

3GPP TSG RAN Meeting #28
Quebec, Canada, 1 - 3 June 2005

RP-050209

Title CR (Rel-6) to 25.101 for the WI "Optimisation of downlink channelisation code utilisation"
Source 3GPP TSG RAN WG4 (Radio)
Agenda Item 8.12

WG Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-050363	25.133	738		B	Rel-6	6.9.0	Introduction of Fractional DPCH	RANimp-RABSE-CodeOptFDD

Athens, Greece 9 - 13 May 2005

CR-Form-v7	
CHANGE REQUEST	
⌘ 25.133 CR 738 ⌘ rev ⌘ Current version: 6.9.0 ⌘	

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:	⌘ Introduction of the Fractional Dedicated Physical Channel F-DPCH		
Source:	⌘ 3GPP TSG RAN WG4 (Radio)		
Work item code:	⌘ RANimp-RABSE-CodeOptFDD	Date:	⌘ 16/05/2005
Category:	⌘ B	Release:	⌘ Rel-6
	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:	⌘ Introduction of the F-DPCH		
Summary of change:	⌘ This new channel has been designed in 3GPP RAN1, RAN2 and RAN3 with the idea to have the same behavior compared to the classical (R99) dedicated DPCH for the main items like synchronisation ,soft-HO and compressed mode. Therefore the introduction of the F DPCH could be made by the appropriate references within the current 25.133 specification. The identified impact on this specification is the synchronisation process which should be also valid when based on F-DPCH frames. F-DPCH is described in subclause 5.3.2.6. of 3GPP RAN1 25.211 (see R1-0500042).		
Consequences if not approved:	⌘ Missing requirement for the F-DPCH channel		

Clauses affected:	⌘ 3.3 ; 7.1 ; 7.2 ;						
Other specs	<table border="1" style="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></td> </tr> </table>	Y	N	X		Other core specifications	⌘ 25.211;25.213;25.214;25.215 (RAN1) 25.331 (RAN2) 25.423;25.433 (RAN3); 25.101(RAN4) 34.101
Y	N						
X							
affected:	<table border="1" style="border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">X</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> </table>	X			X	Test specifications O&M Specifications	
X							
	X						
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

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply

BER	Bit Error Ratio
BLER	Block Error Ratio
BS	Base Station
CFN	Connection Frame Number
CPICH	Common Pilot Channel
DL	Down link (forward link)
DPCH	Dedicated Physical Channel
DRX	Discontinuous Reception
FDD	Frequency Division Duplex
<u>F-DPCH</u>	<u>Fractional Dedicated Physical Channel</u>
OCNS	Orthogonal Channel Noise Simulator, a mechanism used to simulate the users or control signals on the other orthogonal channels of a downlink.
PCCPCH	Primary Common Control Physical Channel
PICH	Paging Indicator Channel
PIN	Personal Identification Number
PLMN	Public Land Mobile Network
RSCP	Received Signal Code Power
RRC	Radio Resource Control
RRM	Radio Resource Management
RSSI	Received Signal Strength Indicator
SCH	Synchronisation Channel, power of SCH shall be divided equally between Primary and Secondary Synchronous channels.
SFN	System Frame Number
SIR	Signal to Interference ratio
TDD	Time Division Duplex
TPC	Transmit Power Control
UE	User Equipment
UL	Up link (reverse link)
USIM	Universal Subscriber Identity Module
UTRA	Universal Terrestrial Radio Access
UTRAN	Universal Terrestrial Radio Access Network

NEXT SECTION MODIFIED

7 Timing and Signalling characteristics

7.1 UE Transmit Timing

7.1.1 Introduction

The UE shall have capability to follow the frame timing change of the connected Node B. The uplink DPCCH/DPDCH frame transmission takes place approximately T_0 chips after the reception of the first detected path (in time) of the corresponding downlink DPCCH/DPDCH [or F-DPCH](#) frame, from the reference cell. T_0 is defined in [2]. UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are defined in the following requirements.

7.1.2 Requirements

The UE initial transmission timing error shall be less than or equal to ± 1.5 Chip. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH [or F-DPCH](#) frame is received from the reference cell plus T_0 chips. T_0 is defined in [2].

When the UE is not in soft handover, the reference cell shall be the one the UE has in the active set. The cell, which is selected as a reference cell, shall remain as a reference cell even if other cells are added to the active set. In case that the reference cell is removed from the active set the UE shall start adjusting its transmit timing no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account.

When the UE attempts to re-establish all dedicated physical channel(s) after an inter-RAT, intra- or inter-frequency hard-handover failure [18], it shall resume UL transmission with the same transmit timing as used immediately before the handover attempt. After resuming transmission, transmit timing adjustment requirements defined in the remainder of this clause apply.

The UE shall be capable of changing the transmission timing according to the received downlink DPCCH/DPDCH [or F-DPCH](#) frame. The maximum amount of the timing change in one adjustment shall be $\frac{1}{4}$ Chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be $\frac{1}{4}$ chip per 200ms. In particular, within any given $800 \cdot d$ ms period, the UE transmit timing shall not change in excess of $\pm d$ chip from the timing at the beginning of this $800 \cdot d$ ms period, where $0 \leq d \leq 1/4$.

7.2 UE Receive - Transmit Time Difference

7.2.1 Introduction

The UE shall have the capability to be in soft handover with more than one cell. The downlink DPCH frame timing [or the downlink F-DPCH frame timing](#) shall take place approximately T_0 chips before the transmission of the uplink DPDCH/DPCCH. The adjustment requirements for the uplink DPDCH/DPCCH timing are specified in 7.1.1. The valid range of the Receive to Transmit time difference at the UE is defined in the following requirements.

7.2.2 Requirements

A UE shall support reception, demodulation and combining of signals of a downlink DPCH, [or a downlink F-DPCH](#), when the receive timing is within a window of $T_0 \pm 148$ chip before the transmit timing where T_0 is defined in [2]. A UE is only required to react to TPC commands with a transmit power adjustment in the immediate next slot if the downlink receive timing of all cells in the active set is within a window of $T_0 \pm 148$ chip before the uplink transmit timing. If the downlink receive timing of one or more cells in the active set is outside the window of $T_0 \pm 148$ chip, the UE may also react with a power adjustment one slot later. The receive timing is defined as the first detected path in time.

7.3 UE timer accuracy