

<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>028</b>	Current Version: <b>3.3.0</b>
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team	
For submission to: <b>RAN#9</b>	for approval for information	<input checked="" type="checkbox"/>	Strategic non-strategic <input type="checkbox"/> (for SMG use only)
list expected approval meeting # here ↑		<input type="checkbox"/>	

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

**Source:** Siemens AG **Date:** 27/06/2000

**Subject:** RACH timing in TDD mode

**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:** Clarification on RACH timing

**Clauses affected:** 4.7

<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.

## 4.7 Random access procedure

The physical random access procedure described below is invoked whenever a higher layer requests transmission of a message on the RACH. The physical random access procedure is controlled by primitives from RRC and MAC. Retransmission on the RACH in case of failed transmission (e.g. due to a collision) is controlled by higher layers. Thus, the backoff algorithm and associated handling of timers is not described here. The definition of the RACH in terms of PRACH sub-channels and associated Access Service Classes is broadcasted on the BCH in each cell. Parameters for common physical channel uplink outer loop power control are also broadcasted on the BCH in each cell. The UE needs to decode this information prior to transmission on the RACH.

### 4.7.1 Physical random access procedure

The physical random access procedure described in this subclause is initiated upon request of a PHY-Data-REQ primitive from the MAC sublayer (cf. TS 25.321 and TS 25.303).

Before the physical random-access procedure can be initiated, Layer 1 shall receive the following information by a CPHY-TrCH-Config-REQ from the RRC layer:

- the available PRACH sub-channels for each Access Service Class (ASC);
- the timeslot, spreading factor, channelisation code, midamble, repetition period and offset for each PRACH sub-channel. (There is a 1:1 mapping between spreading code and midamble as defined by RRC);
- the set of Transport Format parameters;
- the set of parameters for common physical channel uplink outer loop power control.

NOTE: The above parameters may be updated from higher layers before each physical random access procedure is initiated. At each initiation of the physical random access procedure, Layer 1 shall receive the following information from the higher layers (MAC):

- the Transport Format to be used for the PRACH message;
- the ASC of the PRACH transmission;
- the data to be transmitted (Transport Block Set).

The physical random-access procedure shall be performed as follows.

- 1 Randomly select the PRACH sub-channel from the available ones for the given ASC. The random function shall be such that each of the allowed selections is chosen with equal probability.
- 2 Derive the available access slots in the next N frames, defined by SFN, SFN+1, ..., SFN+N-1 for the selected PRACH sub-channel with the help of SFN (where N is the repetition period of the selected PRACH sub-channel). Randomly select an uplink access slot from the available access slots in the next frame, defined by SFN, if there is one available. If there is no access slot available in the next frame, defined by SFN then, randomly select one access slot from the available access slots in the following frame, defined by SFN+1. This search is performed for all frames in increasing order, defined by SFN, SFN+1, ..., SFN+N-1, until an available access slot is found. The random function shall be such that each of the allowed selections is chosen with equal probability.
- 3 Randomly select a spreading code from the available ones for the given ASC. The random function shall be such that each of the allowed selections is chosen with equal probability. The midamble is derived from the selected spreading code.
- 4 Set the PRACH message transmission power level according to the specification for common physical channels in uplink (see subclause 4.2.2.2).
- 5 Transmit the random access message, timely aligned with the beginning of the selected access slot (see bullet 2 above). In other words, PRACH transmission shall start with no offset in time, compared to received timing of DL-timeslots (This can be seen as implicitly setting timing advance TA to zero).