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

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

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| *CR-Form-v12.2* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.212** | **CR** |  | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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:*** | Corrections on NR Multicast and Broadcast Services in 38.212 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MBS | | | | |  | ***Date:*** | | | 2022-03-08 |
|  |  | | | |  | |  | | |  |
| ***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 endorsed TPs and agreements from RAN1#107bis-e and RAN1#108-e. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Incorporate the TPs agreed in RAN1#107bis-e meeting, including the TP for Table 5.4.2.1-1 and the TP for clause 7.3.1.5.1. 2. Reflect the agreements achieved in RAN1#107bis-e meeting, including adding fields of MCS/NDI/RV for transport block 2, adding the field of “ZP CSI-RS trigger” in Clasue 7.3.1.5.3, and adding the description that the size of DCI format 4\_2 is configurable. 3. Incorporate the TPs agreed in RAN1#108-e meeting, including the TP for clause 7.3.1.5.2 and the TP for clause 7.3.1.5.3. 4. Reflect the agreements achieved in RAN1#108-e meeting, including adding description of the DAI field in DCI format 0\_1/0\_2 for multicast, deleting the case of 4 bits for DAI field in DCI format 4\_2 and deleting the case of UE configured with a PUCCH-SCell in DCI format 4\_2 since only one cell is configured for multicast. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The specification for NR Multicast and Broadcast Services is incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.2.1, 7.3.1.1.2, 7.3.1.1.3, 7.3.1.5.1, 7.3.1.5.2, 7.3.1.5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.213, TS 38.214 | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

#### 5.4.2.1 Bit selection

The bit sequence after encoding  from Clause 5.3.2 is written into a circular buffer of length  for the -th coded block, where  is defined in Clause 5.3.2.

For the -th code block, let  if  and  otherwise, where, ,  is determined according to Clause 6.1.4.2 in [6, TS 38.214] for UL-SCH and Clause 5.1.3.2 in [6, TS 38.214] for DL-SCH/PCH, assuming the following:

For one TB for DL-SCH with PDSCH scheduled by DCI format 4\_0/4\_1/4\_2,

- if the PDSCH is scheduled by DCI format 4\_1/4\_2,

- maximum number of layers is given by X, where

- if the higher layer parameter *maxMIMO-Layers-Multicast* of *PDSCH-Config-Multicast* is configured*,* X is given by that parameter;

- otherwise, X equals to 1;

- if the higher layer parameter *mcs-Table* given bya *PDSCH-Config-Multicast* for at least one common frequency resource (CFR) is set to 'qam256', maximum modulation orderis assumed for DL-SCH; otherwise a maximum modulation orderis assumed for DL-SCH;

- if the PDSCH is scheduled by DCI format 4\_0,

- maximum number of layers is 1;

- if the higher layer parameter *mcs-Table* given by a *PDSCH-Config-MCCH* is set to 'qam256', maximum modulation order is assumed for DL-SCH; otherwise a maximum modulation order is assumed for DL-SCH;

- if the higher layer parameter *mcs-Table* given by a *PDSCH-Config-MTCH* is set to 'qam256', maximum modulation orderis assumed for DL-SCH; otherwise a maximum modulation order is assumed for DL-SCH;

- is given by Table 5.4.2.1-1, where the value of for DL-SCH is determined according to the size of the CFR if only one CFR is configured to the UE;

- maximum coding rate of 948/1024;

- ;

- is the number of code blocks of the transport block determined according to Clause 5.2.2.

For one TB for UL-SCH, or for one TB for DL-SCH/PCH except for DL-SCH with PDSCH scheduled by DCI format 4\_0/4\_1/4\_2,

- maximum number of layers for one TB for UL-SCH is given by X, where

- if the higher layer parameter *maxMIMO-Layers* of *PUSCH-ServingCellConfig* of the serving cell is configured, X is given by that parameter

- elseif the higher layer parameter *maxRank* of *pusch-Config* of the serving cell is configured, X is given by the maximum value of *maxRank* across all BWPs of the serving cell

- otherwise, X is given by the maximum number of layers for PUSCH supported by the UE for the serving cell

- maximum number of layers for one TB for DL-SCH/PCH is given by the minimum of X and 4, where

- if the higher layer parameter *maxMIMO-Layers* of *PDSCH-ServingCellConfig* of the serving cell is configured, X is given by that parameter

- otherwise, X is given by the maximum number of layers for PDSCH supported by the UE for the serving cell

