

TSG-RAN Meeting #19
Birmingham, UK, 11 - 14 March 2003

RP-030117

Title: CR (Rel-5) on TS 25.331

Source: TSG-RAN WG2

Agenda item: 8.2.5

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	1872	-	Rel-5	TDD HS-SICH Power Control	F	5.3.0	5.4.0	R2-030545	HSDPA-L23
25.331	1873	-	Rel-5	Usage of separate scrambling code for HSDPA	F	5.3.0	5.4.0	R2-030546	HSDPA-L23
25.331	1875	-	Rel-5	Corrections to the IE "Added or Reconfigured MAC-d flow" and the associated table in 10.3.10	F	5.3.0	5.4.0	R2-030548	HSDPA-L23
25.331	1877	1	Rel-5	Network Assisted Cell Change from UTRAN to GERAN	B	5.3.0	5.4.0	R2-030627	TEI5
25.331	1878	1	Rel-5	Defining more than one DSCH / USCH transport channel in PDSCH and PUSCH system information (TDD only)	F	5.3.0	5.4.0	R2-030617	TEI5
25.331	1879	-	Rel-5	Introducing the use of pre-defined configurations within UTRA	C	5.3.0	5.4.0	R2-030567	TEI5
25.331	1897	-	Rel-5	Correction of shadow CR implementation	F	5.3.0	5.4.0	R2-030595	TEI5
25.331	1900	-	Rel-5	Measurement event for evaluation of best HS-DSCH cell	F	5.3.0	5.4.0	R2-030611	HSDPA-L23
25.331	1903	-	Rel-5	Correction to USBI	F	5.3.0	5.4.0	R2-030623	TEI5

CHANGE REQUEST

25.331 CR 1872 # rev - # Current version: 5.3.0

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# TDD HS-SICH Power Control		
Source:	# TSG-RAN WG2		
Work item code:	# HSDPA-L23	Date:	# 17 Feb 2003
Category:	# F	Release:	# REL-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	# Specification of HS-SICH OL PC for TDD 3.84 Mcps option.
Summary of change:	# Description of specified HS-SICH open loop power control for TDD 3.84 Mcps option as well as related tabular changes: <ul style="list-style-type: none"> - HS-SICH always uses burst type 1. - Added the "HS-SICH Power Control Info" (including HS-SICH Constant Value and SIR_{Target}) in Uplink Physical Channel Control for TDD 3.84 MCps. - Added the IE "HS-SICH constant value" in HS-SICH configuration for TDD 3.84 Mcps option. Related ASN.1 changes: <ul style="list-style-type: none"> - HS-SCCH-Info - HS-SICH-Configuration-TDD384 - HS-SICH-Power-Contorl-Info-TDD384 (new) - UplinkPhysicalChannelControl - UplinkPhysicalChannelControl-r5-IEs (new)
Consequences if not approved:	# HS-SICH OL PC for TDD 3.84 Mcps option in RRC spec is not complete.

Clauses affected:	# 8.5.7; 8.2.10.3; 10.3.6.36a; 10.3.6.11a; 10.2.59, 11.1
--------------------------	--

Other specs Affected:	⌘	Y	N	Other core specifications Test specifications O&M Specifications	⌘
			X		
		X			
Other comments:	⌘				

How to create CRs using this form:

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

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

8.5.7 Open loop power control

For FDD and prior to PRACH or PCPCH transmission the UE shall:

- 1> read the IEs "Primary CPICH Tx power" and "Constant value" in System Information Block type 6 (or System Information Block type 5, if system information block type 6 is not being broadcast) and the IE "UL interference" in System Information Block type 7;
- 1> measure the value for the CPICH_RSCP;
- 1> calculate the power for the first preamble as:

$$\text{Preamble_Initial_Power} = \text{Primary CPICH TX power} - \text{CPICH_RSCP} + \text{UL interference} + \text{Constant Value}$$

Where,

Primary CPICH TX power shall have the value of IE "Primary CPICH Tx power",

UL interference shall have the value of IE "UL interference"; and

Constant Value shall have the value of IE "Constant value".

- 1> as long as the physical layer is configured for PRACH or PCPCH transmission:
 - 2> continuously recalculate the Preamble_Initial_Power when any of the broadcast parameters used in the above formula changes; and
 - 2> resubmit to the physical layer the new calculated Preamble_Initial_Power.

For 3.84 Mcps TDD the UE shall:

- 1> if in the IE "Uplink DPCH Power Control info" the "CHOICE UL OL PC info" has the value "Broadcast UL OL PC info":
 - 3> acquire Reference Power, Constant Values from System Information Block type 6 (or System Information Block type 5, according to subclause 8.1.1.6.5), and I_{BTS} for all active UL timeslots from System Information Block type 14 on the BCH.

1> otherwise:

- 2> acquire Reference Power, Constant Values and I_{BTS} for all active UL timeslots from the IE "Uplink DPCH Power Control info".

1> for PUSCH, ~~and~~ PRACH ~~and~~ HS-SICH power control:

- 2> acquire Reference Power, Constant Values and I_{BTS} for all active UL timeslots from System Information Block type 6 (or System Information Block type 5, according to subclause 8.1.1.6.5) and System Information Block type 14 on the BCH.

calculate the UL transmit power according to the following formula for the PRACH continuously while the physical channel is active:

$$P_{\text{PRACH}} = L_{\text{PCCPCH}} + I_{\text{BTS}} + \text{PRACH Constant value},$$

- 2> 3dB shall be added to RACH Constant Value in the above equation for the case where RACH Spreading Factor = 8.

1> calculate the UL transmit power according to the following formula for the DPCH continuously while the physical channel is active:

$$P_{\text{DPCH}} = \alpha L_{\text{PCCPCH}} + (1-\alpha)L_0 + I_{\text{BTS}} + \text{SIR}_{\text{TARGET}} + \text{DPCH Constant value}$$

1> calculate the UL transmit power according to the following formula for the PUSCH continuously while the physical channel is active:

$$P_{\text{PUSCH}} = \alpha L_{\text{PCCPCH}} + (1-\alpha)L_0 + I_{\text{BTS}} + \text{SIR}_{\text{TARGET}} + \text{PUSCH Constant value}$$

1> calculate the initial UL transmit power for HS-SICH according to the following formulae:

2> when transmitting a Negative Acknowledgement;

$$P_{\text{HS-SICH}} = \alpha L_{\text{PCCPCH}} + (1-\alpha)L_0 + I_{\text{BTS}} + \text{SIR}_{\text{TARGET}} + \text{HS-SICH Constant value}$$

2> when transmitting an Acknowledgement

$$P_{\text{HS-SICH}} = \alpha L_{\text{PCCPCH}} + (1-\alpha)L_0 + I_{\text{BTS}} + \text{SIR}_{\text{TARGET}} + \text{HS-SICH Constant value} + \text{Ack Nack power offset}$$

Where, for all the above equations for 3.84 Mcps TDD the following apply:

- $P_{\text{PRACH}}, P_{\text{DPCH}}, P_{\text{PUSCH}}, \& P_{\text{HS-SICH}}$: Transmitter power level in dBm;
- Pathloss values:
 - L_{PCCPCH} : Measurement representing path loss in dB based on beacon channels (the reference transmit power is signalled as the value of the IE "Primary CCPCH Tx Power" on BCH in System Information Block type 6 (or System Information Block type 5, according to subclause 8.1.1.6.5), or individually signalled in the IE "Uplink DPCH Power Control info").
 - L_0 : Long term average of path loss in dB;
 - If the midamble is used in the evaluation of L_{PCCPCH} and L_0 , and the Tx diversity scheme used for the P-CCPCH involves the transmission of different midambles from the diversity antennas, the received power of the different midambles from the different antennas shall be combined prior to evaluation of the variables.
- I_{BTS} : Interference signal power level at cell's receiver in dBm. I_{BTS} shall have the value of the IE "UL Timeslot Interference" (IE "UL Timeslot Interference" is broadcast on BCH in System Information Block type 14 or individually signalled to each UE in the IE "Uplink DPCH Power Control info" for each active uplink timeslot).
- α : α is a weighting parameter, which represents the quality of path loss measurements. α may be a function of the time delay between the uplink time slot and the most recent down link PCCPCH time slot. α is calculated at the UE. α shall be smaller or equal to the value of the IE "Alpha". If the IE "Alpha" is not explicitly signalled to the UE α shall be set to 1. If UE is capable of estimating its position by using the OTDOA IPDL method, the UE shall use the IPDL- α parameter.
- $\text{SIR}_{\text{TARGET}}$: Target SNR in dB. This value is individually signalled to UEs in IE "UL target SIR" in IE "Uplink DPCH Power Control Info" or in IE "PUSCH Power Control Info" respectively.
- PRACH Constant value: PRACH Constant value shall have the value of the IE "PRACH Constant value".
- DPCH Constant value: DPCH Constant value shall have the value of the IE "DPCH Constant value".
- ~~—~~ PUSCH Constant value: PUSCH Constant value shall have the value of the IE "PUSCH Constant value".
- HS-SICH Constant value: HS-SICH Constant value shall have the value of the IE "HS-SICH Constant value".
- Values received by dedicated signalling shall take precedence over broadcast values.
- ~~—~~ If IPDLs are applied, the UE may increase UL Tx power by the value given in the IE "Max power increase". This power increase is only allowed in the slots between an idle slot and the next beacon slot.

- [Ack-Nack Power Offset: Difference in the desired RX power between HS-SICH transmissions conveying an acknowledgement and transmissions conveying a negative acknowledgement signalled to the UE in IE "HS-SCCH Info"](#).

For 1.28 Mcps TDD the UE shall:

- 1> calculate the UL transmit power according to the following formula for each UpPCH code transmission:

$$P_{UpPCH} = L_{PCCPCH} + PRX_{UpPCHdes} + (i-1) * P_{Wramp}$$

NOTE: When i equals 1, the initial signature power "Signature_Initial_Power" defined in [33] corresponds to P_{UpPCH} with i set to 1.

- 1> calculate the UL transmit power according to the following formula for each PRACH transmission:

$$P_{PRACH} = L_{PCCPCH} + PRX_{PRACHdes} + (i_{UpPCH}-1) * P_{Wramp}$$

- 1> calculate the initial UL transmit power according to the following formula for the PUSCH. Once the UE receives TPC bits relating to the PUSCH then it transitions to closed loop power control. If successive PUSCH resource allocations are contiguous then no return is made to open loop power control at the beginning of the succeeding resource allocation.

$$P_{USCH} = PRX_{PUSCHdes} + L_{PCCPCH}$$

- 1> calculate the initial UL transmit power for HS-SICH according to the following formulae:

- 2> when transmitting a Negative Acknowledgement;

$$P_{HS-SICH} = PRX_{HS-SICH} + L_{PCCPCH}$$

- 2> when transmitting an Acknowledgement

$$P_{HS-SICH} = PRX_{HS-SICH} + L_{PCCPCH} + \text{Ack-Nack Power Offset}$$

- 2> Once the UE receives TPC bits relating to the HS-SICH, it transitions to closed loop power control. If no TPC command for the HS-SICH is detected between successive HS-SICH transmissions, the UE should revert to open loop power control until the next TPC command is detected.

- 1> calculate the initial UL transmit power according to the following formula for the DPCH. Once the UE receives TPC bits relating to the uplink DPCH then it transitions to closed loop power control.

$$P_{DPCH} = PRX_{DPCHdes} + L_{PCCPCH}$$

Where:

- P_{UpPCH} , P_{PRACH} , P_{DPCH} , $P_{HS-SICH}$ & P_{USCH} : Transmitter power level in dBm.
- L_{PCCPCH} : Measurement representing path loss in dB (reference transmit power "Primary CCPCH Tx Power" is broadcast on BCH in System Information Block type 5 and System Information Block type 6, or individually signalled to each UE in the IE "Uplink DPCH Power Control info").
- i is the number of transmission attempts on UpPCH, $i=1 \dots M_{max}$.
- i_{UpPCH} is the final value of i.
- $PRX_{PRACHdes}$: Desired PRACH RX power at the cell's receiver in dBm signalled to the UE by the network in the FPACH response to the UE's successful SYNC_UL transmission.
- $PRX_{UpPCHdes}$: Desired UpPCH RX power at the cell's receiver in dBm. The value is broadcast in "PRX_{UpPCHdes}" in IE "SYNC_UL info" on BCH and shall be read on System Information Block type 5 and System Information Block type 6. It can also be signalled directly to the UE in a protocol message triggering a hard handover.

- $PRX_{PUSCHdes}$: Desired PUSCH RX power at the cell's receiver in dBm signalled to the UE in IE "PUSCH Power Control Info".
- $PRX_{PDPCHdes}$: Desired PDPCH RX power at the cell's receiver in dBm signalled to the UE in IE "Uplink DPCH Power Control Info".
- Pwr_{ramp} : The UE shall increase its transmission power by the value of the IE "Power Ramp step" by every UpPCH transmission.
- $PRX_{HS-SICH}$: Desired HS-SICH RX power at the cell's receiver in dBm signalled to the UE in IE "Downlink HS-PDSCH Information".
- Ack-Nack Power Offset: Difference in the desired RX power between HS-SICH transmissions conveying an acknowledgement and transmissions conveying a negative acknowledgement signalled to the UE in IE "HS-SCCH Info".

...

8.2.10.3 Reception of UPLINK PHYSICAL CHANNEL CONTROL message by the UE

Upon reception of the UPLINK PHYSICAL CHANNEL CONTROL message, the UE shall:

- 1> act upon all received information elements as specified in subclause 8.6.

In 1.28 Mcps TDD, if the IE "Uplink DPCH Power Control Info" is transmitted, this information shall be taken into account by the UE for uplink open loop power control as specified in subclause 8.5.7 and for uplink closed loop power control.

In 3.84 Mcps TDD, if the IEs "Uplink DPCH Power Control Info", "PRACH Constant Value", "PUSCH Constant Value", "[HS-SICH Power Control Info](#)", "Alpha" or IE group "list of UL Timeslot Interference" are transmitted, this information shall be taken into account by the UE for uplink open loop power control as specified in subclause 8.5.7. If the UE is capable of using IPDLs for UE positioning, the IE "IPDL-Alpha" shall be used instead of the IE "Alpha". If the IE "IPDL-Alpha" parameter is not present, the UE shall use IE "Alpha".

If the IE Special Burst Scheduling is transmitted the UE shall:

- 1> use the new value for the "Special Burst Generation Period".

The UE shall:

- 1> clear the entry for the UPLINK PHYSICAL CHANNEL CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> and the procedure ends.

10.3.6.36a HS-SCCH Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode	MP				REL-5
>FDD					REL-5
>>HS-SCCH Channelisation Code Information	MP	<1 to maxHSSC CHcodes>			REL-5
>>>HS-SCCH Channelisation Code	MP		Integer (0..127)		REL-5
>TDD					REL-5
>>CHOICE <i>TDD option</i>	MP				REL-5
>>>3.84 Mcps					REL-5
>>>> Ack-Nack Power Offset	MP		Integer (-7..8 by step of 1)	dB	REL-5
>>>> HS-SICH Power Control Info	MP		HS-SICH Power Control Info 10.3.6.36b		REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-SCCHs>			REL-5
>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, Common midamble)	HS-SCCH always uses burst type 1.	REL-5
>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)	HS-SICH always uses burst type 1.	REL-5
>>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>>Midamble Shift	CV-UE		Integer (0..15)		REL-5
>>>>>>> Ack-Nack Power Offset	MP		Integer (-7..8 by step of 1)	dB	REL-5
>>>>>>> UL target SIR	MP		Real (-11..20 by	dB	REL-5

			step of 0.5		
>>>1.28 Mcps					REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-SCCHs>			REL-5
>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>First Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Second Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, Common midamble)		REL-5
>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)		REL-5
>>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>>Midamble Shift	CV-UE		Integer (0..15)		REL-5
>>>>>>Ack-Nack Power Offset	MP		Integer (-7..8 by step of 1)	dB.	REL-5
>>>>>>PRX _{HS-SICH}	MP		Integer (-120..-58 by step of 1)	dBm. Desired power level for HS-SICH.	REL-5
>>>>>>TPC step size	MP		Integer (1, 2, 3)	dB.	REL-5

Condition	Explanation
UE	This IE is mandatory present when the value of the IE "Midamble Allocation Mode" is "UE specific midamble" and not needed otherwise.

10.3.6.36b HS-SICH Power Control Info

This IE is used to transfer HS-SICH power control info to the UE and only applied to TDD 3.84 Mcps.

<u>Information Element/Group name</u>	<u>Need</u>	<u>Multi</u>	<u>Type and reference</u>	<u>Semantics description</u>	<u>Version</u>
<u>UL target SIR</u>	<u>MP</u>		<u>Real (-11..20 by step of 0.5)</u>	<u>dB</u>	<u>REL-5</u>
<u>HS-SICH Constant value</u>	<u>MP</u>		<u>Constant value TDD 11.3.6.11a</u>		<u>REL-5</u>

...

10.2.59 UPLINK PHYSICAL CHANNEL CONTROL

NOTE: Only for TDD.

This message is used to transfer uplink physical channel parameters to the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

<u>Information Element/Group name</u>	<u>Need</u>	<u>Multi</u>	<u>Type and Reference</u>	<u>Semantics description</u>	<u>Version</u>
Message Type	MP		Message Type		
UE information elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	OP		Integrity check info 10.3.3.16		
PhyCH information elements					
CCTrCH power control info	OP		CCTrCH power control info 10.3.6.8	Power control information for one CCTrCH	
Special Burst Scheduling	OP		Special Burst Scheduling 10.3.6.75a	UL Special Burst generation period in radio frames	
CHOICE <i>TDD option</i>	MP				REL-4
>3.84 Mcps TDD					REL-4
>>Alpha	OP		Alpha 10.3.6.5		
>>Timing Advance Control	OP		UL Timing Advance Control 10.3.6.96		
>>PRACH Constant Value	OP		Constant	Operator	

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
			value TDD 10.3.6.11a	controlled PRACH Margin	
>>PUSCH Constant Value	OP		Constant value TDD 10.3.6.11a	Operator controlled PUSCH Margin	
>>UE positioning related parameters	CV- <i>IPDLs</i>				REL-4
>>>IPDL-Alpha	MP		Alpha 10.3.6.5		REL-4
>>>Max power increase	MP		Integer (0..3)	In dB	REL-4
>> HS-SICH power control info	OP		HS-SICH Power Control Info 10.3.6.36b	Only applied to TDD 3.84 Mcps	REL-5
>1.28 Mcps TDD					REL-4
>>Uplink synchronisation parameters	MD			Default: Uplink synchronisation step size 1. Uplink synchronisation frequency 1.	REL-4
>>>Uplink synchronisation step size	MP		Integer(1..8)	This parameter specifies the step size to be used for the adjustment of the uplink transmission timing	REL-4
>>>Uplink synchronisation frequency	MP		Integer(1..8)	This parameter specifies the frequency of the adjustment of the uplink transmission timing	REL-4

Condition	Explanation
<i>IPDLs</i>	This IE is present only if idle periods are applied

...

