TSG-RAN Meeting #13
Beijing, China, 18 - 21 September 2001

RP-010548

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

Source: **TSG-RAN WG2**

Agenda item: 8.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-012109	agreed	25.331	1007	1	R99	MAC logical channel priority added to definition of RB0 and SHCCH	F	3.7.0	3.8.0
R2-012110	agreed	25.331	1008		Rel-4	MAC logical channel priority added to definition of RB0 and SHCCH	A	4.1.0	4.2.0
R2-011919	agreed	25.331	1009		R99	Control of primary CCPCH RSCP measurement in PUSCH CAPACITY REQUEST message	F	3.7.0	3.8.0
R2-012069	agreed	25.331	1010		Rel-4	Control of primary CCPCH RSCP measurement in PUSCH CAPACITY REQUEST message	A	4.1.0	4.2.0
R2-012131	agreed	25.331	1013	1	R99	Various minor corrections	F	3.7.0	3.8.0
R2-012111	agreed	25.331	1014		Rel-4	Various minor corrections	A	4.1.0	4.2.0
R2-012113	agreed	25.331	1015	1	R99	Range of T312	F	3.7.0	3.8.0
R2-012114	agreed	25.331	1016		Rel-4	Range of T312	A	4.1.0	4.2.0
R2-011923	agreed	25.331	1017		R99	Bitstring of channelisationCodeIndices	F	3.7.0	3.8.0
R2-012115	agreed	25.331	1018		Rel-4	Bitstring of channelisationCodeIndices	A	4.1.0	4.2.0
R2-011924	agreed	25.331	1019		R99	Transmission of UE CAPABILITY INFORMATION message	F	3.7.0	3.8.0
R2-012116	agreed	25.331	1020		Rel-4	Transmission of UE CAPABILITY INFORMATION message	A	4.1.0	4.2.0
R2-012118	agreed	25.331	1021	1	R99	Multiple UE capabilities procedures	F	3.7.0	3.8.0
R2-012119	agreed	25.331	1022		Rel-4	Multiple UE capabilities procedures	A	4.1.0	4.2.0
R2-012120	agreed	25.331	1023	1	R99	Corrections to information elements outside the extension container	F	3.7.0	3.8.0
R2-012121	agreed	25.331	1024		Rel-4	Corrections to information elements outside the extension container	A	4.1.0	4.2.0
R2-012064	agreed	25.331	1025	1	R99	SFN reporting	F	3.7.0	3.8.0
R2-012065	agreed	25.331	1026		Rel-4	SFN reporting	A	4.1.0	4.2.0
R2-011928	agreed	25.331	1027		R99	TFCI combining indicator	F	3.7.0	3.8.0
R2-012156	agreed	25.331	1028		Rel-4	TFCI combining indicator	A	4.1.0	4.2.0

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331 CR** | **1007** | ⌘ | ev | **r1** | ⌘ | Current version: | **3.7.0** | ⌘ |

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

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

Title:	⌘	MAC logical channel priority added to definition of RB0 and SHCCH
Source:	⌘	TSG-RAN WG2
Work item code: ⌘	TEI	*Date:* ⌘ 30 August 2001

Category:	⌘ **F**	*Release:* ⌘ R99

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

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

Reason for change:	⌘	The definition of RB0 and SHCCH is incorrect and does not contain a MAC logical channel priority. This means that ASC cannot be selected for CCCH messages on RACH (except RRC CONNECTION REQUEST where RRC selects ASC) or SHCCH messages sent on RACH (PUSCH CAPACITY REQUEST).

Summary of change: ⌘		MAC logical channel priority is added to definition of RB0 and SHCCH.

A high priority is needed for RACH transmissions of CCCH and SHCCH messages so the MAC logical channel priority is set to 1 (resulting in ASC 1).

Isolated Impact Analysis:

Correction to a function where the specification was :

- ambiguous or not sufficiently explicit.

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

Consequences if not approved:	⌘	It will not be possible to determine the ASC for CELL UPDATE and URA UPDATE (CCCH) or PUSCH CAPACITY REQUEST (SHCCH).

Clauses affected:	⌘	13.6, 13.6a

Other specs affected:	⌘ ☐	Other core specifications	⌘ 25.331 v4.1.0, CR 1008
	☐	Test specifications	
	☐	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:

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

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

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

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

13.6 RB information parameters for signalling radio bearer RB 0

The following Radio Bearer parameter values apply for signalling radio bearer RB0:

Information element/ Group name	Value	Comment
RLC info		
>Uplink RLC mode	TM	
>>Transmission RLC discard	omitted	Neither discard is used, nor will there be a reset
>>Segmentation indication	FALSE	
>Downlink RLC mode	UM	
RB mapping info		Single multiplexing option
>Uplink mapping info		
>>UL transport channel	RACH	RACH corresponding with selected PRACH
>>RLC size list	N/A	The first TB defined in the Transport Format Set for the transport channel that is used
>> MAC logical channel priority	1	
>Downlink mapping info		
>>DL transport channel	FACH	

13.6a RB information parameters for SHCCH

The following Radio Bearer parameter values apply for SHCCH:

Information element/ Group name	Value	Comment
RLC info		
>Uplink RLC mode	TM	
>>Transmission RLC discard	omitted	Neither discard is used, nor will there be a reset
>>Segmentation indication	FALSE	
>Downlink RLC mode	UM	
RB mapping info		
>Uplink mapping info		Option 1
>>UL transport channel	RACH	RACH corresponding with selected PRACH
>>RLC size list	N/A	The first TB defined in the Transport Format Set for the transport channel that is used
>> MAC logical channel priority	1	
>Downlink mapping info		
>>DL transport channel	FACH	
>Uplink mapping info		Option 2
>>UL transport channel	USCH	
>>UL Transport Channel Identity	1	
>>MAC logical channel priority	1	
>>RLC size list	N/A	The first TB defined in the Transport Format Set for the transport channel that is used
>Downlink mapping info		
>>DL transport channel	DSCH	
>>DL Transport Channel Identity	1	

CR-Form-v4

CHANGE REQUEST

⌘	**25.331** CR	**1008** ⌘	ev	**-**	⌘	Current version:	**4.1.0**	⌘

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

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

Title: ⌘	MAC logical channel priority added to definition of RB0 and SHCCH	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 30 August 2001
Category: ⌘ **F**		***Release:*** ⌘ REL-4

Use <u>one</u> of the following categories: **F** *(correction)* **A** *(corresponds to a correction in an earlier release)* **B** *(addition of feature),* **C** *(functional modification of feature)* **D** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Use <u>one</u> of the following releases: 2 *(GSM Phase 2)* R96 *(Release 1996)* R97 *(Release 1997)* R98 *(Release 1998)* R99 *(Release 1999)* REL-4 *(Release 4)* REL-5 *(Release 5)*

Reason for change: ⌘	The definition of RB0 and SHCCH is incorrect and does not contain a MAC logical channel priority. This means that ASC cannot be selected for CCCH messages on RACH (except RRC CONNECTION REQUEST where RRC selects ASC) or SHCCH messages sent on RACH (PUSCH CAPACITY REQUEST).
Summary of change: ⌘	MAC logical channel priority is added to definition of RB0 and SHCCH. Isolated Impact Analysis: Correction to a function where the specification was : • ambiguous or not sufficiently explicit. • Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise. A high priority is needed for RACH transmissions of CCCH and SHCCH messages so the MAC logical channel priority is set to 1 (resulting in ASC 1).
Consequences if not approved: ⌘	It will not be possible to determine the ASC for CELL UPDATE and URA UPDATE (CCCH) or PUSCH CAPACITY REQUEST (SHCCH).

Clauses affected: ⌘	13.6, 13.6a

Other specs affected: ⌘	☐	Other core specifications ⌘	25.331 v3.7.0, CR 1007r1
	☐	Test specifications	
	☐	O&M Specifications	

Other comments: ⌘	

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13.6   RB information parameters for signalling radio bearer RB 0

The following Radio Bearer parameter values apply for signalling radio bearer RB0:

Information element/ Group name	Value	Comment
RLC info		
>Uplink RLC mode	TM	
>>Transmission RLC discard	omitted	Neither discard is used, nor will there be a reset
>>Segmentation indication	FALSE	
>Downlink RLC mode	UM	
RB mapping info		Single multiplexing option
>Uplink mapping info		
>>UL transport channel	RACH	RACH corresponding with selected PRACH
>>RLC size list	N/A	The first TB defined in the Transport Format Set for the transport channel that is used
>> MAC logical channel priority	1	
>Downlink mapping info		
>>DL transport channel	FACH	

13.6a   RB information parameters for SHCCH

The following Radio Bearer parameter values apply for SHCCH:

Information element/ Group name	Value	Comment
RLC info		
>Uplink RLC mode	TM	
>>Transmission RLC discard	omitted	Neither discard is used, nor will there be a reset
>>Segmentation indication	FALSE	
>Downlink RLC mode	UM	
RB mapping info		
>Uplink mapping info		Option 1
>>UL transport channel	RACH	RACH corresponding with selected PRACH
>>RLC size list	N/A	The first TB defined in the Transport Format Set for the transport channel that is used
>> MAC logical channel priority	1	
>Downlink mapping info		
>>DL transport channel	FACH	
>Uplink mapping info		Option 2
>>UL transport channel	USCH	
>>UL Transport Channel Identity	1	
>>MAC logical channel priority	1	
>>RLC size list	N/A	The first TB defined in the Transport Format Set for the transport channel that is used
>Downlink mapping info		
>>DL transport channel	DSCH	
>>DL Transport Channel Identity	1	

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR**   **1009** ⌘   ev   **-**   ⌘   Current version: **3.7.0** ⌘

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

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

Title: ⌘	Control of primary CCPCH RSCP measurements in PUSCH CAPACITY REQUEST message	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 24 August 2001
Category: ⌘	**F**	***Release:*** ⌘ R99

Use one of the following categories:	*Use one of the following releases:*
F *(correction)*	*2 (GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96 (Release 1996)*
B *(addition of feature),*	*R97 (Release 1997)*
C *(functional modification of feature)*	*R98 (Release 1998)*
D *(editorial modification)*	*R99 (Release 1999)*
Detailed explanations of the above categories can	*REL-4 (Release 4)*
be found in 3GPP TR 21.900.	*REL-5 (Release 5)*

Reason for change: ⌘	The UE may include timeslot ISCP and CCPCH RSCP measurements in the PUSCH CAPACITY REQUEST message (both measurements are optional). The timeslot ISCP measurements are controlled by a previous PSCHAM message but the there is no similar way to control the inclusion of CCPCH RSCP in the PUSCH CAPACITY REQUEST message. This CR adds an IE into the PHYSICAL SHARED CHANNEL ALLOCATION which indicates whether the UE should include P-CCPCH in a subsequent PUSCH CAPACITY REQUEST.
Summary of change: ⌘	An Boolean IE,'request P-CCPCH RSCP', is added to the PHYSICAL SHARED CHANNEL ALLOCATION message. When this is set to TRUE the UE will include primary CCPCH RSCP in a subsequent PUSCH CAPACITY.
	Isolated Impact Analysis:
	Correction to a function where the specification was :
	• ambiguous or not sufficiently explicit.
	• Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
	The CR intends to clarify behaviour that has very likely been assumed in most implementations.
Consequences if not approved: ⌘	The generation of P-CCPCH RSCP in the PUSCH CAPACITY REQUEST message is uncontrolled. This report may be needed for downlink power control and its reporting must guaranteed for correct operation.

Clauses affected: ⌘	8.2.8.3, 10.2.25, 11.2	
Other specs affected: ⌘	☐ Other core specifications ⌘	25.331 v4.1.0, CR 1010
	☐ Test specifications	

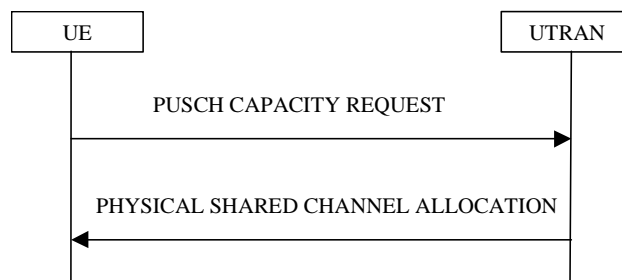|	O&M Specifications	
Other comments: ⌘		

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8.2.8   PUSCH capacity request [TDD only]

Figure 35: PUSCH Capacity request procedure

8.2.8.1   General

With this procedure, the UE transmits its request for PUSCH resources to the UTRAN. In the normal case, the UTRAN responds with a PHYSICAL SHARED CHANNEL ALLOCATION message, which either allocates the requested PUSCH resources, and/or allocates a PDSCH resource, or may just serve as an acknowledgement, indicating that PUSCH allocation is pending.

This procedure can also be used to acknowledge the reception of a PHYSICAL SHARED CHANNEL ALLOCATION message, or to indicate a protocol error in that message.

With the PUSCH CAPACITY REQUEST message, the UE can request capacity for one or more USCH.

8.2.8.2   Initiation

This procedure is initiated

- in the CELL_FACH or CELL_DCH state,

- and when at least one RB using USCH has been established,

- and when the UE sees the requirement to request physical resources (PUSCH) for an USCH channel or there is the need to reply to a PHYSICAL SHARED CHANNEL ALLOCATION message as described in clause 8.2.7 (i.e. to confirm the reception of a message, if requested to do so, or to indicate a protocol error).

    The procedure can be initiated if:

- Timer T311 is not running.

- The timer T310 (capacity request repetition timer) is not running.

The UE shall:

- set the IEs in the PUSCH CAPACITY REQUEST message according to subclause 8.2.8.3;

- if the procedure is triggered to reply to a previous PHYSICAL SHARED CHANNEL ALLOCATION message by the IE "Confirm request" set to "Confirm PUSCH" and the IE "PUSCH capacity allocation info" is not present:

    - transmit the PUSCH CAPACITY REQUEST message on RACH;

- else:

    - transmit the PUSCH CAPACITY REQUEST message on the uplink SHCCH;

- set counter V310 to 1;

- start timer T310.

8.2.8.3   PUSCH CAPACITY REQUEST message contents to set

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

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

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

    -    Radio Bearer ID of the Radio Bearer being reported;

    -    RLC buffer payload for these radio bearers, as specified by the MEASUREMENT CONTROL procedure;

The UE shall:

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

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

        -    Radio Bearer ID of the Radio Bearer being reported;

        -    RLC buffer payload for this radio bearer;

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

    -    set the CHOICE "Allocation confirmation" to "PDSCH Confirmation" with the value given in the IE "PDSCH Identity" in the received message;

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

    -    set the CHOICE "Allocation confirmation" to "PUSCH Confirmation" with the value given in the IE "PUSCH Identity" in the received message;

-    if the variable PROTOCOL_ERROR_REJECT is set to TRUE:

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

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

    -    clear that entry;

    -    set the IE "protocol error indicator" to TRUE;

    -    include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

-    if the value of the variable PROTOCOL_ERROR_ REJECT is FALSE;

    -    set the IE "Protocol error indicator" to FALSE;

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

The timeslots for which "Timeslot ISCP" may be reported shall have been configured with a previous PHYSICAL SHARED CHANNEL ALLOCATION message.

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

8.2.8.4 Reception of a PUSCH CAPACITY REQUEST message by the UTRAN

Upon receiving a PUSCH CAPACITY REQUEST message with traffic volume measurement included for at least one radio bearer, the UTRAN should initiate the PHYSICAL SHARED CHANNEL ALLOCATION procedure, either for allocating PUSCH or PDSCH resources as required, or just as an acknowledgement, indicating a pending PUSCH allocation, as described in subclause 8.2.7.

8.2.8.5 T310 expiry

Upon expiry of timer T310, the UE shall

- if V310 is smaller than N310:

    - transmit a new PUSCH CAPACITY REQUEST message on the Uplink SHCCH;

    - restart timer T310;

    - increment counter V310;

    - set the IEs in the PUSCH CAPACITY REQUEST message as specified in subclause 8.2.8.3;

- if V310 is greater than or equal to N310:

- the procedure ends.

10.2.25 PHYSICAL SHARED CHANNEL ALLOCATION

NOTE: Only for TDD.

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

RLC-SAP: UM on SHCCH, UM on DCCH

Logical channel: SHCCH or DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message type	
C-RNTI	OP		C-RNTI 10.3.3.8	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Uplink timing advance Control	MD		Uplink Timing Advance Control 10.3.6.96	Default value is the existing value for uplink timing advance
PUSCH capacity allocation info	OP		PUSCH Capacity Allocation info 10.3.6.64	
PDSCH capacity allocation info	OP		PDSCH Capacity Allocation info 10.3.6.42	
Confirm request	MD		Enumerated(No Confirm, Confirm PDSCH, Confirm PUSCH)	Default value is No Confirm
Traffic volume report request	OP		Integer (0 .. 255)	Indicates the number of frames between start of the allocation period and sending measurement report. The value should be less than the value for Allocation Duration.
ISCP Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot number 10.3.6.84	Timeslot numbers, for which the UE shall report the timeslot ISCP in PUSCH CAPACITY REQUEST message.
Request P-CCPCH RSCP	MP		Boolean	TRUE indicates that a Primary CCPCH RSCP measurement shall be reported by the UE in PUSCH CAPACITY REQUEST message.