- if the higher layer parameter *mcs-Table-r17* or *mcs-TableDCI-1-2-r17* given by a *pdsch-Config* for at least one DL BWP of the serving cell is set to 'qam1024', maximum modulation order is assumed for DL-SCH, else if the higher layer parameter *mcs-Table* or *mcs-TableDCI-1-2* given by a *pdsch-Config* for at least one DL BWP of the serving cell is set to 'qam256', maximum modulation order  is assumed for DL-SCH; otherwise a maximum modulation order  is assumed for DL-SCH;

- if the higher layer parameter *mcs-Table* or *mcs-TableTransformPrecoder* or *mcs-TableDCI-0-2* or *mcs-TableTransformPrecoderDCI-0-2* given by a *pusch-Config* or the higher layer parameter *mcs-Table* or *mcs-TableTransformPrecoder* given by *configuredGrantConfig* for at least one UL BWP of the serving cell is set to 'qam256', maximum modulation order  is assumed for UL-SCH; otherwise a maximum modulation order  is assumed for UL-SCH

- maximum coding rate of 948/1024;

-  is given by Table 5.4.2.1-1, where the value of  for DL-SCH is determined according to the initial downlink bandwidth part if there is no other downlink bandwidth part configured to the UE;

- ;

-  is the number of code blocks of the transport block determined according to Clause 5.2.2.

Table 5.4.2.1-1: Value of 

|  |  |
| --- | --- |
| Maximum number of PRBs across all configured DL BWPs and UL BWPs of a carrier for DL-SCH and UL-SCH, respectively,  or  Maximum number of PRBs across all CFRs of a carrier for DL-SCH with PDSCH scheduled by DCI format 4\_0/4\_1/4\_2 |  |
| Less than 33 | 32 |
| 33 to 66 | 66 |
| 67 to 107 | 107 |
| 108 to 135 | 135 |
| 136 to 162 | 162 |
| 163 to 217 | 217 |
| Larger than 217 | 273 |

< Unchanged parts are omitted >

##### 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.

< Unchanged parts are omitted >

- HARQ process number – 5 bits if higher layer parameter *harq-ProcessNumberSizeDCI-0-1* is configured; otherwise 4 bits

- 1st downlink assignment index – 1, 2, 3 or 4 bits:

- 1 bit for semi-static HARQ-ACK codebook if the higher layer parameter *pdsch-HARQ-ACK-Codebook-Multicas*t is not configured, or if *pdsch-HARQ-ACK-Codebook-Multicast = semiStatic* is configured and the higher layer parameter *fdmed-Reception-Multicast* is not configured;

- 2 bits for semi-static HARQ-ACK codebook if the higher layer parameter *fdmed-Reception-Multicast* is configured, where the MSB bit is for the semi-static HARQ-ACK codebook for unicast and the LSB bit is for the semi-static HARQ-ACK codebook for multicast;

- 2 bits for dynamic HARQ-ACK codebook if the higher layer parameter *pdsch-HARQ-ACK-Codebook-Multicast* is not configured, or for enhanced dynamic HARQ-ACK codebook without *UL-TotalDAI-Included* configured;

- 3 bits if semi-static HARQ-ACK codebook is configured for unicast and dynamic HARQ-ACK codebook is configured for multicast, where the MSB bit is for the semi-static HARQ-ACK codebook for unicast and the 2 LSB bits are for the dynamic HARQ-ACK codebook for multicast;

- 3 bits if dynamic HARQ-ACK codebook is configured for unicast and semi-static HARQ-ACK codebook is configured for multicast, where the 2 MSB bits are for the dynamic HARQ-ACK codebook for unicast and the LSB bit is for the dynamic HARQ-ACK codebook for multicast;

- 4 bits if dynamic HARQ-ACK codebook is configured for unicast and dynamic HARQ-ACK codebook is configured for multicast, where the 2 MSB bits are for the dynamic HARQ-ACK codebook for unicast and the 2 LSB bits are for the dynamic HARQ-ACK codebook for multicast;

- 4 bits for enhanced dynamic HARQ-ACK codebook and with *UL-TotalDAI-Included = true*.

When two HARQ-ACK codebooks are configured for the same serving cell and if higher layer parameter *priorityIndicatorDCI-0-1* is configured, if the bit width of the 1st downlink assignment index in DCI format 0\_1 for one HARQ-ACK codebook is not equal to that of the 1st downlink assignment index in DCI format 0\_1 for the other HARQ-ACK codebook, a number of most significant bits with value set to '0' are inserted to smaller 1st downlink assignment index until the bit width of the 1st downlink assignment index in DCI format 0\_1 for the two HARQ-ACK codebooks are the same.

