**3GPP TSG RAN WG1 Meeting #103-e R1-2009613**

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

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| *CR-Form-v12.0* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **36.212** | **CR** |  | **rev** | **-** | **Current version:** | **V16.3.0** |  |
|  | | | | | | | | |
| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <http://www.3gpp.org/Change-Requests>.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network |  |

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| ***Title:*** | Correction on explicit feedback for multi-TB scheduling in LTE-MTC | | | | | | | | | |
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| ***Source to WG:*** | Moderator(Ericsson),ZTE,Ericsson,Qualcomn,Lenovo | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_eMTC5 -Core | | | | |  | ***Date:*** | | | 2020-11-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In 5.3.3.1 of 36.212, format 6-0A/6-0B can be used for the indication of ACK feedback when multiple TBs are scheduled by one DCI. However,according to current spec, how to trigger that and which TB should be indicated for early termination is not clear for multiple TB case. | | | | | | | | |
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| ***Summary of change:*** | | The UL early termination for multi-TB unicast scheduling is enabled by *ce-PUSCH-MultiTB-Config, mpdcch-UL-HARQ-ACK-FeedbackConfig,* andcorresponding bits set to predefined value. And the terminated TB can be indicated by bitmap method by using 6 LSB bits of the Scheduling TBs for Unicast Field and 2 MSB bits of Repetition number for 6-0A and 4 LSB bits of the Scheduling TBs for Unicast Field for 6-0B. | | | | | | | | |
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| ***Consequences if not approved:*** | | The UL early termination for multi-TB unicast scheduling is not clear. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.3.1.10 and 5.3.3.1.11 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS/TR 36.213 CR XXXX | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

5.3.3.1.10 Format 6-0A

**<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 *mpdcch-UL-HARQ-ACK-FeedbackConfig* is configured 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, where 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>**

5.3.3.1.11 Format 6-0B

**<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 *mpdcch-UL-HARQ-ACK-FeedbackConfig* is configured 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, where 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>**