11.2   PDU definitions

```
PhysicalSharedChannelAllocation ::= CHOICE {
    r3                                SEQUENCE {
        physicalSharedChannelAllocation-r3
                                    PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    later-than-r3                     SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
}
```

```
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                          C-RNTI                              OPTIONAL,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance                UL-TimingAdvanceControl             OPTIONAL,
        pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo        OPTIONAL,
        pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo        OPTIONAL,
        confirmRequest                  ENUMERATED {
                                           confirmPDSCH, confirmPUSCH }     OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        trafficVolumeReportRequest      INTEGER (0..255)                   OPTIONAL,
        iscpTimeslotList                TimeslotList                             OPTIONAL
        requestPCCPCHRSCP               BOOLEAN
}
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331 CR** | **1010** | ⌘ | ev | **-** | ⌘ | Current version: | **4.1.0** | ⌘ |

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

Title: ⌘	Control of primary CCPCH RSCP measurements in PUSCH CAPACITY REQUEST message	

Source: ⌘	TSG-RAN WG2	

Work item code: ⌘	TEI	***Date:*** ⌘	28 August 2001

Category: ⌘	**A**	***Release:*** ⌘	REL-4

Use *one* of the following categories:	Use *one* of the following releases:
F *(correction)*	2 *(GSM Phase 2)*
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C *(functional modification of feature)*	R98 *(Release 1998)*
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Detailed explanations of the above categories can	REL-4 *(Release 4)*
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Reason for change: ⌘	The UE may include timeslot ISCP and CCPCH RSCP measurements in the PUSCH CAPACITY REQUEST message (both measurements are optional). The timeslot ISCP measurements are controlled by a previous PSCHAM message but the there is no similar way to control the inclusion of CCPCH RSCP in the PUSCH CAPACITY REQUEST message. This CR adds an IE into the PHYSICAL SHARED CHANNEL ALLOCATION which indicates whether the UE should include P-CCPCH in a subsequent PUSCH CAPACITY REQUEST.

Summary of change: ⌘	An Boolean IE,'request P-CCPCH RSCP', is added to the PHYSICAL SHARED CHANNEL ALLOCATION message. When this is set to TRUE the UE will include primary CCPCH RSCP in a subsequent PUSCH CAPACITY.
	Isolated Impact Analysis:
	Correction to a function where the specification was :
	• ambiguous or not sufficiently explicit.
	• Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
	The CR intends to clarify behaviour that has very likely been assumed in most implementations.

Consequences if not approved: ⌘	The generation of P-CCPCH RSCP in the PUSCH CAPACITY REQUEST message is uncontrolled. This report may be needed for downlink power control and its reporting must guaranteed for correct operation.

Clauses affected: ⌘	8.2.8.3, 10.2.25, 11.2

Other specs affected:	⌘ ☐	Other core specifications ⌘	25.331 v3.7.0, CR 1009
	☐	Test specifications	

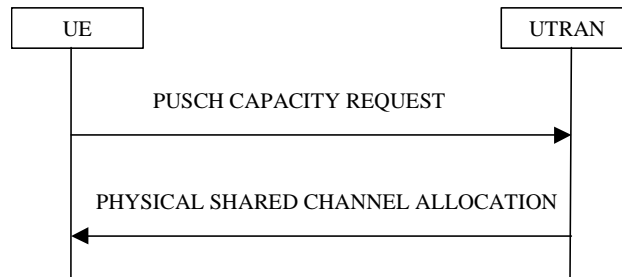|	O&M Specifications	

Other comments: ⌘ | |

How to create CRs using this form:

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

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

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

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

8.2.8   PUSCH capacity request [TDD only]

Figure 35: PUSCH Capacity request procedure

8.2.8.1   General

With this procedure, the UE transmits its request for PUSCH resources to the UTRAN. In the normal case, the UTRAN responds with a PHYSICAL SHARED CHANNEL ALLOCATION message, which either allocates the requested PUSCH resources, and/or allocates a PDSCH resource, or may just serve as an acknowledgement, indicating that PUSCH allocation is pending.

This procedure can also be used to acknowledge the reception of a PHYSICAL SHARED CHANNEL ALLOCATION message, or to indicate a protocol error in that message.

With the PUSCH CAPACITY REQUEST message, the UE can request capacity for one or more USCH.

8.2.8.2   Initiation

This procedure is initiated

- in the CELL_FACH or CELL_DCH state,

- and when at least one RB using USCH has been established,

- and when the UE sees the requirement to request physical resources (PUSCH) for an USCH channel or there is the need to reply to a PHYSICAL SHARED CHANNEL ALLOCATION message as described in clause 8.2.7 (i.e. to confirm the reception of a message, if requested to do so, or to indicate a protocol error).

   The procedure can be initiated if:

- Timer T311 is not running.

- The timer T310 (capacity request repetition timer) is not running.

The UE shall:

- set the IEs in the PUSCH CAPACITY REQUEST message according to subclause 8.2.8.3;

- if the procedure is triggered to reply to a previous PHYSICAL SHARED CHANNEL ALLOCATION message by the IE "Confirm request" set to "Confirm PUSCH" and the IE "PUSCH capacity allocation info" is not present:

  - transmit the PUSCH CAPACITY REQUEST message on RACH;

- else:

  - transmit the PUSCH CAPACITY REQUEST message on the uplink SHCCH;

- set counter V310 to 1;

- start timer T310.

8.2.8.3 PUSCH CAPACITY REQUEST message contents to set

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

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

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

    - Radio Bearer ID of the Radio Bearer being reported;

    - RLC buffer payload for these radio bearers, as specified by the MEASUREMENT CONTROL procedure;

The UE shall:

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

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

        - Radio Bearer ID of the Radio Bearer being reported;

        - RLC buffer payload for this radio bearer;

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

    - set the CHOICE "Allocation confirmation" to "PDSCH Confirmation" with the value given in the IE "PDSCH Identity" in the received message;

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

    - set the CHOICE "Allocation confirmation" to "PUSCH Confirmation" with the value given in the IE "PUSCH Identity" in the received message;

- if the variable PROTOCOL_ERROR_REJECT is set to TRUE:

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

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

    - clear that entry;

    - set the IE "protocol error indicator" to TRUE;

    - include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

- if the value of the variable PROTOCOL_ERROR_ REJECT is FALSE;

    - set the IE "Protocol error indicator" to FALSE;

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

The timeslots for which "Timeslot ISCP" may be reported shall have been configured with a previous PHYSICAL SHARED CHANNEL ALLOCATION message.

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

8.2.8.4 Reception of a PUSCH CAPACITY REQUEST message by the UTRAN

Upon receiving a PUSCH CAPACITY REQUEST message with traffic volume measurement included for at least one radio bearer, the UTRAN should initiate the PHYSICAL SHARED CHANNEL ALLOCATION procedure, either for allocating PUSCH or PDSCH resources as required, or just as an acknowledgement, indicating a pending PUSCH allocation, as described in subclause 8.2.7.

8.2.8.5 T310 expiry

Upon expiry of timer T310, the UE shall

- if V310 is smaller than N310:

    - transmit a new PUSCH CAPACITY REQUEST message on the Uplink SHCCH;

    - restart timer T310;

    - increment counter V310;

    - set the IEs in the PUSCH CAPACITY REQUEST message as specified in subclause 8.2.8.3;

- if V310 is greater than or equal to N310:

    - the procedure ends.

10.2.25 PHYSICAL SHARED CHANNEL ALLOCATION

NOTE: Only for TDD.

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

RLC-SAP: UM on SHCCH, UM on DCCH

Logical channel: SHCCH or DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message Type	MP		Message type	
C-RNTI	OP		C-RNTI 10.3.3.8	
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36	
Uplink timing advance Control	MD		Uplink Timing Advance Control 10.3.6.96	Default value is the existing value for uplink timing advance
PUSCH capacity allocation info	OP		PUSCH Capacity Allocation info 10.3.6.64	
PDSCH capacity allocation info	OP		PDSCH Capacity Allocation info 10.3.6.42	
Confirm request	MD		Enumerated(No Confirm, Confirm PDSCH, Confirm PUSCH)	Default value is No Confirm
Traffic volume report request	OP		Integer (0 .. 255)	Indicates the number of frames between start of the allocation period and sending measurement report. The value should be less than the value for Allocation Duration.
ISCP Timeslot list	OP	1 to maxTS		
>Timeslot number	MP		Timeslot number 10.3.6.84	Timeslot numbers, for which the UE shall report the timeslot ISCP in PUSCH CAPACITY REQUEST message.
Request P-CCPCH RSCP	MP		Boolean	TRUE indicates that a Primary CCPCH RSCP measurement shall be reported by the UE in PUSCH CAPACITY REQUEST message.

11.2   PDU definitions

```
-- **************************************************
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- **************************************************

PhysicalSharedChannelAllocation ::= CHOICE {
    r3                              SEQUENCE {
        physicalSharedChannelAllocation-r3
                                    PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
    },
```

```
    later-than-r3                   SEQUENCE {
        c-RNTI                          C-RNTI                              OPTIONAL,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                physicalSharedChannelAllocation-r4
                                                PhysicalSharedChannelAllocation-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}    OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        c-RNTI                          C-RNTI                              OPTIONAL,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance                UL-TimingAdvanceControl             OPTIONAL,
        pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo        OPTIONAL,
        pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo        OPTIONAL,
        confirmRequest                  ENUMERATED {
                                            confirmPDSCH, confirmPUSCH }    OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        trafficVolumeReportRequest      INTEGER (0..255)                    OPTIONAL,
        iscpTimeslotList                TimeslotList                        OPTIONAL
        requestPCCPCHRSCP               BOOLEAN

}

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- Physical channel IEs
        ul-TimingAdvance                UL-TimingAdvanceControl-r4          OPTIONAL,
        pusch-CapacityAllocationInfo    PUSCH-CapacityAllocationInfo-r4     OPTIONAL,
        pdsch-CapacityAllocationInfo    PDSCH-CapacityAllocationInfo-r4     OPTIONAL,
        confirmRequest                  ENUMERATED {
                                            confirmPDSCH, confirmPUSCH }    OPTIONAL,
        -- TABULAR: If the above value is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        iscpTimeslotList                TimeslotList-r4                     OPTIONAL
        requestPCCPCHRSCP               BOOLEAN

}
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **1013** | ⌘ | ev | **r1** | ⌘ | Current version: | **3.7.0** | ⌘ |

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

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

Title: ⌘	Various minor corrections	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001
Category: ⌘	**F**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘	1. The IE "Uplink DPCH power control info" is essential to establish the UL DPCH. If not included in the message, the configuration is invalid; 2. [Void. See R2-011923]; 3. The IE " UE Timers and Constants in idle mode" has default values that are used in parents IEs. The same default values are applicable to SIB13; 4. If "FACH measurement occasion info" is not included some inter-frequency/inter-RAT measurements may not be performed, as correctly stated in 8.1.1.6.11 and 8.1.1.6.12. These statements should appears in the text before the requirements for each measurements are described; 5. [Void. See R2-011922] 6. References to Secondary CCPCH selection are erroneous; 7. Section 14.12.4.1 appears twice; 8. Editorial in: "set the value of "THRESHOLD" in the variable "START_THRESHOLD" **by** the 20 MSBs of the value stored in the USIM"; 9. Reference to FACH measurement occasion calculation is erroneous; 10. The IE "Intra-frequency cell id" is MD in section 10.3.7.33, but it is OPTIONAL in the ASN.1 and there is an extensive procedural description for the case in which it is not received; 11. There is a distinct COUNT-C for UL and DL RBs. It is not clear from some of the procedural text.
Summary of change: ⌘	1. If the IE "Uplink DPCH power control info" is not sent in a message that establish the UL DPCH, the UE shall set the variable INVALID_CONFIGURATION to TRUE; 2. [Void. See R2-011923]; 3. The proper references for the use of the default values are added to "UE Timers and Constant in idle mode". Moreover, this IE is marked MD in SIB 13; 4. The requirement text is moved to a more appropriate location in the same section; 5. [Void. See R2-011922] 6. References to Secondary CCPCH selection have been corrected; 7. The second occurrence of section 14.12.4.1 is renamed 14.12.4.2 (references

are already correct);

8. Corrected as: "set the value of "THRESHOLD" in the variable "START_THRESHOLD" **to** the 20 MSBs of the value stored in the USIM";

9. Reference to FACH measurement occasion calculation has been corrected;

10. Replace MD with OP for "Intra-frequency cell id" in 10.3.7.33 to align with ASN.1;

11. It is clarified that there are distinct COUNT-C values for UL and DL RBs.

Isolated Impact analysis

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

Consequences if not approved:	⌘	Erroneous interpretation of the standard

Clauses affected:	⌘	8.1.1.6.5, 8.1.1.6.6, 8.1.1.6.11, 8.1.1.6.12, 8.1.3.2, 8.1.15.1, 8.3.6.3, 8.6.3.4, 8.6.4.3, 8.6.6.11, 8.6.7.12, 10.2.48.8.16, 10.3.3.44, 10.3.7.33, 11.3, 14.12.4.2

Other specs affected:	⌘	☐ Other core specifications	⌘	25.331 v4.1.0, CR 1014
		☐ Test specifications		
		☐ O&M Specifications		

Other comments:	⌘	A draft version of this CR was presented at RAN WG2 #22 as R2-011665 Additional changes highlighted in pink

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

[…]

8.1.1.6.5   System Information Block type 5

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

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

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

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

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

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

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

- select a Secondary CCPCH as specified in [4] and in subclause 8.6 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if UE is in Idle mode or in CELL_PCH or URA_PCH state;

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

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

- in TDD:

    - use the IE "TDD open loop power control" as defined in subclause 8.5.7 when allocated PRACH is used;

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

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

8.1.1.6.6   System Information Block type 6

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

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

- let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink if UE is in CELL_FACH state. If the IE "PRACH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 and use that information to configure the PRACH;

- start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" when associated PRACH is used. If the IE "AICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 and use that information (FDD only);

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

- select a Secondary CCPCH as specified in [4] and in subclause 8.6 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if the UE is in CELL_PCH or URA_PCH state. If the IE "PICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 and use that information;

- start to monitor its paging occasions on the selected PICH if the UE is in CELL_PCH or URA_PCH state;

- start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if the UE is in CELL_FACH state. If the IE "Secondary CCPCH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 and use that information;

- in TDD: use the IE "TDD open loop power control" as defined in subclause 8.5.7;

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

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

[…]

8.1.1.6.11   System Information Block type 11

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

- If IE "FACH measurement occasion info" is included:

  - act as specified in subclause 8.6.7

- else:

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

- if in connected mode, and System Information Block type 12 is indicated as used in the cell:

  - read and act on information sent in System Information Block type 12;

- for each measurement type:

  - start a measurement using the set of IEs specified for that measurement type;

- associate each measurement with the identity number given by the IE "Measurement identity";

- clear the variable CELL_INFO_LIST;

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

- if included, store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL_DCH is entered;

- If IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:

  - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Intra-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

  - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Intra-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Intra-frequency cell info list";

  - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

  - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-frequency cell info list";

  - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-RAT Cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

  - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-RAT cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-RAT cell info list";

- If IE "FACH measurement occasion info" is included:

  - act as specified in subclause 8.6.7

- ~~else:~~

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

8.1.1.6.12   System Information Block type 12

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

- If IE "FACH measurement occasion info" is included:

    - act as specified in subclause 8.6.7

- else:

    - perform neither inter-frequency/inter-RAT measurements nor inter-frequency/inter-RAT cell re-selection evaluation, independent of UE measurement capabilities.

- for each measurement type:

    - start (or continue) a measurement using the set of IEs specified for that measurement type;

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

- if any of the IEs "Intra-frequency measurement quantity", "Intra-frequency reporting quantity for RACH reporting", "Maximum number of reported cells on RACH" or "Reporting information for state CELL_DCH" are not included in the system information block, read the corresponding IE(s) in system information block type 11 and use that information for the intra-frequency measurement;

- if included in this system information block or in System Information Block type11, store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL_DCH is entered;

- if the IE "Inter-frequency measurement quantity" is not included in the system information block, read the corresponding IE in System Information Block type 11 and use that information for the inter-frequency measurement;

- if the IE "Inter-RAT measurement quantity" is not included in the system information block, read the corresponding IE in System Information Block type 11 and use that information for the inter-RAT measurement;

- if in state CELL_FACH, start traffic volume measurement reporting as specified in the IE "Traffic volume reporting quantity";

- associate each measurement with the identity number given by the IE "Measurement identity";

- If IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Intra-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Intra-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Intra-frequency cell info list";

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-frequency cell info list";

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-RAT cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-RAT cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-RAT cell info list".

- If IE "FACH measurement occasion info" is included:

- act as specified in subclause 8.6.7

- else:

- perform neither inter-frequency/inter-RAT measurements nor inter-frequency/inter-RAT cell re-selection evaluation, independent of UE measurement capabilities.

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

[…]

8.1.3.2 Initiation

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists), as specified in subclause 8.1.8.

Upon initiation of the procedure, the UE shall:

- set the variable PROTOCOL_ERROR_INDICATOR to FALSE;

- if the USIM is present:

- set the value of "THRESHOLD" in the variable "START_THRESHOLD" by to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain;

- set the IE "Initial UE identity" in the variable INITIAL_UE_IDENTITY according to subclause 8.5.1;

- set the contents of the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

- set CFN in relation to SFN of current cell according to subclause 8.5.15;

- perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

- submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;

- set counter V300 to 1; and

- start timer T300 when the MAC layer indicates success or failure to transmit the message;

- select a Secondary CCPCH according to [4];

- start receiving all FACH transport channels mapped on the selected Secondary CCPCH.

[…]

8.1.15.1 General

The counter check procedure is used by the UTRAN to perform a local authentication. The purpose of the procedure is to check that the amount of data sent in both directions (uplink and downlink) over the duration of the RRC connection is identical at the UTRAN and at the UE (to detect a possible intruder – a 'man-in-the-middle' – from operating). It should be noted that this requires that the COUNT-C values for each UL and DL radio bearer are maintained even if ciphering is not used. This procedure is only applicable to radio bearers using UM or AM mode of RLC. In this version, this procedure is not applied for radio bearers using transparent mode RLC.

[…]

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

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

- store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and

- initialise the variable ESTABLISHED_SIGNALLING_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;

- initialise the variable UE_CAPABILITIES_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;

- initialise the variable TIMERS_AND_CONSTANTS to the default values and start to use those timer and constants values;

- if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":

    - initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";

    - initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;

    - store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and

    - set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314";

- if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":

    - initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";

    - initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;

    NOTE   IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used

    - set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314";

- if IE "Specification mode" is set to "Preconfiguration":

    - use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMPLETE message nor included within pre-defined or default configuration:

        - 0 dB for the power offset P $_{\text{Pilot-DPDCH}}$ bearer in FDD;

        - calculate the Default DPCH Offset Value using the following formula:

            - in FDD:

                Default DPCH Offset Value = (SRNTI 2 mod 600) * 512

            - in TDD:

                Default DPCH Offset Value = (SRNTI 2 mod 7)

    - handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21;

- if IE "Specification mode" is set to "Complete specification":

    - initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements;

- perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;

- if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:

    - for the CN domain as in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup":

        - set the HFN component of the COUNT-C variable for all UL and DL radio bearers and all UL and DL signalling radio bearers that use RLC-AM and RLC-UM to the START value as stored in the USIM for that CN domain; and

        - set the remaining LSBs of the HFN component of COUNT-C to zero;

        - set the HFN component of the COUNT-C variable for all UL and DL radio bearers and all UL and DL signalling radio bearers that use the transparent mode of RLC to zero, while not incrementing the value of the HFN component of the COUNT-C variable at each CFN cycle; and

        - set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;

        - set the IE "Status" in the variable CIPHERING_STATUS to "Started";

        - apply the same ciphering (ciphered/unciphered, algorithm) as prior to inter-RAT handover, unless a change of algorithm is requested by means of the IE "Ciphering algorithm";

        - apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND;

If the UE succeeds in establishing the connection to UTRAN, it shall:

- if the IE "Status" in the variable CIPHERING_STATUS is set to "Started" and transparent mode radio bearers have been established by this procedure:

    - include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;

    - at the CFN value as indicated in the response message in the IE "COUNT-C activation time":

        - set the HFN component of the COUNT-C variable to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and

        - set the remaining LSBs of the HFN component of COUNT-C to zero;

        - increment the HFN component of the COUNT-C variable by one;

        - set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;

        - step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle;

- transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using the new ciphering configuration, only if ciphering has been started;

- when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission,:

    - if the IE "Transport format combination subset" was not included in the HANDOVER TO UTRAN COMMAND message or in the predefined parameters;

        - set the IE "Current TFC subset" in the variable TFS_SUBSET to "Full transport format combination set";

- set the IE "Status" in the variable CIPHERING_STATUS to "Not started";

- set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;

- set the IE "Status" in the variable INTEGRITY_ PROTECTION_INFO to "Not started";

- set the IE "Historical status" in the variable INTEGRITY_ PROTECTION_INFO to "Never been active";

- set the IE "Reconfiguration" in the variable INTEGRITY_ PROTECTION _INFO to FALSE;

- set the variable CELL_UPDATE_STARTED to FALSE;

- set the variable CONFIGURATION_INCOMPLETE to FALSE;

- set the variable ORDERED_RECONFIGURATION to FALSE;

- set the variable FAILURE_INDICATOR to FALSE;

- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;

- set the variable INVALID_CONFIGURATION to FALSE;

- set the variable PROTOCOL_ERROR_INDICATOR, TFC_SUBSET to FALSE;

- set the variable PROTOCOL_ERROR_REJECT to FALSE;

- set the variable TGSN_REPORTED to FALSE;

- set the variable UNSUPPORTED_CONFIGURATION to FALSE;

- clear all optional IEs in all variables, except those optional IEs that are set in this procedure;

- and the procedure ends.

