TSG-RAN Meeting #28
Quebec, Canada, 01-03 June 2005

RP-050321
agenda item 8.11

Source: **TSG-RAN WG2.**

Subject: **CRs to 25.331 and 25.993 on CCCH message enhancements**

The following CRs are in RP-050321:

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	2602	-	Rel-6	CCCH message enhancements	F	6.5.0	6.6.0	R2-051650	TEI6
25.993	0040	-	Rel-6	CCCH message enhancements	F	6.9.0	6.10.0	R2-051651	TEI6

3GPP TSG- RAN Working Group 2 Meeting #47
Athens, Greece, Mai 9th to 13th, 2005

Tdoc ⌘R2-051650

CR-Form-v7

CHANGE REQUEST

⌘ **25.331** **CR** **2602** ⌘ **rev** **-** ⌘ Current version: **6.5.0** ⌘

*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:	⌘	CCCH message enhancements
Source:	⌘	RAN WG2
Work item code:	⌘	TEI6
Date:	⌘	06/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The maximum message size usable for CCCH messages is restricted due to the fact that the current specification restricts the UE to only use the first transport block size listed in the PRACH configuration.
Summary of change:	⌘	One additional transport block size is added as an extension to the SIB 5 and 6. The UE shall use this transport block size to transmit CCCH messages on SRB0.
Consequences if not approved:	⌘	Certain UEs may not be able to support different CCCH message sizes and therefore not be able to send measurements on neighbouring cells, traffic measurement information or inter frequency measurement information on CCCH which may increase the latency in call establishment, or prevent the transition to CELL_DCH.

Clauses affected:	⌘	8.1.1.6.5, 8.1.1.6.6, 8.6.5.1, 8.6.5.12, 8.6.5.12a, 8.6.5.13, 10.2.48.8.8, 10.2.48.8.9, 10.3.5.23, 10.3.5.x1, 10.3.5.x2 10.3.6.55, 11.3, 13.6

Other specs affected:	⌘	Y	N			
		Y		Other core specifications	⌘	25.993
			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.

8.1.1.6.5 System Information Block type 5 and 5bis

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

1> if the IE "Frequency band indicator" is included and if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or

1> if the IE "Frequency band indicator2" is included and if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or

1> if the IE "Frequency band indicator" is included and set to "extension indicator", and the UE does not support any frequency bands beyond Band VIII; or

1> if the IE "Frequency band indicator" is not included in System Information Block type 5, the DL frequency is on the 2.1 GHz band, and Band I is not part of the frequency bands supported by the UE in the UE radio access capability, or

1> if the IE "Frequency band indicator" is not included in System Information Block type 5bis, the DL frequency is on the 2.1 GHz band, and Band IV is not part of the frequency bands supported by the UE in the UE radio access capability:

2> consider the cell to be barred according to [4]; and

2> consider the barred cell as using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T_{barred}".

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

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

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

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

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

1> if the IE “Additional Dynamic Transport Format Information for CCCH” is included for the selected PRACH:

2> use this transport format for transmission of the CCCH

1> else:

2> use the first instance of the list of transport formats as in the IE "RACH TFS" for the used RACH received in the IE "PRACH system information list" when using the CCCH;

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

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

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

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

1> in 3.84 Mcps TDD:

2> use the IE "TDD open loop power control" as defined in subclause 8.5.7 when allocated PRACH is used.

1> in TDD:

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

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

If a UE is a 12 kbps class UE according to [35] and the UE has a lower capability than required to support all transport channel configurations mapped on a specific Secondary CCPCH, the UE shall at a certain time instant still be able to decode those transport channels mapped on this Secondary CCPCH that do match the capability supported by the UE. The UE shall use the TFCI bits for that Secondary CCPCH, to distinguish a transport channel configuration that is supported by the UE from a transport channel configuration that is not supported by the UE.

