~~FFS.~~

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. ~~according to subclause 8.2.6.3.1and 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 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.~~

~~8.2.6.3.1 Message PHYSICAL CHANNEL RECONFIGURATION contents to use in CELL_DCH state~~

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

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.

If neither the IEs "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 ~~and enter the CELL_FACH state.~~

If neither the IEs "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 ~~neither the~~the IE "TFS" is neither included nor 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

~~Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7~~

If the PHYSICAL CHANNEL RECONFIGURATION message is used to initiate a state transition to the CELL_FACH state and if an IE "~~P~~primary CCPCH info" and IE "New C-RNTI" to a given cell is included, the UE shall

- Select the cell indicated by the IE "~~P~~rimary CCPCH 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 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 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.

8.2.6.4 Reception of PHYSICAL CHANNEL RECONFIGURATION by the UE in CELL_FACH state

~~Upon reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall read the IE "DRX indicator".~~

~~If the IE "DRX indicator" is set to "DRX with Cell updating" or "DRX with URA Updating" or "No DRX", the UE shall~~

- ~~Perform actions according to subclause 8.2.6.4.1~~
- ~~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 delete its C-RNTI, move to Cell_PCH state and start updating its location on the URA level. This ends the procedure.~~

~~If the IE "DRX indicator" is set to "DRX with URA updating", the UE shall~~

- ~~Perform actions according to 8.2.6.4.1~~
- ~~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 delete its C-RNTI, move to URA_PCH and start updating its location on the URA level. This ends the procedure.~~

~~If the IE "DRX indicator" is set to "DRX with URA updating", the UE shall~~

- ~~Perform actions according to subclause 8.2.6.4.1 and 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 procedure ends.~~

~~8.2.6.4.1   Message PHYSICAL CHANNEL RECONFIGURATION contents to use in CELL_FACH state~~

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

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.

If neither the IEs "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 ~~and enter the CELL_FACH state~~.

If neither the IEs "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 neither the IE "TFS" is 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

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 enter a state according to subclause 8.5.8 applied on the PHYSICAL CHANNEL RECONFIGURATION message. If the UE ends up in the CELL_PCH or URA_PCH state, it shall delete its C-RNTI. The procedure ends.

If

- ~~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 delete its C-RNTI, move to Cell_PCH state and start updating its location on the URA level. This ends the procedure.~~

If the IE "DRX indicator" is set to "DRX with URA updating", the UE shall

- Perform actions detailed below
- 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 delete its C-RNTI, move to URA-PCH and start updating its location on the URA level. This ends the procedure.

If the IE "DRX indicator" is set to "No DRX", the UE shall

- Perform actions detailed below and 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 procedure ends.

Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7

8.2.6.4.2   Message PHYSICAL CHANNEL RECONFIGURATION COMPLETE contents to set

FFS.

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 and URA_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

8.3.1.2.1 Cell update due to cell reselection

When the UE is in CELL_FACH or CELL_PCH state and originates from an UTRA cell and makes a successful reselection of another UTRA cell, it shall The UE shall start the cell update procedure by

- movingmove to CELL_FACH state, if not already in that state

- delete any C-RNTI and suspend data transmission on any DTCH(s)

- sendingtransmit a CELL UPDATE message on the uplink CCCH,

- startingstart timer T302 and resettingreset counter V302

The IE "cell update cause" shall be used as follows; set to "cell reselection".

- 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 IEs "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 "new-C-RNTI" and optionally the IE "new U-RNTI" but does not include IE "PRACH info" nor 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 IEs "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 "new-U-RNTI"

- transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using the PRACH inidicated 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 CELL UPDATE CONFIRM message includes the IE "DRX indicator" and if it is set to "DRX with Cell updating", the UE shall transit to Cell PCH state.~~

~~If the CELL UPDATE CONFIRM message includes the IE "DRX indicator" and if it is set to "DRX with URA updating", the UE shall transit to URA PCH state.~~

~~If the CELL UPDATE CONFIRM message includes the IE "DRX indicator" and if it is set to "No DRX" or~~

~~i~~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 CELL UPDATE CONFIRM message does not include the IE "DRX indicator"~~

~~or if~~ 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).

~~• When the UE receives a CELL UPDATE CONFIRM message on the downlink DCCH, it shall stop timer T302 and restart timer T305~~

8.3.2.6 Reception of an URA UPDATE CONFIRM message by the UE

Upon receiving the URA UPDATE CONFIRM message, the UE shall stop timer T303 and restart timer T306.

- ~~When the UE receives a URA UPDATE CONFIRM message on the downlink CCCH or DCCH, it shall stop timer T303 and restart timer T306.~~

8.3.2.6.1 ~~Message URA UPDATE CONFIRM contents to use~~

If the URA UPDATE CONFIRM message includes the IE~~s~~ "new C-RNTI" and optionally IE "new U-RNTI", 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 URA UPDATE CONFIRM message includes the IE "URA ID", the UE shall

- confirm whether indicated URA ID is in the list of URA IDs which is temporarily stored in the UE

- update URA ID and store in itself.

If the URA UPDATE CONFIRM message does not include the IE "URA ID", the UE shall

- confirm whether only one URA ID exists in the list of URA IDs which is temporarily stored in the UE

- update URA ID and stored in itself.

If the URA UPDATE CONFIRM message includes the IEs "CN domain identity" and "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 enter a state according to subclause 8.5.8 applied on the URA UPDATE CONFIRM message, unless otherwise specified below.

~~In all cases the~~If the UE does not end up in the CELL_FACH state, the UE shall, after other possible actions:

- retrieve secondary CCPCH info (for PCH) from the SYSTEM INFORMATION broadcasted from the new cell

- delete its C-RNTI and

- ~~transit to URA_PCH state. T~~he procedure ends.

