3GPP TSG RAN Meeting #19 **RP-030135**
Birmingham, United Kingdom, 11 - 14 March 2003

Title: **CRs (Rel-5) to TS 25.213**

Source: **TSG-RAN WG1**

Agenda item: **8.1.5**

TS 25.213 **(RP-030135)**

Doc-1st-	Doc-2nd-	Spec	CR	Rev	Subject	Phase	Ca	Versio	Versio	Workitem
RP-030135	R1-030237	25.213	061	1	Removal of the tiny text in Figure 1 and minor	Rel-5	F	5.2.0	5.3.0	HSDPA-Phys

3GPP TSG-RAN Meeting #31 **Tdoc ⌘R1-030237**
Tokyo, Japan, 18 – 21 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘	**25.213**	**CR**	**061**	⌘ **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:	⌘	Removal of the tiny text in Figure 1 and minor corrections to 4.2.1		
Source:	⌘	TSG RAN WG1		
Work item code:	⌘	HSDPA-Phys	***Date:*** ⌘	11/02/2003
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:	⌘	In figure 1 there is a tiny-font message saying “power setting for HS-“ which seems to be unintendedly left below and above the beta-hs. The notation of the channelisation code and beta factor with captial “C” and “HS” index is not consistent with the non-HS notation in section 4.2.1, where lower case letters are used for DPDCH/DPCCH.
Summary of change:	⌘	The tiny text in Figure 1 is removed and the index “HS” is changed to “hs”, the channelisation code term is changed to lower case. The notation for even and odd maximum number of DPDCHs in the TFCS (for HS-DPCCH) and some wording in the end of section 4.2.1 is slightly improved.
Consequences if not approved:	⌘	Inconsistent notation for HS and non-HS channels in section 4.2.1. The reader of Figure 1 may hurt his eyes trying to read the tiny text.

Clauses affected:	⌘	4.2.1				
		Y	**N**			
Other specs Affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

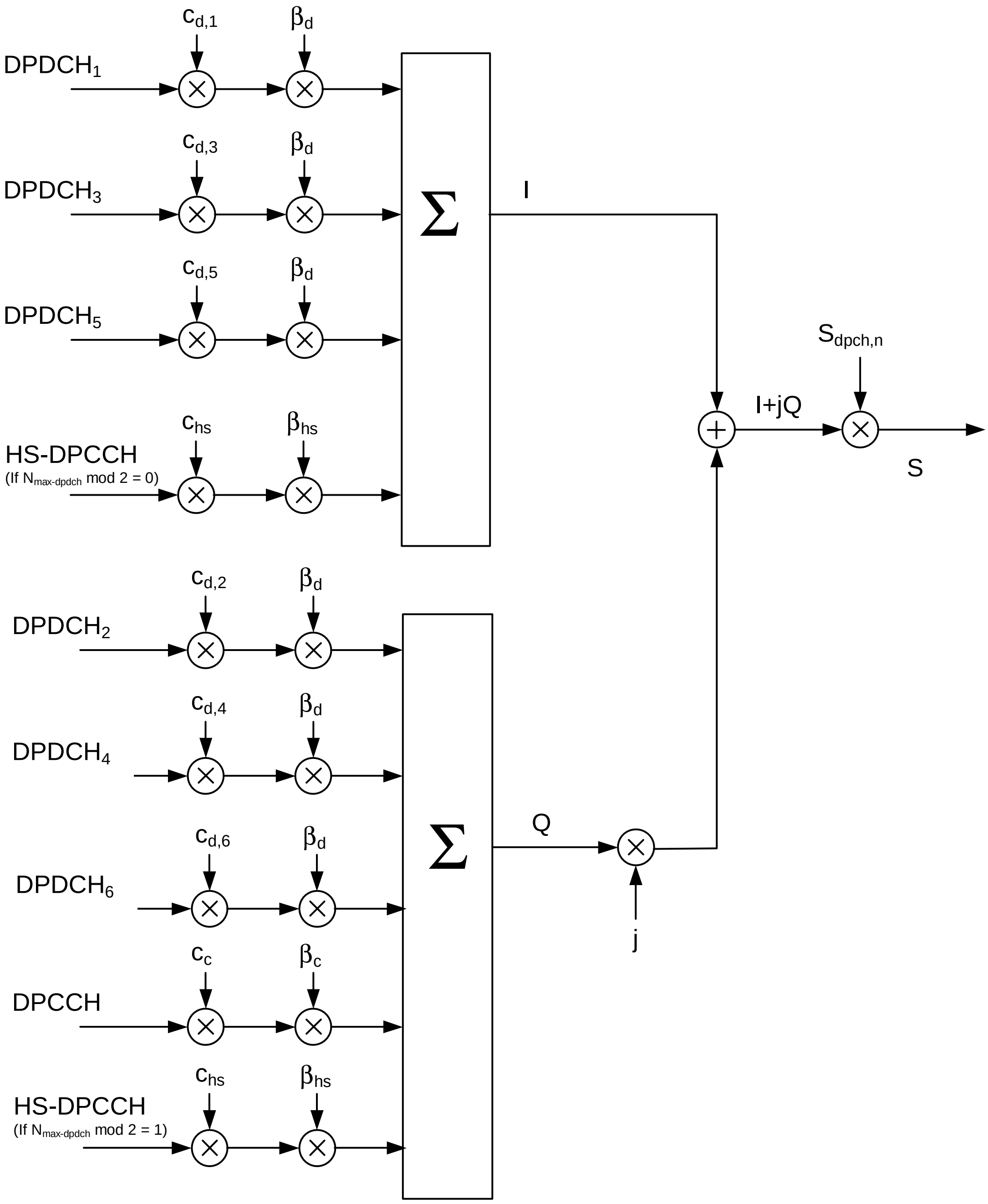
1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