[…]

8.6.3.4   Ciphering mode info

The IE "Ciphering mode info" defines the new ciphering configuration. If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to FALSE, the UE shall check the IE "Ciphering mode command" as part of the IE "Ciphering mode info", and perform the following. The UE shall:

- if the IE "Status" in the variable CIPHERING_STATUS has the value "Not Started", and if the IE "Ciphering mode command" has the value "stop":

    - ignore this attempt to change the ciphering configuration; and

    - set the variable INVALID_CONFIGURATION to TRUE;

- else:

    - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to TRUE;

    - if IE "Ciphering mode command" has the value "start/restart":

        - start or restart ciphering in lower layers for all established radio bearers in the variable ESTABLISHED_RABS, using the ciphering algorithm (UEA [40]) indicated by the IE "Ciphering algorithm" as part of the new ciphering configuration. For each radio bearer, the value of the IE "RB identity" in the variable ESTABLISHED_RABS minus one shall be used as the value of BEARER in the ciphering algorithm. The new ciphering configuration shall be applied as specified below;

        - set the IE "Status" in the variable CIPHERING_STATUS to "Started";

    - if the IE "Ciphering mode command" has the value "stop", the UE shall:

- stop ciphering and stop incrementing COUNT-C values for all <u>UL and DL</u> signalling radio bearers and also for <u>UL and DL</u> transparent RLC mode radio bearers, only at the new ciphering configuration that shall be applied as specified below;

- set the IE "Status" in the variable CIPHERING_STATUS to "Not started";

- in case the IE "Ciphering mode command" has the value "start/restart" or "stop", the new ciphering configuration shall be applied as follows:

  - store the (oldest currently used) ciphering configuration until activation times have elapsed for the new ciphering configuration to be applied on all signalling radio bearers and radio bearers;

  - if there are pending activation times set for ciphering by a previous procedure changing the ciphering configuration:

    - apply the ciphering configuration at this pending activation time as indicated in this procedure;

    - only need to store at most two different ciphering configurations at any given time for all signalling radio bearers and radio bearers, the old and latest ciphering configurations, per CN domain;

  - if the IE "Ciphering activation time for DPCH" is present in the IE "Ciphering mode info":

    - apply the new configuration at that time for radio bearers using RLC-TM. If the IE "Ciphering mode info" is present in a message reconfiguring RB, transport channel or physical channel, the indicated time in IE "Activation time for DPCH" corresponds to a CFN after that reconfiguration;

  - if the IE "Radio bearer downlink ciphering activation time info" is present in the IE "Ciphering mode info":

    - apply the following procedure for each radio bearer using RLC-AM and RLC-UM indicated by the IE "RB identity":

    - suspend data transmission on the radio bearer;

    - select an "RLC send sequence number" at which (activation) time the new ciphering configuration shall be applied in uplink for that radio bearer according to the following:

      - for each radio bearer and signalling radio bearer that has no pending ciphering activation time as set by a previous procedure changing the security configuration:

        - set a suitable value that would ensure a minimised delay in the change to the latest security configuration;

      - for each radio bearer and signalling radio bearer that has a pending ciphering activation time as set by a previous procedure changing the security configuration:

        - set the same value as the pending ciphering activation time;

      - consider this activation time to be elapsed when the selected activation time (as above) is equal to the "RLC send sequence number";

    - store the selected "RLC send sequence number" for that radio bearer in the entry for the radio bearer in the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

    - when the data transmission of that radio bearer is resumed:

      - switch to the new ciphering configuration according to the following:

      - use the old ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers smaller than the corresponding RLC sequence numbers indicated in the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;

        - use the new ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers greater than or equal to the corresponding RLC sequence numbers indicated in

the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;

- for a radio bearer using RLC-AM, when the RLC sequence number indicated in the IE "Radio bearer downlink ciphering activation time info" falls below the RLC receiving window and the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" falls below the RLC transmission window, the UE may release the old ciphering configuration for that radio bearer;

- if an RLC reset or re-establishment occurs before the activation time for the new ciphering configuration has been reached, ignore the activation time and apply the new ciphering configuration immediately after the RLC reset or RLC re-establishment.

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE, the UE shall:

- ignore this second attempt to change the ciphering configuration; and

- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to TRUE.

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

[…]

8.6.4.3 RB information to setup

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- use the same START value to initialise the hyper frame number components of COUNT-C and COUNT-I variables for all the new UL and DL radio bearers to setup;

- perform the actions for the IE "PDCP info", if present, according to subclause 8.6.4.10, applied for the radio bearer;

- perform the actions for the IE "RLC info", according to subclause 8.6.4.9, applied for the radio bearer;

- perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer;

- if the IE "Downlink RLC mode" in the IE "RLC info" is set to "TM RLC":

  - configure delivery of erroneous SDUs in lower layers according to indication from upper layer [5].

- if the variable CIPHERING_STATUS is set to "Started"; and

  - if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" in the IE "RLC info" is set to "AM RLC" or "UM RLC":

    - initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";

    - set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;

  - if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" in the IE "RLC info" is set to "TM RLC":

    - if no other transparent mode RLC radio bearers exist in the variable ESTABLISHED_RABS:

      - initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";

      - set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;

- if at least one transparent mode RLC radio bearers or signalling radio bearers exist in the variable ESTABLISHED_RABS:

    - set the MAC-d HFN component of the COUNT-C for this radio bearer with the MAC-d HFN that is common (refer to subclause 8.5.8) for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";

- start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.

[…]

8.6.6.11   Uplink DPCH power control info

The UE shall:

- in FDD:

    - if the IE "Uplink DPCH power control info" is included:

        - if a synchronisation procedure is performed according to [29],

            - calculate and set an initial uplink transmission power; [Editor's note: Modified indentation]

            - start inner loop power control as specified in subclause 8.5.3; [Editor's note: Modified indentation]

            - for the UL inner loop power control: [Editor's note: Modified indentation]

                - use the parameters specified in the IE; [Editor's note: Modified indentation]

        - else:

            - act on the IE "Power control algorithm" and the IE "TPC step size" if included and ignore any other IEs that are included;

- in TDD:

    - if the IE "Uplink DPCH power control info" is included:

        - use the parameters specified in the IE for open loop power control as defined in subclause 8.5.7;

    - else:

        - use the current uplink transmission power;

- both in FDD and TDD;

    - if the IE "Uplink DPCH power control info" is not included in a message used to enter CELL_DCH:

        - set the variable INVALID_CONFIGURATION to true;

        - use the current uplink transmission power.

[…]

8.6.7.12   FACH measurement occasion info

IE "FACH measurement occasion info" is used to control UE measurement activities in inter-frequency and inter-RAT cells in CELL_FACH state.

If IE "FACH measurement occasion info" is received, UE shall, when in CELL_FACH state:

- if IE "FACH Measurement occasion length coefficient" is included:

    - if, according to its measurement capabilities, UE is not able to perform some of the indicated measurements in this IE simultaneously as receiving the SCCPCH of serving cell:

- perform those measurements during FACH measurement occasions, see subclause ~~8.5.12~~8.5.11;

    - if, according to its measurement capabilities, UE is able to perform some of the indicated measurements in this IE simultaneously as receiving the SCCPCH of serving cell:

        - UE may perform measurements also on other occasions;

    - if, according to its measurement capabilities, UE is able to perform the measurements and indicated in this IE simultaneously as receiving the SCCPCH of serving cell:

        - perform the measurements simultaneously as receiving the SCCPCH of serving cell;

- if IE "FACH Measurement occasion length coefficient" is not included:

    - perform those indicated measurements indicated in this IE that UE, according to its measurement capabilities, is able to perform simultaneously as receiving the SCCPCH of serving cell;

- if IE "Inter-frequency FDD measurement indicator" is set to TRUE:

    - perform measurements and evaluate cell re-selection criteria according to [4] on inter-frequency FDD cells listed in IE "Measurement control system information" in "System Information Block type 11" or "System Information Block type 12";

- if IE "Inter-frequency FDD measurement indicator" is set to FALSE:

    - neither perform measurements nor evaluate cell re-selection criteria on inter-frequency FDD cells;

- if IE "Inter-frequency TDD measurement indicator" is set to TRUE:

    - perform measurements and evaluate cell re-selection criteria according to [4] on inter-frequency TDD cells listed in IE "Measurement control system information" in "System Information Block type 11" or "System Information Block type 12";

- if IE "Inter-frequency TDD measurement indicator" is set to FALSE:

    - neither perform measurements nor evaluate cell re-selection criteria on inter-frequency TDD cells;

- if IE "Inter-RAT measurement indicators" is included:

    - perform measurements and evaluate cell re-selection criteria according to [4] on those cells of listed Inter-RAT types that are present in IE "Measurement control system information" in "System Information Block type 11" or "System Information Block type 12".

[…]

10.2.48.8.4   System Information Block type 1

The system information block type 1 contains NAS system information as well as UE timers and counters to be used in idle mode and in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CN information elements				
CN common GSM-MAP NAS system information	MP		NAS system information (GSM-MAP) 10.3.1.9	
CN domain system information list	MP	1 to <maxCNdomains>		Send CN information for each CN domain.
>CN domain system information	MP		CN domain system information 10.3.1.2	
UE information				
UE Timers and constants in idle mode	MD		UE Timers and constants in idle mode 10.3.3.44	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.44 apply and - For parameters with need OP, the parameters are absent
UE Timers and constants in connected mode	MD		UE Timers and constants in connected mode 10.3.3.43	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.43 apply and - For parameters with need OP, the parameters are absent

[…]

10.2.48.8.16　System Information Block type 13

The system information block type 13 contains ANSI-41 system information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
CN Information Elements				
CN Domain system information list	MP	1 to <maxCNdomains>		Send CN information for each CN domain.
>CN Domain system information	MP		CN Domain system information 10.3.1.2	
UE Information				
UE timers and constants in idle mode	~~OP~~MD		UE timers and constants in idle mode 10.3.3.44	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.44 apply and - For parameters with need OP, the parameters are absent
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2

[…]

10.3.3.44　UE Timers and Constants in idle mode

This information element specifies timer- and constant values used by the UE in idle mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T300	MP		Integer(100, 200... 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 1000. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16
N300	MP		Integer(0.. 7)	Default value is 3. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16
T312	MP		Integer(0 .. 15)	Value in seconds. Default value is 1. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16.
N312	MP		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16

[…]

10.3.6.6 ASC setting

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Available signature Start Index	MP		Integer(0..15)	
>>Available signature End Index	MP		Integer(0..15)	
>>Assigned Sub-Channel Number	MP		Bitstring(4)	This IE defines the subchannel assignment as specified in 8.6.6.29. The bits are numbered b0 to b3, where b0 is the least significant bit.
>TDD				
>>Available Channelisation codes indices	MD		Bitstring(8)	Each bit indicates availability of a channelisation code index, where the channelisation code indices are numbered "channelisation code index 0" to "channelisation code index 7". The value 1 of a bit indicates that the channelisation code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the channelisation code index is not available for the ASC this IE is associated to. Default is that all channelisation codes defined in PRACH Info are available.
>>CHOICE *subchannel size*	MP			
>>>Size1				
>>>>Available Subchannels	MP		null	Indicates that all Subchannels are available.
>>>Size2				
>>>>Available Subchannels	MD		Bitstring (2)	NOTE 1
>>>Size4				
>>>>Available Subchannels	MD		Bitstring (4)	NOTE 1
>>>Size8				
>>>>Available Subchannels	MD		Bitstring (8)	NOTE 1

NOTE 1: Each bit indicates availability of a subchannel, where the subchannels are numbered subchannel 0, subchannel 1 etc. The value 1 of a bit indicates that the subchannel is available for the ASC this IE is associated with. The value 0 of a bit indicates that the subchannel is not available for the ASC this IE is associated with. Default value of the IE is that all subchannels within the size are available for the ASC this IE is associated with.

[…]

10.3.7.33 Intra-frequency cell info list

Contains the measurement object information for an intra-frequency measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Intra-frequency cell removal*	OP			
>Remove all intra-frequency cells				No data
>Remove some intra-frequency cells				
>>Removed intra-frequency cells	MP	1 to <maxCellMeas>		
>>>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas> - 1)	
>Remove no intra-frequency cells				
New intra-frequency cell	OP	1 to <maxCellMeas>		This information element must be present when "Intra-frequency cell info list" is included in the system information
>Intra-frequency cell id	~~MD~~OP		Integer(0 .. <maxCellMeas> - 1)	
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV-*BCHopt*	1 to <maxCellMeas>		
>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas>-1)	

Condition	Explanation
BCHopt	This IE is not needed when sent in SYSTEM INFORMATION. Otherwise, the IE is Optional

[…]

11.3 Information element definitions

```
TPC-StepSizeFDD ::=     INTEGER (0..1)
```

-- Actual value = IE value + 1

[…]

14.12.4.1 HANDOVER TO UTRAN INFO

This RRC information container is sent between network nodes when preparing for an inter RAT handover to UTRAN.

Direction: source RAT→target RNC

Information Element/Group Name	Need	Multi	Type and reference	Semantics description
UE Information elements				
UE radio access capability	OP		UE radio access capability 10.3.3.42	
UE radio access capability extension	OP		UE radio access capability extension 10.3.3.42a	
Non RRC IEs				
UE system specific capability	OP		UE system specific capability 14.13.2.4	
UE security information	OP		UE security information 14.13.2.2	
Pre-defined configuration status information	OP		Pre-defined configuration status information 14.13.2.3	

14.12.4.2~~1~~   SRNS RELOCATION INFO

This RRC information container is sent between network nodes when preparing for an SRNS relocation.

[…]

CR-Form-v4

CHANGE REQUEST

⌘ **25.331 CR 1014** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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

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

Title: ⌘	Various minor corrections	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001
Category: ⌘ **A**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	1. The IE "Uplink DPCH power control info" is essential to establish the UL DPCH. If not included in the message, the configuration is invalid; 2. [Void. See R2-011923]; 3. The IE " UE Timers and Constants in idle mode" has default values that are used in parents IEs. The same default values are applicable to SIB13; 4. If "FACH measurement occasion info" is not included some inter-frequency/inter-RAT measurements may not be performed, as correctly stated in 8.1.1.6.11 and 8.1.1.6.12. These statements should appears in the text before the requirements for each measurements are described; 5. [Void. See R2-011922] 6. References to Secondary CCPCH selection are erroneous; 7. Section 14.12.4.1 appears twice; 8. Editorial in: "set the value of "THRESHOLD" in the variable "START_THRESHOLD" **by** the 20 MSBs of the value stored in the USIM"; 9. Reference to FACH measurement occasion calculation is erroneous; 10. The IE "Intra-frequency cell id" is MD in section 10.3.7.33, but it is OPTIONAL in the ASN.1 and there is an extensive procedural description for the case in which it is not received; 11. There is a distinct COUNT-C for UL and DL RBs. It is not clear from some of the procedural text.
Summary of change: ⌘	1. If the IE "Uplink DPCH power control info" is not sent in a message that establish the UL DPCH, the UE shall set the variable INVALID_CONFIGURATION to TRUE; 2. [Void. See R2-011923]; 3. The proper references for the use of the default values are added to "UE Timers and Constant in idle mode". Moreover, this IE is marked MD in SIB 13; 4. The requirement text is moved to a more appropriate location in the same section; 5. [Void. See R2-011922] 6. References to Secondary CCPCH selection have been corrected; 7. The second occurrence of section 14.12.4.1 is renamed 14.12.4.2 (references

8. Corrected as: "set the value of "THRESHOLD" in the variable "START_THRESHOLD" **to** the 20 MSBs of the value stored in the USIM";
9. Reference to FACH measurement occasion calculation has been corrected;
10. Replace MD with OP for "Intra-frequency cell id" in 10.3.7.33 to align with ASN.1;
11. It is clarified that there are distinct COUNT-C values for UL and DL RBs.

Isolated Impact analysis

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

Consequences if not approved:	⌘	Erroneous interpretation of the standard

Clauses affected:	⌘	8.1.1.6.5, 8.1.1.6.6, 8.1.1.6.11, 8.1.1.6.12, 8.1.3.2, 8.1.15.1, 8.3.6.3, 8.6.3.4, 8.6.4.3, 8.6.6.11, 8.6.7.12, 10.2.48.8.16, 10.3.3.44, 10.3.7.33, 11.3, 14.12.4.2		
Other specs affected:	⌘	Other core specifications Test specifications O&M Specifications	⌘	25.331 v3.7.0, CR 1013r1
Other comments:	⌘	A draft version of this CR was presented at RAN WG2 #22 as R2-011665 Additional changes highlighted in pink		

How to create CRs using this form:

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

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

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

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

[…]

8.1.1.6.5 System Information Block type 5

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

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

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

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

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

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

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

- select a Secondary CCPCH as specified in [4] and in subclause 8.6 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if UE is in Idle mode or in CELL_PCH or URA_PCH state;

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

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

- in 3.84 Mcps TDD:

    - use the IE "TDD open loop power control" as defined in subclause 8.5.7 when allocated PRACH is used;

- in TDD:

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

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

8.1.1.6.6 System Information Block type 6

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

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

- let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink if UE is in CELL_FACH state. If the IE "PRACH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 and use that information to configure the PRACH;

- start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" when associated PRACH is used. If the IE "AICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 and use that information (FDD only);

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

- select a Secondary CCPCH as specified in [4] and in subclause 8.6 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if the UE is in CELL_PCH or URA_PCH state. If the IE "PICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 and use that information;

- start to monitor its paging occasions on the selected PICH if the UE is in CELL_PCH or URA_PCH state;

- start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if the UE is in CELL_FACH state. If the IE "Secondary CCPCH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 and use that information;

- in 3.84 Mcps TDD: use the IE "TDD open loop power control" as defined in subclause 8.5.7;

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

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

[…]

8.1.1.6.11   System Information Block type 11

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

- If IE "FACH measurement occasion info" is included:

    - act as specified in subclause 8.6.7

- else:

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

- if in connected mode, and System Information Block type 12 is indicated as used in the cell:

    - read and act on information sent in System Information Block type 12;

- for each measurement type:

    - start a measurement using the set of IEs specified for that measurement type;

- associate each measurement with the identity number given by the IE "Measurement identity";

- clear the variable CELL_INFO_LIST;

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

- if included, store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL_DCH is entered;

- If IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Intra-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Intra-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Intra-frequency cell info list";

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-frequency cell info list";

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-RAT Cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-RAT cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-RAT cell info list";

~~- If IE "FACH measurement occasion info" is included:~~

~~- act as specified in subclause 8.6.7~~

~~- else:~~

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

8.1.1.6.12 System Information Block type 12

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

- <u>If IE "FACH measurement occasion info" is included:</u>

    - <u>act as specified in subclause 8.6.7</u>

- <u>else:</u>

    - <u>perform neither inter-frequency/inter-RAT measurements nor inter-frequency/inter-RAT cell re-selection evaluation, independent of UE measurement capabilities.</u>

- for each measurement type:

    - start (or continue) a measurement using the set of IEs specified for that measurement type;

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

- if any of the IEs "Intra-frequency measurement quantity", "Intra-frequency reporting quantity for RACH reporting", "Maximum number of reported cells on RACH" or "Reporting information for state CELL_DCH" are not included in the system information block, read the corresponding IE(s) in system information block type 11 and use that information for the intra-frequency measurement;

- if included in this system information block or in System Information Block type11, store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL_DCH is entered;

- if the IE "Inter-frequency measurement quantity" is not included in the system information block, read the corresponding IE in System Information Block type 11 and use that information for the inter-frequency measurement;

- if the IE "Inter-RAT measurement quantity" is not included in the system information block, read the corresponding IE in System Information Block type 11 and use that information for the inter-RAT measurement;

- if in state CELL_FACH, start traffic volume measurement reporting as specified in the IE "Traffic volume reporting quantity";

- associate each measurement with the identity number given by the IE "Measurement identity";

- If IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Intra-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Intra-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Intra-frequency cell info list";

    - If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-frequency cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

    - If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-frequency cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-frequency cell info list";

- If IE "HCS neighbouring cell information" is not included in the first occurrence of IE "Inter-RAT cell info list", use the default values specified for the IE "HCS neighbouring cell information" for that cell;

- If IE "HCS neighbouring cell information" is not included in other occurrence of IE "Inter-RAT cell info list", for that cell use the same parameter values as used for the preceding IE "Inter-RAT cell info list".

