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

**e-Meeting, May 25th – June 5th, 2020**

Source: moderator (vivo)

Title: Feature lead summary on [101-e-NR-unlic-NRU-CG-01]

Agenda Item: 7.2.2.2.4

Document for: Discussion and Decision

1. Introduction

Per guidance from Mr. Chairman, please provide your views on the issues below.

[101-e-NR-unlic-NRU-CG-01] Email discussion/approval on issues 2, 3, 6, 8 and 13 from [R1-2003375](file:///C%3A%5CUsers%5Cwanshic%5COneDrive%20-%20Qualcomm%5CDocuments%5CStandards%5C3GPP%20Standards%5CMeeting%20Documents%5CTSGR1_101%5CDocs%5CR1-2003375.zip) until 5/28; if necessary, endorse any associated TPs by 6/3 – Rakesh (Vivo)

1. Remaining issues
	1. Issue 2: values range of cg-COT-sharinglist (Huawei)
2. Considering MCOT=10ms for p=3 and p=4, i.e., =40 slots for μ=2, and accounting for the maximum number of (O, D) combination per CAP as , the value range for the parameter cg-COT-SharingList-r16 should be changed as follows:
* cg-COT-SharingList-r16 SEQUENCE (SIZE (1..1709)) OF CG-COT-Sharing-r16
1. cg-StartingFullBW-InsideCOT-r16 SEQUENCE (SIZE (1..ffsValue)) OF INTEGER (0..6)
2. cg-StartingFullBW-OutsideCOT-r16 SEQUENCE (SIZE (1..ffsValue)) OF INTEGER (0..6)
3. cg-COT-SharingOffset-r16 INTEGER (1..ffsValue)

(following was greed in RAN1#100b-e where the step size is in square bracket.)

* For the value of X, follow the same value range as for O and D with the step size of [14] symbols

**Note: if there is any impact on range of other parameters due to agreement on above, it should be discussed here as well.**

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* 1. Issue 3: maximum number of PUSCH in a slot

***Proposal 3: The maximum configurable value for cg-nrofPUSCH-InSlot-r16 can be set as 7.***

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* 1. Issue 6: COT sharing related (Vivo)
* it is necessary to clarify if the COT sharing information can be updated by subsequent CG-UCI.
* the gap should be ensured by UE if the CG-UCI indicates that the COT sharing information available, otherwise, the COT sharing information should be indicated as not available.
* The CG-UCI indication carried by different PUSCHs indicates the COT sharing information independently, which means COT sharing information carried in later CG-PUSCH will not override the information in the earlier ones.

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* 1. Issue 8: HARQ-ACK for CBG based PUSCH (Samsung)

TP#1

================= Start of TP#1 for TS 38.213 ====================

10.5 HARQ-ACK information for PUSCH transmissions

< Unchanged Texts Omitted >

For a PUSCH transmission scheduled by a DCI format, if a UE is provided *PUSCH-CodeBlockGroupTransmission* for a serving cell, a value of HARQ-ACK information for a transport block of a corresponding HARQ process number is ACK if at least one of CBGs for the PUSCH is ACK; otherwise, a value of HARQ-ACK information is NACK

For a PUSCH transmission configured by *ConfiguredGrantConfig*, if a UE is provided *PUSCH-CodeBlockGroupTransmission* for a serving cell, a value of HARQ-ACK information for a transport block of a corresponding HARQ process number is ACK if all of CBGs for the PUSCH are ACK; otherwise, a value of HARQ-ACK information is NACK.

For a PUSCH transmission scheduled by a DCI format, HARQ-ACK information for a transport block of a corresponding HARQ process number is valid if a first symbol of the PDCCH reception is after a last symbol of the PUSCH transmission or, if the PUSCH transmission is over multiple slots,

- after a last symbol of the PUSCH transmission in a first slot from the multiple slots by a number of symbols provided by *cg-minDFIDelay-r16*, if a value of the HARQ-ACK information is ACK.

- after a last symbol of the PUSCH transmission in a last slot from the multiple slots by a number of symbols provided by *cg-minDFIDelay-r16*, if a value of the HARQ-ACK information is NACK.