In particular if the UE is a 12 kbps class UE according to [35] and it does not support the processing requirement at a given point in time for a Secondary CCPCH, it shall still be able to decode the same Secondary CCPCH when the processing requirement is consistent with the UE capability. Or if the UE does not support the number of TFs or the coding of a certain transport channel on a Secondary CCPCH, it shall still be able to decode other transport channels mapped on the same Secondary CCPCH that is consistent with what is supported by the UE.

The UE shall:

1> if the IE "Secondary CCPCH system information MBMS" is included:

2> apply the Secondary CCPCH and FACH indicated by the IE "FACH carrying MCCH" for receiving MCCH.

1> otherwise, if the IE "Secondary CCPCH system information" includes the IE "MCCH configuration information":

2> apply the Secondary CCPCH and FACH indicated by the IE “MCCH configuration information” for receiving MCCH.

8.1.1.6.6 System Information Block type 6

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

1> if the IE "Frequency band indicator" is included:

2> if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or

2> if the IE "Frequency band indicator2" is included and if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or

2> if the IE "Frequency band indicator" is included and set to "extension indicator", and the UE does not support any frequency bands beyond Band VIII:

3> consider the cell to be barred according to [4]; and

3> consider the barred cell as using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T_{barred}".

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

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

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

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

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

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

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

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

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

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

If a UE is a 12 kbps class UE according to [35] and the UE has a lower capability than required to support all transport channel configurations mapped on a specific Secondary CCPCH, the UE shall at a certain time instant still be able to decode those transport channels mapped on this Secondary CCPCH that do match the capability supported by the UE. The UE shall use the TFCI bits for that Secondary CCPCH, to distinguish a transport channel configuration that is supported by the UE from a transport channel configuration that is not supported by the UE.

In particular if the UE is a 12 kbps class UE according to [35] and it does not support the processing requirement at a given point in time for a Secondary CCPCH, it shall still be able to decode the same Secondary CCPCH when the processing requirement is consistent with the UE capability. Or if the UE does not support the number of TFs or the coding of a certain transport channel on a Secondary CCPCH, it shall still be able to decode other transport channels mapped on the same Secondary CCPCH that is consistent with what is supported by the UE.

8.6.5.1 Transport Format Set

If the IE "Transport format set" is included, the UE shall:

1> if the transport format set is a RACH TFS received in System Information Block type 5 or 6, and CHOICE "Logical Channel List" has a value different from "Configured":

2> ignore that System Information Block.

NOTE: The TFS added by the IE “Additional Dynamic Transport Format Information for CCCH” has no CHOICE "Logical Channel List" and can thus never be considered as different from “Configured”.

1> if the transport format set for a downlink transport channel is received in a System Information Block, and CHOICE "Logical Channel List" has a value different from 'ALL':

2> ignore that System Information Block.

1> if the transport format set for a downlink transport channel is received in a message on a DCCH, and CHOICE "Logical Channel List" has a value different from 'ALL':

2> keep the transport format set if this exists for that transport channel;

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if the value of any IE "RB identity" (and "Logical Channel" for RBs using two UL logical channels) in the IE "Logical channel list" does not correspond to a logical channel indicated to be mapped onto this transport channel in any RB multiplexing option (either included in the same message or previously stored and not changed by this message); or

1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "Configured" while it is set to "All" or given as an "Explicit List" for any other RLC size; or

1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "All" and for any logical channel mapped to this transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or

1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is given as an "Explicit List" that contains a logical channel for which the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or

1> if the "Logical Channel List" for all the RLC sizes defined for that transport channel are given as "Explicit List" and if one of the logical channels mapped onto this transport channel is not included in any of those lists; or

1> if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is also set to "Configured"; or

1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list" and if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is given as an "Explicit List" that includes an "RLC size index" that does not correspond to any RLC size in this "Transport Format Set"; or

1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list", and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:

2> keep the transport format set if this exists for that transport channel;

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if the total number of configured transport formats for the transport channel exceeds maxTF:

2> keep the transport format set if this exists for that transport channel;

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if the IE "Transport format set" is considered as valid according to the rules above:

2> remove a previously stored transport format set if this exists for that transport channel;