- ~~If IE "FACH measurement occasion info" is included:~~

   - ~~act as specified in subclause 8.6.7~~

- ~~else:~~

   - ~~perform neither inter-frequency/inter-RAT measurements nor inter-frequency/inter-RAT cell re-selection evaluation, independent of UE measurement capabilities.~~

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

[…]

8.1.3.2   Initiation

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists), as specified in subclause 8.1.8.

Upon initiation of the procedure, the UE shall:

- set the variable PROTOCOL_ERROR_INDICATOR to FALSE;

- if the USIM is present:

   - set the value of "THRESHOLD" in the variable "START_THRESHOLD" ~~by~~ to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain;

- set the IE "Initial UE identity" in the variable INITIAL_UE_IDENTITY according to subclause 8.5.1;

- set the contents of the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

- set CFN in relation to SFN of current cell according to subclause 8.5.15;

- perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

- submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;

- set counter V300 to 1; and

- start timer T300 when the MAC layer indicates success or failure to transmit the message;

- select a Secondary CCPCH according to [4];

- start receiving all FACH transport channels mapped on the selected Secondary CCPCH.

[…]

8.1.15.1   General

The counter check procedure is used by the UTRAN to perform a local authentication. The purpose of the procedure is to check that the amount of data sent in both directions (uplink and downlink) over the duration of the RRC connection is identical at the UTRAN and at the UE (to detect a possible intruder – a 'man-in-the-middle' – from operating). It should be noted that this requires that the COUNT-C values for each UL and DL radio bearer are maintained even if ciphering is not used. This procedure is only applicable to radio bearers using UM or AM mode of RLC. In this version, this procedure is not applied for radio bearers using transparent mode RLC.

[…]

8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

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

- store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" (12 bits) and "S-RNTI 2" (10 bits) included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and

- initialise the variable ESTABLISHED_SIGNALLING_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;

- initialise the variable UE_CAPABILITIES_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;

- initialise the variable TIMERS_AND_CONSTANTS to the default values and start to use those timer and constants values;

- if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":

    - initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";

    - initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;

    - store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and

    - set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314";

- if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":

    - initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";

    - initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;

  NOTE   IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used

    - set the IE "RAB Info Post" in the variable ESTABLISHED_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED_RABS to "useT314";

- if IE "Specification mode" is set to "Preconfiguration":

    - use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMPLETE message nor included within pre-defined or default configuration:

        - 0 dB for the power offset $P_{Pilot-DPDCH}$ bearer in FDD;

        - calculate the Default DPCH Offset Value using the following formula:

            - in FDD:

                Default DPCH Offset Value = (SRNTI 2 mod 600) * 512

            - in TDD:

Default DPCH Offset Value = (SRNTI 2 mod 7)

- handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21;

- if IE "Specification mode" is set to "Complete specification":

    - initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements;

- perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;

- if ciphering has been activated and ongoing in the radio access technology from which inter- RAT handover is performed:

    - for the CN domain as in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup":

        - set the HFN component of the COUNT-C variable for all <u>UL and DL</u> radio bearers and <u>all UL and DL</u> signalling radio bearers that use RLC-AM and RLC-UM to the START value as stored in the USIM for that CN domain; and

        - set the remaining LSBs of the HFN component of COUNT-C to zero;

        - set the HFN component of the COUNT-C variable for all <u>UL and DL</u> radio bearers and <u>all UL and DL</u> signalling radio bearers that use the transparent mode of RLC to zero, while not incrementing the value of the HFN component of the COUNT-C variable at each CFN cycle; and

        - set the CFN component of the COUNT-C variable to the value of the CFN as calculated in subclause 8.5.15;

        - set the IE "Status" in the variable CIPHERING_STATUS to "Started";

        - apply the same ciphering (ciphered/unciphered, algorithm) as prior to inter-RAT handover, unless a change of algorithm is requested by means of the IE "Ciphering algorithm";

        - apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND;

If the UE succeeds in establishing the connection to UTRAN, it shall:

- if the IE "Status" in the variable CIPHERING_STATUS is set to "Started" and transparent mode radio bearers have been established by this procedure:

    - include the IE "COUNT-C activation time" in the response message and specify a CFN value other than the default, "Now" for this IE;

    - at the CFN value as indicated in the response message in the IE "COUNT-C activation time":

        - set the HFN component of the COUNT-C variable to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and

        - set the remaining LSBs of the HFN component of COUNT-C to zero;

        - increment the HFN component of the COUNT-C variable by one;

        - set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;

        - step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle;

- transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using the new ciphering configuration, only if ciphering has been started;

- when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission,:

- if the IE "Transport format combination subset" was not included in the HANDOVER TO UTRAN COMMAND message or in the predefined parameters;

    - set the IE "Current TFC subset" in the variable TFS_SUBSET to "Full transport format combination set";

- set the IE "Status" in the variable CIPHERING_STATUS to "Not started";

- set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE;

- set the IE "Status" in the variable INTEGRITY_ PROTECTION_INFO to "Not started";

- set the IE "Historical status" in the variable INTEGRITY_ PROTECTION_INFO to "Never been active";

- set the IE "Reconfiguration" in the variable INTEGRITY_ PROTECTION _INFO to FALSE;

- set the variable CELL_UPDATE_STARTED to FALSE;

- set the variable CONFIGURATION_INCOMPLETE to FALSE;

- set the variable ORDERED_RECONFIGURATION to FALSE;

- set the variable FAILURE_INDICATOR to FALSE;

- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;

- set the variable INVALID_CONFIGURATION to FALSE;

- set the variable PROTOCOL_ERROR_INDICATOR, TFC_SUBSET to FALSE;

- set the variable PROTOCOL_ERROR_REJECT to FALSE;

- set the variable TGSN_REPORTED to FALSE;

- set the variable UNSUPPORTED_CONFIGURATION to FALSE;

- clear all optional IEs in all variables, except those optional IEs that are set in this procedure;

- and the procedure ends.

[…]

8.6.3.4 Ciphering mode info

The IE "Ciphering mode info" defines the new ciphering configuration. If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to FALSE, the UE shall check the IE "Ciphering mode command" as part of the IE "Ciphering mode info", and perform the following. The UE shall:

- if the IE "Status" in the variable CIPHERING_STATUS has the value "Not Started", and if the IE "Ciphering mode command" has the value "stop":

    - ignore this attempt to change the ciphering configuration; and

    - set the variable INVALID_CONFIGURATION to TRUE;

- else:

    - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to TRUE;

    - if IE "Ciphering mode command" has the value "start/restart":

        - start or restart ciphering in lower layers for all established radio bearers in the variable ESTABLISHED_RABS, using the ciphering algorithm (UEA [40]) indicated by the IE "Ciphering algorithm" as part of the new ciphering configuration. For each radio bearer, the value of the IE "RB identity" in the variable ESTABLISHED_RABS minus one shall be used as the value of BEARER in the ciphering algorithm. The new ciphering configuration shall be applied as specified below;

        - set the IE "Status" in the variable CIPHERING_STATUS to "Started";

- if the IE "Ciphering mode command" has the value "stop", the UE shall:

    - stop ciphering and stop incrementing COUNT-C values for all <u>UL and DL</u> signalling radio bearers and also for <u>UL and DL</u> transparent RLC mode radio bearers, only at the new ciphering configuration that shall be applied as specified below;

    - set the IE "Status" in the variable CIPHERING_STATUS to "Not started";

- in case the IE "Ciphering mode command" has the value "start/restart" or "stop", the new ciphering configuration shall be applied as follows:

    - store the (oldest currently used) ciphering configuration until activation times have elapsed for the new ciphering configuration to be applied on all signalling radio bearers and radio bearers;

    - if there are pending activation times set for ciphering by a previous procedure changing the ciphering configuration:

        - apply the ciphering configuration at this pending activation time as indicated in this procedure;

        - only need to store at most two different ciphering configurations at any given time for all signalling radio bearers and radio bearers, the old and latest ciphering configurations, per CN domain;

    - if the IE "Ciphering activation time for DPCH" is present in the IE "Ciphering mode info":

        - apply the new configuration at that time for radio bearers using RLC-TM. If the IE "Ciphering mode info" is present in a message reconfiguring RB, transport channel or physical channel, the indicated time in IE "Activation time for DPCH" corresponds to a CFN after that reconfiguration;

    - if the IE "Radio bearer downlink ciphering activation time info" is present in the IE "Ciphering mode info":

        - apply the following procedure for each radio bearer using RLC-AM and RLC-UM indicated by the IE "RB identity":

        - suspend data transmission on the radio bearer;

        - select an "RLC send sequence number" at which (activation) time the new ciphering configuration shall be applied in uplink for that radio bearer according to the following:

            - for each radio bearer and signalling radio bearer that has no pending ciphering activation time as set by a previous procedure changing the security configuration:

                - set a suitable value that would ensure a minimised delay in the change to the latest security configuration;

            - for each radio bearer and signalling radio bearer that has a pending ciphering activation time as set by a previous procedure changing the security configuration:

                - set the same value as the pending ciphering activation time;

            - consider this activation time to be elapsed when the selected activation time (as above) is equal to the "RLC send sequence number";

        - store the selected "RLC send sequence number" for that radio bearer in the entry for the radio bearer in the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

        - when the data transmission of that radio bearer is resumed:

            - switch to the new ciphering configuration according to the following:

            - use the old ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers smaller than the corresponding RLC sequence numbers indicated in the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;

            - use the new ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers greater than or equal to the corresponding RLC sequence numbers indicated in

the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;

- for a radio bearer using RLC-AM, when the RLC sequence number indicated in the IE "Radio bearer downlink ciphering activation time info" falls below the RLC receiving window and the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" falls below the RLC transmission window, the UE may release the old ciphering configuration for that radio bearer;

- if an RLC reset or re-establishment occurs before the activation time for the new ciphering configuration has been reached, ignore the activation time and apply the new ciphering configuration immediately after the RLC reset or RLC re-establishment.

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE, the UE shall:

- ignore this second attempt to change the ciphering configuration; and

- set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to TRUE.

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

[…]

8.6.4.3 RB information to setup

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- use the same START value to initialise the hyper frame number components of COUNT-C and COUNT-I variables for all the new UL and DL radio bearers to setup;

- perform the actions for the IE "PDCP info", if present, according to subclause 8.6.4.10, applied for the radio bearer;

- perform the actions for the IE "RLC info", according to subclause 8.6.4.9, applied for the radio bearer;

- perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer;

- if the IE "Downlink RLC mode" in the IE "RLC info" is set to "TM RLC":

    - configure delivery of erroneous SDUs in lower layers according to indication from upper layer [5].

- if the variable CIPHERING_STATUS is set to "Started"; and

    - if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" in the IE "RLC info" is set to "AM RLC" or "UM RLC":

        - initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";

        - set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;

    - if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" in the IE "RLC info" is set to "TM RLC":

        - if no other transparent mode RLC radio bearers exist in the variable ESTABLISHED_RABS:

            - initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";

            - set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;

- if at least one transparent mode RLC radio bearers or signalling radio bearers exist in the variable ESTABLISHED_RABS:

    - set the MAC-d HFN component of the COUNT-C for this radio bearer with the MAC-d HFN that is common (refer to subclause 8.5.8) for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";

- start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.

[…]

8.6.6.11 Uplink DPCH power control info

The UE shall:

- in FDD:

    - if the IE "Uplink DPCH power control info" is included:

        - if a synchronisation procedure is performed according to [29],

            - calculate and set an initial uplink transmission power; [Editor's note: Modified indentation]

            - start inner loop power control as specified in subclause 8.5.3; [Editor's note: Modified indentation]

            - for the UL inner loop power control: [Editor's note: Modified indentation]

                - use the parameters specified in the IE; [Editor's note: Modified indentation]

        - else:

            - act on the IE "Power control algorithm" and the IE "TPC step size" if included and ignore any other IEs that are included;

- in 3.84 Mcps TDD:

    - if the IE "Uplink DPCH power control info" is included:

        - use the parameters specified in the IE for open loop power control as defined in subclause 8.5.7;

    - else:

        - use the current uplink transmission power;

- in 1.28 Mcps TDD:

    - if the IE "Uplink DPCH power control info" is included:

        - calculate and set an initial uplink transmission power;

        - start inner loop power control;

        - for the UL inner loop power control:

            - use the parameter specified in the IE;

    - else:

        - use the current uplink transmission power;

- both in FDD and TDD;

    - if the IE "Uplink DPCH power control info" is not included in a message used to enter CELL_DCH:

        - set the variable INVALID_CONFIGURATION to true.

        - use the current uplink transmission power.

[…]

8.6.7.12   FACH measurement occasion info

IE "FACH measurement occasion info" is used to control UE measurement activities in inter-frequency and inter-RAT cells in CELL_FACH state.

If IE "FACH measurement occasion info" is received, UE shall, when in CELL_FACH state:

- if IE "FACH Measurement occasion length coefficient" is included:

    - if, according to its measurement capabilities, UE is not able to perform some of the indicated measurements in this IE simultaneously as receiving the SCCPCH of serving cell:

        - perform those measurements during FACH measurement occasions, see subclause 8.5.128.5.11;

    - if, according to its measurement capabilities, UE is able to perform some of the indicated measurements in this IE simultaneously as receiving the SCCPCH of serving cell:

        - UE may perform measurements also on other occasions;

    - if, according to its measurement capabilities, UE is able to perform the measurements and indicated in this IE simultaneously as receiving the SCCPCH of serving cell:

        - perform the measurements simultaneously as receiving the SCCPCH of serving cell;

- if IE "FACH Measurement occasion length coefficient" is not included:

    - perform those indicated measurements indicated in this IE that UE, according to its measurement capabilities, is able to perform simultaneously as receiving the SCCPCH of serving cell;

- if IE "Inter-frequency FDD measurement indicator" is set to TRUE:

    - perform measurements and evaluate cell re-selection criteria according to [4] on inter-frequency FDD cells listed in IE "Measurement control system information" in "System Information Block type 11" or "System Information Block type 12";

- if IE "Inter-frequency FDD measurement indicator" is set to FALSE:

    - neither perform measurements nor evaluate cell re-selection criteria on inter-frequency FDD cells;

- if IE "Inter-frequency TDD measurement indicator" is set to TRUE:

    - perform measurements and evaluate cell re-selection criteria according to [4] on inter-frequency TDD cells listed in IE "Measurement control system information" in "System Information Block type 11" or "System Information Block type 12";

- if IE "Inter-frequency TDD measurement indicator" is set to FALSE:

    - neither perform measurements nor evaluate cell re-selection criteria on inter-frequency TDD cells;

- if IE "Inter-RAT measurement indicators" is included:

    - perform measurements and evaluate cell re-selection criteria according to [4] on those cells of listed Inter-RAT types that are present in IE "Measurement control system information" in "System Information Block type 11" or "System Information Block type 12".

[…]

10.2.48.8.4   System Information Block type 1

The system information block type 1 contains NAS system information as well as UE timers and counters to be used in idle mode and in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CN information elements				
CN common GSM-MAP NAS system information	MP		NAS system information (GSM-MAP) 10.3.1.9	
CN domain system information list	MP	1 to <maxCNdomains>		Send CN information for each CN domain.
>CN domain system information	MP		CN domain system information 10.3.1.2	
UE information				
UE Timers and constants in idle mode	MD		UE Timers and constants in idle mode 10.3.3.44	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.44 apply and - For parameters with need OP, the parameters are absent
UE Timers and constants in connected mode	MD		UE Timers and constants in connected mode 10.3.3.43	Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.43 apply and - For parameters with need OP, the parameters are absent

[…]

10.2.48.8.16   System Information Block type 13

The system information block type 13 contains ANSI-41 system information.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Other information elements				
CN Information Elements				
CN Domain system information list	MP	1 to <maxCNdomains>		Send CN information for each CN domain.
>CN Domain system information	MP		CN Domain system information 10.3.1.2	
UE Information				
UE timers and constants in idle mode	~~OP~~MD		UE timers and constants in idle mode 10.3.3.44	<u>Default value means that for all timers and constants</u> <u>- For parameters with need MD, the defaults specified in 10.3.3.44 apply and</u> <u>- For parameters with need OP, the parameters are absent</u>
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2

[…]

10.3.3.44   UE Timers and Constants in idle mode

This information element specifies timer- and constant values used by the UE in idle mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T300	MP		Integer(100, 200... 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 1000. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16
N300	MP		Integer(0..7)	Default value is 3. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16
T312	MP		Integer(0 ..15)	Value in seconds. Default value is 1. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16.
N312	MP		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16

[…]

10.3.6.6 ASC setting

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Available signature Start Index	MP		Integer(0..15)	
>>Available signature End Index	MP		Integer(0..15)	
>>Assigned Sub-Channel Number	MP		Bitstring(4)	This IE defines the subchannel assignment as specified in 8.6.6.29. The bits are numbered b0 to b3, where b0 is the least significant bit.
>TDD				
>>Available Channelisation codes indices	MD		Bitstring(8)	Each bit indicates availability of a channelisation code index, where the channelisation code indices are numbered "channelisation code index 0" to "channelisation code index 7". The value 1 of a bit indicates that the channelisation code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the channelisation code index is not available for the ASC this IE is associated to. Default is that all channelisation codes defined in PRACH Info are available.
>>CHOICE *subchannel size*	MP			
>>>Size1				
>>>>Available Subchannels	MP		null	Indicates that all Subchannels are available.
>>>Size2				
>>>>Available Subchannels	MD		Bitstring (2)	NOTE 1
>>>Size4				
>>>>Available Subchannels	MD		Bitstring (4)	NOTE 1
>>>Size8				
>>>>Available Subchannels	MD		Bitstring (8)	NOTE 1

NOTE 1: Each bit indicates availability of a subchannel, where the subchannels are numbered subchannel 0, subchannel 1 etc. The value 1 of a bit indicates that the subchannel is available for the ASC this IE is associated with. The value 0 of a bit indicates that the subchannel is not available for the ASC this IE is associated with. Default value of the IE is that all subchannels within the size are available for the ASC this IE is associated with.

