

3GPP TSG RAN Meeting #17
Biarritz, France, 3 – 6, September 2002

RP-020588

Title: Agreed CRs (Rel-5) to TS 25.211 and TS 25.214 on "HS-DPCCH timing correction"

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	25.211	170	1	R1-02-1154	HS-DPCCH timing correction	Rel-5	F	HSDPA-Phys	5.1.0	5.2.0
2	25.214	289	-	R1-02-1086	Correction of timing of CQI reporting	Rel-5	F	HSDPA-Phys	5.1.0	5.2.0

CR-Form-v7

CHANGE REQUEST

⌘ **25.211 CR 170** ⌘ rev **1** ⌘ 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 Radio Access Network Core Network

Title:	⌘ HS-DPCCH timing correction		
Source:	⌘ TSG RAN WG1		
Work item code:	⌘ HSDPA-Phys	Date:	⌘ 2002-08-21
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ The current definition of HS-DPCCH timing leads to differences of up to 2*256 chip between UE and Node B. UE and Node B have different HS-DPCCH timing.
Summary of change:	⌘ The HS-DPCCH timing is defined relative to the UL DPCCH frame timing based on parameters that are known both in UE and Node B and this timing relation is kept thereafter. In addition, it is clarified that m takes one of a set of five possible values according to the transmission timing of HS-DSCH.
Consequences if not approved:	⌘ HS-DPCCH correction is incorrect, leading to incorrect reception of feedback information in the Node B.

Clauses affected:	⌘ 7.7										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ 25.214 (R1-02-1086 CR 25.214-289)
Y	N										
X											
	X										
	X										
		Test specifications									
		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.

7.7 Uplink DPCCH/HS-DPCCH/HS-PDSCH timing at the UE

Figure 38 shows the timing offset between the uplink DPCCH, the HS-PDSCH and the HS-DPCCH at the UE. ~~The An eode-multiplexed HS-DPCCH sub-frame starts $m \times 256$ chips after the start of an uplink DPCCH slot-frame that corresponds to the DL DPCH frame from the HS-DSCH serving cell containing the beginning of the related HS-PDSCH subframe with m selected-calculated as~~

$$m = (T_{TX_diff} / 256) + 101$$

~~where T_{TX_diff} is the difference in chips, between~~

~~- the receive timing at the UE of the start of the related HS-PDSCH subframe~~

~~and~~

~~- the receive timing at the UE of the start of the downlink DPCH frame from the HS-DSCH serving cell that contains the beginning of the HS-PDSCH subframe which is informed by higher layers.~~

~~such that the ACK/NACK transmission starts within the first 0-255 chips after 7.5 slots following the end of the received HS-PDSCH sub-frame. At any one time, m therefore takes one of a set of five possible values according to the transmission timing of HS-DSCH sub-frame timings relative to the DPCH frame boundary. The UE and Node B shall only update the set of values of m in connection to UTRAN reconfiguration of downlink timing.~~

~~Note that due to autonomous adjustments of the DPDCH/DPCCH transmission time instant by the UE described in [5], the relationships described in this section may cease to be valid. More information about the uplink timing adjustments can be found in [5].~~

