3GPP TSG RAN Meeting #17 *RP-020592*
Biarritz, France, 3 – 6, September 2002

Title: **Agreed CRs (Rel-5) to TS 25.213 on "Power offset values for HS-DPCCH"**

Source: **TSG-RAN WG1**

Agenda item: **7.1.5**

No.	Spec	CR	Rev	R1 T-doc	Subject	Phase	Cat	Workitem	V_old	V_new
1	25.213	060	-	R1-02-1179	Power offset values for HS-DPCCH	Rel-5	F	HSDPA-Phys	5.1.0	5.2.0

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R1-02-1179

CR-Form-v7

CHANGE REQUEST

⌘	**25.213**	**CR**	**060**	⌘ **rev**	**-**	⌘	Current version:	**5.1.0**	⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [X] Core Network [ ]

Title: ⌘	Power offset values for HS-DPCCH			
Source: ⌘	TSG RAN WG1			
Work item code: ⌘	HSDPA-Phys		***Date:*** ⌘	22/08/2002
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: ⌘	The HS-DPCCH relative power offset with respect to DPCCH is not specified yet in Release 5.
Summary of change: ⌘	HS-DPCCH quantized power offsets are added to TS25.213
Consequences if not approved: ⌘	HS-DPCCH power offset range is not specified.

Clauses affected: ⌘	4.2.1				
	Y	**N**			
Other specs affected: ⌘	**X**		Other core specifications	⌘	TS25.331
		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.