8.3.5.3 Reception of ~~message~~ <u>an</u> HANDOVER COMMAND <u>message</u> by the UE

~~The UE shall take the following actions:~~<u>The UE shall act upon all received information elements as specified in 8.5.7, unless specified otherwise in the following:</u>

- ~~Upon reception of a HANDOVER COMMAND message~~ the UE shall perform actions according to ~~subclause 8.3.5.3.1~~ <u>below</u> and transmit a HANDOVER COM~~P~~<u>M</u>LETE 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.

8.3.5.3.1 Message HANDOVER COMMAND contents to use

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 <u>IE "</u><mark>New</mark> U-RNTI"~~IE~~, the UE ~~shall~~ <u>should</u> update its identity.

If the HANDOVER COMMAND message includes the IEs "<u>CN related information[]".</u>"CN domain identity" and <u>IEs</u> "<u>CN related information[]".</u>"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 perform actions for other Ies accoring to subclause 8.5.7.~~<u>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..</u>

8.3.5.3.1 Message HANDOVER COMPLETE contents to set

UE should include the following information:

- IE "physical CH information elements": optional parameters relevant for the target physical CH configuration in new physical configuration.

8.3.6.3 Reception of ~~message~~ XXXX message by the UE

~~The UE shall take the following actions:~~

~~• If the UE succeeds to establish the connection to UTRAN, it shall transmit a HANDOVER COMPLETE message on the uplink DCCH~~

~~8.3.6.3.1 Message XXXX contents to use~~

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

The UE shall

- Store the value of the IE "<mark>New</mark> U-RNTI" and

- Initiate the signalling link parameters according to the IEs "Signalling link type" and "RB mapping info".

If additional RB IEs are included, the UE shall

- 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.

If the IE "<mark>New</mark> C-RNTI" is included, the UE shall

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

If neither the IE~~s~~ "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 and enter the CELL_FACH state.

If neither the IE~~s~~ "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 UE succeeds to establish the connection to UTRAN, it shall transmit a HANDOVER COMPLETE message on the uplink DCCH. When the transmission of the HANDOVER COMPLETE message has been confirmed by RLC, the procedure ends.

~~Actions that shall be performed by the UE, for other IEs are specified in subclause 8.5.7~~

~~8.3.6.3.2 Message HANDOVER COMPLETE contents to set~~

~~There are no requirements on the UE concerning the information elements to be provided within the handover complete message.~~

8.3.9.2 Initiation

This procedure may be initiated in states CELL_FACH, or CELL_PCH or URA_PCH. *[Note: the usage of the procedure in state URA_PCH is FFS.]*

When the UE based on received system information makes a cell reselection to another radio access system other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in TS 25.304, the UE shall.

- start timer T309

- initiate an the establishment of a connection to the other radio access system according to its specifications

8.5.7.6.3 Secondary CCPCH info

If the IE "Secondary CCPCH info" is included and the IE "PICH info" is not included, the UE shall

~~S~~start to receive that Secondary CCPCH in the downlink. ~~and~~

~~• enter the CELL_FACH state if not already in that state.~~

8.5.7.6.4 Uplink DPCH info

If the IE "Uplink DPCH info" is included, the UE shall

~~R~~release any active uplink physical channels~~,~~ and activate the given physical channels. ~~and~~

~~• enter the CELL_DCH state if not already in that state. Additional actions the UE shall perform when entering the CELL_DCH state from another state are specified in subclause 8.5.3~~

If the IE "Secondary CCPCH info" is included and the IE "PICH info" is not included, the UE shall

8.5.7.7   Measurement information elements

8.5.7.8   Other information elements

8.5.8   Generic state transition rules depending on received information elements

The state the UE shall move to depends on the presence of a number of IEs as follows:

