

January 18 – 21, 2000, Beijing, China

Agenda item:

Source: Nokia

Title: Editorial clarification to section 5.1.2.2.2

Document for: Decision

Introduction

This CR clarifies the uplink power control procedure in soft handover in 25.214.

In the previous CR, 25214-010r1, the description of the process for combining multiple TPC commands was modified by introducing the usage of soft symbol values instead of SIR.

The CR contained in this document, CR25214-044, makes an editorial change to remove a duplicate notation for the soft symbol decision values.

Reference

[1] TSGR1#9(99)L22, “*Soft symbol combining for uplink power control*”, Nokia

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.214 CR 044

Current Version: **3.1.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **TSG-RAN #7**
list expected approval meeting # here ↑

for approval
for information

strategic
non-strategic (for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects:

(at least one should be marked with an X)

(U)SIM ME UTRAN / Radio Core Network

Source:

Nokia

Date: 2000-01-14

Subject:

Editorial clarification to section 5.1.2.2.2

Work item:

Category:

(only one category shall be marked with an X)

F Correction
A Corresponds to a correction in an earlier release
B Addition of feature
C Functional modification of feature
D Editorial modification

Release:

Phase 2
Release 96
Release 97
Release 98
Release 99
Release 00

Reason for change:

Editorial change to remove of reference to non-existent example.

Clauses affected:

5.1.2.2.2.3

Other specs affected:

Other 3G core specifications → List of CRs:
Other GSM core specifications → List of CRs:
MS test specifications → List of CRs:
BSS test specifications → List of CRs:
O&M specifications → List of CRs:

Other comments:

5.1.2.2.2 Algorithm 1 for processing TPC commands

5.1.2.2.2.1 Derivation of TPC_cmd when only one TPC command is received in each slot

When a UE is not in soft handover, only one TPC command will be received in each slot. In this case, the value of TPC_cmd is derived as follows:

- If the received TPC command is equal to 0 then TPC_cmd for that slot is -1.
- If the received TPC command is equal to 1, then TPC_cmd for that slot is 1.

5.1.2.2.2.2 Combining of TPC commands known to be the same

When a UE is in soft handover, multiple TPC commands may be received in each slot from different cells in the active set. In some cases, the UE has the knowledge that some of the transmitted TPC commands in a slot are the same. This is the case e.g. with receiver diversity or so called softer handover when the UTRAN transmits the same command in all the serving cells the UE is in softer handover with. For these cases, the TPC commands known to be the same are combined into one TPC command, to be further combined with other TPC commands as described in subclause 5.1.2.2.2.3.

5.1.2.2.2.3 Combining of TPC commands not known to be the same

In general in case of soft handover, the TPC commands transmitted in the same slot in the different cells may be different.

This subclause describes the general scheme for combination of the TPC commands not known to be the same, ~~and then provides an example of such a scheme. It is to be further decided what should be subject to detailed standardisation, depending on final requirements. The example might be considered as the scheme from which minimum requirement will be derived or may become the mandatory algorithm.~~

~~5.1.2.2.2.3.1 General scheme~~

First, the UE shall conduct a soft symbol decision W_i on each of the power control commands TPC_i, where $i = 1, 2, \dots, N$ and N is the number of TPC commands not known to be the same, that may be the result of a first phase of combination according to subclause 5.1.2.2.2.

~~Then the UE assigns to each of the TPC_i command a reliability figure W_i , where W_i is the soft symbol decision obtained above. Finally, the UE derives a combined TPC command, TPC_cmd, as a function γ of all the N soft symbol decisions power control commands TPC_i and reliability estimates W_i :~~

~~TPC_cmd = $\gamma(W_1, W_2, \dots, W_N, TPC_1, TPC_2, \dots, TPC_N)$, where TPC_cmd can take the values 1 or -1.~~

5.1.2.2.3 Algorithm 2 for processing TPC commands

NOTE: Algorithm 2 makes it possible to emulate smaller step sizes than the minimum power control step specified in section 5.1.2.2.1, or to turn off uplink power control by transmitting an alternating series of TPC commands.

5.1.2.2.3.1 Derivation of TPC_cmd when only one TPC command is received in each slot

When a UE is not in soft handover, only one TPC command will be received in each slot. In this case, the UE shall process received TPC commands on a 5-slot cycle, where the sets of 5 slots shall be aligned to the frame boundaries and there shall be no overlap between each set of 5 slots.

The value of TPC_cmd is derived as follows: