**3GPP TSG-RAN WG1 Meeting #108-e *R1-22xxxxx***

**e-Meeting, February 21st – March 3rd, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.212** | **CR** |  | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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:*** | Corrections on NR dynamic spectrum sharing enhancements in 38.212 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_DSS-Core | | | | |  | ***Date:*** | | | 2022-3-8 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Capture the agreement on DCI size alignment made in RAN1#108-e meeting. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Reflect the agreement in DCI format 0\_1, 0\_2, 1\_1 and 1\_2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The specification for NR DSS enhancement is incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.3.1.1.2, 7.3.1.1.3, 7.3.1.2.2, 7.3.1.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

##### 7.3.1.1.2 Format 0\_1

DCI format 0\_1 is used for the scheduling of one or multiple PUSCH in one cell, or indicating CG downlink feedback information (CG-DFI) to a UE.

The following information is transmitted by means of the DCI format 0\_1 with CRC scrambled by C-RNTI or CS-RNTI or SP-CSI-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

- Carrier indicator – 0 or 3 bits, as defined in Clause 10.1 of [5, TS38.213]. This field is reserved when this format is carried by PDCCH on the primary cell and the UE is configured for scheduling on the primary cell from an SCell, with the same number of bits as that in this format carried by PDCCH on the SCell for scheduling on the primary cell.

< Unchanged parts are omitted >

A UE does not expect that the bit width of a field in DCI format 0\_1 with CRC scrambled by CS-RNTI is larger than corresponding bit width of same field in DCI format 0\_1 with CRC scrambled by C-RNTI for the same serving cell. If the bit width of a field in the DCI format 0\_1 with CRC scrambled by CS-RNTI is not equal to that of the corresponding field in the DCI format 0\_1 with CRC scrambled by C-RNTI for the same serving cell, a number of most significant bits with value set to '0' are inserted to the field in DCI format 0\_1 with CRC scrambled by CS-RNTI until the bit width equals that of the corresponding field in the DCI format 0\_1 with CRC scrambled by C-RNTI for the same serving cell.

If the number of information bits in DCI format 0\_1 scheduling a single PUSCH prior to padding is not equal to the number of information bits in DCI format 0\_1 scheduling multiple PUSCHs for the same serving cell, zeros shall be appended to the DCI format 0\_1 with smaller size until the payload size is the same for scheduling a single PUSCH and multiple PUSCHs.

For a UE configured with scheduling on the primary cell from an SCell, if prior to padding the number of information bits in DCI format 0\_1 carried by PDCCH on the primary cell is not equal to the number of information bits in DCI format 0\_1 carried by PDCCH on the SCell for scheduling on the primary cell, zeros shall be appended to the DCI format 0\_1 with smaller size until the payload size is the same.

**Table 7.3.1.1.2-1: Bandwidth part indicator**

|  |  |
| --- | --- |
| Value of BWP indicator field | Bandwidth part |
| 2 bits |
| 00 | Configured BWP with BWP-Id = 1 |
| 01 | Configured BWP with BWP-Id = 2 |
| 10 | Configured BWP with BWP-Id = 3 |
| 11 | Configured BWP with BWP-Id = 4 |

< Unchanged parts are omitted >

7.3.1.1.3 Format 0\_2

DCI format 0\_2 is used for the scheduling of PUSCH in one cell.

The following information is transmitted by means of the DCI format 0\_2 with CRC scrambled by C-RNTI or CS-RNTI or SP-CSI-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

- Carrier indicator – 0, 1, 2 or 3 bits determined by higher layer parameter *carrierIndicatorSizeDCI-0-2*, as defined in Clause 10.1 of [5, TS38.213]. This field is reserved when this format is carried by PDCCH on the primary cell and the UE is configured for scheduling on the primary cell from an SCell, with the same number of bits as that in this format carried by PDCCH on the SCell for scheduling on the primary cell.

< Unchanged parts are omitted >

A UE does not expect that the bit width of a field in DCI format 0\_2 with CRC scrambled by CS-RNTI is larger than corresponding bit width of same field in DCI format 0\_2 with CRC scrambled by C-RNTI for the same serving cell. If the bit width of a field in the DCI format 0\_2 with CRC scrambled by CS-RNTI is not equal to that of the corresponding field in the DCI format 0\_2 with CRC scrambled by C-RNTI for the same serving cell, a number of most significant bits with value set to '0' are inserted to the field in DCI format 0\_2 with CRC scrambled by CS-RNTI until the bit width equals that of the corresponding field in the DCI format 0\_2 with CRC scrambled by C-RNTI for the same serving cell.

For a UE configured with scheduling on the primary cell from an SCell, if prior to padding the number of information bits in DCI format 0\_2 carried by PDCCH on the primary cell is not equal to the number of information bits in DCI format 0\_2 carried by PDCCH on the SCell for scheduling on the primary cell, zeros shall be appended to the DCI format 0\_2 with smaller size until the payload size is the same.

**Table 7.3.1.1.3-1: 1 bit SRS request in DCI format 0\_2 and DCI format 1\_2**

|  |  |
| --- | --- |
| **Value of SRS request field** | **Triggered aperiodic SRS resource set(s) for DCI format 0\_2 and 1\_2** |
| 0 | No aperiodic SRS resource set triggered |
| 1 | SRS resource set(s) configured with higher layer parameter *aperiodicSRS-ResourceTrigger* set to 1 or an entry in *aperiodicSRS-ResourceTriggerList* set to 1 |

< Unchanged parts are omitted >

7.3.1.2.2 Format 1\_1

DCI format 1\_1 is used for the scheduling of one or multiple PDSCH in one cell.

The following information is transmitted by means of the DCI format 1\_1 with CRC scrambled by C-RNTI or CS-RNTI or MCS-C-RNTI:

- Identifier for DCI formats – 1 bits

- The value of this bit field is always set to 1, indicating a DL DCI format

- Carrier indicator – 0 or 3 bits as defined in Clause 10.1 of [5, TS 38.213]. This field is reserved when this format is carried by PDCCH on the primary cell and the UE is configured for scheduling on the primary cell from an SCell, with the same number of bits as that in this format carried by PDCCH on the SCell for scheduling on the primary cell.

< Unchanged parts are omitted >

If DCI formats 1\_1 are monitored in multiple search spaces associated with multiple CORESETs in a BWP for scheduling the same serving cell, zeros shall be appended until the payload size of the DCI formats 1\_1 monitored in the multiple search spaces equal to the maximum payload size of the DCI format 1\_1 monitored in the multiple search spaces.

For a UE configured with scheduling on the primary cell from an SCell, if prior to padding the number of information bits in DCI format 1\_1 carried by PDCCH on the primary cell is not equal to the number of information bits in DCI format 1\_1 carried by PDCCH on the SCell for scheduling on the primary cell, zeros shall be appended to the DCI format 1\_1 with smaller size until the payload size is the same.

**Table 7.3.1.2.2-1: Antenna port(s) (1000 + DMRS port), *dmrs-Type*=1, *maxLength*=1**

|  |  |  |
| --- | --- | --- |
| **One Codeword:**  **Codeword 0 enabled,**  **Codeword 1 disabled** | | |
| **Value** | **Number of DMRS CDM group(s) without data** | **DMRS port(s)** |
| 0 | 1 | 0 |
| 1 | 1 | 1 |
| 2 | 1 | 0,1 |
| 3 | 2 | 0 |
| 4 | 2 | 1 |
| 5 | 2 | 2 |
| 6 | 2 | 3 |
| 7 | 2 | 0,1 |
| 8 | 2 | 2,3 |
| 9 | 2 | 0-2 |
| 10 | 2 | 0-3 |
| 11 | 2 | 0,2 |
| 12-15 | Reserved | Reserved |

< Unchanged parts are omitted >

7.3.1.2.3 Format 1\_2

DCI format 1\_2 is used for the scheduling of PDSCH in one cell.

The following information is transmitted by means of the DCI format 1\_2 with CRC scrambled by C-RNTI or CS-RNTI or MCS-C-RNTI:

- Identifier for DCI formats – 1 bits

- The value of this bit field is always set to 1, indicating a DL DCI format.

- Carrier indicator – 0, 1, 2 or 3 bits determined by higher layer parameter *carrierIndicatorSizeDCI-1-2*, as defined in Clause 10.1 of [5, TS38.213]. This field is reserved when this format is carried by PDCCH on the primary cell and the UE is configured for scheduling on the primary cell from an SCell, with the same number of bits as that in this format carried by PDCCH on the SCell for scheduling on the primary cell.

< Unchanged parts are omitted >

If DCI formats 1\_2 are monitored in multiple search spaces associated with multiple CORESETs in a BWP for scheduling the same serving cell, zeros shall be appended until the payload size of the DCI formats 1\_2 monitored in the multiple search spaces equal to the maximum payload size of the DCI format 1\_2 monitored in the multiple search spaces.

For a UE configured with scheduling on the primary cell from an SCell, if prior to padding the number of information bits in DCI format 1\_2 carried by PDCCH on the primary cell is not equal to the number of information bits in DCI format 1\_2 carried by PDCCH on the SCell for scheduling on the primary cell, zeros shall be appended to the DCI format 1\_2 with smaller size until the payload size is the same.

**Table 7.3.1.2.3-1: Redundancy version**

|  |  |
| --- | --- |
| Value of the Redundancy version field | Value of  to be applied |
| 0 | 0 |
| 1 | 3 |