IF   either IE "Uplink DPCH info" OR IE "Downlink DPCH info" is included   THEN

        The UE shall move to CELL_DCH state

ELSIF "DRX indicator" is included AND set to "DRX with Cell updating" THEN

        The UE shall move to CELL_PCH state

ELSIF "DRX indicator" is included AND set to "DRX with URA updating" THEN

        The UE shall move to URA_PCH state

ELSE

        The UE shall move to CELL_FACH state

END

9 Protocol states

9.1   RRC States and State Transitions including GSM

Figure 1 shows the RRC states in Connected Mode, including transitions between UTRAN connected mode and GSM connected mode for PSTN/ISDN domain services, and between UTRAN connected mode and GSM/GPRS packet modes for IP domain services. It also shows the transitions between Idle Mode and UTRAN Connected Mode and further the transitions within UTRAN connected Mode.
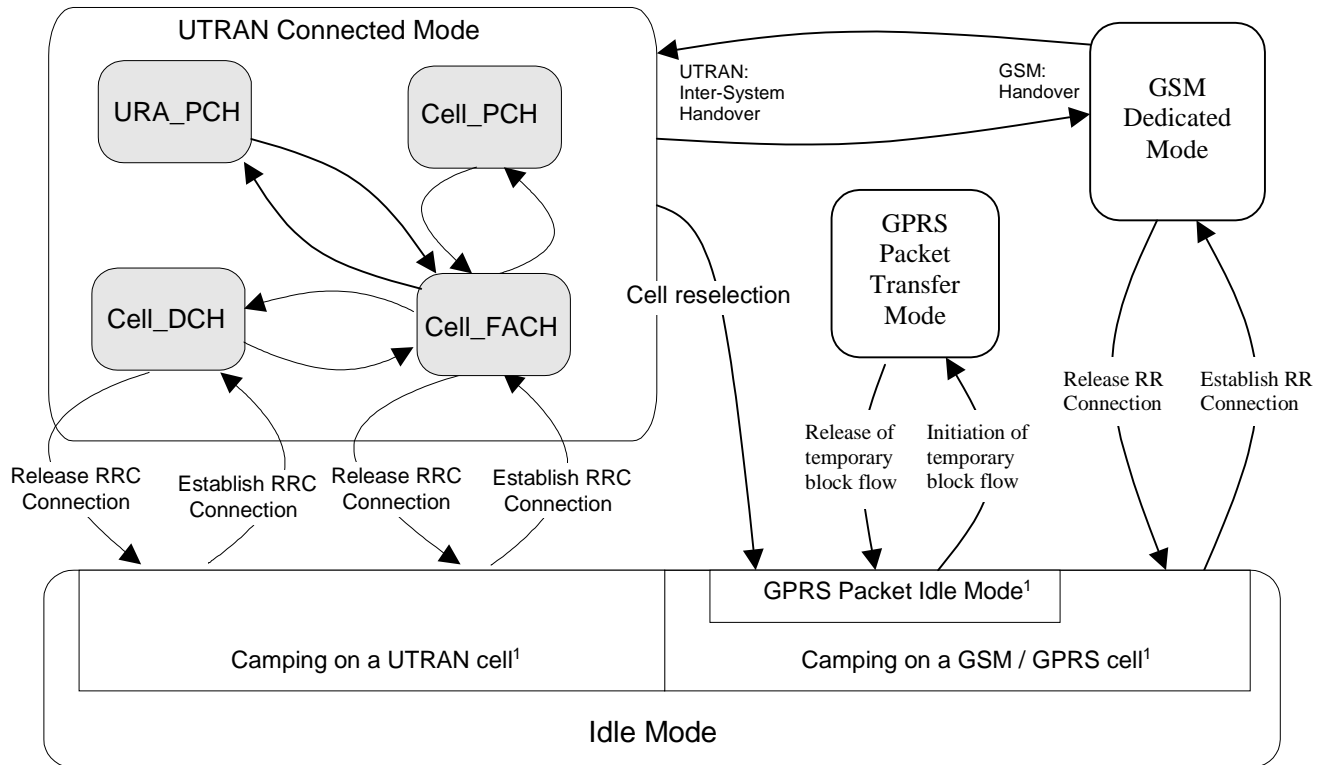
Figure 1: RRC States and State Transitions including GSM

[**[1]: The indicated division within Idle Mode is only included for clarification and shall not be interpreted as states.]**

It shall be noted that not all states may be applicable for all UE connections. For a given QoS requirement on the UE connection, only a subset of the states may be relevant.

After power on, the UE stays in Idle Mode until it transmits a request to establish an RRC Connection. In Idle Mode the connection of the UE is closed on all layers of the access stratumUTRAN. In Idle Mode the UE is identified by non-access stratum identities such as IMSI, TMSI and P-TMSI. In addition, the UTRAN has no own information about the individual Idle Mode UE:s, and it can only address e.g. all UE:s in a cell or all UE:s monitoring a paging occasion. The UE behaviour within this mode is described in /4/.

The UTRAN Connected Mode is entered when the RRC Connection is established. The UE is assigned a radio network temporary identity (RNTI) to be used as UE identity on common transport channels. *[Note: The exact definition of RRC connection needs further refinement.]* The RRC states within UTRAN Connected Mode reflect the level of UE connection and which transport channels that can be used by the UE.

For inactive stationary data users the UE may fall back to PCH on both the Cell or URA levels. That is, upon the need for paging, the UTRAN shall check the current level of connection of the given UE, and decide whether the paging message shall be sent within the URA, or should it be sent via a specific cell.

9.2   Transition from Idle Mode to UTRAN Connected Mode

The transition to the UTRAN Connected Mode from the Idle Mode can only be initiated by the UE by transmitting a request for an RRC Connection. The event is triggered either by a paging request from the network or by a request from upper layers in the UE.

When the UE receives a message from the network that confirms the RRC connection establishment, the UE enters the CELL_FACH or CELL_DCH state of UTRAN Connected Mode.

In the case of a failure to establish the RRC Connection the UE goes back to Idle Mode. Possible causes are radio link failure, a received reject response from the network or lack of response from the network (timeout).

9.3 UTRAN Connected Mode States and Transitions

9.3.1 CELL_DCH state

The CELL_DCH state is characterized by

- A dedicated physical channel is allocated to the UE in uplink and downlink.

- The UE is known on cell level according to its current active set.

- Dedicated transport channels, downlink and uplink (TDD) shared transport channels, and a combination of these transport channels can be used by the UE.

The CELL_DCH-state is entered from the Idle Mode through the setup of an RRC connection, or by establishing a dedicated physical channel from the CELL_FACH state.

A PDSCH may be assigned to the UE in this state, to be used for a DSCH. In TDD a PUSCH may also be assigned to the UE in this state, to be used for a USCH.

9.3.1.3 Transition from CELL_DCH to Idle Mode

Transition to Idle Mode is realised through the release of the RRC connection.

9.3.1.4 Transition from CELL_DCH to CELL_FACH state

Transition to CELL_FACH state ~~can~~ occurs when ~~either~~ all dedicated channels have been released, which may be

~~a)through the expiration of an inactivity timer (T$_{DCH}$);~~

a) via explicit signalling.

b) at the end of the time period for which the dedicated ~~/~~ channel ~~shared channel~~ was allocated ~~or~~ (TDD)

~~c)via explicit signalling.~~

9.3.1.5 Radio Resource Allocation tasks (CELL_DCH)

For the DCH, several physical channel allocation strategies may be applied. The allocations can be either permanent (needing a DCH release message) or based on time or amount-of-data.

Resource allocation can be done separately for each packet burst with fast signalling on the DCH

For each radio frame the UE and the network indicate the current data rate (in uplink and downlink respectively) using the transport format combination indicator (TFCI). However, in TDD, DCH and DSCH or USCH may be mapped on different CCTrCHs, their TFCI are totally independent. DCH transmission is not modified by the simultaneous

existence of DSCH/USCH. If the configured set of combinations (i.e. transport format set for one transport channel) are found to be insufficient to retain the QoS requirements for a transport channel, the network initiates a reconfiguration of the transport format set (TFS) for that transport channel. This reconfiguration can be done during or in between data transmission. Further, the network can reconfigure the physical channel allowing an increase or decrease of the peak data rate.