[…]

10.3.7.33 Intra-frequency cell info list

Contains the measurement object information for an intra-frequency measurement.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *Intra-frequency cell removal*	OP			
>Remove all intra-frequency cells				No data
>Remove some intra-frequency cells				
>>Removed intra-frequency cells	MP	1 to <maxCellMeas>		
>>>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas> - 1)	
>Remove no intra-frequency cells				
New intra-frequency cell	OP	1 to <maxCellMeas>		This information element must be present when "Intra-frequency cell info list" is included in the system information
>Intra-frequency cell id	~~MD~~OP		Integer(0 .. <maxCellMeas> - 1)	
>Cell info	MP		Cell info 10.3.7.2	
Cell for measurement	CV-*BCHopt*	1 to <maxCellMeas>		
>Intra-frequency cell id	MP		Integer(0 .. <maxCellMeas>-1)	

Condition	Explanation
BCHopt	This IE is not needed when sent in SYSTEM INFORMATION. Otherwise, the IE is Optional

[…]

11.3   Information element definitions

```
TPC-StepSizeFDD ::=     INTEGER (0..1)
```

-- Actual value = IE value + 1

[…]

14.12.4.1   HANDOVER TO UTRAN INFO

This RRC information container is sent between network nodes when preparing for an inter RAT handover to UTRAN.

Direction: source RAT→target RNC

Information Element/Group Name	Need	Multi	Type and reference	Semantics description
UE Information elements				
UE radio access capability	OP		UE radio access capability 10.3.3.42	
UE radio access capability extension	OP		UE radio access capability extension 10.3.3.42a	
Non RRC IEs				
UE system specific capability	OP		UE system specific capability 14.13.2.4	
UE security information	OP		UE security information 14.13.2.2	
Pre-defined configuration status information	OP		Pre-defined configuration status information 14.13.2.3	

14.12.4.2~~1~~   SRNS RELOCATION INFO

This RRC information container is sent between network nodes when preparing for an SRNS relocation.

[…]

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **1015** | ⌘ | ev | **r1** | ⌘ | Current version: | **3.7.0** | ⌘ |

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

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

Title: ⌘	Range of T312	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001

Category: ⌘ **F**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘	T312 is started "When the UE starts to establish dedicated CH". It is stopped "When the UE detects consecutive N312 "in sync" indication from L1." If it expires "The criteria for physical channel establishment failure is fulfilled". For such a timer the value 0 is meaningless, because it would imply an immediate physical channel establishment failure.
Summary of change: ⌘	The value 0 for T312 is not used in this version of the specification.
Consequences if not approved: ⌘	If the value 0 is not forbidden in this version of the spec the UE implementations will have to treat it as a special case (how to start a timer set to 0 ?) even though it should never be used in real networks. Moreover, by removing the value 0 from Release 99 we insure that tests will never take advantage of this special condition. **Isolated Impact Change Analysis.** This change affects the physical channel failure procedure. This is a correction to a function where rules were missing: It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise.

Clauses affected: ⌘	9.4, 9.6, 9.7, 10.3.3.43, 10.3.3.44, 11.3	
Other specs Affected: ⌘	☐ Other core specifications ⌘ 25.331 v4.1.0, CR 1016 ☐ Test specifications ☐ O&M Specifications	
Other comments: ⌘	A draft version of this CR was presented at RAN WG2 #22 in R2-011665 Additional changes are in pink	

How to create CRs using this form:

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

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

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

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

[…]

9.4   Unknown or unforeseen information element value, mandatory information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, with a mandatory IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value [49] for this IE, the UE shall:

- if a default value of the IE is defined:

    - treat the rest of the message using the default value of the IE;

- if no default value of the IE is defined:

    - set the variable PROTOCOL_ERROR_REJECT to TRUE;

    - set the IE "Protocol error cause" in the variable PROTOCOL_ERROR_INFORMATION to "Information element value not comprehended";

    - perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH with a mandatory IE having a value reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:

    - treat the rest of the system information block using the default value of the IE;

- if no default value of the IE is defined:

    - ignore the system information block.

If the UE receives an RRC message on the BCCH or PCCH with a mandatory IE having a value reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, it shall

- if a default value of the IE is defined:

    - treat the rest of the message using the default value of the IE.

- if no default value of the IE is defined:

    - ignore the message.

[…]

9.6   Unknown or unforeseen information element value, conditional information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value [49] for this IE, the UE shall:

- if a default value of the IE is defined:

    - treat the rest of the message using the default value of the IE;

- if no default value of the IE is defined:

- set the variable PROTOCOL_ERROR_REJECT to TRUE;

- set the IE "Protocol error cause" in the variable PROTOCOL_ERROR_INFORMATION to "Information element value not comprehended";

- perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:

- treat the rest of the system information block using the default value of the IE;

- if no default value of the IE is defined:

- ignore the system information block.

If the UE receives an RRC message on the BCCH or PCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:

- treat the rest of the message using the default value of the IE;

- if no default value of the IE is defined:

- ignore the message.

9.7 Unknown or unforeseen information element value, optional information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, with an optional IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value [49] for this IE, it shall:

- ignore the value of the IE;

- treat the rest of the message as if the IE was not present.

If the UE receives a system information block on the BCCH with an optional IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, it shall:

- ignore the value of the IE;

- treat the rest of the system information block as if the IE was not present.

If the UE receives an RRC message on the BCCH or PCCH with an optional IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, it shall:

- ignore the value of the IE;

- treat the rest of the message as if the IE was not present.

[…]

10.3.3.43   UE Timers and Constants in connected mode

This information element specifies timer- and constants values used by the UE in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T301	MD		Integer(100, 200 .. 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 2000. This IE should not be used by the UE in this release of the protocol.
N301	MD		Integer(0.. 7)	Default value is 2. This IE should not be used by the UE in this release of the protocol.
T302	MD		Integer(100, 200... 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 4000.
N302	MD		Integer(0.. 7)	Default value is 3.
T304	MD		Integer(100, 200, 400, 1000, 2000)	Value in milliseconds. Default value is 2000. At least one spare value is needed. Note 1.
N304	MD		Integer(0.. 7)	Default value is 2. Note 1.
T305	MD		Integer(5, 10, 30, 60, 120, 360, 720, infinity)	Value in minutes. Default value is 30. Infinity means no update
T307	MD		Integer(5, 10, 15, 20, 30, 40, 50)	Value in seconds. Default value is 30.
T308	MD		Integer(40, 80, 160, 320)	Value in milliseconds. Default value is 160. Note 1.
T309	MD		Integer(1…8)	Value in seconds. Default value is 5. Note 1.
T310	MD		Integer(40 .. 320 by step of 40)	Value in milliseconds. Default value is 160. Note 1.
N310	MD		Integer(0 .. 7)	Default value is 4. Note 1.
T311	MD		Integer(250 .. 2000 by step of 250)	Value in milliseconds. Default value is 2000. Note 1.
T312	MD		Integer (0..15)	Value in seconds. Default value is 1. The value 0 is not used in this version of the specification.
N312	MD		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1.
T313	MD		Integer (0..15)	Value in seconds. Default value is 3. Note 1.
N313	MD		Integer (1, 2, 4, 10, 20, 50, 100, 200)	Default value is 20. Note 1.
T314	MD		Integer(0, 2, 4, 6, 8,	Value in seconds. Default value is 12. Note 1.

			12, 16, 20)	
T315	MD		Integer (0,10, 30, 60, 180, 600, 1200, 1800)	Value in seconds. Default value is 180. Note 1.
N315	MD		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1. Note 1.
T316	MD		Integer(0, 10, 20, 30, 40, 50, infinity)	Value in seconds. Default value is 30.
T317	MD		Integer (0,10, 30, 60, 180, 600, 1200, 1800)	Value in seconds Default value is 180.

NOTE 1: If the value of SIB1 changes, the UE shall re-read SIB1 and use the new value of the parameter, if modified.

10.3.3.44 UE Timers and Constants in idle mode

This information element specifies timer- and constant values used by the UE in idle mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T300	MP		Integer(100, 200... 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 1000.
N300	MP		Integer(0.. 7)	Default value is 3.
T312	MP		Integer(0 .. 15)	Value in seconds. Default value is 1. The value 0 is not used in this version of the specification.
N312	MP		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1.

[…]

11.3 Information element definitions

[…]

```
T-312 ::=                        INTEGER (0..15)
-- The value 0 for T-312 is not used in this version of the specification

T-313 ::=                        INTEGER (0..15)
```

[…]

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR 1016**   ⌘   ev   **-**   ⌘   Current version: **4.1.0**   ⌘

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

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

Title: ⌘	Range of T312	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001

Category: ⌘ **A**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	T312 is started "When the UE starts to establish dedicated CH". It is stopped "When the UE detects consecutive N312 "in sync" indication from L1." If it expires "The criteria for physical channel establishment failure is fulfilled". For such a timer the value 0 is meaningless, because it would imply an immediate physical channel establishment failure.
Summary of change: ⌘	The value 0 for T312 is not used in this version of the specification.
Consequences if not approved: ⌘	If the value 0 is not forbidden in this version of the spec the UE implementations will have to treat it as a special case (how to start a timer set to 0 ?) even though it should never be used in real networks. Moreover, by removing the value 0 from Release 99 we insure that tests will never take advantage of this special condition.

Isolated Impact Change Analysis.

This change affects the physical channel failure procedure.

This is a correction to a function where rules were missing:

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

Clauses affected: ⌘	9.4, 9.6, 9.7, 10.3.3.43, 10.3.3.44, 11.3

Other specs ⌘	☐ Other core specifications ⌘	25.331 v3.7.0, CR 1015r1
Affected:	☐ Test specifications	
	☐ O&M Specifications	

Other comments: ⌘	A draft version of this CR was presented at RAN WG2 #22 in R2-011665
	Additional changes are in pink

How to create CRs using this form:

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

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

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

[…]

9.4 Unknown or unforeseen information element value, mandatory information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, with a mandatory IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value [49] for this IE, the UE shall:

- if a default value of the IE is defined:

    - treat the rest of the message using the default value of the IE;

- if no default value of the IE is defined:

    - set the variable PROTOCOL_ERROR_REJECT to TRUE;

    - set the IE "Protocol error cause" in the variable PROTOCOL_ERROR_INFORMATION to "Information element value not comprehended";

    - perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH with a mandatory IE having a value reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:

    - treat the rest of the system information block using the default value of the IE;

- if no default value of the IE is defined:

    - ignore the system information block.

If the UE receives an RRC message on the BCCH or PCCH with a mandatory IE having a value reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, it shall

- if a default value of the IE is defined:

    - treat the rest of the message using the default value of the IE.

- if no default value of the IE is defined:

    - ignore the message.

[…]

9.6 Unknown or unforeseen information element value, conditional information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value [49] for this IE, the UE shall:

- if a default value of the IE is defined:

    - treat the rest of the message using the default value of the IE;

- if no default value of the IE is defined:

- set the variable PROTOCOL_ERROR_REJECT to TRUE;

- set the IE "Protocol error cause" in the variable PROTOCOL_ERROR_INFORMATION to "Information element value not comprehended";

- perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:

- treat the rest of the system information block using the default value of the IE;

- if no default value of the IE is defined:

- ignore the system information block.

If the UE receives an RRC message on the BCCH or PCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, the UE shall:

- if a default value of the IE is defined:

- treat the rest of the message using the default value of the IE;

- if no default value of the IE is defined:

- ignore the message.

9.7 Unknown or unforeseen information element value, optional information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent to the UE in an RRC information container via a radio access technology other than UTRAN, with an optional IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value [49] for this IE, it shall:

- ignore the value of the IE;

- treat the rest of the message as if the IE was not present.

If the UE receives a system information block on the BCCH with an optional IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, it shall:

- ignore the value of the IE;

- treat the rest of the system information block as if the IE was not present.

If the UE receives an RRC message on the BCCH or PCCH with an optional IE having a value, including choice, reserved for future extension (spare), a value not used in this version of the specification or when the encoded IE does not result in any valid abstract syntax value for this IE, it shall:

- ignore the value of the IE;

- treat the rest of the message as if the IE was not present.

[…]

10.3.3.43   UE Timers and Constants in connected mode

This information element specifies timer- and constants values used by the UE in connected mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T301	MD		Integer(100, 200 .. 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 2000. This IE should not be used by the UE in this release of the protocol.
N301	MD		Integer(0.. 7)	Default value is 2. This IE should not be used by the UE in this release of the protocol.
T302	MD		Integer(100, 200... 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 4000.
N302	MD		Integer(0.. 7)	Default value is 3.
T304	MD		Integer(100, 200, 400, 1000, 2000)	Value in milliseconds. Default value is 2000. At least one spare value is needed. Note 1.
N304	MD		Integer(0.. 7)	Default value is 2. Note 1.
T305	MD		Integer(5, 10, 30, 60, 120, 360, 720, infinity)	Value in minutes. Default value is 30. Infinity means no update
T307	MD		Integer(5, 10, 15, 20, 30, 40, 50)	Value in seconds. Default value is 30.
T308	MD		Integer(40, 80, 160, 320)	Value in milliseconds. Default value is 160. Note 1.
T309	MD		Integer(1…8)	Value in seconds. Default value is 5. Note 1.
T310	MD		Integer(40 .. 320 by step of 40)	Value in milliseconds. Default value is 160. Note 1.
N310	MD		Integer(0 .. 7)	Default value is 4. Note 1.
T311	MD		Integer(250 .. 2000 by step of 250)	Value in milliseconds. Default value is 2000. Note 1.
T312	MD		Integer (0..15)	Value in seconds. Default value is 1. The value 0 is not used in this version of the specification.
N312	MD		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1.
T313	MD		Integer (0..15)	Value in seconds. Default value is 3. Note 1.
N313	MD		Integer (1, 2, 4, 10, 20, 50, 100, 200)	Default value is 20. Note 1.
T314	MD		Integer(0, 2, 4, 6, 8,	Value in seconds. Default value is 12. Note 1.

			12, 16, 20)	
T315	MD		Integer (0,10, 30, 60, 180, 600, 1200, 1800)	Value in seconds. Default value is 180. Note 1.
N315	MD		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1. Note 1.
T316	MD		Integer(0, 10, 20, 30, 40, 50, infinity)	Value in seconds. Default value is 30.
T317	MD		Integer (0,10, 30, 60, 180, 600, 1200, 1800)	Value in seconds Default value is 180.

NOTE 1: If the value of SIB1 changes, the UE shall re-read SIB1 and use the new value of the parameter, if modified.

10.3.3.44   UE Timers and Constants in idle mode

This information element specifies timer- and constant values used by the UE in idle mode.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
T300	MP		Integer(100, 200... 2000 by step of 200, 3000, 4000, 6000, 8000)	Value in milliseconds. Default value is 1000.
N300	MP		Integer(0.. 7)	Default value is 3.
T312	MP		Integer(0 .. 15)	Value in seconds. Default value is 1. The value 0 is not used in this version of the specification.
N312	MP		Integer (1, 50, 100, 200, 400, 600, 800, 1000)	Default value is 1.

[…]

11.3   Information element definitions

[…]

```
T-312 ::=                              INTEGER (0..15)
-- The value 0 for T-312 is not used in this version of the specification

T-313 ::=                              INTEGER (0..15)
```

[…]

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR 1017**   ⌘   ev   **-**   ⌘   Current version: **3.7.0**   ⌘

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

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

Title: ⌘	Bitstring of channelisationCodeIndices	
Source: ⌘	TSG-RAN WG2	
Work item code:⌘	TEI	***Date:*** ⌘ August 27, 2001
Category: ⌘ **F**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	The order of the bits of channelisationCodeIndices in AccessServiceClass-TDD in ASN.1 is inverted
Summary of change:⌘	The bitstring channelisationCodeIndices in AccessServiceClass-TDD in ASN.1 has been inverted **Isolated Impact Change Analysis.** This change affects the ASC in TDD. This is a correction to a function where rules were inconsistent: It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise.
Consequences if ⌘ ***not approved:***	Erroneous interpretation of the standard, since in all other bitstrings the opposite convention is used

Clauses affected: ⌘	11.3

Other specs ⌘ ☐	Other core specifications	⌘	25.331 v4.1.0, CR 1018
affected: ☐	Test specifications		
☐	O&M Specifications		

Other comments: ⌘	

How to create CRs using this form:

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

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

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

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

11.3   Information element definitions

[…]

```
AccessServiceClass-FDD ::=          SEQUENCE {
    availableSignatureStartIndex        INTEGER (0..15),
    availableSignatureEndIndex          INTEGER (0..15),

    assignedSubChannelNumber            BIT STRING {
                                            b3(0),
                                            b2(1),
                                            b1(2),
                                            b0(3)
                                            }   (SIZE(4))
}

AccessServiceClass-TDD ::=          SEQUENCE {
    channelisationCodeIndices           BIT STRING {
                                            chCodeIndex0chCodeIndex7(0),
                                            chCodeIndex1chCodeIndex6(1),
                                            chCodeIndex2chCodeIndex5(2),
                                            chCodeIndex3chCodeIndex4(3),
                                            chCodeIndex4chCodeIndex3(4),
                                            chCodeIndex5chCodeIndex2(5),
                                            chCodeIndex6chCodeIndex1(6),
                                            chCodeIndex7chCodeIndex0(7)
                                            } (SIZE(8))             OPTIONAL,
    subchannelSize                      CHOICE {
        size1                               NULL,
-- in size2, subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
        size2                               SEQUENCE {
            subchannels                         ENUMERATED  { subch0, subch1 }  OPTIONAL
        },
        size4                               SEQUENCE {
            subchannels                         BIT STRING  {
                                                    subCh3(0),
                                                    subCh2(1),
                                                    subCh1(2),
                                                    subCh0(3)
                                                    } (SIZE(4))     OPTIONAL
        },
        size8                               SEQUENCE {
            subchannels                         BIT STRING  {
                                                    subCh7(0),
                                                    subCh6(1),
                                                    subCh5(2),
                                                    subCh4(3),
                                                    subCh3(4),
                                                    subCh2(5),
                                                    subCh1(6),
                                                    subCh0(7)
                                                    } (SIZE(8))     OPTIONAL
        }
    }
}
```

[…]

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331 CR 1018** | ⌘ | ev | **-** | ⌘ | Current version: | **4.1.0** | ⌘ |

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

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

Title: ⌘	Bitstring of channelisationCodeIndices	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001
Category: ⌘ **A**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	The order of the bits of channelisationCodeIndices in AccessServiceClass-TDD in ASN.1 is inverted
Summary of change: ⌘	The bitstring channelisationCodeIndices in AccessServiceClass-TDD in ASN.1 has been inverted

Isolated Impact Change Analysis.