10.3.6.11a Constant value TDD

NOTE: Only for 3.84 Mcps TDD.

3.84 Mcps TDD constant values are used for open loop power control of PRACH, USCH, [HS-SICH](#) and UL DPCH as defined in subclause 8.5.7.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
TDD Constant value	MP		Integer (- 35..+10)	In dB

11.1 General message structure

...

```

HS-SCCH-Info ::=
  modeSpecificInfo
    fdd
      SEQUENCE (SIZE (1..maxHSSCCHs)) OF
        HS-SCCH-Codes,
    tdd
      tdd384
        SEQUENCE {
          nack-ack-power-offset INTEGER (-7..8),
          HS-SICH-PowerControl-Info HS-SICH-Power-Contorl-Info-TDD384,
          SEQUENCE (SIZE (1..maxHSSCCHs)) OF
            HS-SCCH-TDD384
        },
      tdd128
        SEQUENCE (SIZE (1..maxHSSCCHs)) OF
          HS-SCCH-TDD128
    }
  }

```

...

```

HS-SICH-Configuration-TDD384 ::= SEQUENCE {
  timeslotNumber TimeslotNumber,
  channelisationCode HS-ChannelisationCode,
  midambleAllocationMode CHOICE {
    defaultMidamble NULL,
    ueSpecificMidamble SEQUENCE {
      midambleShift MidambleShiftLong
    }
  },
  midambleconfiguration MidambleConfiguration,
  nack-ack-power-offset INTEGER (-7..8),
  -- Actual value ul-target-SIR = IE value * 0.5
  ul-target-SIR INTEGER (-22..40)
}

```

```

HS-SICH-Power-Contorl-Info-TDD384 ::= SEQUENCE {
  -- Actual value ul-target-SIR = IE value * 0.5
  ul-target-SIR INTEGER (-22..40),
  hs-sich-ConstantValue ConstantValue
}

```

...

```

-- *****
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- *****

```

```

UplinkPhysicalChannelControl ::= CHOICE {
  r3 SEQUENCE {
    uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      uplinkPhysicalChannelControl-r3-add-ext BIT STRING OPTIONAL,
      v4xyNonCriticalExtensions SEQUENCE {
        uplinkPysicalChannelControl-v4xyext UplinkPhysicalChannelControl-v4xyext-IEs,
        -- Extension mechanism for non- release4 information
        noncriticalExtensions SEQUENCE {} OPTIONAL
      }
    }
  }
}

```



```
    }  
    tdd128 SEQUENCE {  
        ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL  
    }  
}
```

```
UplinkPhysicalChannelControl-r5-IEs ::= SEQUENCE {  
    HS-SICH-PowerControl HS-SICH-Power-Control-Info-TDD384 OPTIONAL  
}
```

...

CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 1873** ⌘ rev **-** ⌘ Current version: **5.3.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Usage of separate scrambling code for HSDPA		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ HSDPA-L23	Date:	⌘ 30/01/2003
Category:	⌘ F	Release:	⌘ Rel-5
	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 be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘ Physical layer specifications foresee a configuration with HSDPA related physical channels using one scrambling code while dedicated channels use another one. The signalling is currently not in place. The corresponding description can be found in 25.213: The mixture of primary scrambling code and secondary scrambling code for one CCTrCH is allowable. However, in the case of the CCTrCH of type DSCH then all the PDSCH channelisation codes that a single UE may receive shall be under a single scrambling code (either the primary or a secondary scrambling code). In the case of CCTrCH of type of HS-DSCH then all the HS-PDSCH channelisation codes and HS-SCCH that a single UE may receive shall be under a single scrambling code (either the primary or a secondary scrambling code).
Summary of change:	⌘ A new information element "DL Scrambling code" is included in IE "HS-SCCH info". The corresponding description for the usage of the new information element is included in the procedure part.
Consequences if not approved:	⌘ Configuration that is supported by physical layer and NBAP cannot be configured in UE. This may lead to non-optimal usage of radio resources in a cell.

Clauses affected:	⌘ 8.6.6.33, 10.3.6.36a, 11.3										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
Y	N										
	X										
	X										
	X										
		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/specs/CR.htm>. Below is a brief summary:

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

8.6.6.33 HS-SCCH Info

If the IE "HS-SCCH Info" is included, the UE shall:

- 1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

- 1> in the case of FDD:

- 2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link [applying the scrambling code as received in IE "DL Scrambling code"](#).

- 1> in the case of TDD:

- 2> receive the HS-SCCH(s) according to the IEs "Timeslot" and "Channelisation Code" on the serving HS-DSCH radio link;
- 2> receive the HS-SICH according to the IEs "Timeslot" and "Channelisation Code" on the serving HS-DSCH radio link.

10.3.6.36a HS-SCCH Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE mode	MP				REL-5
>FDD					REL-5
>>DL Scrambling Code	MD		Secondary scrambling code 10.3.6.74	DL Scrambling code to be applied for HS-DSCH and HS-SCCH. Default is same scrambling code as for DPCH.	REL-5
>>HS-SCCH Channelisation Code Information	MP	<1 to maxHSSC CHcodes>			REL-5
>>>HS-SCCH Channelisation Code	MP		Integer (0..127)		REL-5
>TDD					REL-5
>>CHOICE TDD option	MP				REL-5
>>>3.84 Mcps					REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-SCCHs>			REL-5
>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, Common midamble)	HS-SCCH always uses burst type 1.	REL-5
>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..14)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1) ..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)		REL-5
>>>>>>Midamble configuration	MP		Integer (4, 8, 16)		REL-5
>>>>>>Midamble Shift	CV-UE		Integer (0..15)		REL-5
>>>>>>Ack-Nack Power Offset	MP		Integer (-7..8 by step of 1)	dB	REL-5
>>>>>>UL target SIR	MP		Real (-11..20 by step of 0.5)	dB	REL-5
>>>1.28 Mcps					REL-5
>>>>HS-SCCH Set Configuration	MP	1 to <maxHS-			REL-5

		SCCHs>			
>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>First Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Second Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, Common midamble)		REL-5
>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>BLER target	MP		Real (-3.15..0 by step of 0.05)	Signalled value is Log10(HS-SCCH BLER quality target)	REL-5
>>>>>HS-SICH configuration					REL-5
>>>>>>Timeslot number	MP		Integer (0..6)		REL-5
>>>>>>Channelisation code	MP		Enumerated ((16/1)..(16/16))		REL-5
>>>>>>Midamble Allocation mode	MP		Enumerated (Default midamble, UE specific midamble)		REL-5
>>>>>>Midamble configuration	MP		Integer (2, 4, 6, 8, 10, 12, 14, 16)		REL-5
>>>>>>Midamble Shift	CV-UE		Integer (0..15)		REL-5
>>>>>>Ack-Nack Power Offset	MP		Integer (-7..8 by step of 1)	dB.	REL-5
>>>>>>PRX _{HS-SICH}	MP		Integer (-120..-58 by step of 1)	dBm. Desired power level for HS-SICH.	REL-5
>>>>>>TPC step size	MP		Integer (1, 2, 3)	dB.	REL-5

Condition	Explanation
UE	This IE is mandatory present when the value of the IE "Midamble Allocation Mode" is "UE specific midamble" and not needed otherwise.

11.3 Information element definitions

```

HS-SCCH-Info ::=
  modeSpecificInfo
  fdd
  tdd
  tdd384
  tdd128
}
}
}

SEQUENCE {
  CHOICE {
    SEQUENCE {
      HS-SCCHChannelisationCodeInfo
      dl-ScramblingCode
    }
    SEQUENCE (SIZE (1..maxHSSCCHs)) OF
      HS-SCCH-Codes,
      SecondaryScramblingCode OPTIONAL,
  }
  CHOICE {
    SEQUENCE (SIZE (1..maxHSSCCHs)) OF
      HS-SCCH-TDD384,
    SEQUENCE (SIZE (1..maxHSSCCHs)) OF
      HS-SCCH-TDD128
  }
}
}
}

```

CHANGE REQUEST

25.331 CR 1875 # rev **-** # Current version: **5.3.0**

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	#	Corrections to the IE "Added or Reconfigured MAC-d flow" and the associated table in 10.3.10	
Source:	#	TSG-RAN WG2	
Work item code:	#	HSDPA-L23	Date: # February 2003
Category:	#	F	Release: # Rel-5
		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 be found in 3GPP TR 21.900 .	Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	#	Incomplete description for some HSDPA parameters in RRC <ul style="list-style-type: none"> ▪ The term maxQueueID was not present in the table in 10.3.10. It was added and set to 8 in order to adapt it to the ASN.1 description and since there are only 8 Mac-hs Queue Ids specified (integer [1..8]) ▪ The value for MaxMACdPDUSizes was set to 8 in 10.3.10 and in the ASN.1 You need only a table with 8 entries to distinguish 8 different sizes (sequence range of the SID is: 0 to 7). ▪ The brackets for the table entry maxHSSCCHcodes are deleted since the number of HS-SCCH is now fixed to 4. ▪ The name of the value of "maxHProcess" is changed to "MaxHProcesses" for consistency with ASN.1 and the table 10.3.10 ▪ The value in the Table 10.3.10 for MaxHProcesses is changed from 6 to 8 to be consistent with ASN.1 and the first entry in 10.3.5.7a (HARQ info) "Number of Processes: integer[1..8]" 	
Summary of change:	#	<ul style="list-style-type: none"> ▪ The term maxQueueID is added at the table in 10.3.10 and set to 8 ▪ The value for MaxMACdPDUSizes in table 10.3.10 is set from 16 to 8 ▪ The value "maxMAC-d-PDUsizes" is set from 16 to 8 in the ASN.1 ▪ The brackets for the table entry maxHSSCCHcodes in 10.3.10 are deleted ▪ The name of "maxHProcess" is changed to "MaxHProcesses" in 10.3.5.7a ▪ The value for MaxHProcesses is changed from 6 to 8 in 10.3.10 	
Consequences if not approved:	#	Incomplete and unclear specification for Rel.5	

Clauses affected:	#	10.3.10, 10.3.5.7a	
--------------------------	---	--------------------	--

Other specs affected:		Y	N		
	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	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/specs/CR.htm>. Below is a brief summary:

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

10.3.5.1a Added or reconfigured MAC-d flow

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
MAC-hs queue list	OP	<1 to maxQueue ID>			REL-5
>MAC-hs queue Id	MP		Integer(1..8)		REL-5
>MAC-d Flow Identity	MP		MAC-d Flow Identity 10.3.5.7c		REL-5
>T1	MP		Integer(10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 200, 300, 400)	Timer (in milliseconds) when PDUs are released to the upper layers even though there are outstanding PDUs with lower TSN values.	REL-5
>MAC-hs window size	MP		Integer(4, 6, 8, 12, 16, 24, 32)		REL-5
>MAC-d PDU size Info	OP	<1 to max MACdPDU sizes>		Mapping of the different MAC-d PDU sizes configured for the HS-DSCH to the MAC-d PDU size index in the MAC-hs header.	REL-5
>>MAC-d PDU size	MP		Integer (1..5000)		REL-5
>>MAC-d PDU size index	MP		Integer(0..7)		REL-5

10.3.5.7a HARQ Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Number of Processes	MP		Integer (1..8)		REL-5
CHOICE <i>Memory Partitioning</i>	MP				REL-5
>Implicit				UE shall apply memory partitioning of equal size across all HARQ processes	REL-5
>Explicit					REL-5
>>Memory size	MP	<1 to MaxHProcesses maxHProcess >			REL-5
>>>Process Memory size	MP		Integer(800 .. 16000 by step of 800, 17600 .. 32000 by step of 1600, 36000 .. 80000 by step of 4000, 88000 .. 160000 by step of 8000, 176000 .. 304000 by step of 16000)	Number of soft channel bits	REL-5

10.3.10 Multiplicity values and type constraint values

The following table includes constants that are either used as multi bounds (name starting with "max") or as high or low value in a type specification (name starting with "lo" or "hi"). Constants are specified only for values appearing more than once in the RRC specification. In case a constant is related to one or more other constants, an expression is included in the "value" column instead of the actual value.

Constant	Explanation	Value	Version
CN information			
maxCNdomains	Maximum number of CN domains	4	
UTRAN mobility information			
maxRAT	Maximum number of Radio Access Technologies	maxOtherRAT + 1	
maxOtherRAT	Maximum number of other Radio Access Technologies	15	
maxURA	Maximum number of URAs in a cell	8	
maxInterSysMessages	Maximum number of Inter System Messages	4	
maxRABsetup	Maximum number of RABs to be established	16	
UE information			
maxtransactions	Maximum number of parallel RRC transactions in downlink	25	
maxPDCPalgoType	Maximum number of PDCP algorithm types	8	
maxDRACclasses	Maximum number of UE classes which would require different DRAC parameters	8	
maxFreqBandsFDD	Maximum number of frequency bands supported by the UE as defined in [21]	8	
maxFreqBandsTDD	Maximum number of frequency bands supported by the UE as defined in [22]	4	

Constant	Explanation	Value	Version
maxFreqBandsGSM	Maximum number of frequency bands supported by the UE as defined in [45]	16	
maxPage1	Number of UEs paged in the Paging Type 1 message	8	
maxSystemCapability	Maximum number of system specific capabilities that can be requested in one message.	16	
RB information			
maxPredefConfig	Maximum number of predefined configurations	16	
maxRB	Maximum number of RBs	32	
maxSRBsetup	Maximum number of signalling RBs to be established	8	
maxRBperRAB	Maximum number of RBs per RAB	8	
maxRBallRABs	Maximum number of non signalling RBs	27	
maxRBMuxOptions	Maximum number of RB multiplexing options	8	
maxLoCHperRLC	Maximum number of logical channels per RLC entity	2	
MaxROHC-PacketSizes	Maximum number of packet sizes that are allowed to be produced by ROHC.	16	
MaxROHC-Profiles	Maximum number of profiles supported by ROHC on a given RB.	8	
maxRFC 3095-CID	Maximum number of available CID values per radio bearer	16384	REL-5
TrCH information			
MaxHProcesses	Maximum number of H-ARQ processes	6 8	REL-5
MaxHSDSCH_TB_index	Maximum number of TB set size configurations for the HS-DSCH.	64 (FDD and 1.28 MCPS TDD); 512 (3.84 Mcps TDD)	REL-5
maxMACdPDUSizes	Maximum number of MAC-d PDU sizes per queue per Size index identifier (SID) permitted for MAC-hs	16 8	REL-5
maxTrCH	Maximum number of transport channels used in one direction (UL or DL)	32	
maxTrCHpreconf	Maximum number of preconfigured Transport channels, per direction	16	
maxCCTrCH	Maximum number of CCTrCHs	8	
maxQueueID	Maximum number of Mac-hs queues	8	REL-5
maxTF	Maximum number of different transport formats that can be included in the Transport format set for one transport channel	32	
maxTF-CPCH	Maximum number of TFs in a CPCH set	16	
maxTFC	Maximum number of Transport Format Combinations	1024	
maxTFCsub	Maximum number of Transport Format Combinations Subset	1024	
maxTFCl-1-Combs	Maximum number of TFCl (field 1) combinations	512	
maxTFCl-2-Combs	Maximum number of TFCl (field 2) combinations	512	
maxCPCHsets	Maximum number of CPCH sets per cell	16	
maxSIBperMsg	Maximum number of complete system information blocks per SYSTEM INFORMATION message	16	
maxSIB	Maximum number of references to other system information blocks.	32	
maxSIB-FACH	Maximum number of references to system information blocks on the FACH	8	
PhyCH information			
maxHSSCCHcodes	Maximum number of HSSCCH codes that can be assigned to a UE	4	REL-5
maxPCPCH-APsubCH	Maximum number of available sub-channels for AP signature on PCPCH	12	
maxPCPCH-CDsubCH	Maximum number of available sub-channels for CD signature on PCPCH	12	
maxPCPCH-APsig	Maximum number of available signatures for AP on PCPCH	16	
maxPCPCH-CDsig	Maximum number of available signatures for CD on PCPCH	16	
maxAC	Maximum number of access classes	16	

