**3GPP TSG-RAN WG1 Meeting #104b-e *R1-21xxxxx***

**E-meeting, April 12 – April 20, 2021**

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| *CR-Form-v12.0* |
| **DRAFT CHANGE REQUEST** |
|  |
|  | **38.212** | **CR** |  | **rev** | **-** | **Current version:** | **16.5.0** |  |
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| *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:***  | Alignment CR for TS 38.212 |
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| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | R1 |
|  |  |
| ***Work item code:*** | NR\_unlic-Core |  | ***Date:*** | 2021-4-19 |
|  |  |  |  |  |
| ***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 canbe 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:*** | CR R1-2102041 was endorsed in RAN1#104-e meeting, but a few indenting changes are missing in TS 38.212 v16.5.0.  |
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| ***Summary of change:*** | Capture the missing indenting changes from R1-2102041. |
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| ***Consequences if not approved:*** | Specification is not accurate  |
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| ***Clauses affected:*** | 7.3.1.1.1 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

7.3.1.1.1 Format 0\_0

DCI format 0\_0 is used for the scheduling of PUSCH in one cell.

The following information is transmitted by means of the DCI format 0\_0 with CRC scrambled by C-RNTI or CS-RNTI or MCS-C-RNTI:

- Identifier for DCI formats – 1 bit

- The value of this bit field is always set to 0, indicating an UL DCI format

- Frequency domain resource assignment – number of bits determined by the following:

-  bits if neither of the higher layer parameters *useInterlacePUCCH-PUSCH* in *BWP-UplinkCommon* and *useInterlacePUCCH-PUSCH* in *BWP-UplinkDedicated* is configured, where  is defined in clause 7.3.1.0

- For PUSCH hopping with resource allocation type 1:

-  MSB bits are used to indicate the frequency offset according to Clause 6.3 of [6, TS 38.214], where  if the higher layer parameter *frequencyHoppingOffsetLists* contains two offset values and  if the higher layer parameter *frequencyHoppingOffsetLists* contains four offset values

-  bits provide the frequency domain resource allocation according to Clause 6.1.2.2.2 of [6, TS 38.214]

- For non-PUSCH hopping with resource allocation type 1:

-  bits provide the frequency domain resource allocation according to Clause 6.1.2.2.2 of [6, TS 38.214]

- If any of the higher layer parameters *useInterlacePUCCH-PUSCH* in *BWP-UplinkCommon* and *useInterlacePUCCH-PUSCH* in *BWP-UplinkDedicated* is configured

- 5+Y bits provide the frequency domain resource allocation according to Clause 6.1.2.2.3 of [6, TS 38.214] if the subcarrier spacing for the active UL bandwidth part is 30 kHz.

- 6+Y bits provide the frequency domain resource allocation according to Clause 6.1.2.2.3 of [6, TS 38.214] if the subcarrier spacing for the active UL bandwidth part is 15 kHz.

 If the DCI format 0\_0 is monitored in a UE-specific search space, the value of Y is determined by $\left⌈log\_{2}\left(\frac{N\_{RB-set,UL}^{BWP}\left(N\_{RB-set,UL}^{BWP}+1\right)}{2}\right)\right⌉$ where $N\_{RB-set,UL}^{BWP}$ is the number of RB sets contained in the active UL BWP as defined in clause 7 of [6, TS38.214]. If the DCI 0\_0 is monitored in a common search space Y = 0.

- Time domain resource assignment – 4 bits as defined in Clause 6.1.2.1 of [6, TS 38.214]

- Frequency hopping flag – 1 bit according to Table 7.3.1.1.1-3, as defined in Clause 6.3 of [6, TS 38.214]

- Modulation and coding scheme – 5 bits as defined in Clause 6.1.4.1 of [6, TS 38.214]

- New data indicator – 1 bit

- Redundancy version – 2 bits as defined in Table 7.3.1.1.1-2

- HARQ process number – 4 bits

- TPC command for scheduled PUSCH – 2 bits as defined in Clause 7.1.1 of [5, TS 38.213]

- ChannelAccess-CPext – 2 bits indicating combinations of channel access type and CP extension as defined in Table 7.3.1.1.1-4, or Table 7.3.1.1.1.4A, if *ChannelAccessMode-r16* = "*semistatic*" is provided for operation in a cell with shared spectrum channel access; 0 bit otherwise.