For the uplink data transmission, the UE reports the observed traffic volume to the network in order for the network to re-evaluate the current allocation of resources. This report contains e.g. the amount of data to be transmitted or the buffer status in the UE.

~~If during data transfer the UE is unable to transmit at the requested output power when using the peak allocated capacity, the UE shall reduce transmission rate within the current 10 ms radio frame in order to maintain the closed loop power control.~~

9.3.1.6   RRC Connection mobility tasks (CELL_DCH)

Depending on the amount and frequency of data macrodiversity (soft handover) may or may not be applied.

The RRC Connection mobility is handled by measurement reporting, soft handover and hard handover procedures.

~~9.3.1.7   Localised Service Area (LSA) support~~

~~[Editor's note: A liaison statement to SMG12 has been sent to receive guidance on the functionalities that would need to be defined in UTRAN to support SoLSA-like (Support of LSA, GSM) services.]~~

~~In case of a network controlled handover procedure, UTRAN shall take into account the local support of LSA service and the enventual subscription information of the UE to those LSA regarding the provision of service to the UE.~~

~~Regarding soft handover, the following principles are applied by UTRAN:~~

~~• For "LSA only" UE, the RRC connection shall be maintained by UTRAN as long as at least one cell of the active set belongs to a UE subscribed LSA.~~

~~• For "LSA exclusive access" cells, UTRAN shall prevent such cell from being part of the active set if the UE has not subscribed to the corresponding LSA~~

~~Regarding network controlled hard handover, the following principles are applied by UTRAN:~~

~~• For "LSA only" UE, UTRAN shall prevent the UE from being handed over a cell which does not belong to a UE subscribed LSA.~~

~~• For "LSA exclusive access" cells, UTRAN shall prevent the UE from being handed over such a cell if the UE has not subscribed to the corresponding LSA~~

9.3.1.7~~8~~   UE Measurements (CELL_DCH)

The UE shall perform measurements and transmit measurement reports according to the measurement control information.

The UE shall use the connected mode measurement control information received in other states until new measurement control information has been assigned to the UE.

9.3.1.8~~9~~   ~~Transfer and update~~Acquisition of system information (CELL_DCH)

UEs with certain capabilities shall read system information broadcast on FACH.

~~*[Editors note: Currently it is only UEs having DRAC capabilities that need to read system information on FACH.]*~~

9.3.2   CELL_FACH state

The CELL_FACH state is characterised by:

- No dedicated physical channel is allocated to the UE.

- The UE continuously monitors a FACH in the downlink

- The UE is assigned a default common or shared transport channel in the uplink (e.g. RACH) that it can use anytime according to the access procedure for that transport channel

- The position of the UE is known by UTRAN on cell level according to the cell where the UE last made a cell update.

- In TDD mode, one or several USCH or DSCH transport channels may have been established.

In the CELL_FACH substate the UE shall perform the following actions:

- listens to an FACH

- listens to the BCH transport channel of the serving cell for the decoding of system information messages

- initiates a cell update procedure on cell change of another UTRA cell

- Use C-RNTI assigned in the current cell as the UE identity on common transport channels ~~unless~~ except for when a new cell is selected

- transmits uplink control signals and small data packets on the RACH.

- In FDD mode, transmits uplink control signals and larger data packets on CPCH when resources are allocated to cell and UE is assigned use of those CPCH resources.

- In TDD mode, transmits signalling messages or user data in the uplink and/or the downlink using USCH and/or DSCH when resources are allocated to the cell and the UE is assigned use of those USCH/DSCH resources

- In TDDmode, transmits measurement reports in the uplink using USCH when resouces are allocated to it in order to trigger a handover procedure in the UTRAN

~~Furthermore, in FDD mode, the UE may use the FAUSCH to trigger the allocation of a new DCH by UTRAN. Further rate adaptation can be done via the DCCH of the new DCH.~~

9.3.2.1   Transition from CELL_FACH to CELL_DCH state

A transition occurs, when a dedicated physical channel is established via explicit signalling.

~~In FDD mode, the state transition may also be done by using the FAUSCH.~~

9.3.2.2   Transition from CELL_FACH to CELL_PCH state

The transition occurs when UTRAN orders the UE to move to CELL_PCH state, which is done via explicit signalling..

~~Since the UE performs continuous reception of FACH in this state, it should be moved to the CELL_PCH state if the data service has not been active for a while. When an inactivity timer (T$_{rf}$) expires, the UE state is changed to~~

CELL_PCH in order to decrease power consumption. Also, when coming from CELL_PCH state, and after the cell update procedure has been performed, the UE state is changed back to CELL_PCH state if neither the UE nor the network has any data to transmit.

In FDD mode, when coming from the CELL_FACH substate, the FAUSCH is still available in the CELL_PCH state after the transition.

9.3.2.3 Transition from CELL_FACH to Idle Mode

Upon The release of the RRC connection, moves the UE moves to the idle mode.

9.3.2.4 Transition from CELL_FACH to URA_PCH State

The transition occurs when UTRAN orders the UE to move to URA _PCH state, which is done via explicit signalling e.g. uTo perform the URA update procedure, UE is moved temporarily from URA_PCH to CELL_ FACH state. pon completion of After the URA update is completedprocedure, UE state is changed back to URA _PCH.

If FAUSCH is intended to be used in URA_PCH State, a FAUSCH transport channel needs to be allocated for the intended cells in the URA prior to this transition.

9.3.2.5 Radio Resource Allocation Tasks (CELL_FACH)

In the CELL_ FACH state the UE will monitor an FACH. It is enabled to transmit uplink control signals and it may be able to transmit small data packets on the RACH.

