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

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

**Agenda item:** 6.2.1

**Source:** Qualcomm Incorporated

**Title:** TP for Support of implicit HARQ-ACK feedback

**Document for:** Discussion and Decision

# Background

The TP in this contribution implements the necessary changes to support implicit HARQ-ACK feedback, where the new PUSCH DCI can provide HARQ-ACK for all the ongoing PUSCHs.

# TP

**<TP, TS 36.213>**

8.0 UE procedure for transmitting the physical uplink shared channel

**<Unchanged parts are omitted>**

For a BL/CE UE configured with *mpdcch-UL-HARQ-ACK-FeedbackConfig*, if the UE detects a first MPDCCH with DCI format 6-0A/6-0B intended for the UE scheduling PUSCH in subframes , and if the UE detects a second MPDCCH with DCI format 6-0A/6-0B intended for the UE scheduling PUSCH in subframes with , where

- for each HARQ ID *i* indicated in the first MPDCCH,

* either:
  + the HARQ ID is not indicated in the second MPDCCH, or,
  + the NDI indicated in the second MPDCCH for the corresponding HARQ ID is toggled with respect to the NDI indicated in the first MPDCCH

- and, the first subframe in which the second MPDCCH is transmitted meets , where is the first subframe in which the HARQ ID *i* is transmitted

- 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

the UE shall

- drop the remaining PUSCH transmission(s) of the transport block(s) scheduled by the first MPDCCH starting from subframe , where , and

- deliver HARQ-ACK feedback corresponding to the transport block(s) scheduled by the first MPDCCH to higher layers, and

- transmit the PUSCH scheduled by the second MPDCCH in subframes

**<Unchanged parts are omitted>**

**</TP>**