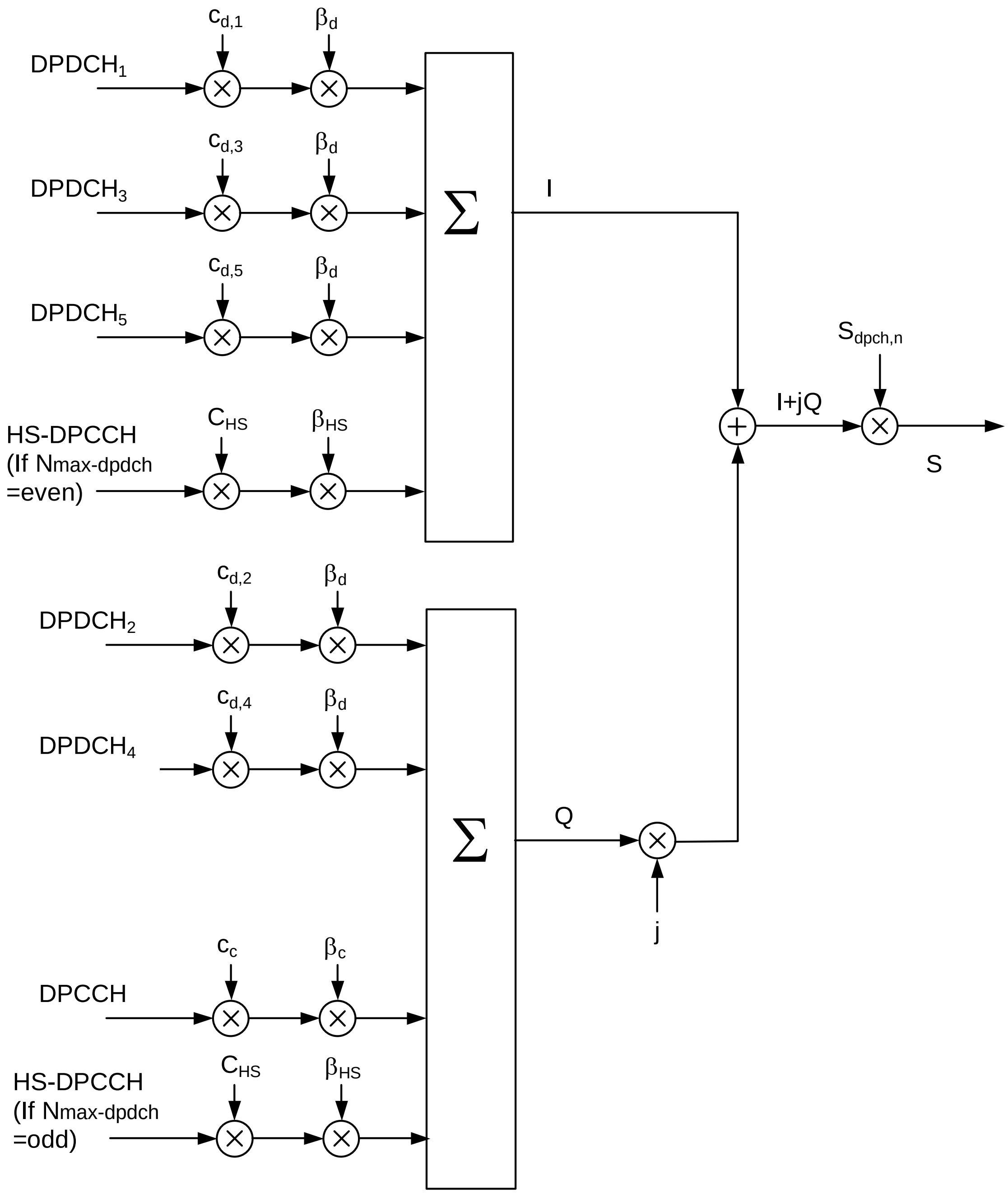

Figure 1: Spreading for uplink DPCCH, DPDCHs and HS-DPCCH

After channelisation, the real-valued spread signals are weighted by gain factors, β_c for DPCCH, β_d for all DPDCHs and β_{HS} for HS-DPCCH (if one is active).

The β_c and β_d values are signalled by higher layers or calculated as described in [6] 5.1.2.5. At every instant in time, at least one of the values β_c and β_d has the amplitude 1.0. The β_c and β_d values are quantized into 4 bit words. The quantization steps are given in table 1.

Table 1: The quantization of the gain parameters

Signalling values for β_c and β_d	Quantized amplitude ratios β_c and β_d
15	1.0
14	14/15
13	13/15
12	12/15
11	11/15
10	10/15
9	9/15
8	8/15
7	7/15
6	6/15
5	5/15
4	4/15
3	3/15
2	2/15
1	1/15
0	Switch off

The β_{HS} value is derived from the power offset Δ_{ACK} , Δ_{NACK} and Δ_{CQI}, which are signalled by higher layers as described in [6] 5.1.2.6.

The relative power offsets Δ_{ACK}, Δ_{NACK} and Δ_{CQI} are quantized into amplitude ratios as shown in Table 1A.

Table 1A: The quantization of the power offset

Signalling values for Δ_{ACK}, Δ_{NACK} and Δ_{CQI}	Quantized amplitude ratios for $10^{\left(\frac{\Delta_{HS-DPCCH}}{20}\right)}$
8	30/15
7	24/15
6	19/15
5	15/15
4	12/15
3	9/15
2	8/15
1	6/15
0	5/15

After the weighting, the stream of real-valued chips on the I- and Q-branches are then summed and treated as a complex-valued stream of chips. This complex-valued signal is then scrambled by the complex-valued scrambling code $S_{dpch,n}$. The scrambling code is applied aligned with the radio frames, i.e. the first scrambling chip corresponds to the beginning of a radio frame. HS-DPCCH is mapped to the I branch in case that the maximum number of DPDCH over all the TFCs in TFCS (defined as Nmax-dpdch) is even, and mapped to the Q branch otherwise. The I/Q mapping of HS-DPCCH is not changed in case frame by frame TFCI change or temporary TFC restriction.

4.2.2 PRACH

4.2.2.1 PRACH preamble part

The PRACH preamble part consists of a complex-valued code, described in section 4.3.3.

4.2.2.2 PRACH message part

Figure 2 illustrates the principle of the spreading and scrambling of the PRACH message part, consisting of data and control parts. The binary control and data parts to be spread are represented by real-valued sequences, i.e. the binary value "0" is mapped to the real value +1, while the binary value "1" is mapped to the real value –1. The control part is spread to the chip rate by the channelisation code c_c, while the data part is spread to the chip rate by the channelisation code c_d.