Constant	Explanation	Value	Version
maxASC	Maximum number of access service classes	8	
maxASCmap	Maximum number of access class to access service classes mappings	7	
maxASCpersist	Maximum number of access service classes for which persistence scaling factors are specified	6	
maxPRACH	Maximum number of PRACHs in a cell	16	
MaxPRACH_FPACH	Maximum number of PRACH / FPACH pairs in a cell (1.28 Mcps TDD)	8	REL-4
maxFACHPCH	Maximum number of FACHs and PCHs mapped onto one secondary CCPCHs	8	
maxRL	Maximum number of radio links	8	
maxSCCPCH	Maximum number of secondary CCPCHs per cell	16	
maxDPDCH-UL	Maximum number of DPDCHs per cell	6	
maxDPCH-DLchan	Maximum number of channelisation codes used for DL DPCH	8	
maxPUSCH	Maximum number of PUSCHs	(8)	
maxPDSCH	Maximum number of PDSCHs	8	
maxPDSCHcodes	Maximum number of codes for PDSCH	16	
maxPDSCH-TFCIgroups	Maximum number of TFCI groups for PDSCH	256	
maxPDSCHcodeGroups	Maximum number of code groups for PDSCH	256	
maxPCPCHs	Maximum number of PCPCH channels in a CPCH Set	64	
maxPCPCH-SF	Maximum number of available SFs on PCPCH	7	
maxTS	Maximum number of timeslots used in one direction (UL or DL)	14 (3.84 Mcps TDD) 6 (1.28 Mcps TDD)	REL-4
hiPUSCHidentities	Maximum number of PUSCH Identities	64	
hiPDSCHidentities	Maximum number of PDSCH Identities	64	
Measurement information			
maxTGPS	Maximum number of transmission gap pattern sequences	6	
maxAdditionalMeas	Maximum number of additional measurements for a given measurement identity	4	
maxMeasEvent	Maximum number of events that can be listed in measurement reporting criteria	8	
maxMeasParEvent	Maximum number of measurement parameters (e.g. thresholds) per event	2	
maxMeasIntervals	Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value	1	
maxCellMeas	Maximum number of cells to measure	32	
maxReportedGSMCells	Maximum number of GSM cells to be reported	6	
maxFreq	Maximum number of frequencies to measure	8	
maxSat	Maximum number of satellites to measure	16	
HiRM	Maximum number that could be set as rate matching attribute for a transport channel	256	
Frequency information			
maxFDDFreqList	Maximum number of FDD carrier frequencies to be stored in USIM	4	
maxTDDFreqList	Maximum number of TDD carrier frequencies to be stored in USIM	4	
maxFDDFreqCellList	Maximum number of neighbouring FDD cells to be stored in USIM	32	
maxTDDFreqCellList	Maximum number of neighbouring TDD cells to be stored in USIM	32	
maxGSMCellList	Maximum number of GSM cells to be stored in USIM	32	
Other information			
maxNumGSMFreqRanges	Maximum number of GSM Frequency Ranges to store	32	
maxNumFDDFreqs	Maximum number of FDD centre frequencies to	8	

Constant	Explanation	Value	Version
	store		
maxNumTDDFreqs	Maximum number of TDD centre frequencies to store	8	
maxNumCDMA200Freqs	Maximum number of CDMA2000 centre frequencies to store	8	

11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```

hipDSCHidentities          INTEGER ::= 64
hipUSCHidentities          INTEGER ::= 64
hiRM                         INTEGER ::= 256
maxAC                       INTEGER ::= 16
maxAdditionalMeas           INTEGER ::= 4
maxASC                      INTEGER ::= 8
maxASCmap                   INTEGER ::= 7
maxASCpersist              INTEGER ::= 6
maxCCTrCH                   INTEGER ::= 8
maxCellMeas                 INTEGER ::= 32
maxCellMeas-1              INTEGER ::= 31
maxCNdomains                INTEGER ::= 4
maxCPCHsets                 INTEGER ::= 16
maxDPCH-DLchan             INTEGER ::= 8
maxDPDCH-UL                 INTEGER ::= 6
maxDRACclasses              INTEGER ::= 8
maxFACHPCH                  INTEGER ::= 8
maxFreq                     INTEGER ::= 8
maxFreqBandsFDD             INTEGER ::= 8
maxFreqBandsTDD             INTEGER ::= 4
maxFreqBandsGSM            INTEGER ::= 16
maxHPProcesses              INTEGER ::= 8
maxHSDSCHTBIndex           INTEGER ::= 64
maxHSDSCHTBIndex-tdd384    INTEGER ::= 512
maxHSSCCHs                  INTEGER ::= 4
maxInterSysMessages        INTEGER ::= 4
maxLoCHperRLC               INTEGER ::= 2
maxMAC-d-PDU-sizes         INTEGER ::= 168
maxMeasEvent                INTEGER ::= 8

```

CHANGE REQUEST

25.331 CR 1877 # rev 1 # Current version: 5.3.0

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Network Assisted Cell Change from UTRAN to GERAN		
Source:	# TSG-RAN WG2		
Work item code:	# TEI5	Date:	# 17/02/2003
Category:	# B	Release:	# Rel-5
	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 be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	# To reduce the service interruption caused during cell re-selection from UTRAN to GERAN. This is enabled by providing the GERAN target cell SI/PSI to the UE before the cell change to GERAN.
Summary of change:	# This provides a change in line with NACC in GERAN, and is used in order to speed up the transition from CELL_DCH in UTRAN to GERAN. <ol style="list-style-type: none"> 1) THE UE behaviour is specified such that the support of NACC is optional in the UE. 2) A GERAN PSI/SI container is added to the CELL CHANGE ORDER FROM UTRAN message in order to provide the UE with the SI/PSI of the target GERAN cell. 3) A support indication for NACC is included in the UE CAPABILITY INFORMATION message. <p style="margin-left: 20px;"><u>Revision 1</u> Alignment of IE naming in procedure text to tabular format.</p>
Consequences if not approved:	# In today's GPRS networks (without NACC), cell re-selection causes an interruption in service in the magnitude of 4 – 8 seconds, which has an impact on the user experience. In mixed UMTS and GPRS networks, service interruption of the same magnitude will occur when UEs re-select from UTRAN to GERAN. <p style="margin-left: 20px;">If the relevant GERAN PSI/SI is not added to the CELL CHANGE ORDER FROM UTRAN message, this will mean that the service interruption will not be reduced. The consequence of this is that TCP applications may time-out at cell change and suffer from the slow-start mechanism. Additionally some streaming applications will stall at cell change due to client buffer depletion. This will cause</p>

an unacceptable user experience.

If the support of NACC is not signalled in the UE CAPABILITY INFORMATION message, this will mean that a UTRAN supporting NACC will send the PSI/SI every time in the CELL CHANGE ORDER FROM UTRAN message. This will cause unnecessary load on the downlink, if the UE does not support the feature.

Clauses affected: ☞ 3.2; 8.3.11; 10.2.5; 10.3.10; 10.3.3.41; 11.2; 11.4

Other specs affected:	☞	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td>X</td><td></td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td><td></td></tr></table>	Y	N	X			X		X		Other core specifications	☞ 25.306v5.3.0
	Y	N											
	X												
	X												
	X												
		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/specs/CR.htm>. Below is a brief summary:

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

3.2 Abbreviations

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

ACK	Acknowledgement
AICH	Acquisition Indicator CHannel
AM	Acknowledged Mode
AS	Access Stratum
ASC	Access Service Class
ASN.1	Abstract Syntax Notation.1
BCCH	Broadcast Control Channel
BCFE	Broadcast Control Functional Entity
BER	Bit Error Rate
BLER	Block Error Rate
BSS	Base Station Sub-system
CCCH	Common Control Channel
CCPCH	Common Control Physical CHannel
CH	Conditional on history
CM	Connection Management
CN	Core Network
CPCH	Common Packet CHannel
C-RNTI	Cell RNTI
CTCH	Common Traffic CHannel
CTFC	Calculated Transport Format Combination
CV	Conditional on value
DCA	Dynamic Channel Allocation
DCCH	Dedicated Control Channel
DCFE	Dedicated Control Functional Entity
DCH	Dedicated Channel
DC-SAP	Dedicated Control SAP
DGPS	Differential Global Positioning System
DL	Downlink
DRAC	Dynamic Resource Allocation Control
DSCH	Downlink Shared Channel
DTCH	Dedicated Traffic Channel
FACH	Forward Access Channel
FDD	Frequency Division Duplex
FFS	For Further Study
GC-SAP	General Control SAP
HCS	Hierarchical Cell Structure
HFN	Hyper Frame Number
H-RNTI	HS-DSCH RNTI
HS-DSCH	High Speed Downlink Shared Channel
ID	Identifier
IDNNS	Intra Domain NAS Node Selector
IE	Information element
IETF	Internet Engineering Task Force
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
ISCP	Interference on Signal Code Power
L1	Layer 1
L2	Layer 2
L3	Layer 3
LAI	Location Area Identity
MAC	Media Access Control
MCC	Mobile Country Code
MD	Mandatory default
MM	Mobility Management
MNC	Mobile Network Code
MP	Mandatory present

NACC	Network Assisted Cell Change
NAS	Non Access Stratum
Nt-SAP	Notification SAP
NW	Network
OP	Optional
PCCH	Paging Control Channel
PCH	Paging Channel
PDCP	Packet Data Convergence Protocol
PDSCH	Physical Downlink Shared Channel
PDU	Protocol Data Unit
PLMN	Public Land Mobile Network
PNFE	Paging and Notification Control Functional Entity
PRACH	Physical Random Access CHannel
PSI	Packet System Information
P-TMSI	Packet Temporary Mobile Subscriber Identity
PUSCH	Physical Uplink Shared Channel
QoS	Quality of Service
RAB	Radio access bearer
RACH	Random Access CHannel
RAI	Routing Area Identity
RAT	Radio Access Technology
RB	Radio Bearer
RFE	Routing Functional Entity
RL	Radio Link
RLC	Radio Link Control
RNC	Radio Network Controller
RNTI	Radio Network Temporary Identifier
RRC	Radio Resource Control
RSCP	Received Signal Code Power
RSSI	Received Signal Strength Indicator
SAP	Service Access Point
SCFE	Shared Control Function Entity
SCTD	Space Code Transmit Diversity
SF	Spreading Factor
SHCCH	Shared Control Channel
SI	System Information
SIR	Signal to Interference Ratio
S-RNTI	SRNC - RNTI
SSDT	Site Selection Diversity Transmission
TDD	Time Division Duplex
TF	Transport Format
TFCS	Transport Format Combination Set
TFS	Transport Format Set
TM	Transparent Mode
TME	Transfer Mode Entity
TMSI	Temporary Mobile Subscriber Identity
Tr	Transparent
Tx	Transmission
UE	User Equipment
UL	Uplink
UM	Unacknowledged Mode
URA	UTRAN Registration Area
U-RNTI	UTRAN-RNTI
USCH	Uplink Shared Channel
UTRAN	Universal Terrestrial Radio Access Network

8.3.11 Inter-RAT cell change order from UTRAN

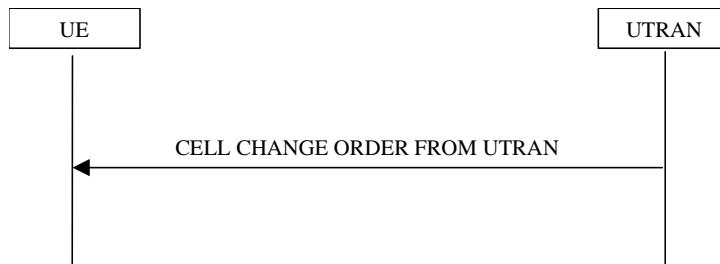


Figure 8.3.11-1: Inter-RAT cell change order from UTRAN

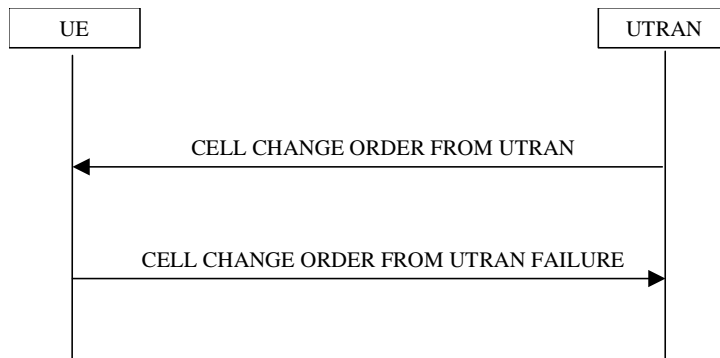


Figure 8.3.11-2: Inter-RAT cell change order from UTRAN, failure case

8.3.11.1 General

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain.

8.3.11.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

8.3.11.3 Reception of an CELL CHANGE ORDER FROM UTRAN message by the UE

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

The UE shall:

- 1> start timer T309; and
- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and
- 1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:
 - 2> retrieve it from the target cell as specified in [43];
 - 2> act upon IE "NC mode" as specified in [43].

- 1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:
 - 2> ignore the contents of the IE "RAB Information List".

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

- 1> if the UE supports UTRAN to GERAN Network Assisted Cell Change, the IE "Geran-System Information" is present and the UE is in CELL_DCH state:
 - 2> if according to [44] the IE "GERAN System Information" includes a correct and consistent set of SI or PSI messages:
 - 3> use this information as the system information to begin access on the target GERAN cell.
 - 2> otherwise:
 - 3> ignore the IE "GERAN System Information" and continue the Cell Change Order procedure.

8.3.11.4 Successful completion of the cell change order

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

- 1> stop timer T309;
- 1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

- 1> release the radio connection; and
- 1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

8.3.11.5 Expiry of timer T309 or UE fails to complete requested cell change order

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

- 1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:
 - 2> for HS-DSCH remove existing HS-PDSCH configurations;
 - 2> otherwise revert back to the UTRA configuration;
 - 2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;
- 2> if the UE does not succeed in establishing the UTRA physical channel(s):
 - 3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";
 - 3> when the cell update procedure has completed successfully:
 - 4> proceed as below.

- 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
- 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.
- 1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:
 - 2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;
 - 2> if the UE is unable to return to this cell:
 - 3> select a suitable UTRA cell according to [4];
 - 3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.
 - 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
 - 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
 - 3> the procedure ends.

8.3.11.6 Unsupported configuration in CELL CHANGE ORDER FROM UTRAN message

If the UTRAN instructs the UE to perform a non-supported cell change order scenario or to use a non-supported configuration, the UE shall:

- 1> transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message, setting the information elements as specified below:
 - 2> include the IE "RRC transaction identifier"; and
 - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 2> clear that entry;
 - 2> set the IE "Inter-RAT change failure" to "configuration unacceptable";
 - 2> when the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:

- 3> resume normal operation as if the CELL CHANGE ORDER FROM UTRAN message has not been received;
- 3> and the procedure ends.

8.3.11.7 Invalid CELL CHANGE ORDER FROM UTRAN message

If the CELL CHANGE ORDER FROM UTRAN message contains a protocol error causing the variable **PROTOCOL_ERROR_REJECT** to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> set the IE "RRC transaction identifier" in the CELL CHANGE ORDER FROM UTRAN FAILURE message to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Rejected transactions" in the variable **TRANSACTIONS**; and
- 1> clear that entry;
- 1> set the IE "Inter-RAT change failure" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with contents set to the value of the variable **PROTOCOL_ERROR_INFORMATION**;
- 1> transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message on the uplink DCCH using AM RLC;
- 1> when the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:
 - 2> resume normal operation as if the invalid CELL CHANGE ORDER FROM UTRAN message has not been received;
 - 2> and the procedure ends.

10.2.5 CELL CHANGE ORDER FROM UTRAN

This message is used to order a cell change from UTRA to another radio access technology, e.g., GSM.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE information elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
RB Information elements					
RAB information list	OP	1 to <maxRAB setup>		This IE should not be included in this version of the protocol.	
>RAB info	MP		RAB info 10.3.4.8		
Other information elements					
Target cell description	MP				
>CHOICE <i>Radio Access</i>	MP			Two spare values	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
<i>Technology</i>				are needed.	
>>GSM					
>>>BSIC	MP		BSIC 10.3.8.2		
>>>Band Indicator	MP		Enumerated (DCS 1800 band used, PCS 1900 band used)	Indicates how to interpret the BCCH ARFCN	
>>>BCCH ARFCN	MP		Integer (0..1023)	[45]	
>>>NC mode	OP		Bit string(3)	Includes bits b1-b3 of the NC mode IE specified in [43]. b1 is the least significant bit. NOTE: The Bit string should be extended to 4 bits in a later version of the message	
>>>CHOICE GERAN System Info type	OP				REL-5
>>>>SI			GERAN system information 10.3.8.4f	SI3, SI13, SI1 [44]	REL-5
>>>>PSI			GERAN system information 10.3.8.4f	PSI1, PSI2, PSI4 [44]	REL-5
>>IS-2000					

10.3.8.4f GERAN system information

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>>> GERAN System Info	MP	1 to <maxGERAN SI>			REL-5
>>>> GERAN system info block	MP		Octet string(1..23)	The first octet contains octet 1 of the GERAN system information block, the second octet contains octet 2 of the GERAN system information block and so on.	REL-5

10.3.10 Multiplicity values and type constraint values

The following table includes constants that are either used as multi bounds (name starting with "max") or as high or low value in a type specification (name starting with "lo" or "hi"). Constants are specified only for values appearing more than once in the RRC specification. In case a constant is related to one or more other constants, an expression is included in the "value" column instead of the actual value.

Constant	Explanation	Value	Version
CN information			

Constant	Explanation	Value	Version
maxCNdomains	Maximum number of CN domains	4	
UTRAN mobility information			
maxRAT	Maximum number of Radio Access Technologies	maxOtherRAT + 1	
maxOtherRAT	Maximum number of other Radio Access Technologies	15	
maxURA	Maximum number of URAs in a cell	8	
maxInterSysMessages	Maximum number of Inter System Messages	4	
maxRABsetup	Maximum number of RABs to be established	16	
UE information			
maxtransactions	Maximum number of parallel RRC transactions in downlink	25	
maxPDCPalgoType	Maximum number of PDCP algorithm types	8	
maxDRACclasses	Maximum number of UE classes which would require different DRAC parameters	8	
maxFreqBandsFDD	Maximum number of frequency bands supported by the UE as defined in [21]	8	
maxFreqBandsTDD	Maximum number of frequency bands supported by the UE as defined in [22]	4	
maxFreqBandsGSM	Maximum number of frequency bands supported by the UE as defined in [45]	16	
maxPage1	Number of UEs paged in the Paging Type 1 message	8	
maxSystemCapability	Maximum number of system specific capabilities that can be requested in one message.	16	
RB information			
maxPredefConfig	Maximum number of predefined configurations	16	
maxRB	Maximum number of RBs	32	
maxSRBsetup	Maximum number of signalling RBs to be established	8	
maxRBperRAB	Maximum number of RBs per RAB	8	
maxRBallRABs	Maximum number of non signalling RBs	27	
maxRBMuxOptions	Maximum number of RB multiplexing options	8	
maxLoCHperRLC	Maximum number of logical channels per RLC entity	2	
MaxROHC-PacketSizes	Maximum number of packet sizes that are allowed to be produced by ROHC.	16	
MaxROHC-Profiles	Maximum number of profiles supported by ROHC on a given RB.	8	
maxRFC 3095-CID	Maximum number of available CID values per radio bearer	16384	REL-5
TrCH information			
MaxHProcesses	Maximum number of H-ARQ processes	[6]	REL-5
MaxHSDSCH_TB_index	Maximum number of TB set size configurations for the HS-DSCH.	64 (FDD and 1.28 MCPS TDD); 512 (3.84 Mcps TDD)	REL-5
maxMACdPDUSizes	Maximum number of MAC-d PDU sizes per Size index identifier (SID) permitted for MAC-hs	[16]	REL-5
maxTrCH	Maximum number of transport channels used in one direction (UL or DL)	32	
maxTrCHpreconf	Maximum number of preconfigured Transport channels, per direction	16	
maxCCTrCH	Maximum number of CCTrCHs	8	
maxTF	Maximum number of different transport formats that can be included in the Transport format set for one transport channel	32	
maxTF-CPCH	Maximum number of TFs in a CPCH set	16	
maxTFC	Maximum number of Transport Format Combinations	1024	
maxTFCsub	Maximum number of Transport Format Combinations Subset	1024	
maxTFCI-1-Combs	Maximum number of TF CI (field 1) combinations	512	
maxTFCI-2-Combs	Maximum number of TF CI (field 2) combinations	512	
maxCPCHsets	Maximum number of CPCH sets per cell	16	

Constant	Explanation	Value	Version
maxSIBperMsg	Maximum number of complete system information blocks per SYSTEM INFORMATION message	16	
maxSIB	Maximum number of references to other system information blocks.	32	
maxSIB-FACH	Maximum number of references to system information blocks on the FACH	8	
PhyCH information			
maxHSSCCHcodes	Maximum number of HSSCCH codes that can be assigned to a UE	[4]	REL-5
maxPCPCH-APsubCH	Maximum number of available sub-channels for AP signature on PCPCH	12	
maxPCPCH-CDsubCH	Maximum number of available sub-channels for CD signature on PCPCH	12	
maxPCPCH-APsig	Maximum number of available signatures for AP on PCPCH	16	
maxPCPCH-CDsig	Maximum number of available signatures for CD on PCPCH	16	
maxAC	Maximum number of access classes	16	
maxASC	Maximum number of access service classes	8	
maxASCmap	Maximum number of access class to access service classes mappings	7	
maxASCpersist	Maximum number of access service classes for which persistence scaling factors are specified	6	
maxPRACH	Maximum number of PRACHs in a cell	16	
MaxPRACH_FPACH	Maximum number of PRACH / FPACH pairs in a cell (1.28 Mcps TDD)	8	REL-4
maxFACHPCH	Maximum number of FACHs and PCHs mapped onto one secondary CCPCHs	8	
maxRL	Maximum number of radio links	8	
maxSCCPCH	Maximum number of secondary CCPCHs per cell	16	
maxDPDCH-UL	Maximum number of DPDCHs per cell	6	
maxDPCH-DLchan	Maximum number of channelisation codes used for DL DPCH	8	
maxPUSCH	Maximum number of PUSCHs	(8)	
maxPDSCH	Maximum number of PDSCHs	8	
maxPDSCHcodes	Maximum number of codes for PDSCH	16	
maxPDSCH-TFCIgroups	Maximum number of TFCI groups for PDSCH	256	
maxPDSCHcodeGroups	Maximum number of code groups for PDSCH	256	
maxPCPCHs	Maximum number of PCPCH channels in a CPCH Set	64	
maxPCPCH-SF	Maximum number of available SFs on PCPCH	7	
maxTS	Maximum number of timeslots used in one direction (UL or DL)	14 (3.84 Mcps TDD) 6 (1.28 Mcps TDD)	REL-4
hiPUSCHidentities	Maximum number of PUSCH Identities	64	
hiPDSCHidentities	Maximum number of PDSCH Identities	64	
Measurement information			
maxTGPS	Maximum number of transmission gap pattern sequences	6	
maxAdditionalMeas	Maximum number of additional measurements for a given measurement identity	4	
maxMeasEvent	Maximum number of events that can be listed in measurement reporting criteria	8	
maxMeasParEvent	Maximum number of measurement parameters (e.g. thresholds) per event	2	
maxMeasIntervals	Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value	1	
maxCellMeas	Maximum number of cells to measure	32	
maxReportedGSMCells	Maximum number of GSM cells to be reported	6	
maxFreq	Maximum number of frequencies to measure	8	

Constant	Explanation	Value	Version
maxSat	Maximum number of satellites to measure	16	
HiRM	Maximum number that could be set as rate matching attribute for a transport channel	256	
Frequency information			
maxFDDFreqList	Maximum number of FDD carrier frequencies to be stored in USIM	4	
maxTDDFreqList	Maximum number of TDD carrier frequencies to be stored in USIM	4	
maxFDDFreqCellList	Maximum number of neighbouring FDD cells to be stored in USIM	32	
maxTDDFreqCellList	Maximum number of neighbouring TDD cells to be stored in USIM	32	
maxGSMCellList	Maximum number of GSM cells to be stored in USIM	32	
Other information			
maxGERANSI	Maximum number of GERAN SI blocks that can be provided as part of NACC information	8	REL-5
maxNumGSMFreqRanges	Maximum number of GSM Frequency Ranges to store	32	
maxNumFDDFreqs	Maximum number of FDD centre frequencies to store	8	
maxNumTDDFreqs	Maximum number of TDD centre frequencies to store	8	
maxNumCDMA200Freqs	Maximum number of CDMA2000 centre frequencies to store	8	

10.3.3.41 UE multi-mode/multi-RAT capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
Multi-RAT capability					
Support of GSM	MP		Boolean		
Support of multi-carrier	MP		Boolean		
Multi-mode capability	MP		Enumerated (TDD, FDD, FDD/TDD)		
Support of UTRAN to GERAN NACC	MP		Boolean		REL-5

11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

11.2 PDU definitions

