

TSG-RAN Working Group 1 Meeting #19
Las Vegas, NE, USA
February 27 – March 2, 2001

TSGR1#19-(01)0300

Source: InterDigital Comm. Corp.
Title: CR to 25.224 – 051r1 Correction to Random Access Procedure
Document for: Decision

1 Introduction

At WG1#18 TDD changes to RACH procedures specified in 25.224 was agreed. In subsequent discussions it was pointed out the new proposed text for PRACH is a bit misleading since it states that “A PRACH is defined by a timeslot and a list of channelisation codes”. This contradicts the general definition of a physical channel that is associated with “a” channelisation code.

2 Specific Changes

The PRACH text is updated to “A PRACH is defined by a timeslot and a channelisation code, which is randomly selected from the PRACH Channelisation Code List [Ref to 25.331] signaled by higher layers”.

CR-Formv3	
CHANGE REQUEST	
⚡ 25.224 CR 051 ⚡ rev 1 ⚡ Current version: 3.5.0 ⚡	

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

Proposed change affects: ⚡ (U)SIM ME/UE Radio Access Network Core Network

Title:	⚡ RACH random access procedure	
Source:	⚡ InterDigital Comm. Corp.	
Work item code:	⚡	Date: ⚡ 26 February, 2001
Category:	⚡ F	Release: ⚡ R99
	Use one of the following categories: F (essential 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 TR 21.900.	Use one of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⚡ Current specification states that A PRACH is defined by a timeslot and a list of channelisation codes". This contradicts the general definition of a physical channel that is associated with "a" channelisation code.
Summary of change:	⚡ The definition of "A PRACH" is corrected to indicate that a PRACH is defined by a timeslot and a channelisation code, which is randomly selected from the PRACH Channelisation Code List signalled by higher layers.
Consequences if not approved:	⚡ The definition of a PRACH in the specifications will be incorrect.

Clauses affected:	⚡ 4.7.1	
Other specs affected:	<input checked="" type="checkbox"/> Other core specifications ⚡ <input type="checkbox"/> Test specifications ⚡ <input type="checkbox"/> 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/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.

- 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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

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 broadcast on the BCH in each cell. Parameters for common physical channel uplink outer loop power control are also broadcast on the BCH in each cell. The UE needs to decode this information prior to transmission on the RACH.

4.7.1 PRACH sub-channels

A PRACH is defined by a timeslot and a list of channelization codes, which is randomly selected from the PRACH Channelisation Code List [15] signaled by higher layers. In order to separate different ASCs each PRACH has N sub-channels associated with it (numbered from 0 to N-1). N may be assigned the value 1, 2, 4, or 8 by higher layer signaling. Sub-channel i for a PRACH defined in timeslot k is defined as the kth slot in the frames where $\text{SFN mod } N = i$. Therefore follows the definition:

?? Sub-channel i associated to a PRACH defined in timeslot k is defined as the kth timeslot in the frames where $\text{SFN mod } N = i$.

Figure 6 illustrates the eight possible subchannels for the case, $N=8$. For illustration, the figure assumes that the PRACH is assigned timeslot 3.

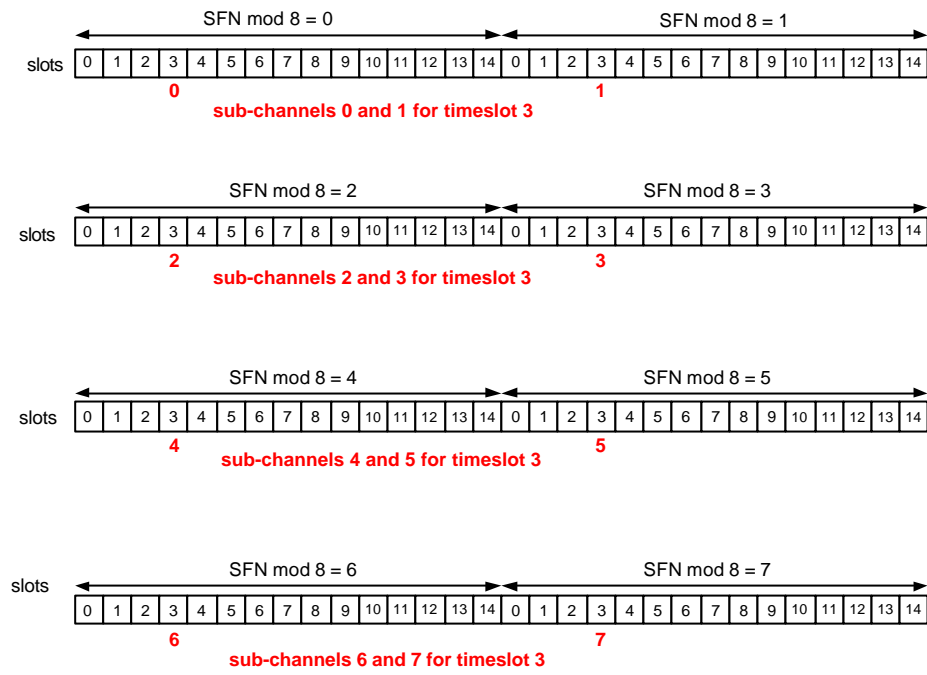


Figure 6. Eight sub-channels for timeslot 3