2> store the transport format set for that transport channel;

2> consider the first instance of the parameter *Number of TBs and TTI List* within the *Dynamic transport format information* to correspond to transport format 0 for this transport channel, the second to transport format 1 and so on;

2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Dedicated transport channel":

3> calculate the transport block size for all transport formats in the TFS using the following

TB size = RLC size + MAC header size	if "RLC size" <> 0,
TB size = 0	if "RLC size" = 0,

where:

- MAC header size is calculated according to [15] if MAC multiplexing is used. Otherwise it is 0 bits;
- 'RLC size' reflects the RLC PDU size.

2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Common transport channel":

3> in FDD:

4> for transport channels other than DSCH calculate the transport block size for all transport formats in the TFS using the following:

TB size = RLC size.

4> for DSCH transport channels calculate the transport block size for all transport formats in the TFS using the following:

TB size = RLC size + MAC header size	if "RLC size" <> 0,
TB size = 0	if "RLC size" = 0,

where:

- MAC header size is calculated according to [15];
- 'RLC size' reflects the RLC PDU size.

3> for TDD calculate the transport block size for all transport formats in the TFS using the following:

TB size = RLC size.

2> if the IE "Number of Transport blocks" <> 0 and IE "RLC size" = 0, no RLC PDU data exists but only parity bits exist for that transport format;

2> if the IE "Number of Transport blocks" = 0, neither RLC PDU neither data nor parity bits exist for that transport format;

2> perform the actions as specified in subclause 8.5.21.

For configuration restrictions on Blind Transport Format Detection, see [27].

8.6.5.12 TFCS Reconfiguration/Addition Information

If the IE "TFCS Reconfiguration/Addition Information" is included the UE shall:

1> store the TFCs to be reconfigured/added indicated in the IE "CTFC information" as specified below;

1> if the IE "Power offset information" is included:

2> perform actions as specified in [29].

In order to identify the TFCs included in this IE the UE shall calculate the CTFC as specified in subclause 14.10 and

1> if the IE "TFCS Reconfiguration/Addition Information" was included in the IE "TFCI Field 1 Information":

2> ignore for the CTFC calculation any DSCH transport channel that may be assigned.

1> if the IE "TFCS Reconfiguration/Addition Information" was included in the IE "TFCI Field 2 Information":

2> ignore for the CTFC calculation any DCH transport channel that may be assigned.

1> if the IE "Additional Dynamic Transport Format Information for CCCH" was included in the IE "RACH TFS":

2> ignore for the CTFC calculation any TF added by the IE “Additional Dynamic Transport Format Information for CCCH”.

If the IE "TFCS Reconfiguration/Addition Information" is used in case of TFCS "Complete reconfiguration" the UE shall:

1> remove a previously stored transport format combination set if this exists;

1> consider the first instance of the IE "CTFC information" as Transport Format Combination 0 in FDD (TFCI=0) and 1 in TDD (TFCI=1), the second instance as Transport Format Combination 1 in FDD (TFCI=1) and 2 in TDD (TFCI=2) and so on. In TDD the TFCI value = 0 is reserved for physical layer use.

If the IE "TFCS Reconfiguration/Addition Information" is used in case of TFCS "Addition" the UE shall insert the new additional(s) TFC into the first available position(s) in ascending TFCI order in the TFCS.

8.6.5.12a Additional RACH TFCS for CCCH

If the IE "Additional RACH TFCS for CCCH " is included the UE shall:

1> if the IE "Power offset information" is included:

2> perform actions as specified in [29].

1> add to the TFCS as calculated in 8.6.5.12 for the corresponding PRACH the TFC which consists of the TF added by the IE “Additional Dynamic Transport Format Information for CCCH” into the next position in ascending order after the highest TFCI value already used.

NOTE: On PRACH only one transport channel can be multiplexed.

8.6.5.13 TFCS Removal Information

If the IE "TFCS Removal Information" is included the UE shall:

1> remove the TFC indicated by the IE "TFCI" from the current TFCS, and regard this position (TFCI) in the TFCS as vacant.