```
-- *****
--
-- CELL CHANGE ORDER FROM UTRAN
```

```

--
-- *****
CellChangeOrderFromUTRAN ::= CHOICE {
  r3 SEQUENCE {
    cellChangeOrderFromUTRAN-IEs CellChangeOrderFromUTRAN-r3-IEs,
    v5xyNonCriticalExtensions SEQUENCE {
      cellChangeOrderFromUTRAN-v5xyext CellChangeOrderFromUTRAN-v5xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions SEQUENCE {}
  }
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy IntegrityProtectionModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  -- the IE rab-InformationList is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored. The IE may be used in a later
  -- version of the protocol and hence it is not changed into a dummy
  rab-InformationList RAB-InformationList OPTIONAL,
  interRAT-TargetCellDescription InterRAT-TargetCellDescription
}

CellChangeOrderFromUTRAN-v5xyext-IEs ::= SEQUENCE {
  geran-SystemInfoType CHOICE {
    sI GERANSystemInformation,
    pSI GERANSystemInformation
  } OPTIONAL
}

InterRAT-TargetCellDescription ::= SEQUENCE {
  technologySpecificInfo CHOICE {
    gsm SEQUENCE {
      bsic BSIC,
      frequency-band Frequency-Band,
      bcch-ARFCN BCCH-ARFCN,
      ncMode NC-Mode OPTIONAL
    },
    is-2000 NULL,
    spare2 NULL,
    spare1 NULL
  }
}

-- *****
--
-- INTER RAT HANDOVER INFO
--
-- *****

InterRATHandoverInfo ::= SEQUENCE {
  -- This structure is defined for historical reasons, backward compatibility with 04.18
  predefinedConfigStatusList CHOICE {
    absent NULL,
    present PredefinedConfigStatusList
  },
  uE-SecurityInformation CHOICE {
    absent NULL,
    present UE-SecurityInformation
  },
  ue-CapabilityContainer CHOICE {
    absent NULL,
    present -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
    OCTET STRING (SIZE (0..63))
  },
  -- Non critical extensions
  v390NonCriticalExtensions CHOICE {
    absent NULL,
    present SEQUENCE {

```



```

interRATHandoverInfo-v390ext    InterRATHandoverInfo-v390ext-IEs,
v3a0NonCriticalExtensions      SEQUENCE {
    interRATHandoverInfo-v3a0ext    InterRATHandoverInfo-v3a0ext,
    laterNonCriticalExtensions      SEQUENCE {
        interRATHandoverInfo-v3d0ext    InterRATHandoverInfo-v3d0ext-IEs,
        -- Container for additional R99 extensions
        interRATHandoverInfo-r3-add-ext    BIT STRING    OPTIONAL,
        v4xyNonCriticalExtensions      SEQUENCE {
            interRATHandoverInfo-v4xyext    InterRATHandoverInfo-v4xyext-IEs,
            -- Reserved for future non critical extension
            v5xyNonCriticalExtensions      SEQUENCE {
                interRATHandoverInfo-v5xyext    InterRATHandoverInfo-v5xyext-IEs,
                nonCriticalExtensions          SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
}
}
}

InterRATHandoverInfo-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v380ext    UE-RadioAccessCapability-v380ext    OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext      DL-PhysChCapabilityFDD-v380ext
}

InterRATHandoverInfo-v3a0ext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    OPTIONAL
}

InterRATHandoverInfo-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ueSpecificBehaviourInformationInterRAT    UESpecificBehaviourInformationInterRAT
    OPTIONAL
}

InterRATHandoverInfo-v4xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

InterRATHandoverInfo-v5xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v5xyext    UE-RadioAccessCapability-v5xyext
}

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    startList                    STARTList,
    ue-RadioAccessCapability      UE-RadioAccessCapability    OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList    OPTIONAL,
    -- Non critical extensions
    v370NonCriticalExtensions      SEQUENCE {
        rrcConnectionSetupComplete-v370ext    RRCConnectionSetupComplete-v370ext,
        v380NonCriticalExtensions      SEQUENCE {
            rrcConnectionSetupComplete-v380ext    RRCConnectionSetupComplete-v380ext-IEs,
            -- Reserved for future non critical extension
            v3a0NonCriticalExtensions      SEQUENCE {
                rrcConnectionSetupComplete-v3a0ext    RRCConnectionSetupComplete-v3a0ext,
                laterNonCriticalExtensions      SEQUENCE {
                    -- Container for additional R99 extensions
                    rrcConnectionSetupComplete-r3-add-ext    BIT STRING    OPTIONAL,
                    v4xyNonCriticalExtensions      SEQUENCE {
                        rrcConnectionSetupComplete-v4xyext    RRCConnectionSetupComplete-v4xyext-IEs,
                        nonCriticalExtensions          SEQUENCE {} OPTIONAL
                    }
                }
            }
        }
    }
}

```

```

v5xyNonCriticalExtensions SEQUENCE {
  rrcConnectionSetupComplete-v5xyext RRCConnectionSetupComplete-v5xyext-IEs,
  nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
}

```

```

RRCConnectionSetupComplete-v5xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v5xyext UE-RadioAccessCapability-v5xyext
}

```

```

-- *****
--
-- UE CAPABILITY INFORMATION
--
-- *****

```

```

UECapabilityInformation ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier OPTIONAL,
  ue-RadioAccessCapability UE-RadioAccessCapability OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList
OPTIONAL,
  v370NonCriticalExtensions SEQUENCE {
    ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
    v380NonCriticalExtensions SEQUENCE {
      ueCapabilityInformation-v380ext UECapabilityInformation-v380ext-IEs,
      v3a0NonCriticalExtensions SEQUENCE {
        ueCapabilityInformation-v3a0ext UECapabilityInformation-v3a0ext,
        laterNonCriticalExtensions SEQUENCE {
          -- Container for additional R99 extensions
          ueCapabilityInformation-r3-add-ext BIT STRING OPTIONAL,
          -- Reserved for future non critical extension
          v4xyNonCriticalExtensions SEQUENCE {
            ueCapabilityInformation-v4xyext UECapabilityInformation-v4xyext,
            v5xyNonCriticalExtensions SEQUENCE {
              ueCapabilityInformation-v5xyext UECapabilityInformation-v5xyext,
              nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

```

```

UECapabilityInformation-v370ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext OPTIONAL
}

```

```

UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext
OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext
}

```

```

UECapabilityInformation-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
}

```

```

UECapabilityInformation-v4xyext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-r4-ext UE-RadioAccessCapability-r4-ext OPTIONAL,
  ue-RadioAccessCapability-v4xyext UE-RadioAccessCapability-v4xyext
}

```

```

UECapabilityInformation-v5xyext ::= SEQUENCE {

```

```

-- User equipment IEs
ue-RadioAccessCapability-r5-ext      UE-RadioAccessCapability-r5-ext      OPTIONAL,
ue-RadioAccessCapability-v5xyext     UE-RadioAccessCapability-v5xyext
}

-- *****
--
-- USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
-- *****

MessageAuthenticationCode ::=      BIT STRING (SIZE (32))

MinimumSF-DL ::=                    ENUMERATED {
                                     sf1, sf16 }

MinimumSF-UL ::=                    ENUMERATED {
                                     sf1, sf2, sf4, sf8, sf16 }

MultiModeCapability ::=            ENUMERATED {
                                     tdd, fdd, fdd-tdd }

MultiRAT-Capability ::=            SEQUENCE {
    supportOfGSM                    BOOLEAN,
    supportOfMulticarrier            BOOLEAN
}

UE-MultiModeRAT-Capability-v5xyext ::= SEQUENCE {
    supportOfUtranToGeranNacc        BOOLEAN,
}

UE-RadioAccessCapability-r5-ext ::= SEQUENCE {
    dl-CapabilityWithSimultaneousHS-DSCHConfig DL-CapabilityWithSimultaneousHS-DSCHConfig
    OPTIONAL,
    pdcp-Capability-r5-ext            PDCP-Capability-r5-ext,
    rlc-Capability-r5-ext            RLC-Capability-r5-ext,
    physicalChannelCapability        PhysicalChannelCapability-hspdsch-r5
}

UE-RadioAccessCapability-v5xyext ::= SEQUENCE {
    ue-MultiModeRAT-Capability-v5xyext UE-MultiModeRAT-Capability-v5xyext
}

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

Geran-systemInformation ::= SEQUENCE (SIZE (1..maxGERANSI)) OF Geran-SystemInfoBlock

Geran-SystemInfoBlock      OCTET STRING (SIZE (1..23))

-- *****
--
-- SRNC Relocation information
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3                        SEQUENCE {
        sRNC-RelocationInfo-r3      SRNC-RelocationInfo-r3-IEs,
        v380NonCriticalExtensions    SEQUENCE {
            sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
            -- Reserved for future non critical extension
            v390NonCriticalExtensions SEQUENCE {
                sRNC-RelocationInfo-v390ext SRNC-RelocationInfo-v390ext-IEs,
                v3a0NonCriticalExtensions  SEQUENCE {
                    sRNC-RelocationInfo-v3a0ext SRNC-RelocationInfo-v3a0ext-IEs,
                    v3b0NonCriticalExtensions SEQUENCE {

```

```

        sRNC-RelocationInfo-v3b0ext          SRNC-RelocationInfo-v3b0ext-IEs,
        v3c0NonCriticalExtensions            SEQUENCE {
            sRNC-RelocationInfo-v3c0ext      SRNC-RelocationInfo-v3c0ext-IEs,
            laterNonCriticalExtensions        SEQUENCE {
                sRNC-RelocationInfo-v3d0ext    SRNC-RelocationInfo-v3d0ext-
IEs,
                -- Container for additional R99 extensions
                sRNC-RelocationInfo-r3-add-ext BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions      SEQUENCE {
                    sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-
v4xyext-IEs,
                    -- Reserved for future non critical extension
                    v5xyNonCriticalExtensions SEQUENCE {
                        sRNC-RelocationInfo-v5xyext SRNC-RelocationInfo-
v5xyext-IEs,
                        nonCriticalExtensions SEQUENCE {} OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3 CHOICE {
        r4 SEQUENCE {
            sRNC-RelocationInfo-r4 SRNC-RelocationInfo-r4-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        },
        criticalExtensions SEQUENCE {}
    }
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
    -- Non-RRC IEs
    stateOfRRC StateOfRRC,
    stateOfRRC-Procedure StateOfRRC-Procedure,
    -- Ciphering related information IEs
    -- If the extension v380 is included use the extension for the ciphering status per CN domain
    cipheringStatus CipheringStatus,
    calculationTimeForCiphering CalculationTimeForCiphering OPTIONAL,
    -- The order of occurrence in the IE cipheringInfoPerRB-List is the
    -- same as the RBs in the IE "Signalling RB information list" and in the
    -- IE "RAB information list". The signalling RBs are supposed to be listed
    -- first. Only UM and AM RBs that are ciphered are listed here
    cipheringInfoPerRB-List CipheringInfoPerRB-List OPTIONAL,
    count-C-List COUNT-C-List OPTIONAL,
    integrityProtectionStatus IntegrityProtectionStatus,
    -- The order of occurrence in the IE srb-SpecificIntegrityProtInfo is the
    -- same as the SRBs in the IE "Signalling RB information list"
    srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams ImplementationSpecificParams OPTIONAL,
    -- User equipment IEs
    u-RNTI U-RNTI,
    c-RNTI C-RNTI OPTIONAL,
    ue-RadioAccessCapability UE-RadioAccessCapability,
    ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity URA-Identity OPTIONAL,
    -- Core network IEs
    cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
    cn-DomainInformationList CN-DomainInformationList OPTIONAL,
    -- Measurement IEs
    ongoingMeasRepList OngoingMeasRepList OPTIONAL,
    -- Radio bearer IEs
    predefinedConfigStatusList PredefinedConfigStatusList,
    srb-InformationList SRB-InformationSetupList,
    rab-InformationList RAB-InformationSetupList OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
    ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            cpch-SetID CPCH-SetID OPTIONAL,
            transChDRAC-Info DRAC-StaticInformationList OPTIONAL
        }
    }
}

```

