**3GPP TSG-RAN WG2 Meeting #113bis-e R2-210xxxx**

**Electronic, 12th April – 20th April, 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.331** | **CR** |  | **rev** |  | **Current version:** | **16.3.1** |  |
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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:*** | Corrections on TS 38.331 from the latest RAN1 decisions | | | | | | | | | |
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| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
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| ***Work item code:*** | 5G\_V2X\_NRSL-Core | | | | |  | ***Date:*** | | | 2021-04-12 |
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| ***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-15 (Release 15)*  *Rel-16 (Release 16)*  *Rel-17 (Release 17)*  *Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | 1. According to RAN1#98bis agreement, they agreed to reuse the Rel-15 procedure and signalling used for DL HARQ-ACK reporting includes using the higher-layer parameter sl-N1PUCCH-AN-r16 for determining the PUCCH resource used for SL HARQ-ACK reporting for SL CG type 2 (but only for PSCCH/PSSCH transmissions without a corresponding PDCCH). However, this RAN1 agreements was not reflected in current RRC specification and they send LS in R1-2102176 to request RAN2 to clarify whether sl-N1PUCCH-AN-r16 is configurable for SL CG type 2 in the current specification 2. In RAN1#104 meeting, the following agreement has been made and RAN1 send LS in R1-2102176 to request RAN2 to capture the agreed behaviour in our specification.  |  | | --- | | Agreements:  The parameter *pdsch-HARQ-ACK-Codebook* is always used for reporting SL HARQ-ACK information. |  1. RAN2 agreed to introduce per table MCS range for mode 2 and corresponding change on RRC specification is needed. | | | | | | | | |
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| ***Summary of change:*** | | 1. Clarify in the field description of sl-N1PUCCH-AN that this field indicates the HARQ resource for PUCCH for sidelink configured grant type 1 and PSCCH/PSSCH transmissions without a corresponding PDCCH on sidelink configured grant type 2. 2. Clarify in the field description of pdsch-HARQ-ACK-Codebook and pdsch-HARQ-ACK-CodebookList that the parameter pdsch-HARQ-ACK-Codebook is always used for reporting SL HARQ-ACK information. 3. Introduce different MCS range for different MCS table in CBR-Priority table and Speed-Sync table.   **Impact analysis**  **Impacted functionality**  NR SL communication  **Inter-operability:**  If the network implements the first change but not the UE, there may be different understanding on the HARQ resource for PUCCH for sidelink configured grant type 2 between the NW and the UE.  If the UE implements the first change but not the network, there may be different understanding on the HARQ resource for PUCCH for sidelink configured grant type 2 between the NW and the UE.  If one UE implements the first change but not the other UE, there is no inter-operability.  If the network implements the second change but not the UE, there may be different understanding on the codebook used for SL HARQ-ACK transmission between the NW and the UE.  If the UE implements the first change but not the network, there may be different understanding on the codebook used for SL HARQ-ACK transmission between the NW and the UE.  If one UE implements the second change but not the other UE, there is no inter-operability.  If the network implements the third change but not the UE, there may be different understanding on the MCS range to be used between the NW and the UE.  If the UE implements the first change but not the network, there is no inter-operability issue.  If one UE implements the second change but not the other UE, there is no inter-operability.  The reason why there is no inter-operability issue is that the change only involves in UE’s internal operation, without impacts on the Inter-operability between UE and the network or that between UE and UE. | | | | | | | | |
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| ***Consequences if not approved:*** | | 1. There is no HARQ resource for PUCCH for sidelink configured grant type 2 2. The UE does not know which codebook to use under some cases for SL HARQ-ACK reporting. 3. The MCS framework cannot work as intended for mode 2. | | | | | | | | |
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| ***Clauses affected:*** | |  | | | | | | | | |
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|  | | **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 ... | | |
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| ***Other comments:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

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| START OF CHANGE |

### 6.3.2 Radio resource control information elements

– *PhysicalCellGroupConfig*

The IE *PhysicalCellGroupConfig* is used to configure cell-group specific L1 parameters.

