RP-010338

TSG-RAN Meeting #12 Stockholm, Sweden, 12-15, June, 2001

Title: Agreed CRs (R99 and Rel-4 Category A) to TS 25.224

Source: TSG-RAN WG1

Agenda item: 8.1.3

No.	Spec	CR	Rev	R1 T-doc	Subject	Release	Cat	W / I Code	V_old	V_new
1	25.224	054	2	R1-01-0630	Addition to the abbreviation list	R99	F	TEI	3.6.0	3.7.0
2	25.224	059	-	R1-01-0630	Addition to the abbreviation list	REL-4	Α	TEI4	4.0.0	4.1.0
3	25.224	056	-	R1-01-0474	Correction of Timing Advance section for 3.84 Mcps TDD	R99	F	TEI	3.6.0	3.7.0
4	25.224	057	-	R1-01-0494	Correction of Timing Advance section for 3.84 Mcps TDD	REL-4	Α	TEI4	4.0.0	4.1.0

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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.
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- 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 Abbreviations

VBR

Variable Bit Rate

For the purposes of the present document, the following abbreviations apply: **Access Service Class BCCH Broadcast Control Channel BCH Broadcast Channel CCTrCH** Coded Composite Transport Channel **Code Division Multiple Access CDMA CRC** Cyclic Redundancy Check **DCA Dynamic Channel Allocation Downlink DPCH Dedicated Physical Channel** DTX Discontinuous Transmission **FACH** Forward Access Channel **FDD** Frequency Division Duplex **ISCP** Interference Signal Code Power Medium Access Control **MAC** Non-Real Time **NRT** P-CCPCH Primary Common Control Physical Channel Power Control <u>PC</u> **PDSCH** Physical Downlink Shared Channel Physical Random Access Channel **PRACH PUSCH** Physical Uplink Shared Channel **RACH** Random Access Channel RL Radio Link **RRC** Radio Resource Control **RSCP** Received Signal Code Power RT Real Time RU Resource Unit **SBGP** Special Burst Generation Gap **SBP** Special Burst Period Special Burst Scheduling Period **SBSP** Secondary Common Control Physical Channel S-CCPCH **SCH** Synchronisation Channel System Frame Number **SFN** <u>S</u>IR Signal-to-Interference Ratio Secondary Synchronisation Channel **SSCH STD** Selective Transmit Diversity **STTD Space Time Transmit Diversity** Timing Advance TA **TDD Time Division Duplex** TF **Transport Format TFC Transport Format Combination TFCI Transport Format Combination Indicator TFCS Transport Format Combination Set TPC** Transmit Power Control **TSTD** Time Switched Transmit Diversity TTI **Transmission Time Interval** TxAA Transmit Adaptive Antennas UE User Equipment UL **UMTS** Universal Mobile Telecommunications System **UTRAN UMTS** Radio Access Network

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4.3 Timing Advance

UTRAN may adjust the UE transmission timing with timing advance. The initial value for timing advance (TA_{phys}) will be determined in the UTRAN by measurement of the timing of the PRACH. The required timing advance will be represented as an 6 bit number (0-63) 'UL Timing Advance' TA_{ul} , being the multiplier of 4 chips which is nearest to the required timing advance (i.e. $TA_{phys} = TA_{ul} \times 4$ chips).

When Timing Advance is used the UTRAN will continuously measure the timing of a transmission from the UE and send the necessary timing advance value. On receipt of this value the UE shall adjust the timing of its transmissions accordingly in steps of ±4chips. The transmission of TA values is done by means of higher layer messages. Upon receiving the TA command the UE shall adjust its transmission timing according to the timing advance command at the frame number specified by higher layer signaling. The UE is signaled the TA value in advance of the specified frame activation time to allow for local processing of the command and application of the TA adjustment on the specified frame. Node-B is also signaled the TA value and radio frame number that the TA adjustment is expected to take place.

If TA is enabled by higher layers, after handover the UE shall transmit in the new cell with timing advance TA adjusted by the relative timing difference Δt between the new and the old cell:

$$TA_{new} = TA_{old} + 2\Delta t.$$

4.3.1 Timing advance with UL Synchronization

If UL Synchronization is used, the timing advance is sub-chip granular and with high accuracy in order to enable synchronous CDMA in the UL. The required timing advance will be represented as a multiple of 1/4 chips.

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Support of UL synchronisation is optional for the UE.

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