Text proposal for SCH modulation to indicate STTD encoding of PCCPCH

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In [1] Texas Instrumets has proposed to modulate the SCH to indicate presence/absence of STTD encoding on PCCPCH. Also, it is proposed that it is not required to transmit the 1 bit on the BCCH to indicate the STTD encoding of the PCCPCH. *This document is the text proposal for modification to S1.11, provided [1] is accepted by AdHoc 6 in WG 1 # 4.*

[1] Texas Instruments, " Fast reliable detection of STTD encoding of PCCPCH with no L3 messaging overhead" Tdoc 372/99, Yokohama, Japan, April 1999.

Modifications to S1.11 document:

----------Begin modification for S1.11 document text section 5.3.3.1.1----------

5.3.3.1.1 Primary CCPCH structure with STTD encoding

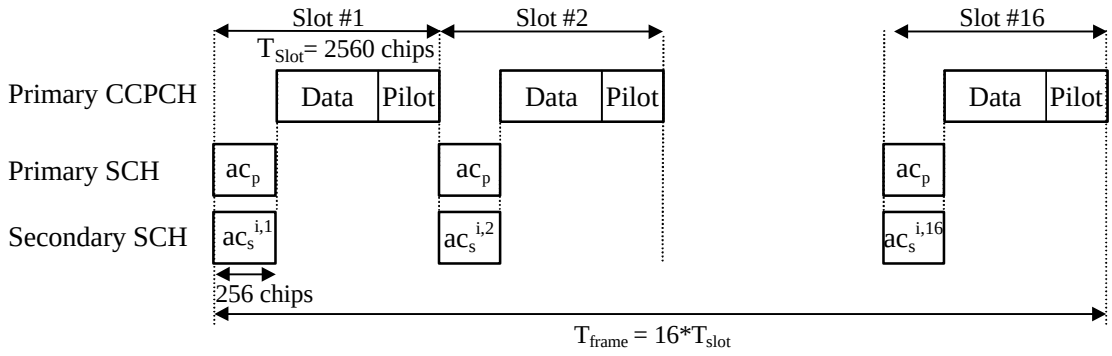
In case the diversity antenna is present at the base station and the PCCPCH is to be transmitted using open loop transmit diversity, the data symbols of the PCCPCH are STTD encoded as given in section 5.3.1.1.1, figure 7 and figure 8. The diversity antenna pilot symbol pattern for the PCCPCH is given in table 13 below. ~~The base station transmits a L3 message on the broadcast channel (BCH) indicating whether STTD encoding is used for the PCCPCH or not. During power on and hand over between cells the UE determines the presence of STTD encoding on the PCCPCH, by receiving the L3 message or by detecting the diversity antenna pilot symbol pattern.~~ The base station indicates the presence/absence of STTD encoding on PCCPCH, by modulating the SCH. During power on and during handover between the calls the UE determines the presence/absence of STTD encoding on the PCCPCH by demodulating the SCH or by detecting the diversity antenna pilot symbol pattern.

----------End modification for S1.11 document text section 5.3.3.1.1----------

----------Begin modification for S1.11 document section 5.3.3.3----------

5.3.3.3.Synchronisation Channel

The Synchronisation Channel (SCH) is a downlink signal used for cell search. The SCH consists of two sub channels, the Primary and Secondary SCH. Figure 15 illustrates the structure of the SCH and the transmission timing relationship with the Primary CCPCH:



c_p : Primary Synchronization Code

$c_s^{i,k}$: One of 17 possible Secondary Synchronization Codes

($c_s^{i,1}$, $c_s^{i,2}$, ..., $c_s^{i,16}$) encode cell specific long scrambling code group i

a: Modulation on primary and secondary synchronization codes to indicate STTD encoding on PCCPCH

Figure 15: Structure of Synchronisation Channel (SCH).

The Primary SCH consists of a~~n *un*~~***modulated* code** of length 256 chips, the Primary Synchronisation Code, transmitted once every slot. The Primary Synchronisation Code is the same for every cell in the system and is transmitted time-aligned with the period where the Primary CCPCH is not transmitted as illustrated in Figure ~~Figure Figure 1~~.

The Secondary SCH consists of repeatedly transmitting a length 16 sequence of ***a*~~*un*~~*modulated* codes** of length 256 chips, the Secondary Synchronisation Codes, transmitted in parallel with the Primary Synchronisation channel. Each Secondary Synchronisation code is chosen from a set of 17 different codes of length 256. This sequence on the Secondary SCH indicates which of the 32 different code the cell's downlink scrambling code belongs. 32 sequences are used to encode the 32 different code groups each containing 16 scrambling codes.

The primary and secondary synchronization codes are modulated by the symbol *a* shown in figure 15, which indicates the presence/ absence of STTD encoding on the PCCPCH and is given by the following table:

PCCPCH STTD encoded	a = +1
PCCPCH not STTD encoded	a = -1

----------End modification for S1.11 document section 5.3.3.3----------