-The network can assign the UE transport channel parameters (e.g. transport format sets) in advance, to be used when a DCH is used. Upon assignment of When the physical channel for DCH is assigned, the UE shall move to state is changed to CELL_DCH state and use the pre-assigned TFS for the DCH can be used.

If no UE dedicated physical channel or transport channel channel configuration has been assigned, tThe UE shall use the common physical channel and transport channel configuration according to the system information when no UE dedicated physical channel or transport channel channel configuration has been assigned.

For the uplink data transmission, the UE reports the observed traffic volume to the network in order for the network to re-evaluate the current allocation of resources. This report contains e.g. the amount of data to be transmitted or the buffer status in the UE.

When there is either user or control data to transmit, a selection procedure determines whether the data should be transmitted on a common transport channel, or if a transition to CELL_DCH should be executed. The selection is dynamic and depends on e.g. traffic parameters (amount of data, packet burst frequency).

In FDD mode, the UTRAN can assign CPCH resources to the UE in CELL_FACH state. When CPCH resources are assigned, the UE will continue to monitor FACHs. The UE may use the RACH to transmit uplink control signals and small data packets. The UE also may choose to transmit data packets, larger than those carried on the RACH, on the CPCH channel. The UE selects either the RACH or one of the CPCH channels to make maximum use of the capacity available on that channel.

In FDD mode, the UE provides the UTRAN with CPCH measurement data which includes data queue depth (current size of data buffers), average access time for each CPCH channel used, and average traffic volume on each CPCH channel used. With these measurands, the UTRAN can reallocate network resources on a periodic basis. The UTRAN allocates CPCH Sets to each cell and assigns UEs to one of the cell's CPCH Sets. The UEs can dynamically access the CPCH resources without further UTRAN control.

In the TDD mode, the UTRAN can assign USCH / DSCH resources to the UE in CELL_FACH state. When USCH / DSCH resources are assigned, the UE will continue to monitor FACHs, depending on the UE capability. The UE may use the USCH / DSCH to transmit signalling messages or user data in the uplink and / or the downlink using USCH and / or DSCH when resources are allocated to cell and UE is assigned use of those USCH / DSCH.

For the uplink data transmission on USCH the UE reports to the network the traffic volume (current size of RLC data buffers), The UTRAN can use these measurement reports to re-evaluate the current allocation of the USCH / DSCH resources.

9.3.2.6 RRC Connection mobility tasks (CELL_FACH)

In this state the location of the UE is known on cell level. A cell update procedure is used to report to the UTRAN, when the UE selects a new cell to observe the common downlink channels of a new cell. Downlink data transmission on the FACH can be started without prior paging.

In CELL_FACH state an CELL_ FACH cell set comparable to the active set of a dedicated channel in SHO is maintained both in the UE and in the network. The CELL_ FACH cell set represents a list of cells which have the potential to serve the UE from radio signal strength perspective. The UE performs measurements and reporting for the CELL_ FACH cell set using the same procedures as in CELL_DCH state. The thresholds required for triggering a measurement report may be different from those in CELL_DCH state.

The CELL_FACH cell set information is used by the network to decide whether the user data can be routed directly via a cell to a specific UE or soft handover would be required when resuming the DCH operation. In addition, the CELL_FACH cell set information provides the means for the network to evaluate potential interference conditions and select a suitable amount of capacity when moving the UE in the DCH active substate, for both uplink and downlink data transfer.

The UE monitors the broadcast channel and system information on BCCH of its own and neighbour cells and from this the need for the updating of cell location is identified.

The UE shall perform cell reselection and upon selecting a new UTRA cell, it shall initiate a cell update procedure. Upon selecting a new cell belonging to another radio access system than UTRA, the UE shall enter idle mode and make an access to that system according to its specifications.

9.3.2.7 UE Measurements (CELL_FACH)

The UE shall perform measurements and transmit measurement reports according to the measurement control information.

By default, tThe UE shall use the measurement control information according broadcast within to the system information. However, for measurements for which the network also provides measurement control information within a MEASUREMENT CONTROL message, the latter information takes precedencewhen no UE dedicated measurement control information has been assigned.

9.3.2.8 Transfer and update of system information (CELL_FACH)

The UE shall read the BCH to acquire valid system information. For each acquisition, the UE may need different combinations of system information broadcast on BCH. The scheduling on the broadcast channel is done in such way that the UE knows when the requested information can be found.

When the system information is modified, the scheduling information is updated to reflect the changes in system information transmitted on BCH. The new scheduling information is broadcast on FACH in order to inform UEs about the changes. If the changes are applicable for the UE, the modified system information is read on BCH.

9.3.3 CELL_PCH state

The CELL_PCH state is characterised by:

- No dedicated physical channel is allocated to the UE

- The UE uses DRX for monitoring a PCH via an allocated PICH.

- No uplink activity is possible.

- The position of the UE is known by UTRAN on cell level according to the cell where the UE last made a cell update in CELL_FACH state.

In this state the UE <u>shall</u> performs the following actions:

- monitor the paging occasions according to the DRX cycle and receive paging information on the PCH

- listens to the BCH transport channel of the serving cell for the decoding of system information messages

- initiates a cell update procedure on cell change.

The DCCH logical channel cannot be used in this sub. If the network wants to initiate any activity, it needs to make a paging request on the PCCH logical channel in the known cell to initiate any downlink activity.

