TSG RAN Meeting #26   **RP-040448**
Athens, Greece, 8 - 10 December 2004

Title   CR (Rel-6 Category B) to TS25.214 for Introduction of MBMS Soft Combining
Source   TSG RAN WG1
Agenda Item   8.4

RAN1 Tdoc	Spec	CR	Rev	Phase	Cat	Current Version	Subject	Work item	Remarks
R1-041496	25.214	356	1	Rel-6	B	6.3.0	Introduction of MBMS Soft Combining	MBMS-RAN	

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CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **25.214** CR **356** | ⌘**rev** **1** ⌘ | Current version: | **6.3.0** ⌘ |

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

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Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Introduction of MBMS Soft Combining	
Source: ⌘	RAN WG1	
Work item code: ⌘	MBMS-RAN	***Date:*** ⌘ 15/11/2004
Category: ⌘ **B**	Use <u>one</u> of the following categories: ***F*** *(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 <u>TR 21.900</u>.	***Release:*** ⌘ Rel-6 Use <u>one</u> of the following releases: Ph2 *(GSM Phase 2)* R96 *(Release 1996)* R97 *(Release 1997)* R98 *(Release 1998)* R99 *(Release 1999)* Rel-4 *(Release 4)* Rel-5 *(Release 5)* Rel-6 *(Release 6)* Rel-7 *(Release 7)*

Reason for change: ⌘	Supports efficient transmission of S-CCPCH carrying MTCH.
Summary of change: ⌘	Describes soft combining timing and constraints.
Consequences if ⌘ ***not approved:***	

Clauses affected: ⌘	Sections 3 and 4.2		
	Y **N**		
Other specs ⌘ ***Affected:***	☐ ☐ ☐ ☐ ☐ ☐	Other core specifications ⌘ 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.

--[START OF MODIFIED SECTION]--

3   Definitions and Abbreviations

3.1   Definitions

For the purposes of the present document, the following terms and definitions apply:

L1 combining period: An interval of contiguous radio frames when S-CCPCH clusters may be soft combined .

S-CCPCH cluster: One or more S-CCPCHs on different RLs, all containing identical physical channel bits.   S-CCPCHs in an S-CCPCH cluster are synchronized such that the delay between the earliest and latest arriving S-CCPCH at the UE is no more than 296 chips.

3.2   Abbreviations

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

ACK	Acknowledgement
AICH	Acquisition Indicator Channel
ASC	Access Service Class
AP	Access Preamble
BCH	Broadcast Channel
CA	Channel Assignment
CCC	CPCH Control Command
CCPCH	Common Control Physical Channel
CCTrCH	Coded Composite Transport Channel
CD	Collision Detection
CPCH	Common Packet Channel
CPICH	Common Pilot Channel
CQI	Channel Quality Indicator
CRC	Cyclic Redundancy Check
CSICH	CPCH Status Indicator Channel
DCH	Dedicated Channel
DL	Downlink
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DPDCH	Dedicated Physical Data Channel
DTX	Discontinuous Transmission
HSDPA	High Speed Downlink Packet Access
HS-DSCH	High Speed Downlink Shared Channel
HS-PDSCH	High Speed Physical Downlink Shared Channel
HS-SCCH	High Speed Physical Downlink Shared Control Channel
NACK	Negative Acknowledgement
P-CCPCH	Primary Common Control Physical Channel
PCA	Power Control Algorithm
PCPCH	Physical Common Packet Channel
PDSCH	Physical Downlink Shared Channel
PICH	Paging Indicator Channel
PRACH	Physical Random Access Channel
RACH	Random Access Channel
RL	Radio Link
RPL	Recovery Period Length
RSCP	Received Signal Code Power
S-CCPCH	Secondary Common Control Physical Channel
SCH	Synchronisation Channel
SFN	System Frame Number
SIR	Signal-to-Interference Ratio

SNIR	Signal to Noise Interference Ratio
SSDT	Site Selection Diversity TPC
TFC	Transport Format Combination
TPC	Transmit Power Control
TrCH	Transport Channel
TTI	Transmission Time Interval
UE	User Equipment
UL	Uplink
UTRAN	UMTS Terrestrial Radio Access Network

---------------------------------------[END OF MODIFIED SECTION]--

---------------------------------------[START OF MODIFIED SECTION]--

4.2   Common physical channel synchronisation

The radio frame timing of all common physical channels can be determined after cell search.

4.2.1 P-CCPCH radio frame timing

The P-CCPCH radio frame timing is found during cell search and the radio frame timing of all common physical channel are related to that timing as described in [1].

4.2.2 S-CCPCH soft combining timing

Higher layers will provide additional timing information when S-CCPCH clusters can be soft combined. The timing information allows the UE to determine the L1 combining period that applies to each S-CCPCH cluster. The information also identifies the S-CCPCHs and the RLs in each cluster as well as which S-CCPCH clusters can be soft combined. The set of S-CCPCH clusters that can be combined does not change during an L1 combining period. When S-CCPCH clusters can be soft combined, all S-CCPCHs in the clusters shall contain identical bits in their data fields, although the TFCI fields of S-CCPCH in different clusters may be different. (TFC detection when S-CCPCH clusters may be soft combined is discussed in [2].) An L1 combining period shall contain only complete TTIs. The maximum delay between S-CCPCH clusters that the UE may combine is set by UE performance requirements.

---------------------------------------[END OF MODIFIED SECTION]--