TSG-RAN Meeting #6 *TSGRP#6(99)697*
Nice, France, 13 – 15 December 1999

Title: **Agreed CRs of category "D" (Editorial) to TS 25.224**

Source: **TSG-RAN WG1**

Agenda item: **5.1.3**

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc
25.224	005	1	R99	Alignment of Terminology Regarding Spreading	D	3.0.0	3.1.0	R1-99k63

NOTE: The source of this document is TSG-RAN WG1. The source shown on each CR cover sheet is the originating organisation.

3GPP TSG RAN WG1 (Radio) Meeting #9
Dresden, Germany, 30 Nov-03 Dec 1999

Document R1-99k63
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

25.224	CR	005r1	Current Version:	V3.0.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN #6	for approval	X	Strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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 [X] UTRAN / Radio [X] Core Network [ ]

Source: Siemens AG **Date:** 01 Dec 1999

Subject: Alignment of Terminology Regarding Spreading for TDD Mode

Work item: Change Request on the corrections/clarifications to the WG1 specifications

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification	X		Release 99	X
				Release 00	

Reason for change: Alignment of the terms 'Spreading', 'Channelisation' and 'Scrambling' according to usage in FDD mode.

Clauses affected: 4.4.1

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	25.221-CR007r1, 25.223-CR003r1
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:


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4.4 Synchronisation and Cell Search Procedures

4.4.1 Cell Search

During the initial cell search, the UE searches for a cell. It then determines the midamble, the downlink scrambling code and frame synchronisation of that cell. The initial cell search uses the Physical Synchronisation Channel (PSCH) described in [8]. The generation of synchronisation codes is described in [10].

This initial cell search is carried out in three steps:

Step 1: Slot synchronisation

During the first step of the initial cell search procedure the UE uses the primary synchronisation code c_p to acquire slot synchronisation to the strongest cell. Furthermore, frame synchronisation with the uncertainty of 1 out of 2 is obtained in this step. A single matched filter (or any similar device) is used for this purpose, that is matched to the primary synchronisation code which is common to all cells.

Step 2: Frame synchronisation and code-group identification

The Step 2 is described for the case where PSCH and PCCPCH are in timeslot k and k+8 with k=0…6.

During the second step of the initial cell search procedure, the UE uses the modulated Secondary Synchronisation Codes to find frame synchronisation and identify one out of 32 code groups. Each code group is linked to a specific t_{Offset}, thus to a specific frame timing, and is containing 4 specific scrambling codes. Each scrambling code is associated with a specific short and long basic midamble code.

In Cases 2 and 3 it is required to detect the position of the next synchronization slots. To detect the position of the next synchronization slots, the primary synchronization code is correlated with the received signal at offsets of 7 and 8 time slots from the position of the primary code that was detected in Step 1.

Then, the received signal at the positions of the synchronization codes is correlated with the primary synchronization Code C_p and the secondary synchronization codes $\{C_0,\ldots,C_{15}\}$. Note that the correlations can be performed coherently over M time slots, where at each slot a phase correction is provided by the correlation with the primary code. The minimal number of time slots is M=1, and the performance improves with increasing M.

Step 3: Scrambling code identification

During the third and last step of the initial cell-search procedure, the UE determines the exact basic midamble code and the accompanying scrambling code used by the found cell. They are identified through correlation over the PCCPCH with all four midambles of the code group identified in the second step . Thus the third step is a one out of four decision. This step is taking into account that the PCCPCH containing the BCH is transmitted using the first ~~spreading~~ channelisation code ($a_{Q=16}^{(h=1)}$ in [10]) and using the first midamble $\mathbf{m}^{(1)}$ (derived from basic midamble code $\mathbf{m}_p$ in [8]).

Thus PCCPCH code and midamble can be immediately derived when knowing scrambling code and basic midamble code.

4.5 ODMA Relay Probing

This section describes the probe-response procedure used by ODMA nodes to detect neighbours which may be used as relays during a call.

4.5.1 Initial Mode Probing

The initial mode probing procedure is activated by a UE when it is switched on and has no information about its surroundings. In this case the UE will synchronise with the ODMA Random Access Channel (ORACH) which is used by all UEs to receive and broadcast system routing control information and data. The UE begins a probing session by