10.2.48.8.8 System Information Block type 5 and 5bis

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. System information block type 5bis uses the same structure as System information block type 5. System information block type 5bis is sent instead of system information block type 5 in networks that use Band IV.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
SIB6 Indicator	MP		Boolean	TRUE indicates that SIB6 is broadcast in the cell.	
PhyCH information elements					
PICH Power offset	MP		PICH Power offset 10.3.6.50		
CHOICE *mode*	MP				
>FDD					
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	This AICH Power offset also indicates the power offset for AP-AICH and for CD/CA-ICH.	
>TDD					
>>PUSCH system information	OP		PUSCH system information 10.3.6.66		
>>PDSCH system information	OP		PDSCH system information 10.3.6.46		
>>TDD open loop power control	MP		TDD open loop power control 10.3.6.79		
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.57	Note 1	
PRACH system information list	MP		PRACH system information list 10.3.6.55		
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.72	Note 2	
CBS DRX Level 1 information	CV-*CTCH*		CBS DRX Level 1 informatio		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			n 10.3.8.3		
Frequency band indicator	OP		Frequency band indicator 10.3.6.35b		REL-6
Frequency band indicator 2	OP		Frequency band indicator 2 10.3.6.35c		REL-6
Secondary CCPCH system information MBMS	OP		Secondary CCPCH system information MBMS 10.3.6.72a	S-CCPCH dedicated to MBMS. Note 2	REL-6

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

NOTE 2: There is only one MCCH in a cell, which may either be mapped on to an S-CCPCH also used for non-MBMS purposes or to an S-CCPCH dedicated to MBMS. In the first case the MCCH configuration is specified within the IE "Secondary CCPCH system information", in the latter case the MCCH configuration is provided within the IE "Secondary CCPCH system information MBMS".

Condition	Explanation
CTCH	The IE is mandatory present if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed in the message

10.2.48.8.9 System Information Block type 6

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
PhyCH information elements					
PICH Power offset	MP		PICH Power offset 10.3.6.50		
CHOICE *mode*	MP				
>FDD					
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	This AICH Power offset also indicates the power offset for AP-AICH and for CD/CA-ICH.	
>TDD					
>>PUSCH system information	OP		PUSCH system information 10.3.6.66		
>>PDSCH system information	OP		PDSCH system information 10.3.6.46		
>>TDD open loop power	MP		TDD open		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
control			loop power control 10.3.6.79		
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.57	Note 1	
PRACH system information list	OP		PRACH system information list 10.3.6.55		
Secondary CCPCH system information	OP		Secondary CCPCH system information 10.3.6.72		
CBS DRX Level 1 information	CV-*CTCH*		CBS DRX Level 1 information 10.3.8.3		
Frequency band indicator	OP		Frequency band indicator 10.3.6.35b		REL-6
Frequency band indicator 2	OP		Frequency band indicator 2 10.3.6.35c		REL-6

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

Condition	Explanation
CTCH	The IE is mandatory present if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed

10.3.5.23 Transport Format Set

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE *Transport channel type*	MP				
>Dedicated transport channels				The transport channel that is configured with this TFS is of type DCH	
>>Dynamic Transport Format Information	MP	1 to <maxTF>			
>>>RLC Size	MP		Integer(16..5000 by step of 8)	Unit is bits	
>>>Number of TBs and TTI List	MP	1 to <maxTF>		Present for every valid number of TB's (and TTI) for this RLC Size.	
>>>>Transmission Time Interval	CV-		Integer(10,2	Unit is ms.	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
	dynamicTTI		0,40,80)		
>>>>Number of Transport blocks	MP		Integer(0..512)		
>>>CHOICE *Logical Channel List*	MP			The logical channels that are allowed to use this RLC Size	
>>>>ALL			Null	All logical channels mapped to this transport channel.	
>>>>Configured			Null	The logical channels configured to use this RLC size in the *RB mapping info*. 10.3.4.21 if present in this message or in the previously stored configuration otherwise	
>>>>Explicit List		1 to 15		Lists the logical channels that are allowed to use this RLC size.	
>>>>>RB Identity	MP		RB identity 10.3.4.16		
>>>>>LogicalChannel	CH-*UL-RLCLogicalChannels*		Integer(0..1)	Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info".	
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.11		
>Common transport channels				The transport channel that is configured with this TFS is of a type not equal to DCH	
>>Dynamic Transport Format Information	MP	1 to <maxTF>		Note	
>>>RLC Size	MP		Integer(16..5000 by step of 8)	Unit is bits	
>>>Number of TBs and TTI List	MP	1 to <maxTF>		Present for every valid number of TB's (and TTI) for this RLC Size.	
>>>>Number of Transport blocks	MP		Integer(0..512)		
>>>>CHOICE *mode*	MP				