This change affects the ASC in TDD.

This is a correction to a function where rules were inconsistent:

It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise. |
| ***Consequences if not approved:*** ⌘ | Erroneous interpretation of the standard, since in all other bitstrings the opposite convention is used |

Clauses affected: ⌘	11.3		
Other specs affected: ⌘	☐ Other core specifications ⌘	25.331 v3.7.0, CR 1017	
	☐ Test specifications		
	☐ O&M Specifications		
Other comments: ⌘			

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

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

11.3   Information element definitions

[...]

```
AccessServiceClass-FDD ::=              SEQUENCE {
    availableSignatureStartIndex        INTEGER (0..15),
    availableSignatureEndIndex          INTEGER (0..15),

    assignedSubChannelNumber            BIT STRING {
                                            b3(0),
                                            b2(1),
                                            b1(2),
                                            b0(3)
                                            }    (SIZE(4))
}

AccessServiceClass-TDD ::=          SEQUENCE {
    channelisationCodeIndices          BIT STRING {
                                            chCodeIndex0chCodeIndex7(0),
                                            chCodeIndex1chCodeIndex6(1),
                                            chCodeIndex2chCodeIndex5(2),
                                            chCodeIndex3chCodeIndex4(3),
                                            chCodeIndex4chCodeIndex3(4),
                                            chCodeIndex5chCodeIndex2(5),
                                            chCodeIndex6chCodeIndex1(6),
                                            chCodeIndex7chCodeIndex0(7)
                                            } (SIZE(8))            OPTIONAL,
    subchannelSize                     CHOICE {
        size1                              NULL,
-- in size2, subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
        size2                              SEQUENCE {
            subchannels                        ENUMERATED { subch0, subch1 } OPTIONAL
        },
        size4                              SEQUENCE {
            subchannels                        BIT STRING {
                                                subCh3(0),
                                                subCh2(1),
                                                subCh1(2),
                                                subCh0(3)
                                                } (SIZE(4))     OPTIONAL
        },
        size8                              SEQUENCE {
            subchannels                        BIT STRING {
                                                subCh7(0),
                                                subCh6(1),
                                                subCh5(2),
                                                subCh4(3),
                                                subCh3(4),
                                                subCh2(5),
                                                subCh1(6),
                                                subCh0(7)
                                                } (SIZE(8))     OPTIONAL
        }
    }
}

AccessServiceClass-TDD-LCR-r4 ::=   SEQUENCE {
    availableSYNC-UlCodesIndics        BIT STRING {
                                            sulCodeIndex7sulCodeIndex0(0),
                                            sulCodeIndex6sulCodeIndex1(1),
                                            sulCodeIndex5sulCodeIndex2(2),
                                            sulCodeIndex4sulCodeIndex3(3),
                                            sulCodeIndex3sulCodeIndex4(4),
                                            sulCodeIndex2sulCodeIndex5(5),
                                            sulCodeIndex1sulCodeIndex6(6),
                                            sulCodeIndex0sulCodeIndex7(7)
                                            } (SIZE(8))            OPTIONAL,
    subchannelSize                     CHOICE {
        size1                              NULL,
-- in size2, subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
        size2                              SEQUENCE {
            subchannels                        ENUMERATED { subch0, subch1 }  OPTIONAL
        },
        size4                              SEQUENCE {
            subchannels                        BIT STRING {
                                                subCh3(0),
```

```
                                                subCh2(1),
                                                subCh1(2),
                                                subCh0(3)
                                                } (SIZE(4))        OPTIONAL
        },
        size8                           SEQUENCE {
            subchannels                     BIT STRING  {
                                                subCh7(0),
                                                subCh6(1),
                                                subCh5(2),
                                                subCh4(3),
                                                subCh3(4),
                                                subCh2(5),
                                                subCh1(6),
                                                subCh0(7)
                                                } (SIZE(8))        OPTIONAL
        }
    }

}

[…]
```

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **1019** | ⌘ | ev | **-** | ⌘ | Current version: | **3.7.0** | ⌘ |

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

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

Title:	⌘	Transmission of UE CAPABILITY INFORMATION message

Source:	⌘	TSG-RAN WG2

Work item code:	⌘	TEI	***Date:*** ⌘	August 27, 2001

Category:	⌘	**F**	***Release:*** ⌘	R99	

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

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

Reason for change:	⌘	The UE CAPABILITY INFORMATION message is the only message, which is sent using AM RLC and which requires also layer 3 retransmission regulated by timer T304 and counter V304. Moreover, it is currently stated that the layer 3 timer shall be started when the message is sent on the radio interface. This would require an extremely complicated UE implementation for no apparent benefit. The common understanding is that the UE is not required to start timers when the message is sent over the radio interface for messages sent in AM RLC.

Summary of change: ⌘		Start the T304 timer when the UE CAPABILITY INFORMATION message **has been delivered to lower layers** for transmission

Consequences if not approved:	⌘	Extremely complicated UE implementation. If not approved the interfaces between RRC, RLC, MAC and Physical Layer specific would need additional primitives used only when UE CAPABILITY INFORMATION message is transmitted. **Isolated Impact Change Analysis.** This change affects the timer for Transmission of UE capability information. The effective length of timer T304 is slightly modified. This is a correction to a function where rules were unclear: It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	8.1.6.2

Other specs affected:	⌘	☐ Other core specifications	⌘	25.331 v4.1.0, CR 1020
		☐ Test specifications		
		☐ O&M Specifications		

How to create CRs using this form:

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

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

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

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

[…]

8.1.6.2 Initiation

The UE shall initiate the UE capability update procedure in the following situations:

- the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

- while in connected mode the UE capabilities change compared to those stored in the variable UE_CAPABILITY_TRANSFERRED

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- include the IE "RRC transaction identifier"; and

- set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS; and

- clear that entry;

- retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and

- include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;

- retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and

- include this in IE "UE system specific capability".

If the UE CAPABILITY INFORMATION message is sent because one or more of the UE capabilities change compared to those stored in the variable UE_CAPABILITY_TRANSFERRED while in connected state, the UE shall include the information elements associated with the capabilities that have changed in the UE CAPABILITY INFORMATION message.

If the UE is in CELL_PCH or URA_PCH state, it shall first perform a cell update procedure using the cause "uplink data transmission", see subclause 8.3.1.

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission ~~sent on the radio interface~~ the UE RRC shall start timer T304 and set counter V304 to 1.

[…]

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331** CR **1020** | ⌘ | ev | **-** | ⌘ | Current version: | **4.1.0** | ⌘ |

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

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

Title:	⌘	Transmission of UE CAPABILITY INFORMATION message

Source:	⌘	TSG-RAN WG2

Work item code: ⌘	TEI		***Date:*** ⌘	August 27, 2001

Category:	⌘	**A**	***Release:*** ⌘	REL-4

Use <u>one</u> of the following categories:	*Use <u>one</u> of the following releases:*
F (correction)	*2 (GSM Phase 2)*
A (corresponds to a correction in an earlier release)	*R96 (Release 1996)*
B (addition of feature),	*R97 (Release 1997)*
C (functional modification of feature)	*R98 (Release 1998)*
D (editorial modification)	*R99 (Release 1999)*
Detailed explanations of the above categories can	*REL-4 (Release 4)*
be found in 3GPP <u>TR 21.900</u>.	*REL-5 (Release 5)*

Reason for change:	⌘	The UE CAPABILITY INFORMATION message is the only message, which is sent using AM RLC and which requires also layer 3 retransmission regulated by timer T304 and counter V304. Moreover, it is currently stated that the layer 3 timer shall be started when the message is sent on the radio interface. This would require an extremely complicated UE implementation for no apparent benefit. The common understanding is that the UE is not required to start timers when the message is sent over the radio interface for messages sent in AM RLC.

Summary of change: ⌘		Start the T304 timer when the UE CAPABILITY INFORMATION message **has been delivered to lower layers** for transmission

Consequences if not approved:	⌘	Extremely complicated UE implementation. If not approved the interfaces between RRC, RLC, MAC and Physical Layer specific would need additional primitives used only when UE CAPABILITY INFORMATION message is transmitted.

Isolated Impact Change Analysis.

This change affects the timer for Transmission of UE capability information. The effective length of timer T304 is slightly modified.

This is a correction to a function where rules were unclear:

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

Clauses affected:	⌘	8.1.6.2

Other specs affected:	⌘	☐ Other core specifications	⌘	25.331 v3.7.0, CR 1019
		☐ Test specifications		
		☐ O&M Specifications		

How to create CRs using this form:

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

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

[…]

8.1.6.2   Initiation

The UE shall initiate the UE capability update procedure in the following situations:

-    the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

-    while in connected mode the UE capabilities change compared to those stored in the variable
     UE_CAPABILITY_TRANSFERRED

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the
UE shall:

-    include the IE "RRC transaction identifier"; and

-    set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in
     the table "Accepted transactions" in the variable TRANSACTIONS; and

-    clear that entry;

-    retrieve its UTRA UE radio access capability information elements from variable
     UE_CAPABILITY_REQUESTED; and

-    include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE
     is included in variable UE_CAPABILITY_REQUESTED;

-    retrieve its inter-RAT-specific UE radio access capability information elements from variable
     UE_CAPABILITY_REQUESTED; and

-    include this in IE "UE system specific capability".

If the UE CAPABILITY INFORMATION message is sent because one or more of the UE capabilities change
compared to those stored in the variable UE_CAPABILITY_TRANSFERRED while in connected state, the UE shall
include the information elements associated with the capabilities that have changed in the UE CAPABILITY
INFORMATION message.

If the UE is in CELL_PCH or URA_PCH state, it shall first perform a cell update procedure using the cause "uplink
data transmission", see subclause 8.3.1.

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the
uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission ~~sent on the radio
interface~~ the UE RRC shall start timer T304 and set counter V304 to 1.

[…]

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR 1021**   ⌘   ev **r1** ⌘   Current version: **3.7.0** ⌘

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

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

Title:	⌘	Multiple UE capabilities procedures
Source:	⌘	TSG-RAN WG2

Work item code: ⌘ TEI   ***Date:*** ⌘ August 27, 2001

Category: ⌘ **F**   ***Release:*** ⌘ R99

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

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

Reason for change: ⌘	According to section 8.6.3.11 RRC transaction identifier the UE has to handle multiple instances of the UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION procedure at the same time, provided that the UE CAPABILITY ENQUIRY messages have distinct RRC transaction identifiers. Upon receiving a UE CAPABILITY ENQUIRY messages, the UE will initiate the "transmission of UE capability information procedure". Therefore, the UE will transmit the UE CAPABILITY INFORMATION message and it will **start Timer T304**. If multiple UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION parallel procedures have to be supported, what should happen to the running T304 Timer?

Summary of change: ⌘	It is proposed that only one UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION procedure is allowed at the same time. In particular, it is suggested to treat the UE CAPABILITY ENQUIRY message similarly to the RRC CONNECTION SETUP, CELL UPDATE CONFIRM and URA UPDATE CONFIRM messages. When the UE receives multiple copies of UE CAPABILITY ENQUIRY message with different RRC transaction identifiers, it will ignore the old instance of the procedure and it will instead initiate a new instance of the same procedure.

Isolated Impact Change Analysis.

This change affects the UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION procedure in the very unlikely case in which UTRAN initiates multiple instances of the same procedure.

This is a correction to a function where rules were missing:

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

Consequences if not approved:	⌘	UE behaviour with respect to Timer T304 when receiving multiple UE CAPABILITY ENQUIRY messages would be unspecified.

Clauses affected:	⌘	8.1.6.2, 8.1.6.4, 8.6.3.11		
Other specs affected:	⌘	Other core specifications Test specifications O&M Specifications	⌘	25.331 v4.1.0, CR 1022
Other comments:	⌘	Changes with respect to the first revision are highlithed in yellow		

How to create CRs using this form:

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

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

[…]

8.1.6.2   Initiation

The UE shall initiate the UE capability update procedure in the following situations:

-    the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

-    while in connected mode the UE capabilities change compared to those stored in the variable UE_CAPABILITY_TRANSFERRED

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

-    include the IE "RRC transaction identifier"; and

-    set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS; ~~and~~

~~-   clear that entry;~~

[…]

8.1.6.4   Reception of the UE CAPABILITY INFORMATION CONFIRM message by the UE

Upon reception of a UE CAPABILITY INFORMATION CONFIRM message, the UE shall:

-    stop timer T304;

-    if there is an entry for the UE CAPABILITY ENQUIRY message is present in the table "Accepted transactions" in the variable TRANSACTIONS:

    -    clear that entry:

-    update its variable UE_CAPABILITY_TRANSFERRED with the UE capabilities it has last transmitted to the UTRAN during the current RRC connection;

-    clear the variable UE_CAPABILITY_REQUESTED;

-    and the procedure ends.

[…]

8.6.3.11   RRC transaction identifier

The IE "RRC transaction identifier" may be used, together with the message type, for identification of an invocation of a downlink procedure (transaction). The UE behaviour for accepting or rejecting transactions based on the message type and the IE "RRC transaction identifier" is specified below.

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

-    RADIO BEARER SETUP; or

-    RADIO BEARER RECONFIGURATION; or

-    RADIO BEARER RELEASE; or

-    TRANSPORT CHANNEL RECONFIGURATION; or

-    PHYSICAL CHANNEL RECONFIGURATION:

the UE shall:

- if the variable ORDERED_RECONFIGURATION is set to FALSE; and

- if the variable CELL_UPDATE_STARTED is set to FALSE; and

- if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

  - accept the transaction; and

  - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS;

- else:

- if the variable ORDERED_RECONFIGURATION is set to TRUE; or

- if the variable CELL_UPDATE_STARTED is set to TRUE; or

- if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

  - if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

    - ignore the transaction; and

    - continue with any ongoing processes and procedures as the message was not received;

    - and end the procedure;

  - else:

    - reject the transaction; and

    - if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

      - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

Else:

If the received message is any of the messages:

- RRC CONNECTION SETUP; or

- CELL UPDATE CONFIRM; or

- URA UPDATE CONFIRM; or

- UE CAPABILITY ENQUIRY:

the UE shall:

- if the IE "Message Type" of the received message is not present in the table "Accepted transactions" in the variable TRANSACTIONS:

  - if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

    - accept the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS;

- else:

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

    - reject the transaction; and

    - if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

    - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

- else:

- if the IE "Message Type" of the received message is present in the table "Accepted transactions" in the variable TRANSACTIONS:

    - if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

        - ignore the transaction; and

        - continue with any ongoing processes and procedures as the message was not received; and

        - end the procedure;

    - else:

    - if the IE "RRC transaction identifier" of the received message is different from the "RRC transaction identifier" stored for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

        - if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

            - ignore the once accepted transaction and instead accept the new transaction; and

            - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS, replacing the previous entry;

        - else:

        - if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

            - reject the transaction; and

            - if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

                - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

Else:

If the received message is any other message, the UE shall:

- if the IE "Message Type" of the received message is not present in the table "Accepted transactions" in the variable TRANSACTIONS:

    - if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

- accept the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS;

- else:

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

- reject the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

- else:

- if the IE "Message Type" of the received message is present in the table "Accepted transactions" in the variable TRANSACTIONS:

- if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored in any entry for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

- ignore the transaction; and

- continue with any ongoing processes and procedures as the message was not received; and

- end the procedure;

- else:

- if the IE "RRC transaction identifier" of the received message is different from the "RRC transaction identifier" stored in all entries for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

- if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

- accept the additional transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS, in addition to the already existing entries;

- else:

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

- reject the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

[…]

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR 1022**   ⌘ ev **-** ⌘   Current version: **4.1.0** ⌘

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

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

Title: ⌘	Multiple UE capabilities procedures	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001

Category: ⌘ **A**	***Release:*** ⌘ REL-4

Use one of the following categories:
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R99   (Release 1999)
REL-4   (Release 4)
REL-5   (Release 5)

Reason for change: ⌘	According to section 8.6.3.11 RRC transaction identifier the UE has to handle multiple instances of the UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION procedure at the same time, provided that the UE CAPABILITY ENQUIRY messages have distinct RRC transaction identifiers. Upon receiving a UE CAPABILITY ENQUIRY messages, the UE will initiate the "transmission of UE capability information procedure". Therefore, the UE will transmit the UE CAPABILITY INFORMATION message and it will **start Timer T304**. If multiple UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION parallel procedures have to be supported, what should happen to the running T304 Timer?
Summary of change: ⌘	It is proposed that only one UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION procedure is allowed at the same time. In particular, it is suggested to treat the UE CAPABILITY ENQUIRY message similarly to the RRC CONNECTION SETUP, CELL UPDATE CONFIRM and URA UPDATE CONFIRM messages. When the UE receives multiple copies of UE CAPABILITY ENQUIRY message with different RRC transaction identifiers, it will ignore the old instance of the procedure and it will instead initiate a new instance of the same procedure. **Isolated Impact Change Analysis.** This change affects the UE CAPABILITY ENQUIRY/UE CAPABILITY INFORMATION procedure in the very unlikely case in which UTRAN initiates multiple instances of the same procedure. This is a correction to a function where rules were missing: It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise.

Consequences if not approved:	⌘	UE behaviour with respect to Timer T304 when receiving multiple UE CAPABILITY ENQUIRY messages would be unspecified.		

Clauses affected:	⌘	8.1.6.2, 8.1.6.4, 8.6.3.11		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.7.0, CR 1021r1
Other comments:	⌘	Changes with respect to the first revision are highlithed in yellow		

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[…]

8.1.6.2   Initiation

The UE shall initiate the UE capability update procedure in the following situations:

-    the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

-    while in connected mode the UE capabilities change compared to those stored in the variable UE_CAPABILITY_TRANSFERRED

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

-    include the IE "RRC transaction identifier"; and

-    set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS; and

-    clear that entry;

[…]

8.1.6.4   Reception of the UE CAPABILITY INFORMATION CONFIRM message by the UE

Upon reception of a UE CAPABILITY INFORMATION CONFIRM message, the UE shall:

-    stop timer T304;

-    if there is an entry for the UE CAPABILITY ENQUIRY message is present in the table "Accepted transactions" in the variable TRANSACTIONS:

    -    clear that entry:

-    update its variable UE_CAPABILITY_TRANSFERRED with the UE capabilities it has last transmitted to the UTRAN during the current RRC connection;

-    clear the variable UE_CAPABILITY_REQUESTED;

-    and the procedure ends.

[…]

8.6.3.11   RRC transaction identifier

The IE "RRC transaction identifier" may be used, together with the message type, for identification of an invocation of a downlink procedure (transaction). The UE behaviour for accepting or rejecting transactions based on the message type and the IE "RRC transaction identifier" is specified below.