4.2.1 DPCCH/DPDCH/HS-DPCCH

Figure 1 illustrates the principle of the uplink spreading of DPCCH, DPDCHs and HS-DPCCH. The binary DPCCH, DPDCHs and HS-DPCCH to be spread are represented by real-valued sequences, i.e. the binary value "0" is mapped to the real value +1, the binary value "1" is mapped to the real value –1, and the value "DTX" (HS-DPCCH only) is mapped to the real value 0. The DPCCH is spread to the chip rate by the channelisation code c_c. The *n*:th DPDCH called $DPDCH_n$ is spread to the chip rate by the channelisation code $c_{d,n}$. The HS-DPCCH is spread to the chip rate by the channelisation code ~~C_{HS}~~c_{hs}. One DPCCH, up to six parallel DPDCHs, and one HS-DPCCH can be transmitted simultaneously, i.e. $1 \le n \le 6$.


DPDCH1
DPDCH3
DPDCH5
HS-DPCCH
(If Nmax-dpdch mod 2 = 0)
DPDCH2
DPDCH4
DPDCH6
DPCCH
HS-DPCCH
(If Nmax-dpdch mod 2 = 1)
cd,1
cd,3
cd,5
chs
cd,2
cd,4
cd,6
cc
βd
βhs
βc
Σ
I
Q
j
I+jQ
Sdpch,n
S