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>>>>>FDD				(no data)	
>>>>>TDD					
>>>>>>Transmission Time Interval	CV-*dynamicTTI*		Integer(10,20,40,80)	Unit is ms.	
>>>CHOICE *Logical Channel List*	MP			The logical channels that are allowed to use this RLC Size.	
>>>>ALL			Null	All logical channels mapped to this transport channel.	
>>>>Configured			Null	The logical channels configured to use this RLC size in the *RB mapping info*. 10.3.4.21 if present in this message or in the previously stored configuration otherwise	
>>>>Explicit List		1 to 15		Lists the logical channels that are allowed to use this RLC size.	
>>>>>RB Identity	MP		RB identity 10.3.4.16		
>>>>>LogicalChannel	CV-*UL-RLCLogicalChannels*		Integer(0..1)	Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info".	
>>Additional Dynamic Transport Format Information for CCCH	CV-FDD-OP		Additional Dynamic Transport Format Information for CCCH 10.3.5.x1		Rel-6
>>Semi-static Transport Format Information	MP		Semi-static Transport Format Information 10.3.5.11		

Condition	Explanation
DynamicTTI	This IE is mandatory present if dynamic TTI usage is indicated in IE Transmission Time Interval in Semi-static Transport Format Information. Otherwise it is not needed.
UL-RLCLogicalChannels	If "Number of uplink RLC logical channels" in IE "RB mapping info" in this message is 2 or the IE "RB mapping info" is not present in this message and 2 UL logical channels are configured for this RB, then this IE is mandatory present. Otherwise this IE is not

	needed.
FDD	The information element is OP for FDD. The information element is not needed for TDD.

10.3.5.x1 Additional Dynamic Transport Format Information for CCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
RLC Size	MP		Integer(16..5000 by step of 8)	Unit is bits	Rel-6
Number of Transport blocks	MP		Integer(1)		Rel-6

10.3.5.x2 Additional RACH TFCS for CCCH

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Power offset Information	OP		Power Offset Information 10.3.5.8	The actual TFCS is specified in 8.6.5.12a	Rel-6

10.3.6.55 PRACH system information list

Information element	Need	Multi	Type and reference	Semantics description	Version
PRACH system information	MP	1 .. <maxPRACH>			
>PRACH info	MP		PRACH info (for RACH) 10.3.6.52		
>Transport channel identity	MP		Transport channel identity 10.3.5.18		
>RACH TFS	MD		Transport format set 10.3.5.23	Default value is the value of "RACH TFS" for the previous PRACH in the list NOTE: —The first occurrence is then MP). [Style changed] NOTE: —For TDD in this release there is a single TF within the RACH TFS. [Style changed]	
>RACH TFCS	MD		Transport Format Combination Set 10.3.5.20	Default value is the value of "RACH TFCS" for the previous PRACH in the list. NOTE:— The first	

