TSG-RAN Working Group 1 meeting No. 10 ***TSGR1-00-0183***
January 18 – 21, 2000, Beijing, China

TSG-RAN Working Group 2 (Radio layer 2 and Radio layer 3) **TSGR2#10 000252**
San Diego, CA, USA 17th to 21st January 2000

Source: TSG RAN WG2

Title: **LS on Downlink outer loop power control**

To: TSG RAN WG1, TSG RAN WG4

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During the TSG RAN WG2 meeting in San Diego, downlink outer loop power control was discussed. TSG RAN WG2 would like to inform TSG RAN WG1 and WG4 about the results of these discussions.

Two different quality targets to use for adjusting the SIR target for the inner loop power control were proposed, physical channel BER and Transport channel BLER. Since, both BER and BLER were seen to have some advantages compared to the other depending on the conditions, it was agreed to have both possibilities as a quality measure. I.e. either BER or BLER can be used to set the SIR target for the inner loop.

It is TSG RAN WG2's understanding that TSG RAN WG4 is working towards defining the minimum performance requirements for the downlink outer loop power control based on both physical channel BER and transport channel BLER. If this work shows that either of these quality targets is not suitable for the downlink outer loop power control then RAN WG2 will reconsider its decision.

It was also seen that both these quality measures had the disadvantage that it is difficult to get measurements when no transport blocks are transmitted. For BLER a zero size transport block can be used in order to get a CRC and a BLER and BER measure. For BER it was agreed to have a BER measure not only for the DPDCH but also for the DPCCH.

TSG RAN WG2 would also like to ask TSG RAN WG1 to include a BER measure also for the downlink DPCCH.

Two CRs are attached for information.

3GPP/SMG Meeting #10
San Diego, CA, USA 17th-21st Jan 2000

Document R2-000236
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

25.331	CR	164r1	Current Version:	3.1.0

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

For submission to:	TSG RAN#7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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

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

Source: Ericsson **Date:** 21st Jan 2000

Subject: Proposed CR to 25.331 on Downlink outer loop power control

Work item:

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

F	Correction	
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	X
D	Editorial modification	

Release:

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

Reason for change:
Two quality measures for downlink outer loop power control has been discussed, BLER and BER. This CR does changes in order to support both these two algorithms.

This CR is a merge of CR136 in R2-000085, CR130 in R2-000074, R2-000064 and R2-000166.

Clauses affected: 8.2.9, 8.5.7.6.x (new), 10.1.7, 10.1.22, 10.1.25, 10.1.28, 10.1.33, 10.1.40, 10.1.49, 10.2.5.x (new), 10.2.6.10, 10.2.6.11, 10.2.7.33, 14.7

Other specs affected:

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

Other comments:

help.doc

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

8.2.9 Downlink outer loop control

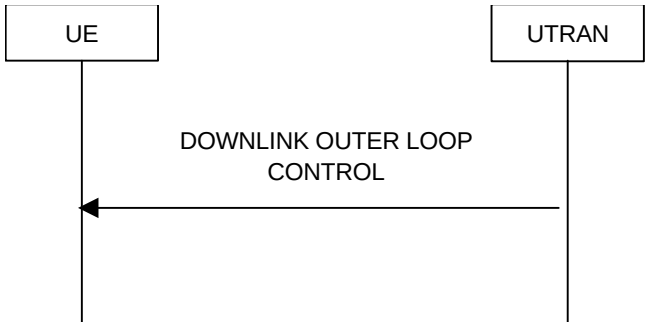

Figure 31: Downlink Outer Loop Control , normal flow

8.2.9.1 General

The downlink outer loop control procedure is used to control the downlink outer loop power control running in the UE.

8.2.9.2 Initiation

The UTRAN may transmit the DOWNLINK OUTER LOOP CONTROL message on the downlink DCCH using AM or UM RLC.

To prevent the UE from increasing its DL ~~Eb/No~~SIR target value above its current value, the UTRAN should set the "Downlink Outer Loop Control" IE to ~~TRUE~~"Increase not allowed".

To remove the previous restriction on the downlink outer loop power control, the UTRAN should set the "Downlink Outer Loop Control" IE to ~~FALSE~~"Increase allowed".

8.2.9.3 Reception of DOWNLINK OUTER LOOP CONTROL message by the UE

Upon reception of the DOWNLINK OUTER LOOP CONTROL message, the UE shall perform actions specified in 8.5.7 unless otherwise specified below.

The UE shall read the IE "Downlink Outer Loop Control".

If the IE "Downlink Outer Loop Control" is set to ~~TRUE~~"Increase not allowed", the UE shall prevent its DL ~~Eb/No~~SIR target value from increasing above the current value.

If the IE "Downlink Outer Loop Control" is set to ~~FALSE~~"Increase allowed", the UE shall remove the above restriction.