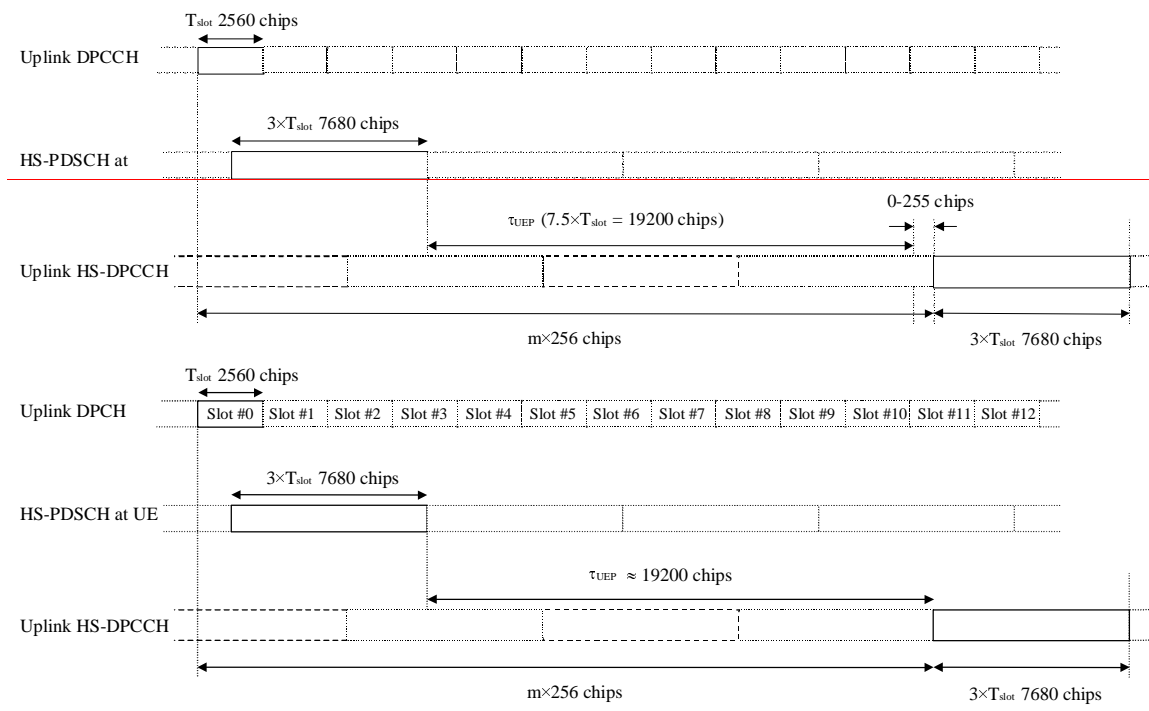


Figure 38: Timing structure at the UE for HS-DPCCH control signalling

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CHANGE REQUEST

⌘ **25.214 CR 289** ⌘ 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 Radio Access Network Core Network

Title:	⌘ Correction of timing of CQI reporting		
Source:	⌘ TSG RAN WG1		
Work item code:	⌘ HSDPA-Phys	Date:	⌘ 15/08/2002
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
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	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ There is a requirement that timing of CQI transmission can only be changed when UTRAN reconfigures downlink timing. This is not mentioned in 25.214 clause 7.1.2.
Summary of change:	⌘ The statement that the parameter m takes the smallest possible value meeting the timing requirements is moved from clause 7.1.2 in 25.214 to clause 7.7 in 25.211. This ensures that the timing of channel quality reporting relative to the uplink DPCCCH can only be updated when the value of m is changed when the UTRAN reconfigures downlink timing.
Consequences if not approved:	⌘ Without this clarification, in the event of timing drift the UE and the network may have a different understanding of the reporting instant for the channel quality indicator on HS-DPCCH.

Clauses affected:	⌘ 7.1.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ 25.211 (R1-02-1154 CR 25.211-170r1)
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘										

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7.1.2 UE procedure for reporting channel quality indication (CQI)

- 1) The UE derives the CQI value as defined in 7.2.
- 2) The UE shall transmit the CQI value in each subframe that starts $n \times 256$ chips after the start of slot i on the associated uplink DPCCH with i simultaneously fulfilling

$$(5 \times CFN + \lceil (n \times 256 \text{chip} + i \times 2560 \text{chip}) / 7680 \text{chip} \rceil) \bmod k = 0 \text{ and } i \bmod 3 = 0,$$

where CFN denotes the connection frame number for the associated DPCH and n being equal to the value of smallest m fulfilling the requirement described in subclause 7.7 in [1].

- 3) The UE shall repeat the transmission of the CQI value derived in 1) over the next $(N_{cqi_transmit} - 1)$ consecutive HS-DPCCH sub frames in the slots respectively allocated to the CQI as defined in [1].
- 4) The UE shall not transmit the CQI in other subframes than those described in 2) and 3).