Information element	Need	Multi	Type and reference	Semantics description	Version
				occurrence is then MP). [Style changed] NOTE:—For TDD in this release there is no TFCS required. [Style changed]	
>Additional RACH TFCS for CCCH	CV-FDD-OP		Additional RACH TFCS for CCCH 10.3.5.x2		Rel-6
>PRACH partitioning	MD		PRACH partitioning 10.3.6.53	Default value is the value of "PRACH partitioning" for the previous PRACH in the list (note : the first occurrence is then MP)	
>Persistence scaling factors	OP		Persistence scaling factors 10.3.6.48	This IE shall not be present if only ASC 0 and ASC 1 are defined. If this IE is absent, value is the value of "Persistence scaling factors" for the previous PRACH in the list if value exists	
>AC-to-ASC mapping	CV-*SIB5-MD*		AC-to-ASC mapping 10.3.6.1	Only present in SIB 5 and in SIB 5bis. Default value is the value of "AC-to-ASC mapping" for the previous PRACH in the list. NOTE:—The first occurrence is then MP in SIB5 and in SIB5bis. [Style changed]	
>CHOICE *mode*	MP				
>>FDD					
>>>Primary CPICH TX power	MD		Primary CPICH TX power 10.3.6.61	Default value is the value of "Primary CPICH TX power" for the previous PRACH in the list. NOTE:—The first occurrence is then MP. [Style changed]	
>>>Constant value	MD		Constant value 10.3.6.11	Default value is the value of "Constant value" for the previous PRACH in the list.	

Information element	Need	Multi	Type and reference	Semantics description	Version
				NOTE:—The first occurrence is then MP. [Style changed]	
>>>PRACH power offset	MD		PRACH power offset 10.3.6.54	Default value is the value of "PRACH power offset" for the previous PRACH in the list. NOTE:—The first occurrence is then MP. [Style changed]	
>>>RACH transmission parameters	MD		RACH transmission parameters 10.3.6.67	Default value is the value of "RACH transmission parameters" for the previous PRACH in the list. NOTE:—The first occurrence is then MP. [Style changed]	
>>>AICH info	MD		AICH info 10.3.6.2	Default value is the value of "AICH info" for the previous PRACH in the list. NOTE:—The first occurrence is then MP. [Style changed]	
>>TDD				(no data)	

Condition	Explanation
SIB5-MD	The information element is present only in SIB 5 and in SIB5bis. In SIB ~~5~~ 6 and in SIB ~~5bis~~ 6bis it is mandatory with default.
FDD	The information element is OP for FDD. The information element is not needed for TDD.

NOTE: If the setting of the PRACH information results in that a combination of a signature, preamble scrambling code and subchannel corresponds to a RACH with different TFS and/or TFCS, then for that combination only the TFS/TFCS of the PRACH listed first is valid, where PRACHs listed in System Information Block type 5 or 5bis shall be counted first.