8.5.7.6.X Downlink DPCH power control information

If the IE Downlink DPCH power control information is included the UE shall

- At all time keep the SIR-target value at a lower value than the IE “Max SIR target” and at a higher value than the IE “Min SIR target”
- Start or resume the downlink outer loop power control according to subclause 14.7. If IE “Initial SIR target” is present the UE shall start the downlink outer loop at that level.

10.1.7 DOWNLINK OUTER LOOP CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
PhyCH information elements				
Downlink Outer Loop Control	M			Indicates whether the UE is allowed or not to increase its SIR-target value above its current value
Downlink DPCH power control information	O			

10.1.22 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C - RACH/FACH			
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to reconfigure		0 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	O			Presence is FFS. For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info	O			
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				

Information Element	Presence	Multi	IE type and reference	Semantics description
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				

Information Element	Presence	Multi	IE type and reference	Semantics description
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

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

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

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

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.25 RADIO BEARER RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C - RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to release		1 to <MaxRBcount>		
>RB identity	M			
RB information to be affected		0 to <MaxOtherRBcount>		
>RB identity	M			
>RB mapping info	O			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information Transport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReco		

Information Element	Presence	Multi	IE type and reference	Semantics description
		nAddFFSTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddFFSTrCH>		
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		Editor: this limit should probably also be MaxReconAddFFSTrCH
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control information	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>Scheduling information				Note 3
Choice *mode*				
>FDD				
>>SSDT indicator				
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O, FFS			Note 3
>>PDSCH with SHO DCH Info	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelRBcount	Maximum number of RBs to be released
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH
MaxReconAddFFSTrCH	Maximum number of transport channels to add and reconfigure

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

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

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

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.28 RADIO BEARER SETUP

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
CN information elements				
NAS binding info	M			
CN domain identity				
UE Information elements				
Activation time	O			
New C-RNTI	C – RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to setup		1 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to be affected		0 to <MaxOtherRBcount>		
>RB identity	M			
>RB mapping info	M			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				

Information Element	Presence	Multi	IE type and reference	Semantics description
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH informationTransport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
IfDPCH	This IE is only sent if "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddcount	Maximum number of Transport CHannels reconfigured or added
MaxRBcount	Maximum number of RBs that could be setup with this message
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

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

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

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

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.33 RRC CONNECTION RE-ESTABLISHMENT

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
New U-RNTI	O			
New C-RNTI	O			
Activation time	O			
Re-establishment timer	O			
CN information elements				
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O		GSM-MAP NAS system information	(Note1)
>CN domain specific GSM-MAP NAS system info	O			(Note1)
NAS binding info	C-RBsetup			
CN domain identity	C-RBsetup			
RB information to setup		0 to <MaxSetupRBcount>		
>RB identity	M			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to release		0 to <MaxRetRBcount>		
>RB identity	M			
RB information to reconfigure		0 to <MaxReconRBcount>		
>RB identity	M			
>CHOICE *RLC info type*	O			
>>RLC info				FFS
>>Signalling radio bearer type				
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
Transport Channel Information Elements				
TFCS	O			For uplink TFCS
TFCS	O			For downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS

Information Element	Presence	Multi	IE type and reference	Semantics description
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Transport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>>Transport channel identity	M			
>>TFS	M			
>>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRlcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET info	O			UL/DL radio resource for CPCH control (Note3)
>>Default DPCH Offset Value	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3: How to map UL and DL radio resource in the message is FFS.

Condition	Explanation
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
RBsetup	This information element is only sent when RB information to setup exists
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

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

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive
Signalling radio bearer type	

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains
MaxSetupRBcount	Maximum number of RBs to be setup
MaxRelRBcount	Maximum number of RBs to be released
MaxReconRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxRLcount	Maximum number of radio links

10.1.40 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	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
U-RNTI	M			
C-RNTI	O			Only if assigned to a common transport channel
Activation time	O			
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Capability update requirement	M			
RB information elements				
Signalling radio bearers		3 to 4		Information for signalling radio bearers, in the order RB 0 up to 3.
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
TrCH information elements				
TFCS	O			For Uplink TFCS
TFCS	O			For Downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
CPCH set ID	O			
Uplink transport channels				
Uplink transport channel information		1 to <MaxULTrCHCount>		
>Transport channel identity	M			
>TFS	M			
Downlink transport channels				
Downlink transport channel information		1 to <MaxDLTrCHCount>		
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
>Transparent mode signalling info	C if TM_DCH	0 or 1		
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note 1)
>>Gated Transmission Control info	O, FFS			Note 2
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
IfTM_DCH	This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands.
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxULTrCHCoun	Maximum number of new uplink transport channels
MaxDLTrCHCount	Maximum number of new downlink transport channels
MaxRLcoun	Maximum number of radio links to be set up

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

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive.

NOTE 1: How to map UL and DL radio resource in the message is FFS.