- 2nd downlink assignment index – 0, 2 or 4 bits:

- 2 bits for dynamic HARQ-ACK codebook with two HARQ-ACK sub-codebooks, or for enhanced dynamic HARQ-ACK codebook with two HARQ-ACK sub-codebooks and without *UL-TotalDAI-Included* configured;

- 4 bits for enhanced dynamic HARQ-ACK codebook with two HARQ-ACK sub-codebooks and with *UL-TotalDAI-Included = true*;

- 0 bit otherwise.

When two HARQ-ACK codebooks are configured for the same serving cell and if higher layer parameter *priorityIndicatorDCI-0-1* is configured, if the bit width of the 2nd downlink assignment index in DCI format 0\_1 for one HARQ-ACK codebook is not equal to that of the 2nd downlink assignment index in DCI format 0\_1 for the other HARQ-ACK codebook, a number of most significant bits with value set to '0' are inserted to smaller 2nd downlink assignment index until the bit width of the 2nd downlink assignment index in DCI format 0\_1 for the two HARQ-ACK codebooks are the same.

- TPC command for scheduled PUSCH – 2 bits as defined in Clause 7.1.1 of [5, TS38.213]

< 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.

< Unchanged parts are omitted >

- HARQ process number – number of bits determined by the following:

- 0, 1, 2, 3, 4 or 5 bits determined by higher layer parameter *harq-ProcessNumberSizeDCI-0-2-r17* if configured;

- otherwise 0, 1, 2, 3 or 4 bits determined by higher layer parameter *harq-ProcessNumberSizeDCI-0-2*

- Downlink assignment index – 0, 1, 2 or 4 bits

- 0 bit if the higher layer parameter *downlinkAssignmentIndexDCI-0-2* is not configured;

- 1, 2 or 4 bits otherwise,

- 1st downlink assignment index – 1, 2, 3 or 4 bits:

- 1 bit for semi-static HARQ-ACK codebook if the higher layer parameter *pdsch-HARQ-ACK-Codebook-Multicas*t is not configured, or if *pdsch-HARQ-ACK-Codebook-Multicast = semiStatic* is configured and the higher layer parameter *fdmed-Reception-Multicast* is not configured;

- 2 bits for semi-static HARQ-ACK codebook if the higher layer parameter *fdmed-Reception-Multicast* is configured, where the MSB bit is for the semi-static HARQ-ACK codebook for unicast and the LSB bit is for the semi-static HARQ-ACK codebook for multicast;

- 2 bits for dynamic HARQ-ACK codebook if the higher layer parameter *pdsch-HARQ-ACK-Codebook-Multicast* is not configured.

- 3 bits if semi-static HARQ-ACK codebook is configured for unicast and dynamic HARQ-ACK codebook is configured for multicast, where the MSB bit is for the semi-static HARQ-ACK codebook for unicast and the 2 LSB bits are for the dynamic HARQ-ACK codebook for multicast;

- 3 bits if dynamic HARQ-ACK codebook is configured for unicast and semi-static HARQ-ACK codebook is configured for multicast, where the 2 MSB bits are for the dynamic HARQ-ACK codebook for unicast and the LSB bit is for the dynamic HARQ-ACK codebook for multicast;

- 4 bits if dynamic HARQ-ACK codebook is configured for unicast and dynamic HARQ-ACK codebook is configured for multicast, where the 2 MSB bits are for the dynamic HARQ-ACK codebook for unicast and the 2 LSB bits are for the dynamic HARQ-ACK codebook for multicast;

- 2nd downlink assignment index – 0 or 2 bits

- 2 bits for dynamic HARQ-ACK codebook with two HARQ-ACK sub-codebooks;

- 0 bit otherwise.

When two HARQ-ACK codebooks are configured for the same serving cell and if higher layer parameter *priorityIndicatorDCI-0-2* is configured, if the bit width of the Downlink assignment index in DCI format 0\_2 for one HARQ-ACK codebook is not equal to that of the Downlink assignment index in DCI format 0\_2 for the other HARQ-ACK codebook, a number of most significant bits with value set to '0' are inserted to smaller Downlink assignment index until the bit width of the Downlink assignment index in DCI format 0\_2 for the two HARQ-ACK codebooks are the same.

- TPC command for scheduled PUSCH – 2 bits as defined in Clause 7.1.1 of [5, TS38.213]

< Unchanged parts are omitted >

##### 7.3.1.5.1 Format 4\_0

DCI format 4\_0 is used for the scheduling of PDSCH for broadcast in DL cell.

The following information is transmitted by means of the DCI format 4\_0 with CRC scrambled by MCCH-RNTI or G-RNTI for MTCH configured by *MBS-SessionInfo*:

- Frequency domain resource assignment – bits where equals to

* the size of CORESET 0 if CORESET 0 is configured for the cell; and
* the size of initial DL bandwidth part if CORESTE 0 is not configured for the cell.