11.3 Information element definitions

```
SysInfoType5 ::=                    SEQUENCE {
        sib6indicator                   BOOLEAN,
    -- Physical channel IEs
        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.
                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,
        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
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType5-v4b0ext            SysInfoType5-v4b0ext-IEs        OPTIONAL,
        -- Extension mechanism for non- rel-4 information
            v590NonCriticalExtensions       SEQUENCE {
                sysInfoType5-v590ext            SysInfoType5-v590ext-IEs        OPTIONAL,
                v650NonCriticalExtensions       SEQUENCE {
                    sysInfoType5-v650ext            SysInfoType5-v650ext-IEs        OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        sysInfoType5-v6xyext            SysInfoType5-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
}

SysInfoType5-v4b0ext-IEs ::= SEQUENCE {
    --The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
    pNBSCH-Allocation-r4            PNBSCH-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
    }                                                                   OPTIONAL,
    frequencyBandIndicator          RadioFrequencyBandFDD           OPTIONAL
}

SysInfoType5-v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo             SEQUENCE {
        pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN-HCR-r5    OPTIONAL,
        pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN-HCR-r5    OPTIONAL
    }                                                                   OPTIONAL
}

SysInfoType5-v650ext-IEs ::= SEQUENCE {
    frequencyBandIndicator2         RadioFrequencyBandFDD2
}

SysInfoType5-v6xyext-IEs ::=        SEQUENCE {
    sccpch-SystemInformation-MBMS       CHOICE {
        sccpch-CommonForMBMSAndNonMBMS      SCCPCH-SystemInformationList-MBMS-r6-ext,
        sccpch-DedicatedForMBMS             SCCPCH-SystemInformation-MBMS-r6
    }       OPTIONAL,
    additionalPRACH-TF-and-TFCS-CCCH-List   AdditionalPRACH-TF-and-TFCS-CCCH-List   OPTIONAL
}

-- SysInfoType5bis uses the same structure as SysInfoType5
SysInfoType5bis ::= SysInfoType5

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
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType6-v4b0ext            SysInfoType6-v4b0ext-IEs        OPTIONAL,
        -- Extension mechanism for non- rel-4 information
            v590NonCriticalExtensions   SEQUENCE {
                sysInfoType6-v590ext            SysInfoType6-v590ext-IEs        OPTIONAL,
                v650nonCriticalExtensions       SEQUENCE {
                    sysInfoType6-v650ext            SysInfoType6-v650ext-IEs        OPTIONAL,
                    v6xynonCriticalExtensions           SEQUENCE {
                        sysInfoType6-v6xyext            SysInfoType6-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}                 OPTIONAL
                    }                               OPTIONAL
                }                           OPTIONAL
            }                               OPTIONAL
        }                           OPTIONAL
}

SysInfoType6-v4b0ext-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
    }                                                               OPTIONAL,
    frequencyBandIndicator          RadioFrequencyBandFDD           OPTIONAL
}

SysInfoType6-v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo             SEQUENCE {
        pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN-HCR-r5    OPTIONAL,
        pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN-HCR-r5    OPTIONAL
    }                                                                   OPTIONAL
}

SysInfoType6-v650ext-IEs ::= SEQUENCE {
    frequencyBandIndicator2         RadioFrequencyBandFDD2
}

SysInfoType6-v6xyext-IEs :: = SEQUENCE {
    additionalPRACH-TF-and-TFCS-CCCH-List   AdditionalPRACH-TF-and-TFCS-CCCH-List   OPTIONAL
}

Next section

PRACH-SystemInformation ::=         SEQUENCE {
    prach-RACH-Info                 PRACH-RACH-Info,
    transportChannelIdentity        TransportChannelIdentity,
    rach-TransportFormatSet         TransportFormatSet                  OPTIONAL,
```

```
    rach-TFCS                           TFCS                                OPTIONAL,
    prach-Partitioning                  PRACH-Partitioning                  OPTIONAL,
    persistenceScalingFactorList        PersistenceScalingFactorList        OPTIONAL,
    ac-To-ASC-MappingTable              AC-To-ASC-MappingTable              OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            constantValue                       ConstantValue               OPTIONAL,
            prach-PowerOffset                   PRACH-PowerOffset           OPTIONAL,
            rach-TransmissionParameters         RACH-TransmissionParameters OPTIONAL,
            aich-Info                           AICH-Info                   OPTIONAL
        },
        tdd                                 NULL
    }
}

PRACH-SystemInformation-LCR-r4 ::=  SEQUENCE {
    prach-RACH-Info-LCR                 PRACH-RACH-Info-LCR-r4,
    rach-TransportFormatSet-LCR         TransportFormatSet-LCR          OPTIONAL,
    prach-Partitioning-LCR              PRACH-Partitioning-LCR-r4       OPTIONAL
}

PRACH-SystemInformationList ::=     SEQUENCE (SIZE (1..maxPRACH)) OF
                                        PRACH-SystemInformation


DynamicTFInformationCCCH :: =       SEQUENCE {
    octetModeRLC-SizeInfoType2          OctetModeRLC-SizeInfoType2
}

AdditionalPRACH-TF-and-TFCS-CCCH-IEs :: = SEQUENCE {
    powerOffsetInformation              PowerOffsetInformation          OPTIONAL,
    dynamicTFInformationCCCH            DynamicTFInformationCCCH
}

AdditionalPRACH-TF-and-TFCS-CCCH:: =    SEQUENCE {
    additionalPRACH-TF-and-TFCS-CCCH-IEs    AdditionalPRACH-TF-and-TFCS-CCCH-IEs    OPTIONAL

}

-- The order is the same as in the PRACH-SystemInformationList
AdditionalPRACH-TF-and-TFCS-CCCH-List ::=   SEQUENCE (SIZE (1..maxPRACH)) OF
                                            AdditionalPRACH-TF-and-TFCS-CCCH
```