```

    },
    tdd                                NULL
  },
  dl-CommonTransChInfo                DL-CommonTransChInfo                OPTIONAL,
  dl-TransChInfoList                  DL-AddReconfTransChInfoList        OPTIONAL,
-- Measurement report
  measurementReport                    MeasurementReport                    OPTIONAL
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
  -- Ciphering related information IEs
  cn-DomainIdentity                    CN-DomainIdentity,
  cipheringStatusList                  CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
  cn-DomainInformationList-v390ext     CN-DomainInformationList-v390ext     OPTIONAL,
  ue-RadioAccessCapability-v370ext     UE-RadioAccessCapability-v370ext     OPTIONAL,
  ue-RadioAccessCapability-v380ext     UE-RadioAccessCapability-v380ext     OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext       DL-PhysChCapabilityFDD-v380ext,
  failureCauseWithProtErr              FailureCauseWithProtErr              OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
  -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
  startValueForCIphering-v3a0ext       START-Value,
  cipheringInfoForSRB1-v3a0ext         CipheringInfoForSRB1-v3a0ext,
  ue-RadioAccessCapability-v3a0ext     UE-RadioAccessCapability-v3a0ext     OPTIONAL
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
  cn-DomainIdentity                    CN-DomainIdentity,
  -- the IE startValueForCiphering-v3b0ext contains the start values for each CN Domain. The
  -- value of start indicated by the IE startValueForCiphering-v3a0ext should be set to the
  -- same value as the start-Value for the corresponding cn-DomainIdentity in the IE
  -- startValueForCiphering-v3b0ext
  startValueForCiphering-v3b0ext       STARTList2                            OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
  -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
  rb-IdentityForHOMessage               RB-Identity                            OPTIONAL
}

SRNC-RelocationInfo-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ueSpecificBehaviourInformationIdle    UESpecificBehaviourInformationIdle    OPTIONAL,
  ueSpecificBehaviourInformationInterRAT UESpecificBehaviourInformationInterRAT
  OPTIONAL
}

STARTList2 ::=
  SEQUENCE (SIZE (2..maxCNdomains)) OF
  STARTSingle

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
  ue-RadioAccessCapability-v4xyext     UE-RadioAccessCapability-v4xyext
}

SRNC-RelocationInfo-v5xyext-IEs ::= SEQUENCE {
  ue-RadioAccessCapability-v5xyext     UE-RadioAccessCapability-v5xyext
}

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
  dl-UM-SN                              BIT STRING (SIZE (7))
}

CipheringStatusList ::=
  SEQUENCE (SIZE (1..maxCNdomains)) OF
  CipheringStatusCNdomain

CipheringStatusCNdomain ::=
  SEQUENCE {
  cn-DomainIdentity                    CN-DomainIdentity,
  cipheringStatus                      CipheringStatus
}

```

```

SRNC-RelocationInfo-r4-IEs ::=          SEQUENCE {
  -- Non-RRC IEs
  -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
  rb-IdentityForHOMessage                RB-Identity                                OPTIONAL,
  stateOfRRC                             StateOfRRC,
  stateOfRRC-Procedure                   StateOfRRC-Procedure,
  -- Ciphering related information IEs
  cipheringStatusList                   CipheringStatusList-r4,
  latestConfiguredCN-Domain              CN-DomainIdentity,
  calculationTimeForCiphering            CalculationTimeForCiphering                OPTIONAL,
  count-C-List                           COUNT-C-List                              OPTIONAL,
  cipheringInfoPerRB-List                 CipheringInfoPerRB-List-r4                OPTIONAL,
  -- Integrity protection related information IEs
  integrityProtectionStatus              IntegrityProtectionStatus,
  srb-SpecificIntegrityProtInfo          SRB-SpecificIntegrityProtInfoList,
  implementationSpecificParams           ImplementationSpecificParams              OPTIONAL,
  -- User equipment IEs
  u-RNTI                                  U-RNTI,
  c-RNTI                                  C-RNTI                                    OPTIONAL,
  ue-RadioAccessCapability                UE-RadioAccessCapability-r4,
  ue-RadioAccessCapability-ext            UE-RadioAccessCapabBandFDDList          OPTIONAL,
  ue-Positioning-LastKnownPos            UE-Positioning-LastKnownPos              OPTIONAL,
  uESpecificBehaviourInformationlidle     UESpecificBehaviourInformationlidle      OPTIONAL,
  uESpecificBehaviourInformationlinterRAT UESpecificBehaviourInformationlinterRAT
OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability                InterRAT-UE-RadioAccessCapabilityList    OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                            URA-Identity                            OPTIONAL,
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo           NAS-SystemInformationGSM-MAP,
  cn-DomainInformationList                CN-DomainInformationListFull             OPTIONAL,
  -- Measurement IEs
  ongoingMeasRepList                     OngoingMeasRepList-r4                   OPTIONAL,
  -- Radio bearer IEs
  predefinedConfigStatusList              PredefinedConfigStatusList,
  srb-InformationList                     SRB-InformationSetupList,
  rab-InformationList                     RAB-InformationSetupList-r4              OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo                   UL-CommonTransChInfo-r4                  OPTIONAL,
  ul-TransChInfoList                     UL-AddReconfTransChInfoList             OPTIONAL,
  modeSpecificInfo                        CHOICE {
    fdd                                    SEQUENCE {
      cpch-SetID                           CPCH-SetID                              OPTIONAL,
      transChDRAC-Info                     DRAC-StaticInformationList              OPTIONAL
    },
    tdd                                    NULL
  }
  dl-CommonTransChInfo                   DL-CommonTransChInfo-r4                  OPTIONAL,
  dl-TransChInfoList                     DL-AddReconfTransChInfoList-r4          OPTIONAL,
  -- Measurement report
  measurementReport                       MeasurementReport                          OPTIONAL,
  failureCause                            FailureCauseWithProtErr                   OPTIONAL
}

```

11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```

hiPDSCHidentities      INTEGER ::= 64
hiPUSCHidentities      INTEGER ::= 64
hiRM                    INTEGER ::= 256
maxAC                   INTEGER ::= 16
maxAdditionalMeas       INTEGER ::= 4
maxASC                  INTEGER ::= 8
maxASCmap               INTEGER ::= 7
maxASCpersist          INTEGER ::= 6
maxCCTrCH               INTEGER ::= 8
maxCellMeas             INTEGER ::= 32
maxCellMeas-1          INTEGER ::= 31
maxCNdomains            INTEGER ::= 4
maxCPCHsets             INTEGER ::= 16

```

```

maxDPCH-DLchan          INTEGER ::= 8
maxDPDCH-UL            INTEGER ::= 6
maxDRACclasses         INTEGER ::= 8
maxFACHPCH             INTEGER ::= 8
maxFreq                INTEGER ::= 8
maxFreqBandsFDD        INTEGER ::= 8
maxFreqBandsTDD        INTEGER ::= 4
maxFreqBandsGSM        INTEGER ::= 16
maxGERANSI             INTEGER ::= 8
maxHProcesses          INTEGER ::= 6
maxHSDSCHTBIndex       INTEGER ::= 64
maxHSDSCHTBIndex-tdd384 INTEGER ::= 512
maxHSSCCHs             INTEGER ::= 4
maxInterSysMessages    INTEGER ::= 4
maxLoCHperRLC          INTEGER ::= 2
maxMAC-d-PDU sizes     INTEGER ::= 16
maxMeasEvent           INTEGER ::= 8
maxMeasIntervals       INTEGER ::= 3
maxMeasParEvent        INTEGER ::= 2
maxNumCDMA2000Freqs    INTEGER ::= 8
maxNumGSMFreqRanges    INTEGER ::= 32
maxNumFDDFreqs         INTEGER ::= 8
maxNumTDDFreqs         INTEGER ::= 8
maxNoOfMeas            INTEGER ::= 16
maxOtherRAT            INTEGER ::= 15
maxOtherRAT-16         INTEGER ::= 16
maxPage1               INTEGER ::= 8
maxPCPCH-APsig         INTEGER ::= 16
maxPCPCH-APsubCh       INTEGER ::= 12
maxPCPCH-CDsig         INTEGER ::= 16
maxPCPCH-CDsubCh       INTEGER ::= 12
maxPCPCH-SF            INTEGER ::= 7
maxPCPCHs              INTEGER ::= 64
maxPDCPAlgoType        INTEGER ::= 8
maxPDSCH               INTEGER ::= 8
maxPDSCH-TFCIgroups    INTEGER ::= 256
maxPRACH               INTEGER ::= 16
maxPRACH-FPACH         INTEGER ::= 8
maxPredefConfig        INTEGER ::= 16
maxPUSCH               INTEGER ::= 8
maxQueueIDs            INTEGER ::= 8
maxRABsetup            INTEGER ::= 16
maxRAT                 INTEGER ::= 16
maxRB                  INTEGER ::= 32
maxRBallRABs           INTEGER ::= 27
maxRBMuxOptions        INTEGER ::= 8
maxRBperRAB            INTEGER ::= 8
maxReportedGSMCells    INTEGER ::= 6
maxRL                  INTEGER ::= 8
maxRL-1                INTEGER ::= 7
maxRFC3095-CID         INTEGER ::= 16384
maxROHC-PacketSizes-r4 INTEGER ::= 16
maxROHC-Profile-r4     INTEGER ::= 8
maxSat                 INTEGER ::= 16
maxSCCPCH              INTEGER ::= 16
maxSIB                 INTEGER ::= 32
maxSIB-FACH            INTEGER ::= 8
maxSIBperMsg           INTEGER ::= 16
maxSRBsetup            INTEGER ::= 8
maxSystemCapability     INTEGER ::= 16
maxTF                  INTEGER ::= 32
maxTF-CPCH             INTEGER ::= 16
maxTFC                 INTEGER ::= 1024
maxTFCsub              INTEGER ::= 1024
maxTFCI-2-Combs        INTEGER ::= 512
maxTGPS                INTEGER ::= 6
maxTrCH                INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf         INTEGER ::= 32
maxTS                  INTEGER ::= 14
maxTS-1                INTEGER ::= 13
maxTS-LCR              INTEGER ::= 6
maxTS-LCR-1            INTEGER ::= 5
maxURA                 INTEGER ::= 8

```

END

Error! No text of specified style in document.

22

Error! No text of specified style in document.

CHANGE REQUEST

25.331 CR 1878 # rev **1** # Current version: **5.3.0**

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

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	#	Defining more than one DSCH / USCH transport channel in PDSCH and PUSCH system information (TDD only)	
Source:	#	TSG-RAN WG2	
Work item code:	#	TEI5	Date: # 21/02/2003
Category:	#	F	Release: # REL-5
		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) Rel-6 (Release 6)

Reason for change:	#	The PDSCH and PUSCH system information IEs may be transmitted to the UE on SIBs 5, 6 or 17 (for TDD only). They define one or more DSCH (USCH) CCTrCHs, but in the current specification only one transport channel may be defined per CCTrCH. In this CR, the IE is extended to allow multiple transport channels to be defined.	
Summary of change:	#	The tabular and ASN are changed to include a list of transport channels per CCTrCH. This change only impacts R5 3.84 Mcps TDD.	
Consequences if not approved:	#	Shared channel configuration via the SIBs will be only able to define one transport channel per CCTrCH for Release 5, 3.84 Mcps TDD. Isolated impact analysis: This CR has limited impact for 3.84 Mcps TDD only (R5). To implement it will impact both the RNC and UE implementations. The change is backward compatible for R99 and R4 UEs.	

Clauses affected:	#	10.3.6.46, 10.3.6.66, 11.2									
Other specs Affected:	#	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	#
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	#										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>.

Below is a brief summary:

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

10.3.6.46 PDSCH system information

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
PDSCH information	MP	1 to <maxPDSCH>			
>PDSCH Identity	MP		Integer(1..hi PDSCHidentities)		
>PDSCH info	MP		PDSCH info 10.3.6.44		
>SFN Time Info	CH-Block17		SFN Time Info 10.3.6.75		
>DSCH TFS	OP		Transport format set 10.3.5.23		
>DSCH Transport Channels	OP	1 to <maxTrCH>		If PDSCH is configured for 3.84Mcps TDD in R5 this IE may be included.	REL-5
>> DSCH Transport channel identity	MP		Transport channel identity 10.3.5.18		REL-5
>>DSCH TFS	MP		Transport format set 10.3.5.23		REL-5
>DSCH TFCS	OP		Transport Format Combination Set 10.3.5.20		

Condition	Explanation
<i>Block17</i>	This IE is not needed in System Information Block 17. Otherwise it is optional.

10.3.6.66 PUSCH system information

NOTE: Only for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
PUSCH information	MP	1 to <maxPUSCH>			
>PUSCH Identity	MP		Integer(1..hi PUSCHidentities)		
>PUSCH info	MP		PUSCH info 10.3.6.63		
>SFN Time Info	CH-Block17		SFN Time Info 10.3.6.75		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>USCH TFS	OP		Transport format set 10.3.5.23		
>USCH Transport Channels	OP	1 to <maxTrCH >=		If PUSCH is configured for 3.84Mcps TDD in R5 this IE may be included.	REL-5
>> USCH Transport channel identity	MP		Transport channel identity 10.3.5.18		REL-5
>>USCH TFS	MP		Transport format set 10.3.5.23		REL-5
>USCH TFCS	OP		Transport Format Combination Set 10.3.5.20		

Condition	Explanation
<i>Block17</i>	This IE is not needed in System Information Block 17. Otherwise it is optional.

11.2 PDU definitions

```

SysInfoType5 ::=
    sib6indicator                SEQUENCE {
    -- Physical channel IEs      BOOLEAN,
    pich-PowerOffset            PICH-PowerOffset,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            aich-PowerOffset      AICH-PowerOffset
        },
        tdd                      SEQUENCE {
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
-- and the info included in the tdd128SpecificInfo instead.
-- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
-- included.
            pusSch-SysInfoList-SFN        PUSCH-SysInfoList-SFN        OPTIONAL,
            pdsch-SysInfoList-SFN        PDSCH-SysInfoList-SFN        OPTIONAL,
            openLoopPowerControl-TDD      OpenLoopPowerControl-TDD
        }
    },
    primaryCCPCH-Info           PrimaryCCPCH-Info                OPTIONAL,
    prach-SystemInformationList PRACH-SystemInformationList,
    sccpCh-SystemInformationList SCCPCH-SystemInformationList,
    -- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
    -- sccpCh-SystemInformationList
    cbs-DRX-Level1Information   CBS-DRX-Level1Information        OPTIONAL,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions   SEQUENCE {
        sysInfoType5-v4xyext         SysInfoType5-v4xyext-IEs,
        -- Extension mechanism for non- rel-4 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
        v5xyNonCriticalExtensions SEQUENCE {
            sysInfoType5-v5xyext SysInfoType5-v5xyext-IEs OPTIONAL,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
    }
}
OPTIONAL
    
```

```

SysInfoType5-v4xyext-IEs ::= SEQUENCE {
    pNBSCH-Allocation-r4          PNBSCCH-Allocation-r4          OPTIONAL,
    -- In case of TDD, the following IE is included instead of the
    -- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
    openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL,
    -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
    -- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
    -- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
    -- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4 OPTIONAL,
    tdd128SpecificInfo                SEQUENCE {
        pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
        pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
        pCCPCH-LCR-Extensions          PrimaryCCPCH-Info-LCR-r4-ext  OPTIONAL,
        sCCPCH-LCR-ExtensionsList      SCCPCH-SystemInformationList-LCR-r4-ext
    }
}

```

```

SysInfoType5-v5xyext-IEs ::= SEQUENCE {
    HCR-r5-SpecificInfo              SEQUENCE {
        pusch-SysInfoList-SFN        PUSCH-SysInfoList-SFN-HCR-r5    OPTIONAL,
        pdsch-SysInfoList-SFN        PDSCH-SysInfoList-SFN-HCR-r5    OPTIONAL
    }
}

```

```

SysInfoType6 ::= SEQUENCE {
    -- Physical channel IEs
    pich-PowerOffset                PICH-PowerOffset,
    modeSpecificInfo                CHOICE {
        fdd                          SEQUENCE {
            aich-PowerOffset          AICH-PowerOffset,
            -- dummy is not used in this version of specification, it should
            -- not be sent and if received it should be ignored.
            dummy                      CSICH-PowerOffset          OPTIONAL
        },
        tdd                          SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
            -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
            -- and the info included in the tdd128SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
            -- also be included.
            pusch-SysInfoList-SFN      PUSCH-SysInfoList-SFN          OPTIONAL,
            pdsch-SysInfoList-SFN      PDSCH-SysInfoList-SFN          OPTIONAL,
            openLoopPowerControl-TDD    OpenLoopPowerControl-TDD
        }
    },
    primaryCCPCH-Info              PrimaryCCPCH-Info          OPTIONAL,
    prach-SystemInformationList     PRACH-SystemInformationList  OPTIONAL,
    sCCPCH-SystemInformationList     SCCPCH-SystemInformationList  OPTIONAL,
    cbs-DRX-Level1Information        CBS-DRX-Level1Information  OPTIONAL,
    -- Conditional on any of the CTCH indicator IEs in
    -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions        SEQUENCE {
        sysInfoType6-v4xyext          SysInfoType6-v4xyext-IEs,
        -- Extension mechanism for non- rel-4 information
        nonCriticalExtensions      SEQUENCE {}          OPTIONAL
    }
    v5xyNonCriticalExtensions      SEQUENCE {
        sysInfoType6-v5xyext        SysInfoType6-v5xyext-IEs          OPTIONAL,
        nonCriticalExtensions      SEQUENCE {}          OPTIONAL
    }
}

```

```

SysInfoType6-v4xyext-IEs ::= SEQUENCE {
    -- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
    openLoopPowerControl-IPDL-TDD    OpenLoopPowerControl-IPDL-TDD-r4    OPTIONAL,
    -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included

```

```

-- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4 OPTIONAL,
tdd128SpecificInfo SEQUENCE {
  pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
  pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
  pCCPCH-LCR-Extensions PrimaryCCPCH-Info-LCR-r4-ext OPTIONAL,
  sCCPCH-LCR-ExtensionsList SCCPCH-SystemInformationList-LCR-r4-ext OPTIONAL
}
}

