

Agenda Item: AH21
Source: CWTS
To: TSG RAN WG1
Title: Coding of SS for low chip rate TDD option
Document for: Discussion and Approval

Introduction

This document describes coding of SS (Synchronization shift) for low chip rate TDD option.

Conclusion

It's proposed to discuss and include the following text proposal into the clause 8.2.4 Coding of SS of TR25.928.

----- changes to TR25.928 begin -----

8.2.4 Coding of SS

[Description:]

The SS command, one kind of L1 control signals, is an identifier sent in downlink, to instruct a timing adjustment each M frames. The length of the SS command is 1 symbol.

[Rational:]

The SS command, one kind of L1 control signals, is an identifier sent in downlink, to instruct a timing adjustment in the uplink in each M frames ([for some environments, it make sense to update the SS only once per M sub-frames. in this case,](#) the SS command is repeated within these M frames). The length of the SS command is 1 symbol. The coding of the SS command is shown in table 1. M (1-8) and k (1-8) can be adjusted during call setup or readjusted during the call [by higher layer](#).

Table 1: Coding of the SS

SS Bits	Meaning
11	Increase timing advance by $k/8 T_c$
00	Decrease timing advance by $k/8 T_c$

* Note: other methods like e.g. definition of 'do nothing' are under consideration

In case of 8PSK service, the numbers of the SS bits is 3. The specific coding of SS for the case of 8PSK service is shown in table 2.

Table 2: Coding of the SS (special for in case of 8PSK)

SS Bits	Meaning
111	Increase timing advance $k/8 T_c$

001	Decrease timing advance $k/8 T_c$
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* Note: other methods like e.g. definition of 'do nothing' are under consideration

[Explanation difference:]

In high chip rate TDD option, SS information is not transmitted as L1 signal on each frame. Because of uplink synchronisation in the low chip rate TDD option, SS information is transmitted, as one of L1 signals, once per 5ms subframe.

The SS command is an identifier sent in downlink, to instruct a timing adjustment each M frames. The length of the SS command is 1 symbol. The SS bits "11" mean increasing timing advance $k/8 T_c$ and "00" mean decreasing the timing advance by $k/8 T_c$. The modulation of 8PSK is applied, e.g. in case of 2Mbps service. In this case, the numbers of the SS bits is 3. The specific coding of SS for the case of 8PSK service is shown in table 2.

----- changes to TR25.928 end -----