- Padding bits, if required.

- UL/SUL indicator – 1 bit for UEs configured with *supplementaryUplink* in *ServingCellConfig* in the cell as defined in Table 7.3.1.1.1-1 and the number of bits for DCI format 1\_0 before padding is larger than the number of bits for DCI format 0\_0 before padding; 0 bit otherwise. The UL/SUL indicator, if present, locates in the last bit position of DCI format 0\_0, after the padding bit(s).

- If the UL/SUL indicator is present in DCI format 0\_0 and the higher layer parameter *pusch-Config* is not configured on both UL and SUL the UE ignores the UL/SUL indicator field in DCI format 0\_0, and the corresponding PUSCH scheduled by the DCI format 0\_0 is for the UL or SUL for which high layer parameter *pucch-Config* is configured;

- If the UL/SUL indicator is not present in DCI format 0\_0 and *pucch-Config* is configured, the corresponding PUSCH scheduled by the DCI format 0\_0 is for the UL or SUL for which high layer parameter *pucch-Config* is configured.

- If the UL/SUL indicator is not present in DCI format 0\_0 and *pucch-Config* is not configured, the corresponding PUSCH scheduled by the DCI format 0\_0 is for the uplink on which the latest PRACH is transmitted.

The following information is transmitted by means of the DCI format 0\_0 with CRC scrambled by TC-RNTI:

- Identifier for DCI formats – 1 bit

- The value of this bit field is always set to 0, indicating an UL DCI format

- Frequency domain resource assignment – number of bits determined by the following:

- bits if the higher layer parameter *useInterlacePUCCH-PUSCH* in *BWP-UplinkCommon* is not configured, where

-  is the size of the initial UL bandwidth part.

- For PUSCH hopping with resource allocation type 1:

-  MSB bits are used to indicate the frequency offset according to Table 8.3-1 in Clause 8.3 of [5, TS 38.213], where  if  and  otherwise

-  bits provide the frequency domain resource allocation according to Clause 6.1.2.2.2 of [6, TS 38.214]

- For non-PUSCH hopping with resource allocation type 1:

-  bits provide the frequency domain resource allocation according to Clause 6.1.2.2.2 of [6, TS 38.214]

- If the higher layer parameter *useInterlacePUCCH-PUSCH* in *BWP-UplinkCommon* is configured

- 5 bits provide the frequency domain resource allocation according to Clause 6.1.2.2.3 of [6, TS 38.214] if the subcarrier spacing for the active UL bandwidth part is 30 kHz

- 6 bits provide the frequency domain resource allocation according to Clause 6.1.2.2.3 of [6, TS 38.214] if the subcarrier spacing for the active UL bandwidth part is 15 kHz

- Time domain resource assignment – 4 bits as defined in Clause 6.1.2.1 of [6, TS 38.214]

- Frequency hopping flag – 1 bit according to Table 7.3.1.1.1-3, as defined in Clause 6.3 of [6, TS 38.214]

- Modulation and coding scheme – 5 bits as defined in Clause 6.1.4.1 of [6, TS 38.214]

- New data indicator – 1 bit, reserved

- Redundancy version – 2 bits as defined in Table 7.3.1.1.1-2

- HARQ process number – 4 bits, reserved

- TPC command for scheduled PUSCH – 2 bits as defined in Clause 7.1.1 of [5, TS 38.213]

- ChannelAccess-CPext – 2 bits indicating combinations of channel access type and CP extension as defined in Table 7.3.1.1.1-4, or Table 7.3.1.1.1.4A, if *ChannelAccessMode-r16* = "*semistatic*" is provided for operation in a cell with shared spectrum channel access; 0 bit otherwise

- Padding bits, if required.

- UL/SUL indicator – 1 bit if the cell has two ULs and the number of bits for DCI format 1\_0 before padding is larger than the number of bits for DCI format 0\_0 before padding; 0 bit otherwise. The UL/SUL indicator, if present, locates in the last bit position of DCI format 0\_0, after the padding bit(s).

- If 1 bit, reserved, and the corresponding PUSCH is always on the same UL carrier as the previous transmission of the same TB

<Unchanged parts are ommited>