```

```

SysInfoType6-v5xyext-IEs ::= SEQUENCE
HCR-r5-SpecificInfo SEQUENCE {
  pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN-HCR-r5 OPTIONAL,
  pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN-HCR-r5 OPTIONAL
}
}

```

< break >

```

SysInfoType17 ::= SEQUENCE {
  -- Physical channel IEs
  -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
  -- pdsch-SysInfoList should be absent and the info included in the
  -- tdd128SpecificInfo instead.
  -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
  -- included.
  pusch-SysInfoList PUSCH-SysInfoList OPTIONAL,
  pdsch-SysInfoList PDSCH-SysInfoList OPTIONAL,
  -- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType17-v4xyext SysInfoType17-v4xyext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
    v5xyNonCriticalExtensions SEQUENCE {
      sysInfoType17-v5xyext SysInfoType17-v5xyext-IEs OPTIONAL,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  }
}
OPTIONAL
}

```

```

SysInfoType17-v4xyext-IEs ::= SEQUENCE {
  tdd128SpecificInfo SEQUENCE {
    pusch-SysInfoList PUSCH-SysInfoList-LCR-r4 OPTIONAL,
    pdsch-SysInfoList PDSCH-SysInfoList-LCR-r4 OPTIONAL
  }
}
OPTIONAL
}

```

```

SysInfoType17-v5xyext-IEs ::= SEQUENCE
HCR-r5-SpecificInfo SEQUENCE {
  pusch-SysInfoList PUSCH-SysInfoList-HCR-r5 OPTIONAL,
  pdsch-SysInfoList PDSCH-SysInfoList-HCR-r5 OPTIONAL
}
}
OPTIONAL
}

```

```

PUSCH-SysInfoList-SFN-HCR-R5 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
SEQUENCE {
  pusch-SysInfo PUSCH-SysInfo-HCR-r5,
  sfn-TimeInfo SFN-TimeInfo OPTIONAL
}

```

```

PDSCH-SysInfoList-SFN-HCR-R5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
SEQUENCE {
  pdsch-SysInfo PDSCH-SysInfo-HCR-R5,
  sfn-TimeInfo SFN-TimeInfo OPTIONAL
}

```

```

}
PUSCH-SysInfoList-HCR-R5 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-HCR-r5
PDSCH-SysInfoList-HCR-R5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-HCR-r5

PUSCH-SysInfo-HCR-r5 ::= SEQUENCE {
  pusch-Identity PUSCH-Identity,
  pusch-Info PUSCH-Info,
  usch-transport-channels USCH-transport-channels OPTIONAL,
  usch-TFCS TFCS OPTIONAL
}

USCH-transport-channels ::= SEQUENCE (SIZE (1..maxTrCH)) OF
  SEQUENCE {
    usch-transport-channel-identity TransportChannelIdentity,
    usch-TFS TransportFormatSet
  }

PDSCH-SysInfo-HCR-r5 ::= SEQUENCE {
  pdsch-Identity PDSCH-Identity,
  pdsch-Info PDSCH-Info,
  dsch-transport-channels DSCH-transport-channels OPTIONAL,
  dsch-TFCS TFCS OPTIONAL
}

DSCH-transport-channels ::= SEQUENCE (SIZE (1..maxTrCH)) OF
  SEQUENCE {
    dsch-transport-channel-identity TransportChannelIdentity,
    dsch-TFS TransportFormatSet
  }

```


CHANGE REQUEST

25.331 CR 1879 # rev - # Current version: 5.3.0

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Introducing the use of pre-defined configurations within UTRA		
Source:	# TSG-RAN WG2		
Work item code:	# TEI-5 Date: # 20/02/2003		
Category:	# C Release: # REL-5		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </td> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </td> </tr> </table>	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>
<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>		

Reason for change:	# This CR includes the following changes: <p><u>Introducing use of pre- configuration for RRC CONNECTION SETUP message</u> The RRC CONNECTION SETUP message may require quite a few transport block all of which have to be transferred successfully for the connection establishment to succeed. By using pre- configuration the success rate can be improved</p>
Summary of change:	# This CR includes the following changes: <p>8.1.3 RRC connection establishment</p> <ul style="list-style-type: none"> The requirement is added that the UE shall report the preconfiguration status in the RRC CONNECTION REQUEST message in case SIB 5 includes a request for this (see below for further details) Clarification is added concerning what UTRAN should include in the RRC CONNECTION SETUP message in case it applies preconfiguration The UE behaviour upon receiving an RRC CONNECTION SETUP message using a preconfiguration is added. A statement is included that in case pre- defined configurations are used, the UE shall ignore the RAB- related IEs The UE behaviour upon receiving a request to use a not available preconfiguration has been added <p>10.2.39 RRC CONNECTION REQUEST The preconfiguration status information has been added</p> <p>10.2.40 RRC CONNECTION SETUP</p>

		The option to apply a predefined configuration has been added
Consequences if not approved:	⌘	The RRC CONNECTION SETUP message may require quite a few transport block all of which have to be transferred successfully for the connection establishment to succeed. By using pre- configuration the success rate for RRC connection establishment can be improved

Clauses affected:	⌘	8.1.3.3, 8.1.3.4, 8.1.3.6, 8.1.3.8, 10.2.39, 10.2.40, 11.2, 11.3								
Other specs affected:	⌘	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications ⌘ Test specifications O&M Specifications	Y	N		X		X		X
Y	N									
	X									
	X									
	X									
Other comments:	⌘									

How to create CRs using this form:

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

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

8.1.3 RRC connection establishment

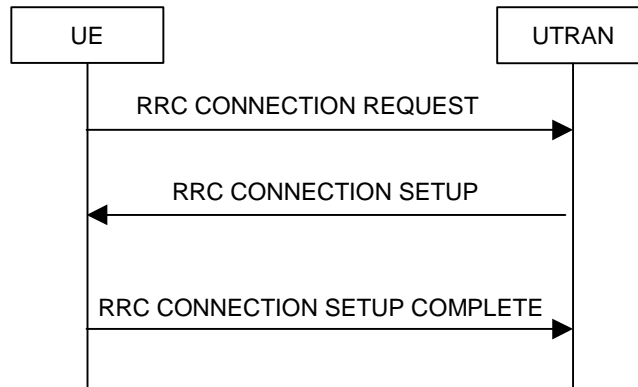


Figure 8.1.3-1: RRC Connection Establishment, network accepts RRC connection

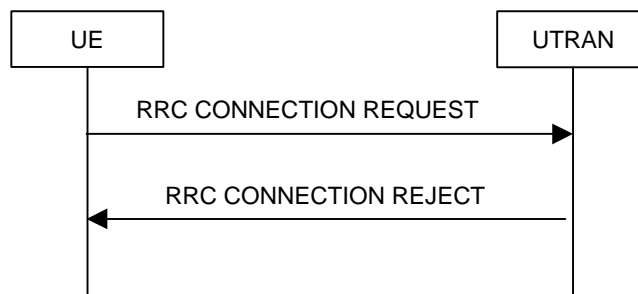


Figure 8.1.3-2: RRC Connection Establishment, network rejects RRC connection

8.1.3.1 General

The purpose of this procedure is to establish an RRC connection.

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:

- 1> set the variable `PROTOCOL_ERROR_INDICATOR` to `FALSE`;
- 1> if the USIM is present:
 - 1> set the value of "THRESHOLD" in the variable "START_THRESHOLD" to the 20 MSBs of the value stored in the USIM [50] for the maximum value of `START` for each CN Domain.
- 1> set the IE "Initial UE identity" in the variable `INITIAL_UE_IDENTITY` according to subclause 8.5.1;
- 1> set the contents of the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
- 1> set CFN in relation to SFN of current cell according to subclause 8.5.15;
- 1> 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;
- 1> submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;
- 1> set counter `V300` to 1; and
- 1> start timer `T300` when the MAC layer indicates success or failure to transmit the message;

1> select a Secondary CCPCH according to [4];

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

8.1.3.3 RRC CONNECTION REQUEST message contents to set

The UE shall, in the transmitted RRC CONNECTION REQUEST message:

1> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT_CAUSE;

1> set the IE "Initial UE identity" to the value of the variable INITIAL_UE_IDENTITY;

1> set the IE "Protocol error indicator" to the value of the variable PROTOCOL_ERROR_INDICATOR;

1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 11; and

1> include the IE "Predefined configuration status information" and set this IE to true the UE has all pre-configurations stored with the same value tag as broadcast in the cell in which the RRC connection establishment is initiated; and

1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported; and

1> take care that the maximum allowed message size is not exceeded when forming the IE "Measured results on RACH".

The UE shall not include the IE "UE Specific Behaviour Information 1 idle".

8.1.3.4 Reception of an RRC CONNECTION REQUEST message by the UTRAN

Upon receiving an RRC CONNECTION REQUEST message, UTRAN should either:

1> accept the request and use a predefined or default radio configuration, in which case it should:

2> include the following information in the RRC CONNECTION SETUP message:

3> the IE "Predefined configuration identity", to indicate which pre-defined configuration of RB and transport channel parameters shall be used; or

3> the IE "Default configuration mode" and IE "Default configuration identity", to indicate which default configuration of RB and transport channel parameters shall be used;

3> PhyCH information elements;

2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH;

NOTE 1: UTRAN should only apply a predefined radio configuration in case it orders the UE to enter CELL_DCH. This is because the predefined configuration information included in SIB 16 mandatorily includes information only required in CELL_DCH state.

1> accept the request without using a predefined or default radio configuration, in which case it should:

2> include in the RRC CONNECTION SETUP message the complete set of RB, TrCH and PhyCH information elements to be used;

2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH;

~~1> submit an RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH; or~~

NOTE 2: ~~In R99,~~ the RRC CONNECTION SETUP message always includes the IEs "Added or Reconfigured TrCH information list", both for uplink and downlink transport channels, even if UTRAN orders the UE to move to CELL_FACH and hence need not configure any transport channels. In these cases, UTRAN may include a configuration that adds little to the encoded message size e.g. a DCH with a single zero size transport format. At a later stage, UTRAN may either remove or reconfigure this configuration.

1> submit an RRC CONNECTION REJECT message on the downlink CCCH. In the RRC CONNECTION REJECT message, the UTRAN may direct the UE to another UTRA carrier or to another system. After the RRC CONNECTION REJECT message has been sent, all context information for the UE may be deleted in UTRAN.

8.1.3.5 Cell re-selection or T300 timeout

1> if the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL_UE_IDENTITY; and

1> if cell re-selection or expiry of timer T300 occurs:

the UE shall:

1> check the value of V300; and

2> if V300 is equal to or smaller than N300:

3> if cell re-selection occurred:

4> set CFN in relation to SFN of current cell according to subclause 8.5.15.

3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

3> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13; and

3> apply the given Access Service Class when accessing the RACH;

3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;

3> increment counter V300;

3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.

2> if V300 is greater than N300:

3> enter idle mode.

3> consider the procedure to be unsuccessful;

3> Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;

3> the procedure ends.

8.1.3.5a Abortion of RRC connection establishment

If the UE has not yet entered UTRA RRC Connected mode and the RRC connection establishment is to be aborted as specified in subclause 8.1.8, the UE shall:

1> consider the procedure to be unsuccessful;

1> perform the actions when entering idle mode as specified in subclause 8.5.2.

The procedure ends.

8.1.3.6 Reception of an RRC CONNECTION SETUP message by the UE

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

If the values are different, the UE shall:

- 1> ignore the rest of the message.

If the values are identical, the UE shall:

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

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

4> ignore the IE "RB to setup list" and the IE "Re-establishment timer";

NOTE: IE above IEs are mandatory to include in IE "Predefined RB configuration" that is included in SIB 16 but should be ignored since it is not possible to establish a RAB during RRC connection establishment.

3> initiate the physical channels in accordance with the received physical channel information elements;

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

3> 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";

3> initiate the physical channels in accordance with 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.

2> if IE "Specification mode" is set to "Complete specification":

3> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.

1> stop timer T300, and act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

2> if the UE will be in the CELL_FACH state at the conclusion of this procedure:

3> if the IE "Frequency info" is included:

4> select a suitable UTRA cell according to [4] on that frequency;

3> select PRACH according to subclause 8.5.17;

3> select Secondary CCPCH according to subclause 8.5.19;

3> ignore the IE "UTRAN DRX cycle length coefficient" and stop using DRX.

1> if the UE will be in the CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> enter UTRA RRC connected mode, in a state according to subclause 8.6.3.3;

1> submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per subclause 8.6.3.3, with the contents set as specified below:

2> set the IE "RRC transaction identifier" to:

3> the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and

- 3> clear that entry.
- 2> if the USIM or SIM is present:
 - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message with the corresponding START value that is stored in the USIM [50] if present, or as stored in the UE if the SIM is present; and then
 - 3> set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START_THRESHOLD.
- 2> if neither the USIM nor SIM is present:
 - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message to zero;
 - 3> set the value of "THRESHOLD" in the variable "START_THRESHOLD" to the default value [40].
- 2> retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
- 2> include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;
- 2> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then
- 2> include this in IE "UE system specific capability".

When the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- 1> if the UE has entered CELL_FACH state:
 - 2> start timer T305 using its initial value if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS.
- 1> store the contents of the variable UE_CAPABILITY_REQUESTED in the variable UE_CAPABILITY_TRANSFERRED;
- 1> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
- 1> consider the procedure to be successful;

And the procedure ends.

8.1.3.7 Physical channel failure or cell re-selection

- 1> If the UE failed to establish, per subclause 8.5.4, the physical channel(s) indicated in the RRC CONNECTION SETUP message; or
- 1> if the UE performs cell re-selection; or
- 1> if the UE will be in the CELL_FACH state at the conclusion of this procedure; and
- 1> if the received RRC CONNECTION SETUP message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE; or
- 1> if the contents of the variable C_RNTI is empty;
- 1> after having received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL_UE_IDENTITY; and
- 1> before the RRC CONNECTION SETUP COMPLETE message is delivered to lower layers for transmission:

the UE shall:

- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> check the value of V300, and:
 - 2> if V300 is equal to or smaller than N300:
 - 3> set CFN in relation to SFN of current cell according to subclause 8.5.15;
 - 3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
 - 3> 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;
 - 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
 - 3> increment counter V300; and
 - 3> restart timer T300 when the MAC layer indicates success or failure in transmitting the message.
 - 2> if V300 is greater than N300:
 - 3> enter idle mode;
 - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.

8.1.3.8 Invalid RRC CONNECTION SETUP message, unsupported configuration or invalid configuration

If the UTRAN instructs the UE to use a configuration, which it does not support e.g., the message includes a pre-defined configuration that the UE has not stored and/or if the received message causes the variable UNSUPPORTED_CONFIGURATION or the variable INVALID_CONFIGURATION to be set to TRUE the UE shall perform procedure specific error handling as specified in this subclause.

If the UE receives an RRC CONNECTION SETUP message which contains an IE "Initial UE identity" with a value which is identical to the value of the variable INITIAL_UE_IDENTITY, but the RRC CONNECTION SETUP message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Rejected transactions" in the variable TRANSACTIONS and proceed as below.

If the UE receives an RRC CONNECTION SETUP message which contains an IE "Initial UE identity" with a value which is identical to the value of the variable INITIAL_UE_IDENTITY:

- 1> if the RRC CONNECTION SETUP message contained a configuration the UE does not support; and/or
- 1> if the variable UNSUPPORTED_CONFIGURATION becomes set to TRUE due to the received RRC CONNECTION SETUP message; and/or
- 1> if the variable INVALID_CONFIGURATION becomes set to TRUE due to the received RRC CONNECTION SETUP message:

the UE shall:

- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS and proceed as below.

If V300 is equal to or smaller than N300, the UE shall:

- 1> set the variable `PROTOCOL_ERROR_INDICATOR` to `TRUE`;
- 1> set the IEs in the `RRC CONNECTION REQUEST` message according to subclause 8.1.3.3;
- 1> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13; and
- 1> apply the given Access Service Class when accessing the RACH;
- 1> submit a new `RRC CONNECTION REQUEST` message to the lower layers for transmission on the uplink CCCH;
- 1> increment counter `V300`; and
- 1> restart timer `T300` when the MAC layer indicates success or failure in transmitting the message.

If `V300` is greater than `N300`, the UE shall:

- 1> enter idle mode;
- 1> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
- 1> consider the RRC establishment procedure to be unsuccessful;
- 1> the procedure ends.

8.1.3.9 Reception of an `RRC CONNECTION REJECT` message by the UE

When the UE receives an `RRC CONNECTION REJECT` message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received `RRC CONNECTION REJECT` message with the value of the variable `INITIAL_UE_IDENTITY`:

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

If the values are identical, the UE shall:

- 1> stop timer `T300`; and
- 1> clear the entry for the `RRC CONNECTION REJECT` message in the table "Accepted transactions" in the variable `TRANSACTIONS`;
- 1> if the IE "wait time" \neq '0'; and
- 1> if the IE "frequency info" is present and:
 - 2> if `V300` is equal to or smaller than `N300`:
 - 3> initiate cell selection on the designated UTRA carrier;
 - 3> after having selected and camped on a cell:
 - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;
 - 4> set the contents of the `RRC CONNECTION REQUEST` message according to subclause 8.1.3.3;
 - 4> 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;
 - 4> transmit an `RRC CONNECTION REQUEST` message on the uplink CCCH;
 - 4> reset counter `V300`;
 - 4> start timer `T300` when the MAC layer indicates success or failure in transmitting the message;
 - 4> disable cell reselection to original carrier until the time stated in the IE "wait time" has elapsed;

- 3> if a cell selection on the designated carrier fails:
 - 4> wait for the time stated in the IE "wait time";
 - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;
 - 4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
 - 4> 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;
 - 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH of the original serving cell;
 - 4> increment counter V300;
 - 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
- 2> if V300 is greater than N300:
 - 3> enter idle mode;
 - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> if the IE "inter-RAT info" is present and:
 - 2> if V300 is equal to or smaller than N300:
 - 3> perform cell selection in the designated system;
 - 3> delay cell reselection to the original system until the time stated in the IE " wait time" has elapsed.
 - 3> if cell selection in the designated system fails:
 - 4> wait at least the time stated in the IE "wait time";
 - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;
 - 4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2.
 - 4> 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;
 - 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
 - 4> increment counter V300;
 - 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
 - 2> if V300 is greater than N300:
 - 3> enter idle mode;
 - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> If neither the IEs "frequency info" nor "inter-RAT info" are present and:
 - 2> if V300 is equal to or smaller than N300:
 - 3> wait at least the time stated in the IE "wait time";

- 3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2;
- 3> 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;
- 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
- 3> increment counter V300;
- 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
- 2> if V300 is greater than N300:
 - 3> enter idle mode;
 - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 3> consider the RRC establishment procedure to be unsuccessful;
 - 3> the procedure ends.
- 1> if the IE "wait time" = '0':
 - 2> enter idle mode;
 - 2> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
 - 2> consider the RRC establishment procedure to be unsuccessful;
 - 2> the procedure ends.