9.3.3.1 ~~Transition from CELL_PCH to URA_PCH State~~

~~The only overhead in keeping a UE in the CELL_PCH state is the potential possibility of cell updating, when the UE moves to other cells.~~

~~To reduce this overhead, the UE is moved to the URA_PCH State when low activity is observed. This can be controlled with an inactivity timer, and optionally, with a counter, which counts the number of cell updates. When the number of cell updates has exceeded certain limits (a network parameter), then UTRAN orders the UE to the URA_PCH State. This transition is made via the CELL_FACH state.~~

~~*[Editor's note: If the coverage area of FAUSCH is expanded from one cell to several cells in the URA in relation to the execution of this transition, the new FAUSCH allocation information for each new cell in the URA needs to be exchanged either in the CELL_FACH or a CELL_DCH-based state prior to a transition from CELL_PCH to URA_PCH state. For proper operation, this shouldn't be observed as increased activity.]*~~

9.3.3.1~~2~~ Transition from CELL_PCH to CELL_FACH state

The UE is transferred to ~~>~~CELL_FACH state either by ~~a command (packet~~ paging~~)~~ from UTRAN or through any uplink access.

~~In FDD mode, if a valid FAUSCH transport channel is allocated for the current cell, the UE changes to CELL_FACH state as soon as it uses the FAUSCH to allocate a DCH.~~

9.3.3.2~~3~~ Radio Resource Allocation Tasks (CELL_PCH)

In CELL_PCH state no resources have been granted for data transmission. For this purpose, a transition to another state has to be executed.

The UE may use Discontinuous Reception (DRX) in order to reduce power consumption. When DRX is used the UE needs only to receive at one paging occasion per DRX cycle. The UE may be instructed to use a specific DRX cycle

length by the network. The UE shall determine its paging occasions in the same way as for Idle Mode, see ~~TS 25.304~~[4].

9.3.3.~~3~~4   RRC Connection mobility tasks (CELL_PCH)

In the CELL_PCH state, the UE mobility is performed through cell reselection procedures, which may differ from the one defined in ~~TS 25.304~~[4].

The UE shall perform cell reselection and upon selecting a new UTRA cell, it shall move to CELL_FACH state and initiate a cell update procedure in the new cell. After the cell update procedure has been performed, the UE shall change its state back to CELL_PCH state if neither the UE nor the network has any more data to transmit.

Upon selecting a new cell belonging to another radio access system than UTRA, the UE shall enter idle mode and make an access to that system according to its specifications.

In case of low UE activity, UTRAN may want to reduce the cell updating overhead by ordering the UE to move to the URA_PCH State. This transition is made via the CELL_FACH state. UTRAN may apply an inactivity timer, and optionally, a counter, which counts the number of cell updates e.g. UTRAN orders the UE to move to URA_PCH when the number of cell updates has exceeded certain limits (network parameter).

9.3.3.~~4~~5   UE Measurements (CELL_PCH)

The UE shall perform measurements and transmit measurement reports according to the measurement control information.

The UE shall use the measurement control information according to the system information when no UE dedicated measurement control information has been assigned.

9.3.3.~~5~~6   Transfer and update of system information (CELL_PCH)

The UE shall read the BCH to acquire valid system information. For each acquisition, the UE may need different combinations of system information broadcast on BCH. The scheduling on the broadcast channel is done in such way that the UE knows when the requested information can be found.

9.3.4   URA_PCH State

The URA_PCH state is characterised by:

- No dedicated physical channel is allocated to the UE

- ~~Neither an uplink nor a downlink dedicated physical channel is allocated to the UE~~

- The UE uses DRX for monitoring a PCH via an allocated PICH.

- No uplink activity is possible

- The location of the UE is known on UTRAN Registration area level according to the URA assigned to the UE during the last URA update in CELL_FACH state.

In this state the UE performs the following actions:

- monitor the paging occasions according to the DRX cycle and receive paging information on the PCH

-

- listens to the BCH transport channel of the serving cell for the decoding of system information messages

- initiates a URA updating procedure on URA change.

The DCCH logical channel cannot be used in this state. If the network wants to initiate any activity, it needs to make a paging request on the PCCH logical channel within the URA where the location of the UE is known. If the UE needs to transmit anything to the network, it goes to the CELL_FACH state. ~~In addition, the UE can also use the FAUSCH for requesting a DCH in the whole URA or parts of it, if the UE has been allocated - on entering the connected mode or via explicit signalling later on - a FAUSCH channel for the cell, which the UE is currently camping on.~~

The transition to URA_PCH State can be controlled with an inactivity timer, and optionally, with a counter which counts the number of cell updates. When the number of cell updates has exceeded certain limits (a network parameter), then the UE changes to the URA_PCH State.

URA updating is initiated by the UE which, upon the detection of the Registration area, sends the network the Registration area update information on the RACH of the new cell.

9.3.4.1 Transition from URA_PCH State to Cell_FACH State (URA_PCH)

Any activity causes the UE to be transferred to CELL_ FACH State. Uplink access is performed by ~~either~~ RACH ~~or FAUSCH, if a FAUSCH transport channel for the current cell has been allocated~~.

Note that the release of an RRC connection is not possible in the URA_PCH State. The UE will first move to Cell_FACH State to perform the release signalling.

9.3.4.2 Radio Resource Allocation Tasks (URA _PCH)

In URA_PCH State no resources have been granted for data transmission. For this purpose, a transition to CellFACH State has to be executed.

The UE may use Discontinuous Reception (DRX) in order to reduce power consumption. When DRX is used the UE needs only to receive at one paging occasion per DRX cycle. The UE may be instructed to use a specific DRX cycle length by the network. The UE shall determine its paging occasions in the same way as for Idle Mode, see ~~TS 25.304~~[4].

9.3.4.3 RRC Connection mobility tasks (URA_PCH)

In URA_PCH State the location of a UE is known on UTRAN Registration area level.

In this state, the UE mobility is performed through URA reselection procedures, which may differ from the definitions in S2.04. The UE shall perform cell reselection and upon selecting a new UTRA cell belonging to an URA which does not match the URA used by the UE, the UE shall move to CELL_FACH state and initiates a URA update towards the network. After the URA update procedure has been performed, the UE shall change its state back to URA_PCH state if neither the UE nor the network has any more data to transmit.

