

<b>CHANGE REQUEST</b>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
<b>25.224</b>	<b>CR</b>	<b>042</b>
GSM (AA.BB) or 3G (AA.BBB) specification number ?		? CR number as allocated by MCC support team
For submission to: <b>RAN#10</b> <i>list expected approval meeting # here</i> ?	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	Current Version: <b>3.4.0</b>  strategic <input type="checkbox"/> (for SMG use only) non-strategic <input type="checkbox"/>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <http://ftp.3gpp.org/Information/CR-F-ormv2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
*(at least one should be marked with an X)*

**Source:** Siemens **Date:** xx-Nov-2000

**Subject:** Correction to TDD timing advance description

**Work item:**

<b>Category:</b>	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>	<b>Release:</b>	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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*(only one category shall be marked with an X)*

**Reason for change:** Existing text does not clearly represent the relationship between the actual timing advance (TA) in chips and the information element 'UL timing advance' (a 6 bit quantity) signalled.

**Clauses affected:** 4.3

<b>Other specs affected:</b>	Other 3G core specifications <input type="checkbox"/> ? Other GSM core specifications <input type="checkbox"/> ? MS test specifications <input type="checkbox"/> ? BSS test specifications <input type="checkbox"/> ? O&M specifications <input type="checkbox"/> ?	List of CRs: List of CRs: List of CRs: List of CRs: List of CRs:
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**Other comments:**

<----- double-click here for help and instructions on how to create a CR.

## 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.  $TA_{phys} = TA_{ul} \cdot 4$  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  $\pm 4$  chips. 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  $\Delta t$  between the new and the old cell:

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