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

-    RADIO BEARER SETUP; or

-    RADIO BEARER RECONFIGURATION; or

-    RADIO BEARER RELEASE; or

-    TRANSPORT CHANNEL RECONFIGURATION; or

-    PHYSICAL CHANNEL RECONFIGURATION:

the UE shall:

- if the variable ORDERED_RECONFIGURATION is set to FALSE; and

- if the variable CELL_UPDATE_STARTED is set to FALSE; and

- if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

  - accept the transaction; and

  - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS;

- else:

- if the variable ORDERED_RECONFIGURATION is set to TRUE; or

- if the variable CELL_UPDATE_STARTED is set to TRUE; or

- if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

  - if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

    - ignore the transaction; and

    - continue with any ongoing processes and procedures as the message was not received;

    - and end the procedure;

  - else:

    - reject the transaction; and

    - if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

      - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

Else:

If the received message is any of the messages:

- RRC CONNECTION SETUP; or

- CELL UPDATE CONFIRM; or

- URA UPDATE CONFIRM; or

- UE CAPABILITY ENQUIRY:

the UE shall:

- if the IE "Message Type" of the received message is not present in the table "Accepted transactions" in the variable TRANSACTIONS:

  - if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

    - accept the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS;

- else:

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

    - reject the transaction; and

    - if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

    - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

- else:

- if the IE "Message Type" of the received message is present in the table "Accepted transactions" in the variable TRANSACTIONS:

    - if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

        - ignore the transaction; and

        - continue with any ongoing processes and procedures as the message was not received; and

        - end the procedure;

    - else:

    - if the IE "RRC transaction identifier" of the received message is different from the "RRC transaction identifier" stored for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

        - if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

            - ignore the once accepted transaction and instead accept the new transaction; and

            - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS, replacing the previous entry;

        - else:

        - if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

            - reject the transaction; and

            - if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

                - store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

Else:

If the received message is any other message, the UE shall:

- if the IE "Message Type" of the received message is not present in the table "Accepted transactions" in the variable TRANSACTIONS:

    - if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

- accept the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS;

- else:

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

- reject the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

- else:

- if the IE "Message Type" of the received message is present in the table "Accepted transactions" in the variable TRANSACTIONS:

- if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored in any entry for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

- ignore the transaction; and

- continue with any ongoing processes and procedures as the message was not received; and

- end the procedure;

- else:

- if the IE "RRC transaction identifier" of the received message is different from the "RRC transaction identifier" stored in all entries for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:

- if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL_ERROR_REJECT is set to FALSE:

- accept the additional transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS, in addition to the already existing entries;

- else:

- if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

- reject the transaction; and

- store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

[…]

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.331 CR 1023** | ⌘ | ev | **r1** | ⌘ | Current version: | **3.7.0** | ⌘ |

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

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

Title:	⌘	Corrections to information elements outside the extension container
Source:	⌘	TSG-RAN WG2
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001

Category: ⌘ **F**	***Release:*** ⌘ R99
Use <u>one</u> of the following categories: **F** (correction) **A** (corresponds to a correction in an earlier release) **B** (addition of feature), **C** (functional modification of feature) **D** (editorial modification) Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u>.	Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘	1. Measurement Control message should have the Transaction Id In the later-than-r3 container. 2. Cell Change order from UTRAN failure message should not have the Transaction Id in the later-than-r3 container. More importantly, this message is an UL message and it shoul not be critically extended (UTRAN behaviour is unspecified for such a case). 3. TFC Control message should have the Transaction Id in the later-than-r3 container. Moreover, this message can not be critically extended.
Summary of change: ⌘		1. later-than-r3 container and the corresponding Transaction Id is added to the Measurement Control message. 2. Critical extensions are marked as "dummy", together with the later-than-r3 container. 3. It is stated that TFC Control message can not be critically extended and no later-than-r3 container is added. This means that the UE may not be able to retrieve the Transaction Id in some error conditions. **Isolated Impact Analisys** Changes 1, 2 and 3 only affect Rel-4 and onward.
Consequences if not approved:	⌘	UE may not be able to retrieve the Transaction Id in some error cases

Clauses affected:	⌘	10.1.1, 11.2

Other specs affected:	⌘ ☐	Other core specifications ⌘ 25.331 v4.1.0, CR 1024
	☐	Test specifications
	☐	O&M Specifications

Other comments:	⌘	

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[…]

10.1.1   Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a UE, conforming to this revision of the standard, upon receiving a not comprehended future extension. The details of this error handling behaviour are provided in clause 9.

> NOTE 1:   By avoiding the need for partial decoding (skipping uncomprehended IEs to continue decoding the remainder of the message), the RRC protocol extension mechanism also avoids the overhead of length determinants for extensions.

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

> NOTE 2:   Critical extensions can only be added to certain downlink messages.

Extensions	Message
Critical and non-critical extensions	ACTIVE SET UPDATE 10.2.1 ASSISTANCE DATA DELIVERY 10.2.4 CELL CHANGE ORDER FROM UTRAN 10.2.5 CELL UPDATE CONFIRM 10.2.8 COUNTER CHECK 10.2.9 DOWNLINK DIRECT TRANSFER 10.2.11 HANDOVER TO UTRAN COMMAND 10.2.12 HANDOVER FROM UTRAN COMMAND 10.2.15 MEASUREMENT CONTROL 10.2.17 PHYSICAL CHANNEL RECONFIGURATION 10.2.22 PHYSICAL SHARED CHANNEL ALLOCATION 10.2.25 RADIO BEARER RECONFIGURATION 10.2.27 RADIO BEARER RELEASE 10.2.30 RADIO BEARER SETUP 10.2.33 RRC CONNECTION REJECT 10.2.36 RRC CONNECTION RELEASE 10.2.37 RRC CONNECTION SETUP 10.2.40 SECURITY MODE COMMAND 10.2.43 SIGNALLING CONNECTION RELEASE 10.2.46 TRANSPORT CHANNEL RECONFIGURATION 10.2.50 ~~TRANSPORT FORMAT COMBINATION CONTROL 10.2.53~~ UE CAPABILITY ENQUIRY 10.2.55 UE CAPABILITY INFORMATION CONFIRM 10.2.57 UPLINK PHYSICAL CHANNEL CONTROL 10.2.59 URA UPDATE CONFIRM 10.2.61 UTRAN MOBILITY INFORMATION 10.2.62
Non-critical extensions only	ACTIVE SET UPDATE COMPLETE 10.2.2 ACTIVE SET UPDATE FAILURE 10.2.3 CELL CHANGE ORDER FROM UTRAN FAILURE 10.2.6 CELL UPDATE 10.2.7 COUNTER CHECK RESPONSE 10.2.10 HANDOVER TO UTRAN COMPLETE 10.2.13 INITIAL DIRECT TRANSFER 10.2.14 HANDOVER FROM UTRAN FAILURE 10.2.16 MEASUREMENT CONTROL FAILURE 10.2.18 MEASUREMENT REPORT 10.2.19 PAGING TYPE 1 10.2.20 PAGING TYPE 2 10.2.21 PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23 PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24 PUSCH CAPACITY REQUEST 10.2.26 RADIO BEARER RECONFIGURATION COMPLETE 10.2.28 RADIO BEARER RECONFIGURATION FAILURE 10.2.29 RADIO BEARER RELEASE COMPLETE 10.2.31 RADIO BEARER RELEASE FAILURE 10.2.32 RADIO BEARER SETUP COMPLETE 10.2.34 RADIO BEARER SETUP FAILURE 10.2.35 RRC CONNECTION RELEASE COMPLETE 10.2.38 RRC CONNECTION REQUEST 10.2.39 RRC CONNECTION SETUP COMPLETE 10.2.41 RRC STATUS 10.2.42 SECURITY MODE COMPLETE 10.2.44 SECURITY MODE FAILURE 10.2.45 SIGNALLING CONNECTION RELEASE REQUEST10.2.47 Master Information Block 10.2.48.8.1 System Information Block type 1 to System Information Block type 17 10.2.48.8.2 to 10.2.48.8.19 SYSTEM INFORMATION CHANGE INDICATION 10.2.49 TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51 TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52 <u>TRANSPORT FORMAT COMBINATION CONTROL 10.2.53</u> TRANSPORT FORMAT COMBINATION CONTROL FAILURE 10.2.54 UE CAPABILITY INFORMATION 10.2.56 UPLINK DIRECT TRANSFER 10.2.58 URA UPDATE 10.2.60 UTRAN MOBILITY INFORMATION CONFIRM 10.2.63 UTRAN MOBILITY INFORMATION FAILURE 10.2.64

Extensions	Message
No extensions	SYSTEM INFORMATION 10.2.48 First Segment 10.2.48.1 Subsequent or last Segment 10.2.48.3 Complete SIB 10.2.48.5 SIB content 10.2.48.8.1

NOTE: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

[…]

11.2   PDU definitions

[…]

```
-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- **************************************************

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                                SEQUENCE {
        cellChangeOrderFromUTRANFailure-r3
                                      CellChangeOrderFromUTRANFailure-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
-- dummy is not used in this version of the protocol
    later-than-r3dummy                SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        -- not used in this release of the specification
        dummy                         IntegrityProtectionModeInfo         OPTIONAL,
        interRAT-ChangeFailureCause   InterRAT-ChangeFailureCause
}

[…]

-- **************************************************
--
-- MEASUREMENT CONTROL
--
-- **************************************************

MeasurementControl ::= CHOICE {
    r3                            SEQUENCE {
        measurementControl-r3         MeasurementControl-r3-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    later-than-r3                 SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
    criticalExtensions            SEQUENCE {}
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity     MeasurementIdentity,
        measurementCommand            MeasurementCommand,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementReportingMode      MeasurementReportingMode            OPTIONAL,
        additionalMeasurementList     AdditionalMeasurementID-List        OPTIONAL,
    -- Physical channel IEs
```

```
        dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo      OPTIONAL
}
```

[…]

```
        dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo      OPTIONAL
}
```

[…]

3GPP TSG-RAN WG2 Meeting #23   *R2-012121*
Helsinki, Finland, 27- 31 August, 2001

CR-Form-v4

<div align="center">

CHANGE REQUEST

</div>

| ⌘ | **25.331 CR 1024** | ⌘ | ev | **-** | ⌘ | Current version: | **4.1.0** | ⌘ |

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

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

Title: ⌘	Corrections to information elements outside the extension container	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001

Category: ⌘ **A**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘	1. Measurement Control message should have the Transaction Id In the later-than-r3 container. 2. Cell Change order from UTRAN failure message should not have the Transaction Id in the later-than-r3 container. More importantly, this message is an UL message and it shoul not be critically extended (UTRAN behaviour is unspecified for such a case). 3. TFC Control message should have the Transaction Id in the later-than-r3 container. Moreover, this message can not be critically extended.
Summary of change: ⌘	1. later-than-r3 container and the corresponding Transaction Id is added to the Measurement Control message. 2. Critical extensions are marked as "dummy", together with the later-than-r3 container. 3. It is stated that TFC Control message can not be critically extended and no later-than-r3 container is added. This means that the UE may not be able to retrieve the Transaction Id in some error conditions. **Isolated Impact Analisys** Changes 1, 2 and 3 only affect Rel-4 and onward.
Consequences if not approved: ⌘	UE may not be able to retrieve the Transaction Id in some error cases

Clauses affected: ⌘	10.1.1, 11.2

Other specs affected: ⌘	☐ Other core specifications	⌘	25.331 v3.7.0, CR 1023r1
	☐ Test specifications		
	☐ O&M Specifications		

Other comments: ⌘	

How to create CRs using this form:

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

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

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

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

[…]

10.1.1 Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a UE, conforming to this revision of the standard, upon receiving a not comprehended future extension. The details of this error handling behaviour are provided in clause 9.

NOTE 1: By avoiding the need for partial decoding (skipping uncomprehended IEs to continue decoding the remainder of the message), the RRC protocol extension mechanism also avoids the overhead of length determinants for extensions.

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

NOTE 2: Critical extensions can only be added to certain downlink messages.

Extensions	Message
Critical and non-critical extensions	ACTIVE SET UPDATE 10.2.1 ASSISTANCE DATA DELIVERY 10.2.4 CELL CHANGE ORDER FROM UTRAN 10.2.5 CELL UPDATE CONFIRM 10.2.8 COUNTER CHECK 10.2.9 DOWNLINK DIRECT TRANSFER 10.2.11 HANDOVER TO UTRAN COMMAND 10.2.12 HANDOVER FROM UTRAN COMMAND 10.2.15 MEASUREMENT CONTROL 10.2.17 PHYSICAL CHANNEL RECONFIGURATION 10.2.22 PHYSICAL SHARED CHANNEL ALLOCATION 10.2.25 RADIO BEARER RECONFIGURATION 10.2.27 RADIO BEARER RELEASE 10.2.30 RADIO BEARER SETUP 10.2.33 RRC CONNECTION REJECT 10.2.36 RRC CONNECTION RELEASE 10.2.37 RRC CONNECTION SETUP 10.2.40 SECURITY MODE COMMAND 10.2.43 SIGNALLING CONNECTION RELEASE 10.2.46 TRANSPORT CHANNEL RECONFIGURATION 10.2.50 ~~TRANSPORT FORMAT COMBINATION CONTROL 10.2.53~~ UE CAPABILITY ENQUIRY 10.2.55 UE CAPABILITY INFORMATION CONFIRM 10.2.57 UPLINK PHYSICAL CHANNEL CONTROL 10.2.59 URA UPDATE CONFIRM 10.2.61 UTRAN MOBILITY INFORMATION 10.2.62
Non-critical extensions only	ACTIVE SET UPDATE COMPLETE 10.2.2 ACTIVE SET UPDATE FAILURE 10.2.3 CELL CHANGE ORDER FROM UTRAN FAILURE 10.2.6 CELL UPDATE 10.2.7 COUNTER CHECK RESPONSE 10.2.10 HANDOVER TO UTRAN COMPLETE 10.2.13 INITIAL DIRECT TRANSFER 10.2.14 HANDOVER FROM UTRAN FAILURE 10.2.16 MEASUREMENT CONTROL FAILURE 10.2.18 MEASUREMENT REPORT 10.2.19 PAGING TYPE 1 10.2.20 PAGING TYPE 2 10.2.21 PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23 PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24 PUSCH CAPACITY REQUEST 10.2.26 RADIO BEARER RECONFIGURATION COMPLETE 10.2.28 RADIO BEARER RECONFIGURATION FAILURE 10.2.29 RADIO BEARER RELEASE COMPLETE 10.2.31 RADIO BEARER RELEASE FAILURE 10.2.32 RADIO BEARER SETUP COMPLETE 10.2.34 RADIO BEARER SETUP FAILURE 10.2.35 RRC CONNECTION RELEASE COMPLETE 10.2.38 RRC CONNECTION REQUEST 10.2.39 RRC CONNECTION SETUP COMPLETE 10.2.41 RRC STATUS 10.2.42 SECURITY MODE COMPLETE 10.2.44 SECURITY MODE FAILURE 10.2.45 SIGNALLING CONNECTION RELEASE REQUEST10.2.47 Master Information Block 10.2.48.8.1 System Information Block type 1 to System Information Block type 17 10.2.48.8.2 to 10.2.48.8.19 SYSTEM INFORMATION CHANGE INDICATION 10.2.49 TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51 TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52 <u>TRANSPORT FORMAT COMBINATION CONTROL 10.2.53</u> TRANSPORT FORMAT COMBINATION CONTROL FAILURE 10.2.54 UE CAPABILITY INFORMATION 10.2.56 UPLINK DIRECT TRANSFER 10.2.58 URA UPDATE 10.2.60 UTRAN MOBILITY INFORMATION CONFIRM 10.2.63 UTRAN MOBILITY INFORMATION FAILURE 10.2.64

Extensions	Message
No extensions	SYSTEM INFORMATION 10.2.48 First Segment 10.2.48.1 Subsequent or last Segment 10.2.48.3 Complete SIB 10.2.48.5 SIB content 10.2.48.8.1

NOTE: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

[…]

11.2   PDU definitions

[…]

```
-- **************************************************
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- **************************************************

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                                  SEQUENCE {
        cellChangeOrderFromUTRANFailure-r3
                                        CellChangeOrderFromUTRANFailure-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
-- dummy is not used in this version of the protocol
    later-than-r3dummy                  SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        -- not used in this release of the specification
        dummy                           IntegrityProtectionModeInfo         OPTIONAL,
        interRAT-ChangeFailureCause     InterRAT-ChangeFailureCause
}
```

[…]

```
-- **************************************************
--
-- MEASUREMENT CONTROL
--
-- **************************************************

MeasurementControl ::= CHOICE {
    r3                                  SEQUENCE {
        measurementControl-r3           MeasurementControl-r3-IEs,
        nonCriticalExtensions           SEQUENCE {
            measurementControl-r3-r4-ext    MeasurementControl-r3-r4-ext-IEs,
            nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
        }                                                                       OPTIONAL
    },
    later-than-r3                       SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                measurementControl-r4           MeasurementControl-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
```

```
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity        MeasurementIdentity,
        measurementCommand                MeasurementCommand,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementReportingMode        MeasurementReportingMode                OPTIONAL,
        additionalMeasurementList        AdditionalMeasurementID-List           OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo          OPTIONAL
}

MeasurementControl-r3-r4-ext-IEs ::= SEQUENCE {
    -- In case of TDD, the following IE is included instead of the IE
    -- up-IPDL-Parameters in up-OTDOA-AssistanceData
    up-Ipdl-Parameters-TDD           UP-IPDL-Parameters-TDD-r4-ext          OPTIONAL
}

 MeasurementControl-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity        MeasurementIdentity,
        measurementCommand                MeasurementCommand-r4,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementReportingMode        MeasurementReportingMode                OPTIONAL,
        additionalMeasurementList        AdditionalMeasurementID-List           OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo          OPTIONAL
}

[…]
```

CR-Form-v4

CHANGE REQUEST

⌘ **25.331** CR **1025** ⌘ ev **r1** ⌘ Current version: **3.7.0** ⌘

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

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

Title: ⌘	SFN reporting	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001
Category: ⌘	**F**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘	In section 5 of TS 25.402 it is stated: "The parameter OFF is calculated by the UE and reported to the UTRAN only when the UTRAN has requested the UE to send this parameter." The purpose is to avoid reading the SFN of the measured cell if not strictly necessary. In general the signal quality of the measured cell may be good enough to report the Tm value (i.e. the time difference of the PCCPCH reception timing of measured cell, from the PCCPCH reception timing of the reference cell), but not good enough to read the SFN. In addition to this, it is impossible to read the SFN when compressed mode is used to measure inter-frequency cells. As a result it may not be possible to report SFN-SFN measurements type 1, OFF and COUNT-C-SFN high. Unfortunately, some of the latter measurements are mandatory, and consequently the UE may not report a potentially useful cell, even if UTRAN may have no interest in the value of OFF, etc. because they may be already known by other means. The IE "Read SFN indicator", if set to TRUE, "indicates that read of SFN is requested for the target cell". Thus, UTRAN is able to indicate the need to read the SFN or not, but the UE procedures to handle these cases are currently not specified.
Summary of change: ⌘	It is proposed to allow the UE to avoid reporting the IEs "OFF" and "COUNT-C-SFN high", and to let the UE report "SFN-SFN observed time difference type 1" for the cell to a value in the range (0..38399) if the IE "Read SFN indicator" for that cell is set to FALSE. Moreover, it is proposed to reject a MEASUREMENT CONTROL message if it orders the UE to read the SFN of an inter-frequency cell in case the UE needs DL compressed mode to perform inter-frequency measurements. **Isolated Impact Change Analysis.** This change affects the measurement reporting for soft handover and hard handover. If the UE does not implement this change it may not be able to report some intra-frequency or inter-frequency cells, but there are no inter-operability problems, whether URAN implements this change or not.

