**3GPP TSG RAN WG1 Meeting #103e R1-2005xxx**

**e-Meeting, October 19th – November 6th, 2020**

**Agenda Item: 6.2.2**

**Source: Lenovo, Motorola Mobility**

**Title: Text proposals on gap in multicast**

**Document for: Discussion and decision**

# Introduction

For multiple transport block transmission in multicast, a scheduling gap is agreed among TBs. the following agreement was achieved in RAN1-99. Two TP(s) proposal for TS36.213 corresponding to the scheduling gap counted with BL/CE DL subframe(s) or absolute subframe are in section 2.

**Agreement**

For multicast, a scheduling gap can be inserted after each TB, where the gap length is configurable between {0, 2, 4, 8, 16, 32, 64, 128} subframes. The configuration is per cell.

# Text proposals on scheduling gap in multiple TBs of multicast

TP1, scheduling gap is *NGAP*BL/CE DL subframe(s)

**<Unchanged parts are omitted>**

### 7.1.11 PDSCH subframe assignment for BL/CE UE

A BL/CE UE shall upon detection of a MPDCCH with DCI format 6-1A/6-1B/6-2 intended for the UE, decode the corresponding PDSCH in subframe(s) *n+ki* with *i = 0, 1, …, NTBN-1* according to the MPDCCH, where

- subframe *n* is the last subframe in which the MPDCCH is transmitted and is determined from the starting subframe of MPDCCH transmission and the DCI subframe repetition number field in the corresponding DCI;

- the value of is the number of scheduled TB determined in the corresponding DCI if present, otherwise;

- If the UE is configured with higher layer parameter *multiTB-Gap,* PDSCH corresponding to MPDCCH with DCI CRC is scrambled by G-RNTI and,

- subframe(s) *n+sj* with *j=0,1,…, NTBN+(NTB-1)NGAP -1* are *NTBN* +*(NTB-1)NGAP* consecutive BL/CE DL subframe(s) where .

 - subframe(s) *ni* =*n+ki*, where with, *r=0,1,…NTB-1* and *i = 0, 1, …, NTBN-1* are *NTBN* BL/CE DL subframe(s)

- BL/CE DL subframes  with  are associated with TB*r+*1 , *r=0,1,…NTB-1*.

- *NGAP* is the indicated value of higher layer parameter *multiTB-Gap.*

- Otherwise

- subframe(s) *ni* = *n+ki* with *i=0,1,…, NTBN-1* are *NTBN* consecutive BL/CE DL subframe(s) where .

- for ,

- if the UE is configured with higher layer parameter *interleaving* in *ce-PDSCH-MultiTB-Config*, and PDSCH corresponding to a MPDCCH with DCI CRC scrambled by C-RNTI and where  for BL/CE UE configured with CEModeA,  for BL/CE UE configured with CEModeB,

- BL/CE DL subframes  with  are associated with TB*r+*1 ,

- otherwise,

- BL/CE DL subframes  with  are associated with TB*r+*1 ,,

- the value of  is determined by the repetition number field in the corresponding DCI, where  are given in Table 7.1.11-1, Table 7.1.11-2 and Table 7.1.11-3, respectively and subframe *n+x* is the second BL/CE DL subframe after subframe *n*.

**<Unchanged parts are omitted>**

TP2, scheduling gap is *NGAP*absolute subframe(s)

**<Unchanged parts are omitted>**

### 7.1.11 PDSCH subframe assignment for BL/CE UE

A BL/CE UE shall upon detection of a MPDCCH with DCI format 6-1A/6-1B/6-2 intended for the UE, decode the corresponding PDSCH in subframe(s) *n+ki* with *i = 0, 1, …, NTBN-1* according to the MPDCCH, where

- subframe *n* is the last subframe in which the MPDCCH is transmitted and is determined from the starting subframe of MPDCCH transmission and the DCI subframe repetition number field in the corresponding DCI;

- the value of is the number of scheduled TB determined in the corresponding DCI if present, otherwise;

- If the UE is configured with higher layer parameter *multiTB-Gap,* PDSCH corresponding to MPDCCH with DCI CRC is scrambled by G-RNTI and,

- subframe(s) *ni* =*n+ki*, with *i = 0, 1, …, NTBN-1* are *NTBN* BL/CE DL subframe(s)

- subframe(s) *nl* = *n+ kl* with *l=0,1,…, N-1* are *N* consecutive BL/CE DL subframe(s), and subframe *n+x* is the second BL/CE DL subframe after subframe *n*

- subframe(s) *nr·N+l* = *n+ kr·N+l* with *l=0,1,…, N-1* are *N* consecutive BL/CE DL subframe(s), and subframe is the second BL/CE DL subframe after subframe *n*+ for each *r=1,…NTB-1*

- *NGAP* is the indicated value of higher layer parameter *multiTB-Gap.*

- BL/CE DL subframes  with  are associated with TB*r+*1 ,

- Otherwise

- subframe(s) *ni* = *n+ki* with *i=0,1,…, NTBN-1* are *NTBN* consecutive BL/CE DL subframe(s) where,  , and subframe *n+x* is the second BL/CE DL subframe after subframe *n*.

- for ,

- if the UE is configured with higher layer parameter *interleaving* in *ce-PDSCH-MultiTB-Config*, and PDSCH corresponding to a MPDCCH with DCI CRC scrambled by C-RNTI and where  for BL/CE UE configured with CEModeA,  for BL/CE UE configured with CEModeB,

- BL/CE DL subframes  with  are associated with TB*r+*1 ,

- otherwise,

- BL/CE DL subframes  with  are associated with TB*r+*1 ,,

- The value of  is determined by the repetition number field in the corresponding DCI, where  are given in Table 7.1.11-1, Table 7.1.11-2 and Table 7.1.11-3, respectively.

**<Unchanged parts are omitted>**

# References

1. 3GPP TS 36.213 g30