Upon selecting a new cell belonging to another radio access system than UTRA, the UE shall enter idle mode and make an access to that system according to its specifications (FFS).

9.3.4.4 UE Measurements (URA_PCH)

The UE shall perform measurements and transmit measurement reports according to the measurement control information.

The UE shall use the measurement control information according to the system information when no UE dedicated measurement control information has been assigned.

9.3.4.5 Transfer and update of system information (URA_PCH)

The same mechanisms to transfer and update system information as for state CELL_PCH are applicable for UEs in URA_PCH state, see section **Error! Reference source not found.**.

9.4 Inter-system handover with PSTN/ISDN domain services

When using PSTN / ISDN domain services, UTRAN is using an Inter- ~~System~~Radio access system Handover Procedure and GSM is using a Handover procedure for the transition from UTRAN Connected Mode to GSM Connected Mode.

9.5 Inter-system handover with IP domain services

When using IP domain services, the UE initiates cell reselection from a GSM/GPRS cell to a UTRAN cell and then uses the RRC Connection Establishment procedure for the transition to UTRAN Connected mode.

When the RRC Connection is established from Idle Mode (GPRS Packet Idle Mode) the RRC CONNECTION REQUEST message contains an indication, that UTRAN needs to continue an already established GPRS UE context from the CN. This indication allows UTRAN to e.g. prioritize the RRC CONNECTION REQUEST from the UE.

In UTRAN connected mode UTRAN is using UE or network initiated cell reselection to change from a UTRAN cell to a GSM/GPRS cell. If the cell reselection was successful the UE enters Idle Mode (GPRS Packet Idle Mode). The UE sends a packet channel request from Idle Mode (GPRS Packet Idle mode) to establish a Temporary Block flow and enter GPRS Packet Transfer Mode. In the GPRS Packet Transfer Mode the UE sends a RA Update request message. The RA Update Request message sent from the UE contains an indication that GSM/GPRS need to continue an already established UTRAN UE context from the CN. This means that the RA Update request is always sent for the transition from UTRAN Connected Mode to GSM/GPRS regardless if the RA is changed or not.

[Note: The reason for using RA update instead of a new message is to reduce the impact on the existing GSM/GPRS specification.]

9.6 Inter-system handover with simultaneous IP and PSTN/ISDN domain services

[Note: This is an initial assumption that needs to be seen by SMG2 and requiring checking by SMG2, when the work on this item has progressed.]

9.6.1 Inter-system handover UTRAN to GSM / BSS

For a UE in CELL_DCH state using both PSTN / ISDN and IP Domain services the Inter-system handover procedure is based on measurement reports from the UE but initiated from UTRAN.

The UE performs the Inter-system handover from UTRAN Connected Mode to GSM Connected Mode first. When the UE has sent handover complete message to GSM / BSS the UE initiates a temporary block flow towards GPRS and sends a RA update request.

If the Inter-system handover from UTRAN Connected Mode to GSM Connected Mode was successful the handover is considered as successful regardless if the UE was able to establish a temporary block flow or not towards GPRS.

In case of Inter-system handover failure the UE has the possibility to go back to UTRAN Connected Mode and re-establish the connection in the state it originated from without attempting to establish a temporary block flow. If the UE has the option to try to establish a temporary block flow towards GSM / GPRS after Inter-system handover failure is FFS.

9.6.2 Inter-system handover GSM / BSS to UTRAN

For a UE in GSM Connected Mode using both PSTN / ISDN and IP domain services the Inter-system handover procedure is based on measurement reports from the UE but initiated from GSM / BSS.

The UE performs the Inter-system handover from GSM Connected Mode to UTRAN Connected Mode.

In UTRAN Connected Mode both services are established in parallel.

If the Inter-System handover from GSM Connected mode to UTRAN Connected Mode was successful the handover is considered as successful.

In case of Inter-system handover failure the UE has the possibility to go back to GSM Connected Mode and re-establish the connection in the state it originated from.

10.1.1.5 CELL UPDATE CONFIRM ~~(FDD only)~~

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

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		U-RNTI	~~New U-RNTI~~
New C-RNTI	O		C-RNTI	~~New C-RNTI~~
RLC re-configuration indicator	C-AM_RLC_recon			
UTRAN DRX cycle length	O			
DRX Indicator	O			
UTRAN mobility information elements				
URA identifier	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
CN domain identity	O			(Note1,2)
NAS system info	O			(Note1,2)

Physical CH information elements (FFS Note 5)				
Frequency info	O (FFS)			
Uplink radio resources				
Uplink DPCH power control info	O (FFS)			
CHOICE channel requirement				
Uplink DPCH info	O (FFS)			
PRACH info (for RACH)	O (FFS)			
CHOICE mode				
FDD				
PRACH info (for FAUSCH)	O (FFS)			
Downlink radio resources				
DL information per radio link		0 to <maxNoRLs>		
Primary CCPCH info	O (FFS)			
Downlink DPCH info	O (FFS)			
Secondary CCPCH info	O (FFS)			
				Note 3
CHOICE mode				
FDD				
SSDT indicator	O (FFS)			
CPCH SET Info	O (FFS)			UL/DL radio resource for CPCH control (Note4)
Gated Transmission Control info	O (FFS)			
Default DPCH Offset Value	O (FFS)			

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

Range Bound	Explanation
MaxNoRLs	Maximum number of radio links
MaxNoCN domains	Maximum number of CN domains

Condition	Explanation
AM_RLC_recon	This IE is only sent when the UTRAN requests AM RLC re-configuration

[Note1: It depends on the length of these information whether this message can be used to notify these information to UE.]

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

Note 3: It is assumed that the DL timeslot configuration is the same for all radio links, whether or not macro-diversity is supported for TDD.

