3GPP TSG RAN Meeting #18 RP-020847
New Orleans, Louisiana, USA, 3 - 6 December, 2002

Title: CRs (Rel-5) to TS 25.214

Source: TSG-RAN WG1

Agenda item: 7.1.5

3. Release 5 CRs

3.1 CRs with no links to other specifications

TS 25.214 **(RP-020847)**

No.	Spec	CR	Rev	R1 T-doc	Subject	Phase	Cat	Workitem	V_old	V_new
1	25.214	300	1	R1-02-1406	Corrections and clarifications to FDD CQI description	REL-5	F	HSDPA-Phys	5.2.0	5.3.0
2	25.214	301	1	R1-02-1411	Criterion to determine primary cell for DSCH power control improvement	REL-5	F	TEI	5.2.0	5.3.0

3GPP TSG-RAN1 Meeting #29
Shanghai, China, 05 – 08 November 2002

Tdoc ⌘R1-02-1406

CR-Form-v7

CHANGE REQUEST

⌘ **25.214** **CR** **300** ⌘ **rev** **1** ⌘ Current version: **5.2.0** ⌘

*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:	⌘	CR 25.214-300 (Rel-5) Corrections and clarifications to FDD CQI description
Source:	⌘	TSG RAN WG1
Work item code:	⌘	HSDPA-Phys
Date:	⌘	22/10/2002
Category:	⌘	**F**
Release:	⌘	Rel-5

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: ⌘ FDD CQI description is ambiguous

Summary of change: ⌘
- The following transport format parameters, for the purpose of CQI reporting, are specified to clarify the ambiguity:
  - -The value of 1st rate match parameter (N_{IR})
  - -Redundancy and Constellation version (X_{RV})
- CQI definition for UE categories 11 and 12 is added

Consequences if not approved: ⌘ FDD CQI description will remain ambiguous

Clauses affected: ⌘ 6A.2

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:

6A .2 Channel quality indicator (CQI) definition

Based on an unrestricted observation interval, the UE shall report the highest tabulated CQI value for which a single HS-DSCH sub-frame formatted with the transport block size, number of HS-PDSCH codes and modulation corresponding to the reported or lower CQI value could be received in a 3-slot reference period ending 1 slot before the start of the first slot in which the reported CQI value is transmitted and for which the transport block error probability would not exceed 0.1. Depending on the UE category as defined in [10], either Table 7A, 7B, 7C, 7D, or 7E should be used.

For the purpose of CQI reporting, the UE shall assume a total received HS-PDSCH power of $P_{HSPDSCH} = P_{CPICH} + \Gamma + \Delta$ in dB,

where the total received power is evenly distributed among the HS-PDSCH codes of the reported CQI value, the measurement power offset Γ is signaled by higher layers and the reference power adjustment Δ is given by Table 7A, 7B, 7C, 7D, or 7E depending on the UE category.

Further, UE shall assume the number of soft bits available in the virtual IR buffer (N_{IR}), and redundancy and constellation version parameter (X_{RV}) as given by Table 7A, 7B, 7C, 7D, or 7E depending on the UE category.

If higher layer signaling informs the UE that for the radio link from the serving HS-DSCH cell it may use a S-CPICH as a phase reference and the P-CPICH is not a valid phase reference, P_{CPICH} is the received power of the S-CPICH used by the UE, otherwise P_{CPICH} is the received power of the P-CPICH. If transmit diversity is used for the radio link from the serving HS-DSCH cell, P_{CPICH} denotes received power of the combined CPICH from both diversity antennas, otherwise it denotes the power from the non-diversity antenna.

Table 7A: CQI mapping table for UE categories 1 to 6.

CQI value	Transport Block Size	Number of HS-PDSCH	Modulation	Reference power adjustment Δ	N_{IR}	X_{RV}
0	N/A	Out of range				
1	137	1	QPSK	0	9600	0
2	173	1	QPSK	0		
3	233	1	QPSK	0		
4	317	1	QPSK	0		
5	377	1	QPSK	0		
6	461	1	QPSK	0		
7	650	2	QPSK	0		
8	792	2	QPSK	0		
9	931	2	QPSK	0		
10	1262	3	QPSK	0		
11	1483	3	QPSK	0		
12	1742	3	QPSK	0		
13	2279	4	QPSK	0		
14	2583	4	QPSK	0		
15	3319	5	QPSK	0		
16	3565	5	16-QAM	0		
17	4189	5	16-QAM	0		
18	4664	5	16-QAM	0		
19	5287	5	16-QAM	0		
20	5887	5	16-QAM	0		
21	6554	5	16-QAM	0		
22	7168	5	16-QAM	0		
23	7168	5	16-QAM	-1		
24	7168	5	16-QAM	-2		
25	7168	5	16-QAM	-3		
26	7168	5	16-QAM	-4		
27	7168	5	16-QAM	-5		
28	7168	5	16-QAM	-6		
29	7168	5	16-QAM	-7		
30	7168	5	16-QAM	-8		

Table 7B: CQI mapping table for UE categories 7 and 8.