***PhysicalCellGroupConfig* information element**

-- ASN1START

-- TAG-PHYSICALCELLGROUPCONFIG-START

PhysicalCellGroupConfig ::= SEQUENCE {

harq-ACK-SpatialBundlingPUCCH ENUMERATED {true} OPTIONAL, -- Need S

harq-ACK-SpatialBundlingPUSCH ENUMERATED {true} OPTIONAL, -- Need S

p-NR-FR1 P-Max OPTIONAL, -- Need R

pdsch-HARQ-ACK-Codebook ENUMERATED {semiStatic, dynamic},

tpc-SRS-RNTI RNTI-Value OPTIONAL, -- Need R

tpc-PUCCH-RNTI RNTI-Value OPTIONAL, -- Need R

tpc-PUSCH-RNTI RNTI-Value OPTIONAL, -- Need R

sp-CSI-RNTI RNTI-Value OPTIONAL, -- Need R

cs-RNTI SetupRelease { RNTI-Value } OPTIONAL, -- Need M

...,

[[

mcs-C-RNTI RNTI-Value OPTIONAL, -- Need R

p-UE-FR1 P-Max OPTIONAL -- Cond MCG-Only

]],

[[

xScale ENUMERATED {dB0, dB6, spare2, spare1} OPTIONAL -- Cond SCG-Only

]],

[[

pdcch-BlindDetection SetupRelease { PDCCH-BlindDetection } OPTIONAL -- Need M

]],

[[

dcp-Config-r16 SetupRelease { DCP-Config-r16 } OPTIONAL, -- Need M

harq-ACK-SpatialBundlingPUCCH-secondaryPUCCHgroup-r16 ENUMERATED {enabled, disabled} OPTIONAL, -- Cond twoPUCCHgroup

harq-ACK-SpatialBundlingPUSCH-secondaryPUCCHgroup-r16 ENUMERATED {enabled, disabled} OPTIONAL, -- Cond twoPUCCHgroup

pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup-r16 ENUMERATED {semiStatic, dynamic} OPTIONAL, -- Cond twoPUCCHgroup

p-NR-FR2-r16 P-Max OPTIONAL, -- Need R

p-UE-FR2-r16 P-Max OPTIONAL, -- Cond MCG-Only

nrdc-PCmode-FR1-r16 ENUMERATED {semi-static-mode1, semi-static-mode2, dynamic} OPTIONAL, -- Cond MCG-Only

nrdc-PCmode-FR2-r16 ENUMERATED {semi-static-mode1, semi-static-mode2, dynamic} OPTIONAL, -- Cond MCG-Only

pdsch-HARQ-ACK-Codebook-r16 ENUMERATED {enhancedDynamic} OPTIONAL, -- Need R

nfi-TotalDAI-Included-r16 ENUMERATED {true} OPTIONAL, -- Need R

ul-TotalDAI-Included-r16 ENUMERATED {true} OPTIONAL, -- Need R

pdsch-HARQ-ACK-OneShotFeedback-r16 ENUMERATED {true} OPTIONAL, -- Need R

pdsch-HARQ-ACK-OneShotFeedbackNDI-r16 ENUMERATED {true} OPTIONAL, -- Need R

pdsch-HARQ-ACK-OneShotFeedbackCBG-r16 ENUMERATED {true} OPTIONAL, -- Need R

downlinkAssignmentIndexDCI-0-2-r16 ENUMERATED { enabled } OPTIONAL, -- Need S

downlinkAssignmentIndexDCI-1-2-r16 ENUMERATED {n1, n2, n4} OPTIONAL, -- Need S

pdsch-HARQ-ACK-CodebookList-r16 SetupRelease {PDSCH-HARQ-ACK-CodebookList-r16} OPTIONAL, -- Need M

ackNackFeedbackMode-r16 ENUMERATED {joint, separate} OPTIONAL, -- Need R

pdcch-BlindDetectionCA-CombIndicator-r16 SetupRelease { PDCCH-BlindDetectionCA-CombIndicator-r16 } OPTIONAL, -- Need M

pdcch-BlindDetection2-r16 SetupRelease { PDCCH-BlindDetection2-r16 } OPTIONAL, -- Need M

pdcch-BlindDetection3-r16 SetupRelease { PDCCH-BlindDetection3-r16 } OPTIONAL, -- Need M

bdFactorR-r16 ENUMERATED {n1} OPTIONAL -- Need R

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}

PDCCH-BlindDetection ::= INTEGER (1..15)

