Agenda Item:
Source: CWTS
To: TSG RAN WG1
Title: Mapping of BCH, PCH onto physical channels
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Introduction

This file describes mapping of BCH and PCH onto physical channels for low chip rate TDD option.

Common transport channels

The following figure shows the transport channels mapping in low chip rate option:

Figure 1 Transport channels mapping

In low chip rate option,the BCH (PCH) is mapped onto the fixed position Td0 (as show in the figure 1).More details are giving as following:

1.1.1 The Broadcast Channel (BCH)

The BCH is mapped on at least one resource unit (RU) in the first downlink time slot (Td0) per

subframe. The BCH has higher transmission power level (9-11dB higher than average power level in one RU) with omni-directional or sectorial pattern (without beamforming) to cover the whole cell range. The RU allocated for BCH would be shared with other common control channels: PCH, according to a multiframe structure.

1.1.2 The Paging Channel (PCH)

The PCH is a special broadcast channel used to paging UEs from base station side,as mentioned above, it is also mapped onto the same downlink time slot0 as BCH followed by DwPTS(see reference[1]) ,which is always transmitted with the same power level and antenna pattern as those of the BCH. PCH and BCH will occupy their own blocks in the multi-frame structure.

According the frame structure , Td0 is followed by DwPTS, so when the UE catches the SYNC word , it can easily get the BCH .

Conclusion

The low chip rate TDD option of 1.28Mcps has already included in the specification. Based on the descriptions above and to enable the low chip rate with it's specific properties, it's proposed to include this new feature for low chip rate TDD option in clause 5.3.2.1 and 5.3.2.2of TR25.928.

5.3.2 Common Transport channels for low chip rate option

The following figure shows the transport channels mapping:

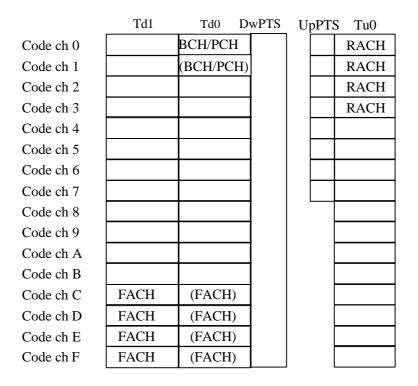|	Td1	Td0	DwPTS	UpPTS	Tu0
Code ch 0		BCH/PCH			RACH
Code ch 1		(BCH/PCH)			RACH
Code ch 2					RACH
Code ch 3					RACH
Code ch 4					
Code ch 5					
Code ch 6					
Code ch 7					
Code ch 8					
Code ch 9					
Code ch A					
Code ch B					
Code ch C	FACH	(FACH)			
Code ch D	FACH	(FACH)			
Code ch E	FACH	(FACH)			
Code ch F	FACH	(FACH)			

Figure 1 Transport channels mapping

5.3.2.1 The broadcast channel (BCH)

The BCH is mapped on at least one Resource Unit (RU) in the first downlink time slot (Td0) per subframe. Due to the adoption of smart antenna, in order to provide the coverage of the whole cell, the time slot with BCH has to have higher transmission power level (9-11dB higher than average power level in one RU) with omni-directional or sectorial pattern (without beamforming) compared with the regular time slot which is beamformed. The RU allocated for BCH would be shared with other common control channels: PCH, according to a multiframe structure.

5.3.2.2 The Paging Channel (PCH)

The PCH is a special broadcast channel used to paging UEs from base station side, as mentioned above, it is also mapped onto the same downlink time slot0 as BCH followed by DwPTS(see reference[1]) ,which is always transmitted with the same power level and antenna pattern as those of the BCH. PCH and BCH will occupy their own blocks in the multi-frame structure.