		This is a correction to a function where rules were missing: It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise.
Consequences if not approved:	⌘	The UE may not be able to report a target cell because it is not able to read the SFN on the BCCH.

Clauses affected:	⌘	8.4.1.3, 8.6.7.7		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v4.1.0, CR 1026
Other comments:	⌘	Changes to the draft version presented at RAN2 #22 are highlighted A more extensive description is included in R2-011927, presented at RAN2 #23		

How to create CRs using this form:

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

[…]

8.4.1.3   Reception of MEASUREMENT CONTROL by the UE

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

The UE shall:

- read the IE "Measurement command";

- if the IE "measurement command" has the value "setup":

    - store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", possibly overwriting the measurement previously stored with that identity;

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

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

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

            - begin measurements according to the stored control information for this measurement identity;

    - for any other measurement type:

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

    - if the IE "Measurement command" has the value "modify":

        - for all measurement control present in the MEASUREMENT CONTROL message:

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

                - replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity";

                - resume the measurements according to the new stored measurement control information.

            - otherwise:

                - set the variable CONFIGURATION_INCOMPLETE to TRUE;

- if the IE "measurement command" has the value "release":

    - terminate the measurement associated with the identity given in the IE "measurement identity";

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

- if the IE "DPCH Compressed Mode Status Info" is present,:

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

        - set the variable CONFIGURATION_INCOMPLETE to TRUE;

    - if pattern sequence corresponding to IE "TGPSI" is already active (according to "TGPS Status Flag"):

        - deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;

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

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

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

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

- start the concerned pattern sequence immediately at that CFN;

- not alter pattern sequences stored in variable TGPS_IDENTITY, but not identitifed in IE "TGPSI" [Editor's note: Style changed to B2]

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

- set the variable CONFIGURATION_INCOMPLETE to TRUE.

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

- and the procedure ends.

[…]

8.6.7.7   Cell Reporting Quantities

If the IE "Cell Reporting Quantities" is received by the UE, the UE shall store the content of the IE "Cell Reporting Quantities" to the variable MEASUREMENT_IDENTITY.

The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities", except for the following cases:

If the IE "Cell Identity" is set to TRUE, the UE shall in this version of the specification:

- treat the IE as if the IE "Cell Identity" is set to FALSE.

If the IE "Cell synchronisation information reporting indicator" is set to TRUE, the UE shall:

- include the IE "Cell synchronisation information" in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities":

- if the measurement is performed on another frequency or if the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE:

- a UE may omit the information group "COUNT-C-SFN frame difference" in the IE "Cell synchronisation information".

- if the measurement is performed on the same frequency and no RLC Transparent Mode COUNT-C exists in the UE:

- set the IE "COUNT-C-SFN high" to 0.

- otherwise:

- include the information group "COUNT-C-SFN frame difference".

If the IE "Proposed TGSN Reporting required" is set to TRUE, the UE shall:

- if compressed mode was used to monitor a TDD cell and the variable TGSN_REPORTED is set to FALSE:

- report the IE "Proposed TGSN" indicating the TGSN that suits best to the measured cell;

- set the variable TGSN_REPORTED to TRUE.

- otherwise

- omit the IE "Proposed TGSN".

If the IE "SFN-SFN observed time difference reporting indicator" is set to "type 1" and the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE, the UE shall:

- set the SFN-SFN observed time difference type 1 for that cell to a value in the range (0..38399), i.e. the UE shall assume that the SFN of the measured cell differs less than a frame with respect to the reference cell.

[…]

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR 1026** ⌘ ev **-** ⌘   Current version: **4.1.0** ⌘

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

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

Title: ⌘	SFN reporting	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001

Category: ⌘ **A**	***Release:*** ⌘ REL-4

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

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   R99   *(Release 1999)*
   REL-4 *(Release 4)*
   REL-5 *(Release 5)*

Reason for change: ⌘	In section 5 of TS 25.402 it is stated: "The parameter OFF is calculated by the UE and reported to the UTRAN only when the UTRAN has requested the UE to send this parameter." The purpose is to avoid reading the SFN of the measured cell if not strictly necessary. In general the signal quality of the measured cell may be good enough to report the Tm value (i.e. the time difference of the PCCPCH reception timing of measured cell, from the PCCPCH reception timing of the reference cell), but not good enough to read the SFN. In addition to this, it is impossible to read the SFN when compressed mode is used to measure inter-frequency cells. As a result it may not be possible to report SFN-SFN measurements type 1, OFF and COUNT-C-SFN high. Unfortunately, some of the latter measurements are mandatory, and consequently the UE may not report a potentially useful cell, even if UTRAN may have no interest in the value of OFF, etc. because they may be already known by other means. The IE "Read SFN indicator", if set to TRUE, "indicates that read of SFN is requested for the target cell". Thus, UTRAN is able to indicate the need to read the SFN or not, but the UE procedures to handle these cases are currently not specified.
Summary of change: ⌘	It is proposed to allow the UE to avoid reporting the IEs "OFF" and "COUNT-C-SFN high", and to let the UE report "SFN-SFN observed time difference type 1" for the cell to a value in the range (0..38399) if the IE "Read SFN indicator" for that cell is set to FALSE. Moreover, it is proposed to reject a MEASUREMENT CONTROL message if it orders the UE to read the SFN of an inter-frequency cell in case the UE needs DL compressed mode to perform inter-frequency measurements. **Isolated Impact Change Analysis.** This change affects the measurement reporting for soft handover and hard handover. If the UE does not implement this change it may not be able to report some intra-frequency or inter-frequency cells, but there are no inter-operability problems, whether URAN implements this change or not.

| | | This is a correction to a function where rules were missing: It would not affect implementations behaving like indicated in the CR, it would affect implementations supporting the corrected functionality otherwise. |
| *Consequences if not approved:* | ⌘ | The UE may not be able to report a target cell because it is not able to read the SFN on the BCCH. |

Clauses affected:	⌘	8.4.1.3, 8.6.7.7		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.7.0, CR 1025r1
Other comments:	⌘	Changes to the draft version presented at RAN2 #22 are highlighted A more extensive description is included in R2-011927, presented at RAN2 #23		

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

[…]

8.4.1.3   Reception of MEASUREMENT CONTROL by the UE

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

The UE shall:

- read the IE "Measurement command";

- if the IE "measurement command" has the value "setup":

    - store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", possibly overwriting the measurement previously stored with that identity;

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

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

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

            - begin measurements according to the stored control information for this measurement identity;

    - for any other measurement type:

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

    - if the IE "Measurement command" has the value "modify":

        - for all measurement control present in the MEASUREMENT CONTROL message:

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

                - replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity";

                - resume the measurements according to the new stored measurement control information.

            - otherwise:

                - set the variable CONFIGURATION_INCOMPLETE to TRUE;

- if the IE "measurement command" has the value "release":

    - terminate the measurement associated with the identity given in the IE "measurement identity";

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

- if the IE "DPCH Compressed Mode Status Info" is present,:

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

        - set the variable CONFIGURATION_INCOMPLETE to TRUE;

    - if pattern sequence corresponding to IE "TGPSI" is already active (according to "TGPS Status Flag"):

        - deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;

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

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

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

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

    -     start the concerned pattern sequence immediately at that CFN;

-   not alter pattern sequences stored in variable TGPS_IDENTITY, but not identitifed in IE "TGPSI" [Editor's note: Style changed to B2]

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

    -   set the variable CONFIGURATION_INCOMPLETE to TRUE.

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

-   and the procedure ends.

[…]

8.6.7.7   Cell Reporting Quantities

If the IE "Cell Reporting Quantities" is received by the UE, the UE shall store the content of the IE "Cell Reporting Quantities" to the variable MEASUREMENT_IDENTITY.

The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities", except for the following cases:

If the IE "Cell Identity" is set to TRUE, the UE shall in this version of the specification:

-   treat the IE as if the IE "Cell Identity" is set to FALSE.

If the IE "Cell synchronisation information reporting indicator" is set to TRUE, the UE shall:

-   include the IE "Cell synchronisation information" in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities":

    -   if the measurement is performed on another frequency or if the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE:

        -   a UE may omit the information group "COUNT-C-SFN frame difference" in the IE "Cell synchronisation information".

    -   if the measurement is performed on the same frequency and no RLC Transparent Mode COUNT-C exists in the UE:

        -   set the IE "COUNT-C-SFN high" to 0.

    -   otherwise:

        -   include the information group "COUNT-C-SFN frame difference".

If the IE "Proposed TGSN Reporting required" is set to TRUE, the UE shall:

-   if compressed mode was used to monitor a TDD cell and the variable TGSN_REPORTED is set to FALSE:

    -   report the IE "Proposed TGSN" indicating the TGSN that suits best to the measured cell;

    -   set the variable TGSN_REPORTED to TRUE.

-   otherwise

- omit the IE "Proposed TGSN".

If the IE "SFN-SFN observed time difference reporting indicator" is set to "type 1" and the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE, the UE shall:

- set the SFN-SFN observed time difference type 1 for that cell to a value in the range (0..38399), i.e. the UE shall assume that the SFN of the measured cell differs less than a frame with respect to the reference cell.

[…]

CR-Form-v4

CHANGE REQUEST

⌘   **25.331 CR 1027**   ⌘   ev   **-**   ⌘   Current version: **3.7.0**   ⌘

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

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

Title: ⌘	TFCI combining indicator	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ August 27, 2001
Category: ⌘ **F**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	The IE "TFCI combining indicator" is mandatory in ASN.1 but it is considered optional in the Tabular and in the procedural section (8.3.4.3 Reception of an ACTIVE SET UPDATE message by the UE). This IE should only be sent when the UE is in CELL_DCH state with a DSCH transport channel assigned and when there is a 'hard' split in the TFCI field (such that TFCI1 and TFCI2 have their own separate block coding). The procedural text is incorrect since it assumes that combining or not combining is determined by the presence of the IE and not by its value (TRUE or FALSE)

Summary of change: ⌘	The following is here proposed:

1. Make the IE "TFCI combining indicator" MP in the tabular (10.3.6.68)

2. State that FALSE means "no combining or not applicable" in the tabular (10.3.6.81)

3. add requirements to section 8.3.4.3 "Reception of an ACTIVE SET UPDATE message by the UE" as suggested below:

[the UE shall]

....

-   if the IE "TFCI combining indicator" associated with a radio link to be added is set to TRUE:

    -   if a DSCH transport channel is assigned and there is a 'hard' split in the TFCI field:

       -   configure Layer 1 to soft combine TFCI (field 2) of this new link with those links already in the TFCI (field 2) combining set;

4. remove the existing requirement from section 8.3.4.3.

Consequences if not approved:	⌘	The DSCH functionality would not work properly when a new radio link is added to the active set

Clauses affected:	⌘	8.3.4.3, 10.3.6.68, 10.3.6.81, 11		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v4.1.0, CR 1028
Other comments:	⌘			

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

8.3.4.3   Reception of an ACTIVE SET UPDATE message by the UE

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following. The UE shall:

- first add the RLs indicated in the IE "Radio Link Addition Information";

- remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

- perform the physical layer synchronisation procedure as specified in [29];

- if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":

    - include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

- if the ACTIVE SET UPDATE message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":

    - include and set the IE "Integrity protection activation info" to the value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- if the variable PDCP_SN_INFO is non-empty:

    - include the IE "RB with PDCP information list" in the ACTIVE SET UPDATE COMPLETE message; and

    - set it to the value of the variable PDCP_SN_INFO;

- if the IE "TFCI combining indicator" associated with a radio link to be added is set to TRUE:

    - if a DSCH transport channel is assigned and there is a 'hard' split in the TFCI field:

        - configure Layer 1 to soft combine TFCI (field 2) of this new link with those links already in the TFCI (field 2) combining set;

- if the ACTIVE SET UPDATE message includes the IE "TFCI combining indicator" associated with a radio link to be added:

    - configure Layer 1 to soft combine TFCI (field 2) of this new link with those links already in the TFCI (field 2) combining set;

- if the received ACTIVE SET UPDATE message included the IE "Downlink counter synchronisation info":

    - calculate the START value according to subclause 8.5.9;

    - include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the ACTIVE SET UPDATE COMPLETE message;

- set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

- clear that entry;

- transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the Physical Layer synchronization;

- if the IE "Integrity protection mode info" was present in the ACTIVE SET UPDATE message:

    - start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted ACTIVE SET UPDATE COMPLETE message;

- if the variable PDCP_SN_INFO is empty:

    - if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":

- when RLC has confirmed the successful transmission of the ACTIVE SET UPDATE COMPLETE message:

    - perform the actions below;

- if the ACTIVE SET UPDATE message did not contain the IE "Ciphering mode info":

    - when RLC has been requested to transmit the ACTIVE SET UPDATE COMPLETE message:

        - perform the actions below;

- if the variable PDCP_SN_INFO is non-empty:

    - when RLC has confirmed the successful transmission of the ACTIVE SET UPDATE COMPLETE message:

        - for each radio bearer in the variable PDCP_SN_INFO:

            - if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":

                - configure the RLC entity for that radio bearer to "continue";

        - clear the variable PDCP_SN_INFO;

- if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":

    - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

    - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

- if the ACTIVE SET UPDATE message contained the IE "Integrity protection mode info":

    - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

    - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- the procedure ends on the UE side.

[…]

10.3.6.68   Radio link addition information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL 10.3.6.21	
TFCI combining indicator	~~OP~~MP		TFCI combining indicator 10.3.6.81	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	Note 1

NOTE 1: These IEs are present when the UE needs to listen to system information on FACH in CELL_DCH state.

[…]

10.3.6.81   TFCI Combining Indicator

NOTE: Only for FDD.

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCI combining indicator	MP		Boolean	TRUE means that TFCI is combined, FALSE means that TFCI is not combined or that this IE is not applicable to the added radio link

[…]

```
RL-AdditionInformation ::=        SEQUENCE {
    primaryCPICH-Info                 PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL                 DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator           BOOLEAN,
    sccpch-InfoforFACH                SCCPCH-InfoForFACH              OPTIONAL
}
```
[…]

CR-Form-v4

CHANGE REQUEST

⌘ **25.331 CR 1028** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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

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

Title: ⌘	TFCI combining indicator	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	*Date:* ⌘ August 27, 2001

Category: ⌘ **A**	*Release:* ⌘ REL-4

Use <u>one</u> of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
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R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘	The IE "TFCI combining indicator" is mandatory in ASN.1 but it is considered optional in the Tabular and in the procedural section (8.3.4.3 Reception of an ACTIVE SET UPDATE message by the UE). This IE should only be sent when the UE is in CELL_DCH state with a DSCH transport channel assigned and when there is a 'hard' split in the TFCI field (such that TFCI1 and TFCI2 have their own separate block coding). The procedural text is incorrect since it assumes that combining or not combining is determined by the presence of the IE and not by its value (TRUE or FALSE)
Summary of change: ⌘	The following is here proposed: **1**. Make the IE "TFCI combining indicator" MP in the tabular (10.3.6.68) **2**. State that FALSE means "no combining or not applicable" in the tabular (10.3.6.81) **3**. add requirements to section 8.3.4.3 "Reception of an ACTIVE SET UPDATE message by the UE" as suggested below: [the UE shall] .... - if the IE "TFCI combining indicator" associated with a radio link to be added is set to TRUE: - if a DSCH transport channel is assigned and there is a 'hard' split in the TFCI field: - configure Layer 1 to soft combine TFCI (field 2) of this new link with those links already in the TFCI (field 2) combining set; **4**. remove the existing requirement from section 8.3.4.3.

Clauses affected:	⌘	8.3.4.3, 10.3.6.68, 10.3.6.81, 11		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.331 v3.7.0, CR 1027
Other comments:	⌘			

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8.3.4.3   Reception of an ACTIVE SET UPDATE message by the UE

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-    first add the RLs indicated in the IE "Radio Link Addition Information";

-    remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

-    perform the physical layer synchronisation procedure as specified in [29];

-    if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":

    -    include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

-    if the ACTIVE SET UPDATE message contained the IE "Integrity protection mode info" with the IE "Integrity protection mode command" set to "Modify":

    -    include and set the IE "Integrity protection activation info" to the value of the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

-    if the variable PDCP_SN_INFO is non-empty:

    -    include the IE "RB with PDCP information list" in the ACTIVE SET UPDATE COMPLETE message; and

    -    set it to the value of the variable PDCP_SN_INFO;

-    if the IE "TFCI combining indicator" associated with a radio link to be added is set to TRUE:

    -    if a DSCH transport channel is assigned and there is a 'hard' split in the TFCI field:

        -    configure Layer 1 to soft combine TFCI (field 2) of this new link with those links already in the TFCI (field 2) combining set;

-    if the ACTIVE SET UPDATE message includes the IE "TFCI combining indicator" associated with a radio link to be added:

    -    configure Layer 1 to soft combine TFCI (field 2) of this new link with those links already in the TFCI (field 2) combining set;

-    if the received ACTIVE SET UPDATE message included the IE "Downlink counter synchronisation info":

    -    calculate the START value according to subclause 8.5.9;

    -    include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the ACTIVE SET UPDATE COMPLETE message;

-    set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

-    clear that entry;

-    transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the Physical Layer synchronization;

-    if the IE "Integrity protection mode info" was present in the ACTIVE SET UPDATE message:

    -    start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted ACTIVE SET UPDATE COMPLETE message;

-    if the variable PDCP_SN_INFO is empty:

    -    if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":

- when RLC has confirmed the successful transmission of the ACTIVE SET UPDATE COMPLETE message:

    - perform the actions below;

- if the ACTIVE SET UPDATE message did not contain the IE "Ciphering mode info":

    - when RLC has been requested to transmit the ACTIVE SET UPDATE COMPLETE message:

        - perform the actions below;

- if the variable PDCP_SN_INFO is non-empty:

    - when RLC has confirmed the successful transmission of the ACTIVE SET UPDATE COMPLETE message:

        - for each radio bearer in the variable PDCP_SN_INFO:

            - if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":

                - configure the RLC entity for that radio bearer to "continue";

        - clear the variable PDCP_SN_INFO;

- if the ACTIVE SET UPDATE message contained the IE "Ciphering mode info":

    - set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

    - clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

- if the ACTIVE SET UPDATE message contained the IE "Integrity protection mode info":

    - set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

    - clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- the procedure ends on the UE side.

[…]

10.3.6.68   Radio link addition information

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CPICH info	MP		Primary CPICH info 10.3.6.60	
Downlink DPCH info for each RL	MP		Downlink DPCH info for each RL 10.3.6.21	
TFCI combining indicator	~~OP~~MP		TFCI combining indicator 10.3.6.81	
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	Note 1

NOTE 1: These IEs are present when the UE needs to listen to system information on FACH in CELL_DCH state.

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10.3.6.81   TFCI Combining Indicator

NOTE: Only for FDD.

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Information Element/Group name	Need	Multi	Type and reference	Semantics description
TFCI combining indicator	MP		Boolean	TRUE means that TFCI is combined, FALSE means that TFCI is not combined or that this IE is not applicable to the added radio link

[…]

```
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    primaryCPICH-Info                  PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL                  DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator            BOOLEAN,
    sccpch-InfoforFACH                 SCCPCH-InfoForFACH                OPTIONAL
}
```
[…]