DCP-Config-r16 ::= SEQUENCE {

ps-RNTI-r16 RNTI-Value,

ps-Offset-r16 INTEGER (1..120),

sizeDCI-2-6-r16 INTEGER (1..maxDCI-2-6-Size-r16),

ps-PositionDCI-2-6-r16 INTEGER (0..maxDCI-2-6-Size-1-r16),

ps-WakeUp-r16 ENUMERATED {true} OPTIONAL, -- Need S

ps-TransmitPeriodicL1-RSRP-r16 ENUMERATED {true} OPTIONAL, -- Need S

ps-TransmitOtherPeriodicCSI-r16 ENUMERATED {true} OPTIONAL -- Need S

}

PDSCH-HARQ-ACK-CodebookList-r16 ::= SEQUENCE (SIZE (1..2)) OF ENUMERATED {semiStatic, dynamic}

PDCCH-BlindDetectionCA-CombIndicator-r16 ::= SEQUENCE {

pdcch-BlindDetectionCA1-r16 INTEGER (1..15),

pdcch-BlindDetectionCA2-r16 INTEGER (1..15)

}

PDCCH-BlindDetection2-r16 ::= INTEGER (1..15)

PDCCH-BlindDetection3-r16 ::= INTEGER (1..15)

-- TAG-PHYSICALCELLGROUPCONFIG-STOP

-- ASN1STOP

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| ***PhysicalCellGroupConfig* field descriptions** |
| ***ackNackFeedbackMode***  Indicates which among the joint and separate ACK/NACK feedback modes to use within a slot as specified in TS 38.214 [19] (clause 9). |
| ***bdFactorR***  Parameter for determining and distributing the maximum numbers of BD/CCE for mPDCCH based mPDSCH transmission as specified in TS 38.213 [13] Clause 10.1. |
| ***cs-RNTI***  RNTI value for downlink SPS (see *SPS-Config*) and uplink configured grant (see *ConfiguredGrantConfig*). |
| ***downlinkAssignmentIndexDCI-0-2***  Indicates if "Downlink assignment index" is present or absent in DCI format 0\_2. If the field "*downlinkAssignmentIndexDCI-0-2*" is absent, then 0 bit for "Downlink assignment index" in DCI format 0\_2. If the field "*downlinkAssignmentIndexDCI-0-2*" is present, then the bitwidth of "Downlink assignment index" in DCI format 0\_2 is defined in the same was as that in DCI format 0\_1 (see TS 38.212 [17], clause 7.3.1 and TS 38.213 [13], clause 9.1). |
| ***downlinkAssignmentIndexDCI-1-2***  Configures the number of bits for "Downlink assignment index" in DCI format 1\_2. If the field is absent, then 0 bit for "Downlink assignment index" in DCI format 1\_2. Note that 1 bit and 2 bits are applied if only one serving cell is configured in the DL and the higher layer parameter pdsch-HARQ-ACK-Codebook=dynamic. 4 bits is applied if more than one serving cell are configured in the DL and the higher layer parameter *pdsch-HARQ-ACK-Codebook* is set to *dynamic* (see TS 38.212 [17], clause 7.3.1 and TS 38.213 [13], clause 9.1). |
| ***harq-ACK-SpatialBundlingPUCCH***  Enables spatial bundling of HARQ ACKs. It is configured per cell group (i.e. for all the cells within the cell group) for PUCCH reporting of HARQ-ACK. It is only applicable when more than 4 layers are possible to schedule. When the field is absent, the spatial bundling of PUCCH HARQ ACKs for the primary PUCCH group is disabled (see TS 38.213 [13], clause 9.1.2.1). If the field *harq-ACK SpatialBundlingPUCCH-secondaryPUCCHgroup* is present, *harq-ACK-SpatialBundlingPUCCH* is only applied to primary PUCCH group. Network does not configure for a UE both spatial bundling of HARQ ACKs and *codeBlockGroupTransmission* within the same cell group. |
| ***harq-ACK-SpatialBundlingPUCCH-secondaryPUCCHgroup***  Indicates whether spatial bundling of PUCCH HARQ ACKs for the secondary PUCCH group is enabled or disabled. The field is only applicable when more than 4 layers are possible to schedule (see TS 38.213 [13], clause 9.1.2.1). When the field is absent, the use of spatial bundling of PUCCH HARQ ACKs for the secondary PUCCH group is indicated by *harq-ACK-SpatialBundlingPUCCH*. See TS 38.213 [13], clause 9.1.2.1. Network does not configure for a UE both spatial bundling of HARQ ACKs and *codeBlockGroupTransmission* within the same cell group. |