CQI value	Transport Block Size	Number of HS-PDSCH	Modulation	Reference power adjustment Δ	N_{IR}	X_{RV}
0	N/A	Out of range				
1	137	1	QPSK	0	19200	0
2	173	1	QPSK	0		
3	233	1	QPSK	0		
4	317	1	QPSK	0		
5	377	1	QPSK	0		
6	461	1	QPSK	0		
7	650	2	QPSK	0		
8	792	2	QPSK	0		
9	931	2	QPSK	0		
10	1262	3	QPSK	0		
11	1483	3	QPSK	0		
12	1742	3	QPSK	0		
13	2279	4	QPSK	0		
14	2583	4	QPSK	0		
15	3319	5	QPSK	0		
16	3565	5	16-QAM	0		
17	4189	5	16-QAM	0		
18	4664	5	16-QAM	0		
19	5287	5	16-QAM	0		
20	5887	5	16-QAM	0		
21	6554	5	16-QAM	0		
22	7168	5	16-QAM	0		
23	9719	7	16-QAM	0		
24	11418	8	16-QAM	0		
25	14411	10	16-QAM	0		
26	14411	10	16-QAM	-1		
27	14411	10	16-QAM	-2		
28	14411	10	16-QAM	-3		
29	14411	10	16-QAM	-4		
30	14411	10	16-QAM	-5		

Table 7C: CQI mapping table for UE category 9.

CQI value	Transport Block Size	Number of HS-PDSCH	Modulation	Reference power adjustment Δ	N_{IR}	X_{RV}
0	N/A	Out of range				
1	137	1	QPSK	0	28800	0
2	173	1	QPSK	0		
3	233	1	QPSK	0		
4	317	1	QPSK	0		
5	377	1	QPSK	0		
6	461	1	QPSK	0		
7	650	2	QPSK	0		
8	792	2	QPSK	0		
9	931	2	QPSK	0		
10	1262	3	QPSK	0		
11	1483	3	QPSK	0		
12	1742	3	QPSK	0		
13	2279	4	QPSK	0		
14	2583	4	QPSK	0		
15	3319	5	QPSK	0		
16	3565	5	16-QAM	0		
17	4189	5	16-QAM	0		
18	4664	5	16-QAM	0		
19	5287	5	16-QAM	0		
20	5887	5	16-QAM	0		
21	6554	5	16-QAM	0		
22	7168	5	16-QAM	0		
23	9719	7	16-QAM	0		
24	11418	8	16-QAM	0		
25	14411	10	16-QAM	0		
26	17300	12	16-QAM	0		
27	17300	12	16-QAM	-1		
28	17300	12	16-QAM	-2		
29	17300	12	16-QAM	-3		
30	17300	12	16-QAM	-4		

Table 7D: CQI mapping table for UE category 10.

CQI value	Transport Block Size	Number of HS-PDSCH	Modulation	Reference power adjustment Δ	N_{IR}	X_{RV}
0	N/A	Out of range				
1	137	1	QPSK	0	28800	0
2	173	1	QPSK	0		
3	233	1	QPSK	0		
4	317	1	QPSK	0		
5	377	1	QPSK	0		
6	461	1	QPSK	0		
7	650	2	QPSK	0		
8	792	2	QPSK	0		
9	931	2	QPSK	0		
10	1262	3	QPSK	0		
11	1483	3	QPSK	0		
12	1742	3	QPSK	0		
13	2279	4	QPSK	0		
14	2583	4	QPSK	0		
15	3319	5	QPSK	0		
16	3565	5	16-QAM	0		
17	4189	5	16-QAM	0		
18	4664	5	16-QAM	0		
19	5287	5	16-QAM	0		
20	5887	5	16-QAM	0		
21	6554	5	16-QAM	0		
22	7168	5	16-QAM	0		
23	9719	7	16-QAM	0		
24	11418	8	16-QAM	0		
25	14411	10	16-QAM	0		
26	17300	12	16-QAM	0		
27	21754	15	16-QAM	0		
28	23370	15	16-QAM	0		
29	24222	15	16-QAM	0		
30	25558	15	16-QAM	0		

Table 7E: CQI mapping table for UE categories 11 and 12.

