3GPP TSG RAN WG1 #103-e R1-200xxxx

**e-Meeting, October 26th – November 13th, 2020**

Source: ZTE

Title: Text proposals on explicit feedback for MTB

Agenda item: 6.2.1

Document for: Discussion and Decision

## Introduction

For the explicit feedback, a reference text proposal based on [1] can be discussed as the starting point in this contribution.

## Text proposals on explicit feedback for MTB

**<Unchanged parts are omitted>**

If *ce-PUSCH-MultiTB-Config* is not enabled and the Resource block assignment in format 6-0A is set to all ones, or *ce-PUSCH-MultiTB-Config* is enabled and the 6 MSB bits of the Scheduling TBs for Unicast Field are set to '110111', format 6-0A is used for the indication of ACK feedback. 8 bits including the 6 LSB bits of the Scheduling TBs for Unicast Field and 2 MSB bits of Repetition number are used to indicate HARQ-ACK by bitmap, the order of the bitmap to HARQ process index mapping is such that HARQ process indices are mapped in ascending order from MSB to LSB of the bitmap. For each bit of the bitmap, value 1 indicates ACK, and value 0 is reserved. And all the remaining bits except Flag format 6-0A/format 6-1A differentiation and DCI subframe repetition number are set to zero.

**<Unchanged parts are omitted>**

**<Unchanged parts are omitted>**

If *ce-PUSCH-MultiTB-Config* is not enabled and the Modulation and coding scheme in format 6-0B is 4 bits and set to all ones, or *ce-PUSCH-MultiTB-Config* is enabled and the 6 MSB bits of the Scheduling TBs for Unicast Field are set to '111111', format 6-0B is used for the indication of ACK feedback. 4 LSB bits of the Scheduling TBs for Unicast Field are used to indicate 4 HARQ-ACK by bitmap corresponding. The order of the bitmap to HARQ process index mapping is such that HARQ process indices are mapped in ascending order from MSB to LSB of the bitmap. For each bit of the bitmap, value 1 indicates ACK, and value 0 is reserved. And all the remaining bits except Flag for format 6-0B/format 6-1B differentiation and DCI subframe repetition number are set to zero.

**<Unchanged parts are omitted>**

**<TP 1, TS 36.212, 5.3.3.1 >**

And the TP in 36.213 can be shown as following:

**<Unchanged parts are omitted>**

A BL/CE UE configured with *mpdcch-UL-HARQ-ACK-FeedbackConfig* shall upon detection on a given serving cell of an MPDCCH with DCI format 6-0A/6-0B intended for the UE in the UE-specific search space indicating HARQ-ACK(s) corresponding to transport block(s) associated to HARQ process(es) in the most recent PUSCH transmission with *N>1*, drop the remaining PUSCH transmission(s) (if any) corresponding to the transport block(s) no later than subframe *n+k*, where

* subframe *n* is the last subframe in which the MPDCCH is transmitted; and
* for FDD, *k = 4*;
* for TDD the value of *k* is given in Table 8-2 for the corresponding TDD UL/DL configuration; If the value of *k* is not given in Table 8-2 for subframe *n*, denote subframe *n'* as the first downlink/special subframe which has a value in Table 8-2 after subframe *n*, and substitute *n* with *n'* in the above procedure;
* value of is determined by the *repetition number* field in the corresponding DCI associated with the most recent PUSCH transmission;
* if the UE is configured with higher layer parameter *ce-PUSCH-SubPRB-Config-r15*, and the PUSCH resource assignment in the corresponding DCI associated with the most recent PUSCH transmission is using uplink resource allocation type 5,  where  is defined in [3] and  is determined according to procedure in subclause 8.1.6,  otherwise.

**<Unchanged parts are omitted>**

**<TP 2, TS 36.213, 8.0 >**

# References

1. [R1-2007713](https://protect2.fireeye.com/v1/url?k=fbbf041c-a66d1315-fbbe8f53-0cc47a31cdf8-08bc37774253a8a3&q=1&e=31cac414-d755-4f05-8fc7-d03d4bb99eda&u=https%3A%2F%2Fwww.3gpp.org%2Fftp%2Ftsg_ran%2FWG1_RL1%2FTSGR1_103-e%2FDocs%2FR1-2007713.zip), “Remaining issues on scheduling enhancement for MTC”, ZTE