

Agenda item:

Source: Philips

Title: Correction on AP-AICH

Document for: Decision

Introduction

Clarification is required that only one positive AP-AICH can be sent at a time. Otherwise, there is an increased collision risk in the CPCH access procedure, plus the possibility of ambiguity in the service apparently requested by after UE, after progressing through the collision resolution stage.

It is proposed to add the restriction on AP-AICH transmission in 25.211 section 5.3.3.7

$$a_j = \sum_{s=0}^{15} \text{API}_s \times b_{s,j}$$

where API_s , taking the values +1, -1, and 0, is the AP acquisition indicator corresponding to Access Preamble signature s transmitted by UE and the sequence $b_{s,0}, \dots, b_{s,31}$ is given in Table 20. [The UTRAN shall not set more than one positive API in any one API part.](#)

The real-valued symbols, a_j , are spread and modulated in the same fashion as bits when represented in { +1, -1 } form.

In case STTD-based open-loop transmit diversity is applied to AP-AICH, STTD encoding according to subclause 5.3.1.1.1 is applied to each sequence $b_{s,0}, b_{s,1}, \dots, b_{s,31}$ separately before the sequences are combined into AP-AICH symbols a_0, \dots, a_{31} .

5.3.3.8 CPCH Collision Detection/Channel Assignment Indicator Channel (CD/CA-ICH)

The Collision Detection Channel Assignment Indicator channel (CD/CA-ICH) is a fixed rate (SF=256) physical channel used to carry CD Indicator (CDI) only if the CA is not active, or CD Indicator/CA Indicator (CDI/CAI) at the same time if the CA is active. The structure of CD/CA-ICH is shown in figure 23. CD/CA-ICH and AP-AICH may use the same or different channelisation codes.

The CD/CA-ICH has a part of duration of 4096chips where the CDI/CAI is transmitted, followed by a part of duration 1024chips with no transmission that is not formally part of the CD/CA-ICH. The part of the slot with no transmission is reserved for possible use by CSICH or possible future use by other physical channels.

The spreading factor (SF) used for channelization of the CD/CA-ICH is 256.

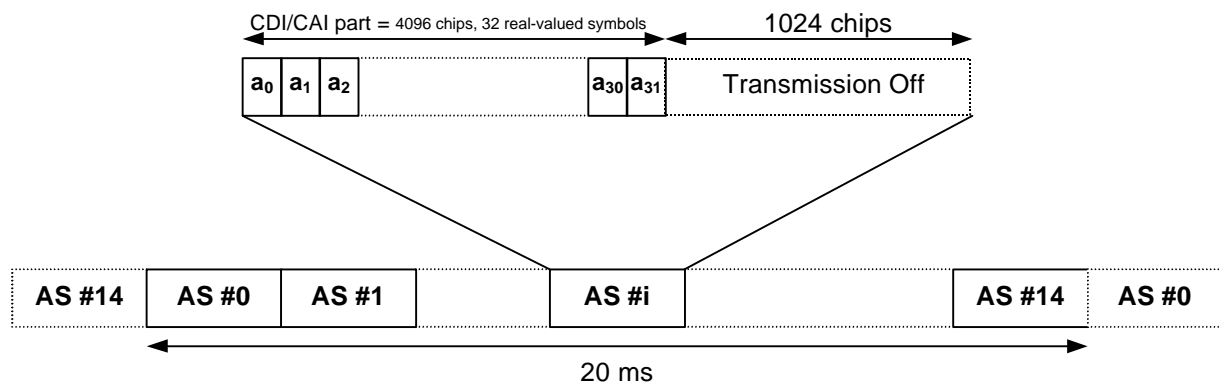


Figure 23: Structure of CD/CA Indicator Channel (CD/CA-ICH)

In case STTD-based open-loop transmit diversity is applied to CD/CA-ICH, STTD encoding according to subclause 5.3.1.1.1 is applied to each sequence $b_{s,0}, b_{s,1}, \dots, b_{s,31}$ separately before the sequences are combined into CD/CA-ICH symbols a_0, \dots, a_{31} .

In case CA is not active, the real-valued symbols a_0, a_1, \dots, a_{31} in figure 23 are given by

$$a_j = \sum_{s=0}^{15} \text{CDI}_s \times b_{s,j}$$

where CDI_s , taking the values +1, and 0, is the CD indicator corresponding to CD preamble signature s transmitted by UE and the sequence $b_{s,0}, \dots, b_{s,31}$ is given in table 20.

The real-valued symbols, a_j , are spread and modulated in the same fashion as bits when represented in { +1, -1 } form.

In case CA is active, the real-valued symbols a_0, a_1, \dots, a_{31} in figure 23 are given by