NOTE 2: The activation time should be present when the Gated Transmission control info is present in this message.

10.1.49 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C - RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconTrCHDRAC>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>>Silent period duration before release				
Downlink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

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

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

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

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

NOTE 3 The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.2.5.x Quality Target

Information Element/Group name	Presence	Mult	IE type and reference	Semantics description
BLER Quality value	M			

10.2.6.10 Downlink DPCH power control information

This information element indicates the range of SIR target values and the initial SIR target value to be set in the UE on this physical, channel for the downlink inner loop power control.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DPC Mode	M		Enumerated (~~mode0~~Single TPC, ~~mode1~~TPC triplet in soft)	"Single TPC" is DPC_Mode=0 and "TPC triplet in soft" is DPC_mode=1 in [TS 25.214]
Initial SIR target~~-value~~	~~M~~O		Enumerated(-10, -9.5..20)	Initial SIR value to be used for the DL closed loop power control. Granularity of 0.5 dB.
Min SIR target~~-value~~	M		Enumerated(-10, -9.5..20)	Minimum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.
Max SIR target~~-value~~	M		Enumerated(-10, -9.5..20)	Maximum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.
Target vaule per CCTrCH		1 to <MaxCCTrCH>		
>DPDCH BER-target	O		Enumerated(0, 0.02..5.10)	dB%=-Log10(Physical channel BER) Granularity 0.02
>DPCCH BER-target	O		Enumerated(0, 0.02..5.10)	dB%=-Log10(Physical channel BER) Granularity 0.02

Multi Bound	Explanation
MaxCCTrCH	Maximum number of CCTrCH

10.2.6.11 Downlink Outer Loop Control

This information element indicates whether the UE is allowed or not to increase its downlink SIR target value above the current value.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DL Outer loop control	M		~~Boolean~~Enumerated(Increase allowed, Increase not allowed)	

10.2.7.33 Quality reporting quantity

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DL Transport Channel BLER for each transport channel	M		Boolean	
Include transport channels		0 to <MaxBLER>		Default (i.e. no transport channel identities) is all downlink transport channels
>Transport channel identity	M			
DL Physical channel BER	M		Boolean	
SIR	M		Boolean	

Multi Bound	Explanation
MaxBLER	Maximum number of transport channels with BLER measurements that can be included in a measurement report

14.7 Downlink outer loop power control

This function is implemented in the UE in order to set the ~~Eb/No~~SIR target value on each CCTrCH used for the downlink ~~closed~~ inner loop power control. This ~~Eb/No~~SIR value shall be adjusted~~is set~~ according to an autonomous function in the UE in order to achieve ~~some~~ the same measured quality as the quality target set by UTRAN. The quality target could be either one physical channel BER value for each CCTrCH or a transport channel BLER value for each transport channel as signalled by UTRAN.~~quality measurements performed in the UE, in order to maintain the quality requirements (FER or BER).~~

When physical channel BER is used the UE shall run a quality target control loop such that the quality requirement for each CCTrCH is met. When transport channel BLER is used the UE shall run a quality target control loop such that the quality requirement for each transport channel is met.

The UE shall set the ~~Eb/No~~SIR target within the range allocated by the RNC when the physical channel has been set up or reconfigured. It shall not increase the ~~Eb/No~~SIR target value before the ~~closed~~ inner loop power control has converged on the current value. The UE may estimate whether the ~~closed~~ inner loop power control has converged on the current value, by comparing the averaged measured ~~Eb/No~~SIR to the ~~Eb/No~~SIR target value.

If the UE has received a DL outer loop control message from UTRAN indicating that the ~~Eb/No~~SIR target value shall not be increased above the current value, it shall record the current value as the maximum allowed value for the outer loop power control function, until it receives a new DL outer loop control message from UTRAN indicating that the restriction is removed.

3GPP/SMG Meeting #10
San Diego, CA, USA 17th-21st Jan 2000

Document R2-000239
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

25.302	CR	035r1	Current Version:	3.2.0

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

For submission to: TSG RAN#7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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

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

Source: Ericsson **Date:** 21st Jan 2000

Subject: Proposed CR to 25.302 on DPCCH BER

Work item:

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

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: In order to have possibility to have a quality estimate for the downlink outer loop power control when no data is transmitted there is a need to have a BER estimate also on the DPCCH.

Clauses affected: 9.1.13

Other specs affected:

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

Other comments:

help.doc

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

9.1.13 Physical channel BER

This measure is mandatory for the UE.

Measurement	Physical channel BER
Source	L1(UE)
Destination	RRC(UE,RNC)
Reporting Trigger	On-demand, Event-triggered
Definition	There are two types of this measurement. Type 1 calculates ~~The estimate of~~ the physical channel BER of the data part before channel decoding and after RL combining (FDD only). Type 2 calculates the physical channel BER on the control part after RL combining (FDD only).