- Time domain resource assignment – 4 bits as defined in Clause 5.1.2.1 of [6, TS38.214]

- VRB-to-PRB mapping – 1 bit according to Table 7.3.1.2.2-5

- Modulation and coding scheme – 5 bits as defined in Clause 5.1.3 of [6, TS38.214]

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

- MCCH change notification – 2 bits as defined in Clause x.x.x of [8, TS38.321] if the CRC of the DCI format 4\_0 is scrambled by MCCH-RNTI. Otherwise, this bit field is reserved.

- Padding bits, if required

Zeros shall be appended to DCI format 4\_0 until the payload size equals that of DCI format 1\_0 monitored in common search space in the same serving cell.

7.3.1.5.2 Format 4\_1

DCI format 4\_1 is used for the scheduling of PDSCH for multicast in DL cell.

The following information is transmitted by means of the DCI format 4\_1 with CRC scrambled by G-RNTI configured by *G-RNTI-Config* or G-CS-RNTI:

- Frequency domain resource assignment – bits where equals to as given by clause 7.3.1.0

- Time domain resource assignment – 4 bits as defined in Clause 5.1.2.1 of [6, TS38.214]

- VRB-to-PRB mapping – 1 bit according to Table 7.3.1.2.2-5

- Modulation and coding scheme – 5 bits as defined in Clause 5.1.3 of [6, TS38.214]

- New data indicator – 1 bit

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

- HARQ process number – 4 bits

- Downlink assignment index – 2 bits as defined in Clause 9.1.3 of [5, TS 38.213], as counter DAI

- PUCCH resource indicator – 3 bits as defined in Clause 9.2.3 of [5, TS38.213]

- PDSCH-to-HARQ\_feedback timing indicator – 3 bits as defined in Clause 9.2.3 of [5, TS38.213]

- Reserved bits – 3 bits

##### 7.3.1.5.3 Format 4\_2

DCI format 4\_2 is used for the scheduling of PDSCH in DL cell.

The following information is transmitted by means of the DCI format 4\_2 with CRC scrambled by G-RNTI configured by *G-RNTI-Config* or G-CS-RNTI:

- Frequency domain resource assignment – number of bits determined by the following, where is the size of the common frequency resource as configured by higher layer parameter *locationAndBandwidth-Multicast*:

- bits if only resource allocation type 0 is configured, where is defined in Clause 5.1.2.2.1 of [6, TS38.214],

- bits if only resource allocation type 1 is configured, or

- bits if *resourceAllocation* in *PDSCH-Config-Multicast* is configured as '*dynamicSwitch'*.

- If *resourceAllocation* in *PDSCH-Config-Multicast* is configured as '*dynamicSwitch'*, the MSB bit is used to indicate resource allocation type 0 or resource allocation type 1, where the bit value of 0 indicates resource allocation type 0 and the bit value of 1 indicates resource allocation type 1.

- For resource allocation type 0, the LSBs provide the resource allocation as defined in Clause 5.1.2.2.1 of [6, TS 38.214].

- For resource allocation type 1, the LSBs provide the resource allocation as defined in Clause 5.1.2.2.2 of [6, TS 38.214]

- Time domain resource assignment – 0, 1, 2, 3, or 4 bits as defined in Clause 5.1.2.1 of [6, TS 38.214]. The bitwidth for this field is determined as bits, where *I* is the number of entries in the higher layer parameter *pdsch-TimeDomainAllocationList* if the higher layer parameter is configured; otherwise *I* is the number of entries in the default table.

- VRB-to-PRB mapping – 0 or 1 bit:

- 0 bit if only resource allocation type 0 is configured or if *vrb-ToPRB-Interleaver* in *PDSCH-Config-Multicast* is not configured;

- 1 bit according to Table 7.3.1.2.2-5 otherwise, only applicable to resource allocation type 1, as defined in Clause 7.3.1.6 of [4, TS 38.211].

- PRB bundling size indicator – 0 bit if the higher layer parameter *prb-BundlingType* is not configured in *PDSCH-Config-Multicast* or is set to 'staticBundling', or 1 bit if the higher layer parameter *prb-BundlingType* in *PDSCH-Config-Multicast* is set to 'dynamicBundling' according to Clause 5.1.2.3 of [6, TS 38.214].

- Rate matching indicator – 0, 1, or 2 bits according to higher layer parameters *rateMatchPatternGroup1* and *rateMatchPatternGroup2* in *PDSCH-Config-Multicast*, where the MSB is used to indicate *rateMatchPatternGroup1* and the LSB is used to indicate *rateMatchPatternGroup2* when there are two groups.