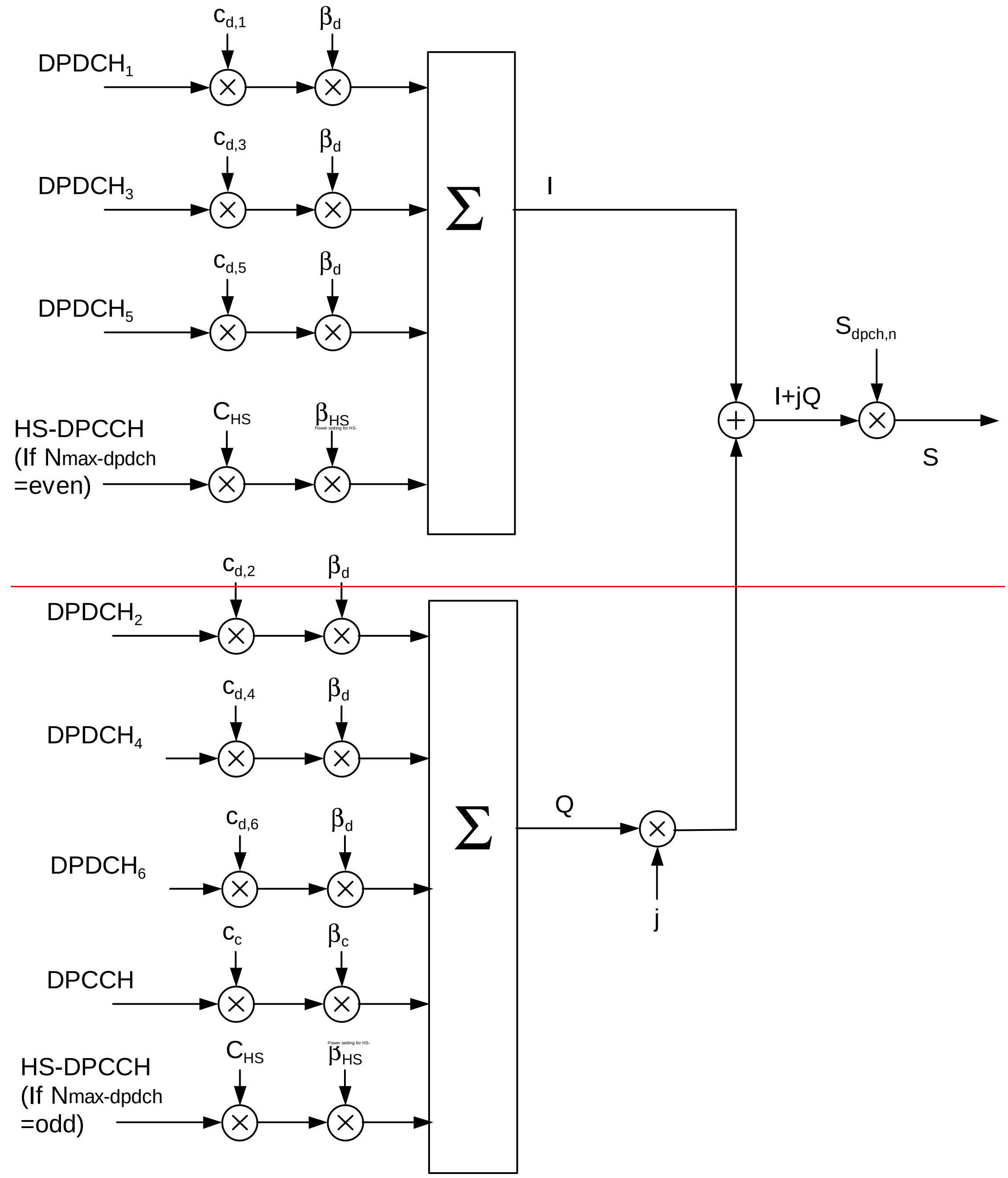


Figure 1: Spreading for uplink DPCCH, DPDCHs and HS-DPCCH

After channelisation, the real-valued spread signals are weighted by gain factors, β_c for DPCCH, β_d for all DPDCHs and $\beta_{\cancel{HS}\,hs}$ 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 $\beta_{\cancel{HS}\,hs}$ 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 the TFCS (defined as $N_{max-dpdch}$~~Nmax-dpdch~~) is even, and mapped to the Q branch otherwise. The I/Q mapping of HS-DPCCH is not changed ~~in case~~due to frame-~~-~~by-~~-~~frame TFCI change or temporary TFC restrictions.