8.1.3.10 Invalid RRC CONNECTION REJECT message

If the UE receives an RRC CONNECTION REJECT message which contains an IE "Initial UE identity" with a value which is identical to the value of the IE "Initial UE identity" in the most recent RRC CONNECTION REQUEST message sent by the UE; but the RRC CONNECTION REJECT message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

The UE shall:

- 1> clear the entry for the RRC CONNECTION REJECT message in the table "Rejected transactions" in the variable TRANSACTIONS;
- 1> if V300 is equal to or smaller than N300:
 - 2> set the variable PROTOCOL_ERROR_INDICATOR to TRUE;
 - 2> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
 - 2> 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;
 - 2> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
 - 2> increment counter V300;
 - 2> restart timer T300 when the MAC layer indicates success or failure to transmit the message.
- 1> if V300 is greater than N300:
 - 2> enter idle mode;
 - 2> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;

2> consider the procedure to be successful;

2> the procedure ends.

10.2.39 RRC CONNECTION REQUEST

RRC Connection Request is the first message transmitted by the UE when setting up an RRC Connection to the network.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
Radio Bearer IEs					
Predefined configuration status information	MP		Boolean	True indicates the UE has all pre-configurations stored with the same value tag as broadcast in the cell in which the RRC connection establishment is initiated	REL-5
UE information elements					
Initial UE identity	MP		Initial UE identity 10.3.3.15		
Establishment cause	MP		Establishment cause 10.3.3.11		
Protocol error indicator	MD		Protocol error indicator 10.3.3.27	Default value is FALSE	
>UE Specific Behaviour Information 1 idle	OP		UE Specific Behaviour Information 1 idle 10.3.3.51	This IE shall not be included in this version of the protocol	
Measurement information elements					
Measured results on RACH	OP		Measured results on RACH 10.3.7.45		
Access stratum release indicator	MP		Enumerated(REL-4,	Absence of the IE implies R99. The IE also indicates the release of the RRC transfer syntax supported by the UE 14 spare values are needed	REL-4
			REL-5)		REL-5

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

10.2.40 RRC CONNECTION SETUP

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

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
Initial UE identity	MP		Initial UE identity 10.3.3.15		
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	MP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	MP		UTRAN DRX cycle length coefficient 10.3.3.49		
Capability update requirement	MD		Capability update requirement 10.3.3.2	Default value is defined in subclause 10.3.3.2	
CHOICE <i>specification mode</i>	MP				REL-5
>Complete specification					
RB Information Elements					
>>Signalling RB information to setup list	MP	3 to 4			
>>>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24		
TrCH Information Elements					
Uplink transport channels					
>>UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
>>Added or Reconfigured TrCH information list	MP	1 to <maxTrCH >		Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1	
	OP				REL-4

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>>>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
Downlink transport channels					
>>DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
>>Added or Reconfigured TrCH information list	MP	1 to <maxTrCH >		Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1	
	OP				REL-4
>>>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
>Preconfiguration					REL-5
>>CHOICE <i>Preconfiguration mode</i>	MP				
>>>Predefined configuration identity	MP		Predefined configuration identity 10.3.4.5		
>>>Default configuration					
>>>>Default configuration mode	MP		Enumerated (FDD, TDD)	Indicates whether the FDD or TDD version of the default configuration shall be used	
>>>>Default configuration identity	MP		Default configuration identity 10.3.4.0		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE <i>channel requirement</i>	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
Downlink radio resources					
Downlink information common for all radio links	OP		Downlink information common for all radio links		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.6.24		
Downlink information per radio link list	OP	1 to <MaxRL>		Send downlink information for each radio link to be set-up	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		

11.2 PDU definitions

<Cut until the next modified section>

```

-- *****
--
-- RRC CONNECTION REQUEST
--
-- *****

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    initialUE-Identity          InitialUE-Identity,
    establishmentCause          EstablishmentCause,
    -- protocolErrorIndictator is MD, but for compactness reasons no default value
    -- has been assigned to it.
    protocolErrorIndicator      ProtocolErrorIndicator,
    -- Measurement IEs
    measuredResultsOnRACH       MeasuredResultsOnRACH          OPTIONAL,
    -- Non critical Extensions
    v3d0NonCriticalExtensions   SEQUENCE {
        rrcConnectionRequest-v3d0ext  RRCConnectionRequest-v3d0ext-IEs,
        -- Reserved for future non critical extension
        v4xyNonCriticalExtensions     SEQUENCE {
            rrcConnectionRequest-v4xyext  RRCConnectionRequest-v4xyext-IEs,
            v5xyNonCriticalExtensions    SEQUENCE {
                rrcConnectionRequest-v5xyext    RRCConnectionRequest-v5xyext-IEs,
            }
            nonCriticalExtensions     SEQUENCE {}          OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

RRCConnectionRequest-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ueSpecificBehaviourInformationIdle    UESpecificBehaviourInformationIdle    OPTIONAL
}

RRCConnectionRequest-v4xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v4xyext     UE-RadioAccessCapability-v4xyext
}

RRCConnectionRequest-v5xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    predefinedConfigStatusInfo          BOOLEAN
}

-- *****
--
-- RRC CONNECTION SETUP
--
-- *****

RRCConnectionSetup ::= CHOICE {
    r3
        SEQUENCE {
            rrcConnectionSetup-r3          RRCConnectionSetup-r3-IEs,
            laterNonCriticalExtensions     SEQUENCE {
                -- Container for additional R99 extensions
                rrcConnectionSetup-r3-add-ext  BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions     SEQUENCE {
                    rrcConnectionSetup-v4xyext  RRCConnectionSetup-v4xyext-IEs,
                    nonCriticalExtensions       SEQUENCE {}          OPTIONAL
                } OPTIONAL
            } OPTIONAL
        },
    later-than-r3
        SEQUENCE {
            initialUE-Identity          InitialUE-Identity,
            rrc-TransactionIdentifier    RRC-TransactionIdentifier,
            criticalExtensions          CHOICE {
                r4
                    SEQUENCE {
                        rrcConnectionSetup-r4          RRCConnectionSetup-r4-IEs,
                        nonCriticalExtensions         SEQUENCE {}          OPTIONAL
                    },

```

```

later-than-r4 CHOICE {
  r5 SEQUENCE {
    rrcConnectionSetup-r5 RRCConnectionSetup-r5-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}
}
}

```

```

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity InitialUE-Identity,
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI,
  new-c-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capacityUpdateRequest is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement CapabilityUpdateRequirement OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of
  -- this message
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
  -- of this message
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
  -- Physical channel IEs
  frequencyInfo FrequencyInfo OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
  dl-CommonInformation DL-CommonInformation OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List OPTIONAL
}

```

```

RRCConnectionSetup-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext OPTIONAL,
  -- Physical channel IEs
  -- ssdt-UL extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL SSdT-UL-r4 OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as
  -- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List CellIdentity-PerRL-List OPTIONAL
}

```

```

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI,
  new-c-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capabilityUpdateRequirements is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement-r4 CapabilityUpdateRequirement-r4 OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  dl-CommonTransChInfo-r4 DL-CommonTransChInfo-r4 OPTIONAL,
  dl-AddReconfTransChInfoList-r4 DL-AddReconfTransChInfoList-r4 OPTIONAL,
  -- Physical channel IEs
  frequencyInfo FrequencyInfo OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  ul-ChannelRequirement-r4 UL-ChannelRequirement-r4 OPTIONAL,
  dl-CommonInformation-r4 DL-CommonInformation-r4 OPTIONAL,
  dl-InformationPerRL-List-r4 DL-InformationPerRL-List-r4 OPTIONAL
}

```

```

RRCConnectionSetup-r5-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  activationTime          ActivationTime          OPTIONAL,
  new-U-RNTI              U-RNTI,
  new-c-RNTI              C-RNTI                  OPTIONAL,
  rrc-StateIndicator      RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capabilityUpdateRequirements is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement  CapabilityUpdateRequirement-r4  OPTIONAL,
  -- Specification mode information
  specificationMode       CHOICE {
    complete                SEQUENCE {
      -- Radio bearer IEs
      srb-InformationSetupList  SRB-InformationSetupList2,
      -- Transport channel IEs
      ul-CommonTransChInfo      UL-CommonTransChInfo          OPTIONAL,
      ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
      dl-CommonTransChInfo      DL-CommonTransChInfo-r4        OPTIONAL,
      dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList  OPTIONAL
    },
    preconfiguration         SEQUENCE {
      -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
      -- one for the FDD only elements and one for the TDD only elements, so that one
      -- FDD/TDD choice in this level is sufficient.
      preConfigMode          CHOICE {
        predefinedConfigIdentity  PredefinedConfigIdentity,
        defaultConfig            SEQUENCE {
          defaultConfigMode      DefaultConfigMode,
          defaultConfigIdentity  DefaultConfigIdentity-r4
        }
      }
    }
  },
  -- Physical channel IEs
  frequencyInfo           FrequencyInfo          OPTIONAL,
  maxAllowedUL-TX-Power   MaxAllowedUL-TX-Power  OPTIONAL,
  ul-ChannelRequirement   UL-ChannelRequirement-r4  OPTIONAL,
  dl-CommonInformation    DL-CommonInformation-r4  OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List-r4  OPTIONAL
}

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  startList                  STARTList,
  ue-RadioAccessCapability   UE-RadioAccessCapability          OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability    InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
  -- Non critical extensions
  v370NonCriticalExtensions   SEQUENCE {
    rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
    v380NonCriticalExtensions           SEQUENCE {
      rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
      -- Reserved for future non critical extension
      v3a0NonCriticalExtensions           SEQUENCE {
        rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
        laterNonCriticalExtensions         SEQUENCE {
          -- Container for additional R99 extensions
          rrcConnectionSetupComplete-r3-add-ext  BIT STRING          OPTIONAL,
          v4xyNonCriticalExtensions             SEQUENCE {
            rrcConnectionSetupComplete-v4xyext  RRCConnectionSetupComplete-v4xyext-IEs,
            nonCriticalExtensions              SEQUENCE {}          OPTIONAL
          }
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

RRCConnectionSetupComplete-v370ext ::= SEQUENCE {

```

```

    -- User equipment IEs
    ue-RadioAccessCapability-v370ext    UE-RadioAccessCapability-v370ext    OPTIONAL
}

RRCConnectionSetupComplete-v380ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v380ext    UE-RadioAccessCapability-v380ext    OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext      DL-PhysChCapabilityFDD-v380ext
}

RRCConnectionSetupComplete-v3a0ext ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    OPTIONAL
}

RRCConnectionSetupComplete-v4xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-r4-ext      UE-RadioAccessCapability-r4-ext      OPTIONAL
}

```

CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 1897** ⌘ rev **-** ⌘ Current version: **5.3.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Correction of shadow CR implementation		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI-5	Date:	⌘ 17 Feb 2003
Category:	⌘ F	Release:	⌘ Rel-5
	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) Rel-6 (Release 6)

Reason for change:	⌘ In subsection 8.2.2.3, errors in shadow CR implementation have been made.
Summary of change:	⌘ —This CR aligns subsection 8.2.2.3 for Rel-5 with previous releases.
Consequences if not approved:	⌘ Incorrect subclause 8.2.2.3.

Clauses affected:	⌘ 8.2.2.3						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
Other comments:	⌘						

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

- 1> be able to receive any of the following messages:
 - 2> RADIO BEARER SETUP message; or
 - 2> RADIO BEARER RECONFIGURATION message; or
 - 2> RADIO BEARER RELEASE message; or
 - 2> TRANSPORT CHANNEL RECONFIGURATION message; or
 - 2> PHYSICAL CHANNEL RECONFIGURATION message;
- 1> perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message:

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:
 - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
- 1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

- 1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:
 - 2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and
 - 2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.
- 1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;

1> clear any stored HS-PDSCH configuration;

1> remove any H-RNTI stored;

1> clear the variable H_RNTI;

1> set the variable HS_DSCH_RECEPTION to FALSE.

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

1> remove any DSCH-RNTI from MAC;

1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if "DPCH frame offset" is included for one or more RLS in the active set:

2> use its value to determine the beginning of the DPCH frame in accordance with the following:

3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:

4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).

3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:

4> set the variable INVALID_CONFIGURATION to TRUE.

3> and the procedure ends.

2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4] on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to [4].

1> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

- 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
- 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> use the transport format set given in system information;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
 - 2> re-establish RB2;
 - 2> set the new uplink and downlink HFN of RB2 to MAX(uplink HFN of RB2, downlink HFN of RB2);

- 2> increment by one the downlink and uplink HFN values for RB2;
 - 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
- 2> if the variable START_VALUE_TO_TRANSMIT is set:
 - 3> include and set the IE "START" to the value of that variable.
 - 2> if the variable START_VALUE_TO_TRANSMIT is not set and the IE "New U-RNTI" is included:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
 - 2> if the received reconfiguration message caused a change in the RLC size for any RB using RLC-AM:
 - 3> calculate the START value according to subclause 8.5.9;
 - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
- 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
- 2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
- 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
 - 3> if, at the conclusion of this procedure, the UE will be in CELL_DCH state; and
 - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
 - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE.
- NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.
- ~~2> if prior to this procedure there exists at least one transparent mode RLC radio bearer:~~
 - ~~3> if, at the conclusion of this procedure, no transparent mode RLC radio bearers exist:~~
 - ~~4> include the IE "COUNT-C activation time" and specify a CFN value for this IE:~~
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP_SN_INFO is not empty:
- 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_INFO.

- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
 - 2> set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.
- 1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:
 - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4].
- 1> prohibit periodical status transmission in RLC;
- 1> remove any C-RNTI from MAC;
- 1> clear the variable C_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in system information block type 1;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE enters CELL_PCH state from CELL_DCH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 3> the procedure ends.
- 1> if the UE enters CELL_PCH state from CELL_FACH state, and the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE:
 - 2> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 2> when the cell update procedure is successfully completed:
 - 3> the procedure ends.
- 1> if the UE enters URA_PCH state, and after cell selection the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 is fulfilled:
 - 2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";

2> when the URA update procedure is successfully completed:

3> the procedure ends.

CHANGE REQUEST

25.331 CR 1900 # rev - # Current version: 5.3.0

For [HELP](#) on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Measurement event for evaluation of best HS-DSCH cell		
Source:	# TSG-RAN WG2		
Work item code:	# HSDPA-L23	Date:	# 21/02/2003
Category:	# F	Release:	# Rel-5
	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) Rel-6 (Release 6)

Reason for change:	# An intra-frequency event is needed for support of decision which of the neighbouring cells is best suited for HS-DSCH. Since no suitable existing event could be found, it is proposed to enhance intra-frequency event 1d with CIO and triggering condition to meet the requirements below: <ol style="list-style-type: none"> 1. Existing intra-frequency measurement reporting event 1d shall be enhanced. 2. Cell individual offset (CIO) shall be taken into account. 3. For event evaluation for HS-DSCH decision, it should be possible to restrict event trigger to active set cells only.
Summary of change:	# Reporting intra-frequency event 1d is enhanced with CIO and triggering condition. Clauses changed are denoted below: 10.3.7.39: Intra-frequency event 1d is added to the new <i>CV-Clause 10</i> for Triggering condition 2 in the in IE "Intra-frequency measurement reporting criteria". The IE is denoted to be optional in this case. An optional IE "useCIO" is added for intrafrequency event 1d to indicate that UE shall use cell individual offset for event evaluation if IE is "true". 11.2, 11.3 ASN1 System information block 11, System Information block 12 and Measurement control messages are extended according to tabular description, using the non

critical extension mechanism.

14.1.2.4

CIO is added to formulas and usage of triggering condition 2, if present, is added to event description.

Consequences if not approved: ⌘ There is no intra-frequency reporting event available to support cell selection for HS_DSCH.

Clauses affected: ⌘ 10.3.7.39, 11.2, 11.3, 14.1.2.4

Other specs affected:

Y	N
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Other core specifications ⌘
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/specs/CR.htm>. Below is a brief summary:

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

10.3.7.39 Intra-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an intra-frequency measurement. All events concerning intra-frequency measurements are labelled 1x where x is a, b, c....

Event 1a: A Primary CPICH enters the Reporting Range (FDD only).

Event 1b: A Primary CPICH leaves the Reporting Range (FDD only).

Event 1c: A Non-active Primary CPICH becomes better than an active Primary CPICH (FDD only).

Event 1d: Change of best cell (FDD only).

Event 1e: A Primary CPICH becomes better than an absolute threshold (FDD only).

Event 1f: A Primary CPICH becomes worse than an absolute threshold (FDD only).

Event 1g: Change of best cell in TDD.

Event 1h: Timeslot ISCP below a certain threshold (TDD only).

Event 1i: Timeslot ISCP above a certain threshold (TDD only).

