
Agenda item: REL-4 CRs
Source: Samsung and Nokia
Title: TS 25.214 CR, Addition of closed loop mode transmit diversity operation during gated DPCCH transmission to TS 25.214
Document for: Approval

Introduction

This contribution introduces the CR for addition of closed loop mode transmit diversity operation during gated DPCCH transmission to TS 25.214 which is based on TR 25.840 "Terminal Power Saving Features" v2.2.0 (R1-01-0296).

Summary of Changes

Closed loop mode transmit diversity operation during gating is described in new section 7.4 as follows:

- During gated DPCCH transmission, closed loop mode 1 is used without explicit signalling, regardless of the closed loop mode used before gating is initiated. If the mode 2 had been used before gating was initiated, the transmit diversity mode should return to mode 2 without explicit signalling after gating is terminated.

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CR-Formv3

CHANGE REQUEST

↖ **25.214 CR CR-0153** ↗ rev **-** ↖ Current version: **3.5.0** ↗

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

Proposed change affects: ↖ (U)SIM ME/UE Radio Access Network Core Network

Title:	Addition of closed loop mode transmit diversity operation during gated DPCCH transmission to TS 25.214		
Source:	Samsung and Nokia		
Work item code:	RInImp-TPS	Date:	March 2, 2001
Category:	B	Release:	REL-4
Use <u>one</u> of the following categories: F (essential 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 <u>one</u> 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)	

Reason for change:	Addition of closed loop mode transmit diversity operation during gated DPCCH transmission in order to include gated DPCCH transmission in REL-4 specification.
Summary of change:	The closed loop mode transmit diversity operation during gated DPCCH transmission is described in new section 7.4.
Consequences if not approved:	Results in degradation in performance of the closed loop mode transmit diversity when gated DPCCH transmission is used.

Clauses affected:	7.4 (new section)
Other specs Affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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

Table 12: FSM_{ph} normal initialisation for closed loop mode 2

FSM _{ph}	Phase difference between antennas (radians)
---	? (normal initialisation) or held from previous setting (compressed mode recovery)
0--	?
1--	0
00-	?
01-	- $\pi/2$
11-	0
10-	$\pi/2$
000	?
001	- $3\pi/4$
011	- $\pi/2$
010	- $\pi/4$
110	0
111	$\pi/4$
101	$\pi/2$
100	$3\pi/4$

This operation applies in both the soft handover and non soft handover cases.

7.3.3 Mode 2 operation during compressed mode

7.3.3.1 Downlink in compressed mode and uplink in normal mode

When the downlink is in compressed mode and the uplink is in normal mode, the closed loop mode 2 functions are described below.

If UE continues to calculate the phase adjustments based on the received CPICH from antennas 1 and 2 during the idle downlink slots there is no difference in UE operation when compared to non-compressed downlink operation.

When the UE is not listening to the CPICH from antennas 1 and 2 during the idle downlink slots, the UE sends the last FSM bits calculated before entering in the compressed mode.

- For recovery after compressed mode, UTRAN Access Point sets the power in both antennas to 0.5 until a FSM_{po} bit is received. Until the first FSM_{ph} bit is received and acted upon, UTRAN uses the phase offset, which was applied before the transmission interruption (table 12).
- Normal initialisation of FSM_{ph} (table 12) occurs if the uplink signalling information resumes at the beginning of a FSM period (that is if signalling resumes in slots 0,4,8,12).
- If the uplink signalling does not resume at the beginning of a FSM period, the following operation is performed. In each of the remaining slots of the partial FSM period, and for the first slot of the next full FSM period, the UE sends the first (i.e. MSB) bit of the FSM_{ph} message, and at the UTRAN access point the phase offset applied between the antennas is updated according to the number and value of FSM_{ph} bits received as given in table 13. Initialisation then continues with the transmission by the UE of the remaining FSM_{ph} bits and the UTRAN operation according to table 12.

Table 13: FSM_{ph} subfield of closed loop mode 2 in compressed mode recovery period

FSM _{ph}	Phase difference between antennas (radians)
-	held from previous setting
0	?
1	0

7.3.3.2 Both downlink and uplink in compressed mode

During both downlink and uplink compressed mode, the UTRAN and the UE performs the functions of recovery after compressed mode as described in the previous subclause 7.3.3.1.

7.4 Closed loop mode transmit diversity during gated DPCCH transmission

During gated DPCCH transmission, closed loop mode 1 is used without explicit signalling, regardless of the closed loop mode used before gating is initiated. If the mode 2 had been used before gating was initiated, the transmit diversity mode should return to mode 2 without explicit signalling after gating is terminated.