< Unchanged Texts Omitted >

========================== End of TP#1 for TS 38.213 =========================

TP#2

=================== Start of TP for TS 38.213 =======================

10.5 HARQ-ACK information for PUSCH transmissions

< Unchanged Texts Omitted >

For a PUSCH transmission scheduled by a DCI format, if a UE is provided *PUSCH-CodeBlockGroupTransmission* for a serving cell, a value of HARQ-ACK information for a transport block of a corresponding HARQ process number is ACK if all of CBGs for the PUSCH are ACK; otherwise, a value of HARQ-ACK information is NACK.

For a PUSCH transmission scheduled by a DCI format, HARQ-ACK information for a transport block of a corresponding HARQ process number is valid if a first symbol of the PDCCH reception is after a last symbol of the PUSCH transmission or, if the PUSCH transmission is over multiple slots,

- after a last symbol of the PUSCH transmission in a first slot from the multiple slots by a number of symbols provided by *cg-minDFIDelay-r16*, if a value of the HARQ-ACK information is ACK.

- after a last symbol of the PUSCH transmission in a last slot from the multiple slots by a number of symbols provided by *cg-minDFIDelay-r16*, if a value of the HARQ-ACK information is NACK.

< Unchanged Texts Omitted >

================ End of TP for TS 38.213 ==========================

TP#3

=================== Start of TP for TS 37.213 =======================

\*\*\* Unchanged text is omitted \*\*\*

#### 4.2.2.2 Contention window adjustment procedures for UL transmissions scheduled/configured by gNB

If a UE transmits transmissions using Type 1 channel access procedures that are associated with channel access priority class on a channel, the UE maintains the contention window value and adjusts for those transmissions before step 1 of the procedure described in subclause 4.2.1.1, using the following steps:

1) For every priority class , set ;

2) If HARQ-ACK feedback is available after the last update of , go to step 3. Otherwise, if the UE transmission after procedure described in subclause 4.2.1.1 does not include a retransmission or is transmitted within a duration from the end of the *reference duration* corresponding to the earliest UL transmission burst after the last update of transmitted after the procedures described in subclause 4.1.1, go to step 5; otherwise go to step 4.

3) The HARQ-ACK feedback(s) corresponding to PUSCH(s) in the *reference duration* for the latest UL transmission burst for which HARQ-ACK feedback is available is used as follows:

a. If at least one HARQ-ACK feedback is 'ACK' for PUSCH(s) with transport block (TB) based feedback or at least 10% of HARQ-ACK feedbacks is 'ACK' for PUSCH(s) with code block group (CBG) based feedback go to step 1; otherwise go to step 4.

4) Increase for every priority class to the next higher allowed value;

5) For every priority class , maintain as it is; go to step 2.

\*\*\* Unchanged text is omitted \*\*\*

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* 1. Issue 13: Editorial

38.214

6.1 UE procedure for transmitting the physical uplink shared channel

< Unchanged parts are omitted >

For the licensed spectrum, a UE is not expected to be scheduled by a PDCCH ending in symbol to transmit a PUSCH on a given serving cell for a given HARQ process, if there is a transmission occasion where the UE is

< End of text proposal >

or

<Unchanged part omitted>

Except for operation with shared spectrum channel access, a ~~A~~ UE is not expected to be scheduled by a PDCCH

< End of text proposal >

**Note: we first discuss whether the proposed correction is needed or not, if there is consensus to have this change, exact wording is to be discussed further.**

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# References

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| --- | --- | --- |
| [R1-2003373](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2003373.zip) | Remaining issues on the enhancements to configured grant | vivo |
| [R1-2003453](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2003453.zip) | Remaining issues on the configured grant for NR-U | ZTE, Sanechips |
| [R1-2003515](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2003515.zip) | Maintenance on the configured grant procedures | Huawei, HiSilicon |
| [R1-2003731](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2003731.zip) | Enhancements to configured grants for NR-unlicensed | Intel Corporation |
| [R1-2003824](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2003824.zip) | Text proposals for configured grant enhancement for NR-U | Lenovo, Motorola Mobility |
| [R1-2003846](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2003846.zip) | Configured grant enhancement | Ericsson |
| [R1-2003863](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2003863.zip) | Configured grant enhancement for NR-U | Samsung |
| [R1-2004016](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2004016.zip) | Remaining issues of configured grant for NR-U | LG Electronics |
| [R1-2004088](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2004088.zip) | Discussion on the remaining issues of configured grant enhancements | OPPO |
| [R1-2004446](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_101-e/Docs/R1-2004446.zip) | TP for Enhancements to configured grants for NR-U | Qualcomm Incorporated |