Note 4: How to map UL and DL radio resource in the message is FFS.

Note 5: The inclusion of any physical channel information elements requires further study

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		U-RNTI	~~New U-RNTI~~
CHOICE *mode*				
TDD				
New C-RNTI			C-RNTI	
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 <MaxHoRL count>		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.

10.1.1.12 URA UPDATE CONFIRM

This message confirms the URA update procedure and can be used to reallocate new RNTI information for the UE valid after the URA update.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element	Presence	Range	IE type and reference	Semantics description
Message Type	M			
UE information elements				
U-RNTI	C-CCCH			
New U-RNTI	O		U-RNTI	~~New U-RNTI~~
New C-RNTI	O		C-RNTI	~~New C-RNTI~~
UTRAN DRX cycle length	O			
DRX Indicator	O			
UTRAN mobility information elements				
URA identifier	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
CN domain identity	O			(Note1,2)
NAS system info	O			(Note1,2)

Range Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

Condition	Explanation
CCCH	This IE is only sent when CCCH is used

[Note1: It depends on the length of these information whether this message can be used to notify these information to UE.]

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

10.1.1.13 RNTI REALLOCATION

<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				
New U-RNTI	O		U-RNTI	~~New U-RNTI~~
New C-RNTI	O		C-RNTI	~~New C-RNTI~~
CN information elements				
PLMN identity	O			(Note1,2)
CN related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
CN domain identity	O			(Note1,2)
NAS system info	O			(Note1,2)

Range Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

[Note1: It depends on the length of these information whether this message can be used to notify these information to UE.]

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

10.1.3.1 PAGING TYPE 1

This message is used to send information on the paging channel. One or several UEs, in idle or connected mode,can be paged in one message, which also can contain other information.
RLC-SAP: TM

Logical channel: PCCH

Direction: UTRAN → UE

Information Element	Presence	Range	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Paging record		0̶1 to <Page Count>		
Other information elements				
BCCH modification info	O			~~FFS~~

Range Bound	Explanation
Page Count	Number of UE's paged in the Paging Type 1 message

10.1.4.1 RRC CONNECTION RE-ESTABLISHMENT

<Functional description of this message to be included here>

RLC-SAP: UM

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			~~Only in case of SRNC relocation~~
New C-RNTI	O			~~Only if assigned to a common transport channel~~
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 <Max Rlcount>		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	O			FFS

3GPP

info				
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

10.1.5.1 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 $\rightarrow$ 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		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				
Downlink DPCH info				
Secondary CCPCH info				For FACH
~~ Secondary CCPCH info~~				~~For PCH~~
~~ CHOICE *mode*~~				
~~ TDD~~				
~~ Secondary CCPCH info~~				~~For PICH~~
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		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			
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			
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 $\rightarrow$ 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				
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				
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.

10.1.7.6 SECURITY MODE CONTROL COMPLETE

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to UTRAN

Information Element	Presence	Range	IE type and reference	Semantics description
Message Type	M			
RB Information elements				
Radio bearer identity		1 to <maxReconRBs>		Radio bearer identity 0 indicates the signalling link and is always present
UE information elements				
Downlink ~~A~~activation Time	O~~M~~		Activation time	~~Start of the new ciphering configuration in uplink for all the radio bearers~~

Range Bound	Explanation
MaxReconRBs	For each radio bearer that is reconfigured

10.2.3.5 Activation time

Activation Time defines the CFN (Connection Frame Number) in which the operation/changes caused by the related message should be executed.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Activation time			Integer(0.. 255)	CFN [TS 25.402]

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	025	Current Version:	3.0.0

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

Source:	TSG-RAN WG2	**Date:**	1999-11-05

Subject:	Logical CH for RRC Connection Re-establishment

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		
C	Functional modification of feature	X	
D	Editorial modification		

Release:

Phase 2		
Release 96		
Release 97		
Release 98		
Release 99	X	
Release 00		

Reason for change:	When a fast re-establishment procedure is required, SRNC relocation should not be done. Therefore it is proposed to add CCCH for RRC CONNECTION RE-ESTABLISHMENT message.

Clauses affected:	10.1.4.1

Other specs affected:

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

Other comments:	

help.doc

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

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

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**	**028**		Current Version:	**3.0.0**

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

Source:	TSG-RAN WG2	**Date:**	1999-11-05

Subject:	Cell Update Cause

Work item:	

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

Reason for change:	When the UTRAN commands UE to change its state from CELL_DCH to CELL_FACH state, the UTRAN can either send a new common CH info or only a DRX indicator. If only DRX indicator is sent, the UE has to retrieve the information for common CH from the broadcasted system information when the UE sends response message. It is proposed to add a new cell update cause value "RB control response" in CELL UPDATE message for UTRAN to relate CELL UPDATE message with RB control command.

Clauses affected:	10.2.3.19

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.

10.2.3.19 Cell update cause

Indicates the cause for s cell update. ~~Examples of causes are cell reselection and periodic cell update.~~

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell update cause			Enumerated (cell reselection, periodic cell update, UL data transmission, paging response, RB control response)	

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**	**039**		Current Version:	**3.0.0**

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

Source:	TSG-RAN WG2	**Date:**	1999-11-05

Subject:	Information elements for RLC reset

Work item:	

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

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

Reason for change:	Currently there is no information element for the RLC reset procedure in the RRC parameter "RLC info".

Clauses affected:	10.2.4.2.1

Other specs affected:

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

Other comments:	

help.doc

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

-

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; Timer based with explicit signalling, Timer based without explicit signalling or Discard after Max_DAT retransmissions. For unacknowledged mode only Timer based without explicit signalling is applicable.
Timer_discard	C-timer			Elapsed time before a SDU is discarded.
Max_DAT	C-discard			Number of retransmissions of a PU before a SDU is discarded.
Max_RST	C-no_discard			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.