**3GPP TSG RAN WG1 Meeting #101-e R1-200xxxx**

**E-Meeting, May 25 – June 5, 2020**

**Agenda Item: 6.2.1.3**

**Source: Huawei, HiSilicon**

**Title: Text proposal on clarification of sub-PRB symbol counter reset**

**Document for: Discussion and Decision**

# Introduction

This document provides the text proposal as outcomes of the following email discussion [1]:

[101-e-LTE-eMTC5-Multi-TB-02] Minor corrections – Johan (Ericsson)

* Consider TP in Proposal 3 (on sub-PRB symbol counter reset) in R1-2004696
* Consider TP in Proposal 4 (on SPS handling) in R1-2004696
* Consider TP in Proposal 5 (on removal of scheduling gap after last SC-MTCH TB) in R1-2004696

# Discussion

## TP on clarification of sub-PRB symbol counter reset

**Reason for changes:**

The description on the symbol counter reset for sub-PRB in multi-TB transmission may introduce ambiguity on whether it’s reset at the start of the transmission of each transport block or the first TB of the *NTB* transport blocks.

**Summary of changes:**

It is clarified that the symbol counter for sub-PRB in multi-TB transmission is reset only at the start of the first PUSCH transport block of the *NTB* transport blocks.

**Specs/sections impacted:**

36.212 sections 6.4.3.1

**Consequences if not approved:**

There may be ambiguity whether the symbol counter for sub-PRB in multi-TB transmission is reset only at the start of the first PUSCH TB or each TB of the *NTB* transport blocks.

**-----------------------------------------------------Start of Text Proposal---------------------------------------------**

**<Unchanged parts are omitted>**

5.6A.2 Modulation scheme π/2-BPSK

**<Unchanged parts are omitted>**

For and π/2-BPSK modulation only 2-of-3 adjacent subcarriers are selected as described in 5.5.2.1A.2. The time-continuous signal  in SC-FDMA symbol  in an uplink slot is defined by



for  where , ,  is given by Table 5.6-1, and  and  are respectively the modulation value for subcarrier index  and  for symbol , and the values of  used on  and  are respectively obtained by subtracting  from the resulting set of allocated subcarriers as described in Table 8.1.6-1 of [4], and  represents the lower subcarrier index among the selected subcarriers and  is the subcarrier index adjacent to it. The phase rotation  is given by

where is the number of transport blocks defined in clause 8.0 of 3GPP TS 36.213 [4]. If >1 and interleaving between codewords is applied according to clause 8.0 of 3GPP TS 36.213 [4], then the symbol counter  is reset at the start of the first PUSCH codeword transmission and incremented for each symbol during the transmission of the PUSCH codewords . For other cases, the symbol counter  is reset at the start of each PUSCH codeword transmission and incremented for each symbol during the transmission of the PUSCH codeword.

**<Unchanged parts are omitted>**

**-----------------------------------------------------End of Text Proposal---------------------------------------------**

# References

1. R1-200xxxx Feature lead summary #2 for Multi-TB scheduling for LTE-MTC Moderator (Ericsson)