3GPP TSG RAN WG1 #107 R1-211xxxx

e-Meeting, Nov 11th – 19th, 2021

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| *CR-Form-v11.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **36.212** | **CR** |  | **rev** | **-** | **Current version:** | **16.6.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](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:*** | Fallback DCI for eMTC | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Moderator (Nordic Semiconductor ASA), Ericsson | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_eMTC5-Core | | | | |  | | ***Date:*** | | 2021-11-12 |
|  |  | | | |  | | |  | |  |
| ***Category:*** | **A** |  | | | | | | ***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)* | |
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| ***Reason for change:*** | | Clarify that all UE-specific RRC-configured UL DCI format fields are only present in USS. | | | | | | | | |
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| ***Summary of change:*** | | Add the clarification “and the DCI is mapped onto the UE-specific search space given by the C-RNTI as defined in [3]” to Resource block assignment DCI field in 6-0A. | | | | | | | | |
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| ***Consequences if not approved:*** | | Size of CSS fallback DCI changes with RRC configuration. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.3.3.1.10 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | |  | | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | TS/TR ... CR ... | | | |
| ***affected:*** | |  | **X** | Test specifications | | | TS/TR ... CR ... | | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | TS/TR ... CR ... | | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |

##### 5.3.3.1.10 Format 6-0A

DCI format 6-0A is used for the scheduling of PUSCH in one UL cell, for the indication of ACK feedback, and operation on preconfigured UL resources.

The following information is transmitted by means of the DCI format 6-0A:

- Flag format 6-0A/format 6-1A differentiation – 1 bit, where value 0 indicates format 6-0A and value 1 indicates format 6-1A

- Frequency hopping flag – 1 bit, where value 0 indicates frequency hopping is not enabled and value 1 indicates frequency hopping is enabled as defined in clause 5.3.4 of [2]. The field is not present if *ce-PUSCH-MultiTB-Config* is enabled and the DCI is mapped onto the UE-specific search space given by C-RNTI as defined in [3].

- Number of resource units – 2 bits, where value '00' indicates the format 6-0A DCI uses PRB resource allocation, otherwise the DCI format 6-0A uses sub-PRB resource allocation as defined in clause 8.1.6 of [3]. This field is present when *ce-PUSCH-SubPRB-Config* is configured by higher layers and the DCI is mapped onto the UE-specific search space given by C-RNTI as defined in [3], or when the DCI is mapped onto the UE-specific search space given by PUR-RNTI as defined in [3] and the UE is not configured with higher layer parameter *numRUs* = '00'.

- Resource block assignment –

- If the format 6-0A DCI uses sub-PRB resource allocation:

- +6 bits for PUSCH as defined in [3]

-  MSB bits provide the narrowband index as defined in clause 5.2.4 of [2]

- 6 bits provide the resource allocation within the indicated narrowband using UL resource allocation type 5 as defined in clause 8.1.6 of [3]

- Else if flexible starting PRB for PUSCH resource allocation is enabled by higher layers with  equal to  and the DCI is mapped onto the UE-specific search space given by C-RNTI as defined in [3], bits for FDD PUSCH and bits for TDD PUSCH provide the resource allocation using UL resource allocation type 0 as defined in clause 8.1.1 of [3]

- Otherwise,+5 bits for PUSCH as defined in [3]:

- If the 5 LSB bits indicate a value not larger than 20

-  MSB bits provide the narrowband index as defined in clause 5.2.4 of [2]

- 5 bits provide the resource allocation using UL resource allocation type 0 within the indicated narrowband

- Otherwise,

- +5 bits provide the resource allocation using UL resource allocation type 4 as defined in clause 8.1.5 of[ 3]