- ZP CSI-RS trigger – 0, 1, or 2 bits as defined in Clause 5.1.4.2 of [6, TS 38.214]. The bitwidth for this field is determined as bits, where is the number of aperiodic ZP CSI-RS resource sets configured in *PDSCH-Config-Multicast*.

For transport block 1:

- Modulation and coding scheme – 5 bits as defined in Clause 5.1.3.1 of [6, TS 38.214]

- New data indicator – 1 bit

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

For transport block 2 (only present if *maxNrofCodeWordsScheduledByDCI* equals 2):

- Modulation and coding scheme – 5 bits as defined in Clause 5.1.3.1 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

- Downlink assignment index – number of bits as defined in the following

- 2 bits if the higher layer parameter *pdsch-HARQ-ACK-Codebook-Multicast=dynamic*, where the 2 bits are the counter DAI;

- 0 bits otherwise.

If higher layer parameter *priorityIndicatorDCI-4-2* is configured in *PDSCH-Config-Multicast*, if the bit width of the Downlink assignment index in DCI format 4\_2 for one HARQ-ACK codebook is not equal to that of the Downlink assignment index in DCI format 4\_2 for the other HARQ-ACK codebook, a number of most significant bits with value set to '0' are inserted to smaller Downlink assignment index until the bit width of the Downlink assignment index in DCI format 4\_2 for the two HARQ-ACK codebooks are the same.

- PUCCH resource indicator – 3 bits as defined in Clause 9.2.3 of [5, TS 38.213]

- PDSCH-to-HARQ\_feedback timing indicator – 0, 1, 2, or 3 bits as defined in Clause 9.2.3 of [5, TS 38.213]. The bitwidth for this field is determined as bits, where *I* is the number of entries in the higher layer parameter *dl-DataToUL-ACK* in *PUCCH-Config-Multicast1* if configured or *PUCCH-Config-Multicast2* if configured; otherwise, *I* is the number of entries in the higher layer parameter *dl-DataToUL-ACK* in *PUCCH-Config.*

If higher layer parameter *priorityIndicatorDCI-4-2* is configured in *PDSCH-Config-Multicast*, if the bit width of the PDSCH-to-HARQ\_feedback timing indicator in DCI format 4\_2 for one HARQ-ACK codebook is not equal to that of the PDSCH-to-HARQ\_feedback timing indicator in DCI format 4\_2 for the other HARQ-ACK codebook, a number of most significant bits with value set to '0' are inserted to smaller PDSCH-to-HARQ\_feedback timing indicator until the bit width of the PDSCH-to-HARQ\_feedback timing indicator in DCI format 4\_2 for the two HARQ-ACK codebooks are the same.

- Antenna port(s) – 4, 5, or 6 bits as defined by Tables 7.3.1.2.2-1/2/3/4, where the number of CDM groups without data of values 1, 2, and 3 refers to CDM groups {0}, {0,1}, and {0, 1,2} respectively. The antenna ports shall be determined according to the ordering of DMRS port(s) given by Tables 7.3.1.2.2-1/2/3/4.

If a UE is configured with both *dmrs-DownlinkForPDSCH-MappingTypeA* and *dmrs-DownlinkForPDSCH-MappingTypeB*, the bitwidth of this field equals , where is the "Antenna ports" bitwidth derived according to *dmrs-DownlinkForPDSCH-MappingTypeA* and is the "Antenna ports" bitwidthderived according to *dmrs-DownlinkForPDSCH-MappingTypeB*. A number of zeros are padded in the MSB of this field, if the mapping type of the PDSCH corresponds to the smaller value of and .

- Transmission configuration indication – 0 bit if higher layer parameter *tci-PresentInDCI* in *PDCCH-Config-Multicast* is not enabled; otherwise 3 bits as defined in Clause 5.1.5 of [6, TS38.214].

- DMRS sequence initialization – 1 bit.

- Priority indicator – 0 bit if higher layer parameter *priorityIndicatorDCI-4-2* is not configured in *PDSCH-Config-Multicast*; otherwise 1 bit as defined in Clause 9 in [5, TS 38.213].

- Enabling/disabling HARQ-ACK feedback indication –1 bit if higher layer parameter *harq-FeedbackEnabler-Multicast* indicates *dci-enabler*; 0 bit, otherwise.

The size of DCI format 4\_2 is configurable by higher layer parameter *sizeDCI-4-2* from 20 bits and up to 140 bits.

< Unchanged parts are omitted >