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Parameters required for each event	OP	1 to <maxMeasEvent>			
>Intra-frequency event identity	MP		Intra-frequency event identity 10.3.7.34		
>Triggering condition 1	CV-clause 0		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells can trigger the event	
>Triggering condition 2	CV-clause 6		Enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells, Detected set cells, Detected set cells and monitored set cells)	Indicates which cells can trigger the event	
	CV-clause 10				REL-5
>Reporting Range Constant	CV-clause 2		Real(0..14.5 by step of 0.5)	In dB. In event 1a,1b.	
>Cells forbidden to affect	CV-	1 to		In event 1a,1b	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Reporting range	<i>clause 1</i>	<maxCel lMeas>			
>>CHOICE <i>mode</i>	MP				
>>>FDD					
>>>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60		
>>>TDD					
>>>>Primary CCPCH info	MP		Primary CCPCH info 10.3.6.57		
>W	CV- <i>clause 2</i>		Real(0.0.. 2.0 by step of 0.1)		
>Hysteresis	MP		Real(0..7. 5 by step of 0.5)	In dB.	
>Threshold used frequency	CV- <i>clause 3</i>		Integer (- 115..165)	Range used depend on measurement quantity. CPICH RSCP -115..-25 dBm CPICH Ec/No -24..0 dB Pathloss 30..165dB ISCP -115..-25 dBm	
>Delta _{Threshold used frequency}	CV- <i>clause 8</i>		Integer(- 5..-1)	If present, the actual value of Threshold used frequency = Threshold used frequency + Delta _{Threshold used frequency}	REL-5
>Reporting deactivation threshold	CV- <i>clause 4</i>		Integer(0, 1, 2, 3, 4, 5, 6, 7)	In event 1a Indicates the maximum number of cells allowed in the active set in order for event 1a to occur. 0 means not applicable	
>Replacement activation threshold	CV- <i>clause 5</i>		Integer(0, 1, 2, 3, 4, 5, 6, 7)	In event 1c Indicates the minimum number of cells allowed in the active set in order for event 1c to occur. 0 means not applicable	
>Time to trigger	MP		Time to trigger 10.3.7.64	Indicates the period of time during which the event condition has to be satisfied, before sending a Measurement Report. Time in ms	
>Amount of reporting	CV- <i>clause 7</i>		Integer(1, 2, 4, 8, 16, 32, 64, Infinity)	In case the IE "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement", this IE is not needed.	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>Reporting interval	CV- <i>clause 7</i>		Integer(0, 250, 500, 1000, 2000, 4000, 8000, 16000)	Indicates the interval of periodical reporting when such reporting is triggered by an event. Interval in milliseconds. 0 means no periodical reporting. In case the IE "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement", this IE is not needed.	
>Reporting cell status	OP		Reporting cell status 10.3.7.61		
>Periodical reporting information-1b	CV- <i>clause 9</i>		Periodical reporting info-1b 10.3.7.53 aa	In case the IE "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement", this IE is not needed.	REL-5
>Use CIO	CV- clause 10		Boolean	TRUE indicates that the cell individual offset shall be used for event evaluation	REL-5

Condition	Explanation
<i>Clause 0</i>	The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1b" or "1f", otherwise the IE is not needed.
<i>Clause 1</i>	The IE is optional if the IE "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed.
<i>Clause 2</i>	The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed.
<i>Clause 3</i>	The IE is mandatory present if the IE "Intra-frequency event identity" is set to , "1e", "1f", "1h" or "1i", otherwise the IE is not needed.
<i>Clause 4</i>	The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a", otherwise the IE is not needed.
<i>Clause 5</i>	The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1c", otherwise the IE is not needed.
<i>Clause 6</i>	The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a" or "1e", otherwise the IE is not needed.
<i>Clause 7</i>	The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a" or "1c", otherwise the IE is not needed.
<i>Clause 8</i>	The IE is optional if the IE "Intra-frequency event identity" is set to "1e", "1f", "1h" or "1i", and the threshold is below -115dBm. Otherwise the IE is not needed.
<i>Clause 9</i>	The IE is optional if the IE "Intra-frequency event identity" is set to "1b", otherwise the IE is not needed.
Clause 10	The IE is optional if the IE "Intra-frequency event identity" is set to "1d", otherwise the IE is not needed.

[...]

11.2 PDU definitions

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```
--*****
--
-- IE parameter types from other modules
--
--*****
```

IMPORTS

```
-- Core Network IEs :
  CN-DomainIdentity,
  CN-InformationInfo,
[... ]
  UL-TimingAdvanceControl,
  UL-TimingAdvanceControl-r4,
-- Measurement IEs :
  AdditionalMeasurementID-List,
  DeltaRSCP,
  Frequency-Band,
  EventResults,
  Inter-FreqEventCriteriaList-v5xyext,
  Intra-FreqEventCriteriaList-v5xyext,
  IntraFreqEvent-1d-r5ext,
  IntraFreqReportingCriteria-1b-r5ext,
  InterFreqEventResults-LCR-r4-ext,
[... ]
  SIB-Type
FROM InformationElements
```

[...]

```
SysInfoType11 ::= SEQUENCE {
  sib12indicator BOOLEAN,
  -- Measurement IEs
  fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
  measurementControlSysInfo MeasurementControlSysInfo,
  -- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType11-v4xyext SysInfoType11-v4xyext-IEs,
    v5xyNonCriticalExtension SEQUENCE {
      sysInfoType11-v5xyext SysInfoType11-v5xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  } OPTIONAL
}
```

```
SysInfoType11-v4xyext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}
```

```
SysInfoType11-v5xyext-IEs ::= SEQUENCE {
  --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
  newIntraFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
  newInterFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterRATCellInfoList
  newInterRATCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  intraFreqEventCriteriaList-v5xyext Intra-FreqEventCriteriaList-v5xyext OPTIONAL,
  intraFreqReportingCriteria-1b-r5ext IntraFreqReportingCriteria-1b-r5ext OPTIONAL,
  intraFreqEvent-1d-r5ext IntraFreqEvent-1d-r5ext OPTIONAL
}
```

```
SysInfoType12 ::= SEQUENCE {
  -- Measurement IEs
  fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
  measurementControlSysInfo MeasurementControlSysInfo,
  -- Extension mechanism for non- release99 information
```

```

    v4xyNonCriticalExtensions      SEQUENCE {
        sysInfoType12-v4xyext      SysInfoType12-v4xyext-IEs,
        v5xyNonCriticalExtension    SEQUENCE {
            sysInfoType12-v5xyext    SysInfoType12-v5xyext-IEs,
            nonCriticalExtensions     SEQUENCE {}
        }
    }
}
OPTIONAL
}

SysInfoType12-v4xyext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
    measurementControlSysInfo-LCR           MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12-v5xyext-IEs ::= SEQUENCE {
    --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
    newIntraFrequencyCellInfoList-v5xyext    SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt    OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
    newInterFrequencyCellInfoList-v5xyext    SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt    OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
    newInterRATCellInfoList-v5xyext         SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExt    OPTIONAL,
    intraFreqEventCriteriaList-v5xyext      Intra-FreqEventCriteriaList-v5xyext    OPTIONAL,
    intraFreqReportingCriteria-lb-r5ext     IntraFreqReportingCriteria-lb-r5ext    OPTIONAL,
    intraFreqEvent-lb-r5ext                 IntraFreqEvent-lb-r5ext    OPTIONAL
}

```

[...]

```

MeasurementControl ::= CHOICE {
    r3
        SEQUENCE {
            measurementControl-r3      MeasurementControl-r3-IEs,
            v390nonCriticalExtensions    SEQUENCE {
                measurementControl-v390ext    MeasurementControl-v390ext,
                v3a0NonCriticalExtensions    SEQUENCE {
                    measurementControl-v3a0ext    MeasurementControl-v3a0ext,
                    laterNonCriticalExtensions    SEQUENCE {
                        -- Container for additional R99 extensions
                        measurementControl-r3-add-ext    BIT STRING    OPTIONAL,
                        v4xyNonCriticalExtensions    SEQUENCE {
                            measurementControl-v4xyext    MeasurementControl-v4xyext-IEs,
                            v5xyNonCriticalExtensions    SEQUENCE {
                                measurementControl-v5xyext    MeasurementControl-v5xyext-IEs,
                                nonCriticalExtensions        SEQUENCE {}
                            }
                        }
                    }
                }
            }
        }
    OPTIONAL
},
    later-than-r3
        SEQUENCE {
            rrc-TransactionIdentifier    RRC-TransactionIdentifier,
            criticalExtensions            CHOICE {
                r4
                    SEQUENCE {
                        measurementControl-r4      MeasurementControl-r4-IEs,
                        v5xyNonCriticalExtensions    SEQUENCE {
                            measurementControl-v5xyext    MeasurementControl-v5xyext-IEs,
                            nonCriticalExtensions        SEQUENCE {}
                        }
                    }
                OPTIONAL
            }
        }
    OPTIONAL
}
}

```

```

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    -- Measurement IEs
    measurementIdentity          MeasurementIdentity,
    -- TABULAR: The measurement type is included in MeasurementCommand.
    measurementCommand           MeasurementCommand,
    measurementReportingMode      MeasurementReportingMode    OPTIONAL,
    additionalMeasurementList     AdditionalMeasurementID-List    OPTIONAL,
}

```

```

-- Physical channel IEs
    dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}

MeasurementControl-v4xyext-IEs ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext    UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}

MeasurementControl-v390ext ::= SEQUENCE {
    ue-Positioning-Measurement-v390ext    UE-Positioning-Measurement-v390ext    OPTIONAL
}

MeasurementControl-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity    SFN-Offset-Validity    OPTIONAL
}

MeasurementControl-r4-IEs ::= SEQUENCE {
    -- Measurement IEs
    measurementIdentity    MeasurementIdentity,
    -- TABULAR: The measurement type is included in measurementCommand.
    measurementCommand    MeasurementCommand-r4,
    measurementReportingMode    MeasurementReportingMode    OPTIONAL,
    additionalMeasurementList    AdditionalMeasurementID-List    OPTIONAL,
    -- Physical channel IEs
    dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}

MeasurementControl-v5xyext-IEs ::= SEQUENCE {
    measurementCommand-v5xyext    CHOICE {
        -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
        -- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency    Intra-FreqEventCriteriaList-v5xyext,
        inter-frequency    Inter-FreqEventCriteriaList-v5xyext
    }    OPTIONAL,
    intraFreqReportingCriteria-1b-r5ext    IntraFreqReportingCriteria-1b-r5ext    OPTIONAL,
    intraFreqEvent-1d-r5ext    IntraFreqEvent-1d-r5ext    OPTIONAL
}

```

11.3 Information element definitions

[...]

```

IntraFreqEvent-1d-r5ext ::= SEQUENCE {
    triggeringCondition    TriggeringCondition2    OPTIONAL,
    useCIO    BOOLEAN    OPTIONAL
}

```

[...]

14.1.2.4 Reporting event 1D: Change of best cell

When an intra-frequency measurement configuring event 1d is set up, the UE shall:

- 1> create a variable TRIGGERED_1D_EVENT related to that measurement, which shall initially contain the best cell in the active set when the measurement is initiated;
- 1> delete this variable when the measurement is released.

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

1> if IE "useCIO" is present and its value is TRUE, take into account the Cell Individual Offset for evaluation of the Equation 1 and 2, otherwise do not take it into account;

- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for a primary CPICH that is not stored in "Best cell" in variable BEST_CELL_1D_EVENT, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for a primary CPICH that is not stored in "Best cell" in variable BEST_CELL_1D_EVENT:

NOTE: If the equations are simultaneously fulfilled for more than one primary CPICH, the UE should report only one event 1D, triggered by the best primary CPICH.

2> if all required reporting quantities are available for that cell, and if the equations have been fulfilled for a time period indicated by "Time to trigger" and if IE "Triggering condition 2" is absent or if it is present and that primary CPICH is part of cells allowed to trigger the event according to "Triggering condition 2":

3> set "best cell" in the variable BEST_CELL_1D_EVENT to that primary CPICH that triggered the event;

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

4> set in "intra-frequency measurement event results"; "Intrafrequency event identity" to "1d" and "cell measurement event results" to the CPICH info of the primary CPICH that triggered the report, ~~not taking into account the cell individual offset for each cell.~~

4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, ~~not taking into account the cell individual offset for each cell.~~

~~NOTE: Event 1D can be triggered by an active or by a non active CPICH.~~

This event is only applicable to the CELL_DCH state. Upon transition to CELL_DCH the UE shall:

1> set "best cell" in the variable BEST_CELL_1D_EVENT to the best cell of the primary CPICHs included in the active set, ~~not taking into account any cell individual offsets.~~

Equation 1 (Triggering condition for pathloss)

$$\frac{10 \log M_{NotBest} - H_{1d}/2}{10 \log M_{Best} - H_{1d}/2} \leq \frac{10 \log M_{NotBest} + CIO_{NotBest}}{10 \log M_{Best} + CIO_{Best}} \leq \frac{10 \log M_{NotBest} + CIO_{NotBest} - H_{1d}/2}{10 \log M_{Best} + CIO_{Best} - H_{1d}/2}$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$\frac{10 \log M_{NotBest} - H_{1d}/2}{10 \log M_{Best} - H_{1d}/2} \geq \frac{10 \log M_{NotBest} + CIO_{NotBest}}{10 \log M_{Best} + CIO_{Best}} \geq \frac{10 \log M_{NotBest} + CIO_{NotBest} + H_{1d}/2}{10 \log M_{Best} + CIO_{Best} + H_{1d}/2}$$

The variables in the formula are defined as follows:

$M_{NotBest}$ is the measurement result of a cell not stored in "best cell" in the variable BEST_CELL_1D_EVENT.

$CIO_{NotBest}$ is the cell individual offset of a cell not stored in "best cell" in the variable BEST_CELL_1D_EVENT.

M_{Best} is the measurement result of the cell stored in "best cell" in variable BEST_CELL_1D_EVENT.

CIO_{Best} is the cell individual offset of a cell stored in "best cell" in the variable BEST_CELL_1D_EVENT.

H_{1d} is the hysteresis parameter for the event 1d.

If the measurement results are pathloss or CPICH-Ec/No then $M_{NotBest}$ and M_{Best} are expressed as ratios.

If the measurement result is CPICH-RSCP then $M_{NotBest}$ and M_{Best} are expressed in mW.

~~NOTE: The cell individual offsets for the two cells being compared shall not be taken into account when checking whether this event has been triggered or not.~~

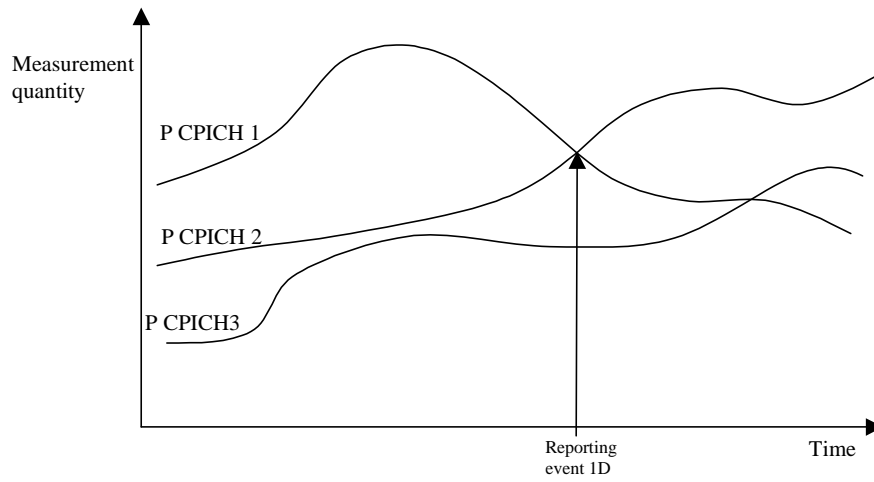


Figure 14.1.2.4-1 [Informative]: A primary CPICH becomes better than the previously best primary CPICH

In this figure, the parameters hysteresis and time to trigger, as well as the cell individual offsets for all cells are equal to 0.

CHANGE REQUEST

25.331 CR 1903 # rev - # Current version: 5.3.0

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

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	# Correction to USBI				
Source:	# TSG-RAN WG2				
Work item code:	# TEI5	Date:	# 14/02/2003		
Category:	# F	Release:	# Rel-5		
	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 be found in 3GPP TR 21.900 .		Rel-4 (Release 4)		
			Rel-5 (Release 5)		
			Rel-6 (Release 6)		

Reason for change:	# In the Release 5 version of the agreed CR 1758 on the USBI the changes to section 8.1.16.3 were missing.
Summary of change:	# The changes in section 8.1.16.3 from CR 1758 are copied to the Release 5 version of the specification i.e. that the UE shall not send the USBI in this version of the protocol.
Consequences if not approved:	# If this CR is not approved the UE behaviour may change between the REL 99/4 version and the Rel 5 version for the same functionality i.e. the USBI. This means that the interworking between Release 5 mobiles and a Release 99 / 4 network, and the interworking between a Release 99 / 4 mobile and a Release 5 network is not guaranteed.

Clauses affected:	# 8.1.16.3				
Other specs affected:	#				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	#	X
Y	N				
#	X				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Test specifications	#	X		
#	X				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> O&M Specifications	#	X		
#	X				
Other comments:	#				

How to create CRs using this form:

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

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

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

8.1.16.3 INTER RAT HANDOVER INFO message contents to set

The UE shall:

- 1> include the IE "Predefined configuration status information" and the IE "UE security information";
- 1> include the IE "UE capability container", containing the IE "UE radio access capability" and the IE "UE radio access capability extension", in accordance with the following:
 - 2> if the UE supports multiple UTRA FDD Frequency Bands; or
 - 2> if the UE supports a single UTRA FDD Frequency Band different from 2100 MHz:
 - 3> include the IE "UE radio access capability", excluding IEs "RF capability FDD" and "Measurement capability";
 - 3> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".
 - 2> else:
 - 3> include the IE "UE radio access capability", including the IEs "RF capability FDD" and "Measurement capability" associated with the 2100 MHz UTRA FDD frequency band;
 - 3> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".

1> The UE shall not include the IE "UE Specific Behaviour Information 1 interRAT".

- 1> initiate the transfer of the INTER RAT HANDOVER INFO message via the other radio access technology, using radio access technology-specific procedures;
- 1> store the IE "Predefined configuration status information", the IE "UE security information", the IE "UE radio access capability" and the IE "UE radio access capability extension", if included in the INTER RAT HANDOVER MESSAGE, in variable INTER_RAT_HANDOVER_INFO_TRANSFERRED;
- 1> and the procedure ends.