

**Agenda item:** RACH AdHoc meeting

**Source:** Ericsson

**Title:** Text proposal for random-access message structure

**Document for:** Decision

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## 1 Introduction

This document contains text proposal related to the structure of the random-access message. It is based on email discussions within the RACH AdHoc group (AdHoc #3). We propose that it should replace the current Section 5.2.2.1.3 in S1.11. Basically, the only new assumptions, is the assumption of two rate information bits per slot, i.e. a total of 32 bits for rate information.

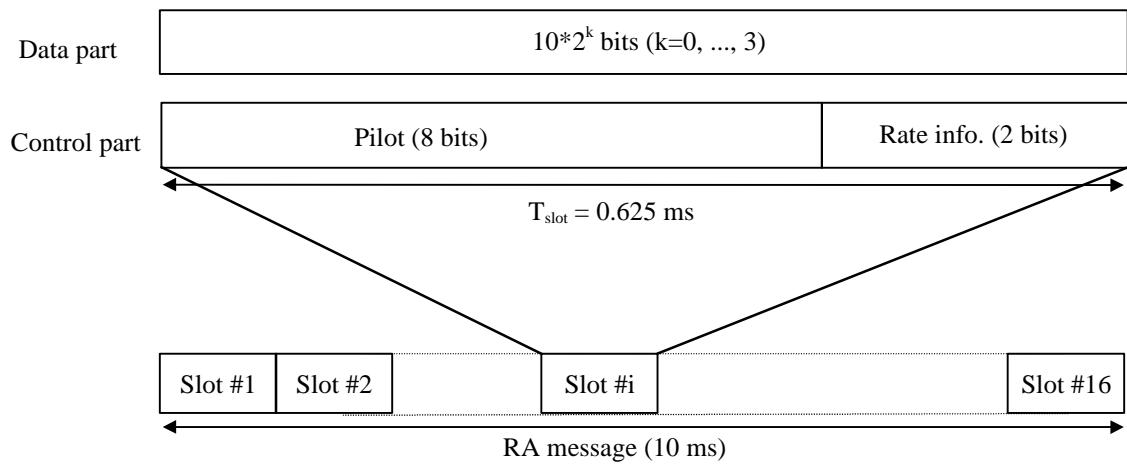
## 2 Text proposal for S1.11

### 5.2.2.1.3 RACH message part

Figure 1 shows the structure of the Random-access message part. The 10 ms message is split into 16 slots, each of length  $T_{\text{slot}} = 0.625$  ms. Each slot consists of two parts, a data part that carries Layer 2 information and a control part that carries Layer 1 control information. The data and control parts are transmitted in parallel.

The data part consists of  $10*2^k$  bits, where  $k=0,1,2,3$ . This corresponds to a spreading factor of 256, 128, 64, and 32 respectively for the message data part.

The control part consists of 8 known pilot bits to support channel estimation for coherent detection and 2 bits of rate information. This corresponds to a spreading factor of 256 for the message control part. The total number of rate-information bits in the random-access message is thus  $16*2 = 32$ . The rate information indicates the spreading factor or, equivalently, the number of bits of the data part of the random-access message. The coding of the rate information is the same as that of the TFCI, see further S1.12, Section 4.3.



**Figure 1 Structure of random-access message part**