13.6 RB information parameters for signalling radio bearer RB 0

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

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

Procedure descriptions in subclause 8.6.4.8 shall not be applied for the IE "RB mapping info" that is used for signalling radio bearer RB0.

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Athens, Greece, Mai 9th to 13th, 2005

Tdoc ⌘R2-051651

CR-Form-v7

CHANGE REQUEST

⌘ **25.993** **CR** **0040** ⌘**rev** **-** ⌘ Current version: **6.9.0** ⌘

*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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	CCCH message enhancements
Source:	⌘	RAN WG2
Work item code:	⌘	TEI6
Date:	⌘	06/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The maximum message size usable for CCCH messages is restricted due to the fact that the current specification restricts the UE to only use the first transport block size listed in the PRACH configuration. Some UEs might not support the change of the transport block sizes in SIB 5/6.
Summary of change:	⌘	For FDD one additional transport block size is added as an extension to the SIB 5 and 6 such that Rel 99-5 UEs do not receive this information and ignore the information. A Release 6 and above UE shall use this transport block size to transmit CCCH messages on SRB0. The corresponding configuration is given below.
Consequences if not approved:	⌘	Certain UEs may not be able to support different CCCH message sizes and therefore not be able to send measurements on neighbouring cells, traffic measurement information or inter frequency measurement information on CCCH which may increase the latency in call establishment, or prevent the transition to CELL_DCH.

Clauses affected:	⌘	7.3.x			
Other specs affected:	⌘	Y: Other core specifications	⌘	25.331	
		N: Test specifications			
		N: 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.

7.3.x Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH

Higher layer	RAB/signalling RB		**RAB**	**SRB#0**	**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**
	User of Radio Bearer		Interactive/ Background RAB	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type		DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
	RLC mode		AM	TM	UM	AM	AM	AM
	Payload sizes, bit		320	166 / 238 (Rel6)	136	128	128	128
	Max data rate, bps		32000	16600/ 23800 (Rel6, see Note)	13600	12800	12800	12800
	AMD/UMD/TrD PDU header, bit		16	0	8	16	16	16
MAC	MAC header, bit		24	2	24	24	24	24
	MAC multiplexing		6 logical channel multiplexing					
Layer 1	TrCH type		RACH					
	TB sizes, bit		360	168 / 240 (Rel6, see Note)	168	168	168	168
	TFS	TF0, bits	1x168					
		TF1, bits	1x360					
		TF2, bits (Rel 6, see Note)	1x240					
	TTI, ms		20 (alt. 10)					
	Coding type		CC 1/2					
	CRC, bit		16					
	Max number of bits/TTI after channel coding		768	384 / 512 (Rel 6, see Note)	384	384	384	384
	Max number of bits/ Radio frame before rate matching		384 (alt. 768)	192 / 256 Rel 6 (alt. 384 / 512 Rel 6, see Note)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)

7.3.x.1 TFCS

TFCS size	2, 3 (in Rel 6 , see Note)
TFCS	32 kbps + SRBs for CCCH/ DCCH = TF0, TF1, TF2 (in Rel 6 , see Note)

NOTE: In Release 6 UEs shall use the TF/TFC as indicated in the IE “Additional Dynamic Transport Format Information for CCCH” and IE “Additional RACH TFCS for CCCH” for CCCH if available. In this configuration the indicated TF / TFC will be transmitted in these IEs.

The minimum UE class supporting this combination is UL: 12 kbps.

This is supported in Release '6.