CQI value	Transport Block Size	Number of HS-PDSCH	Modulation	Reference power adjustment Δ	N_{IR}	X_{RV}
0	N/A	Out of range				
1	137	1	QPSK	0	4800	0
2	173	1	QPSK	0		
3	233	1	QPSK	0		
4	317	1	QPSK	0		
5	377	1	QPSK	0		
6	461	1	QPSK	0		
7	650	2	QPSK	0		
8	792	2	QPSK	0		
9	931	2	QPSK	0		
10	1262	3	QPSK	0		
11	1483	3	QPSK	0		
12	1742	3	QPSK	0		
13	2279	4	QPSK	0		
14	2583	4	QPSK	0		
15	3319	5	QPSK	0		
16	3319	5	QPSK	-1		
17	3319	5	QPSK	-2		
18	3319	5	QPSK	-3		
19	3319	5	QPSK	-4		
20	3319	5	QPSK	-5		
21	3319	5	QPSK	-6		
22	3319	5	QPSK	-7		
23	3319	5	QPSK	-8		
24	3319	5	QPSK	-9		
25	3319	5	QPSK	-10		
26	3319	5	QPSK	-11		
27	3319	5	QPSK	-12		
28	3319	5	QPSK	-13		
29	3319	5	QPSK	-14		
30	3319	5	QPSK	-15		

Shanghai, China, November 5th-8th 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.214** **CR** **301** ⌘ **rev** **1** ⌘ Current version: **5.2.0** ⌘

*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:	⌘	Criterion to determine primary cell for DSCH power control improvement
Source:	⌘	TSG RAN WG1
Work item code:	⌘	TEI 5
Date:	⌘	06/11/2002
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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C *(functional modification of feature)*
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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:	⌘	If the same criterion as for SSDT is employed for PDSCH power control improvement to determine primary cell, this may lead to performance degradation of the PDSCH.
Summary of change:	⌘	The condition on the received uplink signal quality in 5.2.1.4.4 for TS 25.214 should not be considered in DSCH PC improvement in soft handover.
Consequences if not approved:	⌘	The performance of PDSCH may be degraded.

Clauses affected:	⌘	5.2.2			
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:
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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.

5.2.2 PDSCH

The PDSCH power control can be based on any of the following solutions:

- Inner-loop power control based on the power control commands sent by the UE on the uplink DPCCH.
- Other power control procedures applied by the network.

UTRAN may use the SSDT signalling to determine what power offset to use for PDSCH with respect to the associated downlink DCH when more than one cell may be in the active set. The support for a combination where SSDT signaling is used in the uplink, but SSDT is not necessarily used in the downlink, is required only from the UEs that support the use of DSCH.

If the downlink direction uses SSDT for the DCH transmission, then the TPC procedure in the UE to generate TPC commands to control the network transmit power is as specified in 5.2.1.4.2.

If the downlink transmission does not use SSDT operation, then the TPC procedure in the UE to generate TPC commands to control the network transmit power is as specified in 5.2.1.2.1.

The PDSCH power offset to be used with respect to the associated DCH depends on whether the cell transmitting PDSCH is determined to be a primary one or not. Note that the condition on the received uplink signal quality in subclause 5.2.1.4.4 is not used for determining whether the cell status for PDSCH power control is primary or not

The SSDT commands sent by the UE are averaged in UTRAN side over one or more frames. The averaging window length parameter as the number of frames to average over, *SSDT_aveg_window*, and the parameter for the required number of received primary SSDT commands, *SSDT_primary_commands*, during the averaging window for declaring primary status for a cell are given by UTRAN.

If the number of primary ID codes in the uplink received during the averaging window is less than the parameter *SSDT_primary_commands*, then a cell shall consider itself as non-primary and uses the power offset given from UTRAN to the cell with the data for the PDSCH.

If the number of primary ID codes in the uplink received during the averaging window is equal or more than the parameter *SSDT_primary_commands* defines, the cell shall use the power control parameterisation for the primary case. When the cell considers itself as primary it uses both the power offset for the PDSCH frame for the given UE and the *Enhanced DSCH Power Offset* parameter given by the UTRAN for the primary case.

The cell status (primary/non-primary) obtained from the rules above may differ from the cell status for SSDT transmission in the downlink depending on the values given by UTRAN for the parameters for averaging window length and the required number of received primary SSDT commands for cell status determination.