| ***harq-ACK-SpatialBundlingPUSCH***  Enables spatial bundling of HARQ ACKs. It is configured per cell group (i.e. for all the cells within the cell group) for PUSCH reporting of HARQ-ACK. It is only applicable when more than 4 layers are possible to schedule. When the field is absent, the spatial bundling of PUSCH HARQ ACKs for the primary PUCCH group is disabled (see TS 38.213 [13], clauses 9.1.2.2 and 9.1.3.2). If the field *harq-ACK SpatialBundlingPUSCH-secondaryPUCCHgroup* is present, *harq-ACK-SpatialBundlingPUSCH* is only applied to primary PUCCH group. Network does not configure for a UE both spatial bundling of HARQ ACKs and *codeBlockGroupTransmission* within the same cell group. |
| ***harq-ACK-SpatialBundlingPUSCH-secondaryPUCCHgroup***  Indicates whether spatial bundling of PUSCH HARQ ACKs for the secondary PUCCH group is enabled or disabled. The field is only applicable when more than 4 layers are possible to schedule (see TS 38.213 [13], clauses 9.1.2.2 and 9.1.3.2). When the field is absent, the use of spatial bundling of PUSCH HARQ ACKs for the secondary PUCCH group is indicated by *harq-ACK-SpatialBundlingPUSCH*. See TS 38.213 [13], clauses 9.1.2.2 and 9.1.3.2. Network does not configure for a UE both spatial bundling of HARQ ACKs and *codeBlockGroupTransmission* within the same cell group. |
| ***mcs-C-RNTI***  RNTI to indicate use of *qam64LowSE* for grant-based transmissions. When the *mcs*-*C-RNT*I is configured, RNTI scrambling of DCI CRC is used to choose the corresponding MCS table. |
| ***nfi-TotalDAI-Included***  Indicates whether the NFI and total DAI fields of the non-scheduled PDSCH group is included in the non-fallback DL grant DCI (see TS 38.212 [17], clause 7.3.1). The network configures this only when enhanced dynamic codebook is configured (*pdsch-HARQ-ACK-Codebook* is set to *enhancedDynamic*). |
| ***nrdc-PCmode-FR1***  Indicates the uplink power sharing mode that the UE uses in NR-DC in frequency range 1 (FR1) (see TS 38.213 [13], clause 7.6). |
| ***nrdc-PCmode-FR2***  Indicates the uplink power sharing mode that the UE uses in NR-DC in frequency range 2 (FR2) (see TS 38.213 [13], clause 7.6). |
| ***pdcch-BlindDetection, pdcch-BlindDetection2, pdcch-BlindDetection3***  Indicates the reference number of cells for PDCCH blind detection for the CG. Network configures the field for each CG when the UE is in NR DC and sets the value in accordance with the constraints specified in TS 38.213 [13]. The network configures *pdcch-BlindDetection* only if the UE is in NR-DC. The network configures *pdcch-BlindDetection2* only if the UE is in NR-DC with at least one downlink cell using Rel-16 PDCCH monitoring capability. The network configures *pdcch-BlindDetection3* only if the UE is in NR-DC with at least one downlink cell using Rel-15 PDCCH monitoring capability. |
| ***pdcch-BlindDetectionCA-CombIndicator***  Configure one combination of pdcch-BlindDetectionCA1 (for R15) and pdcch-BlindDetectionCA2 (for R16) for UE to use for scaling PDCCH monitoring capability if the number of serving cells configured to a UE is larger than the reported capability, and if UE reports more than one combination of pdcch-BlindDetectionCA1 and pdcch-BlindDetectionCA2 as UE capability. The combination of pdcch-BlindDetectionCA1 and pdcch-BlindDetectionCA2) configured by pdcch-BlindDetectionCACombIndicator is from the more than one combination of pdcch-BlindDetectionCA1 and pdcch-BlindDetectionCA2 reported by UE (see TS 38.213 [13], clause 10). |
| ***p-NR-FR1***  The maximum total transmit power to be used by the UE in this NR cell group across all serving cells in frequency range 1 (FR1). The maximum transmit power that the UE may use may be additionally limited by *p-Max* (configured in *FrequencyInfoUL*) and by *p-UE-FR1* (configured total for all serving cells operating on FR1). |
| ***p-NR-FR2***  The maximum total transmit power to be used by the UE in this NR cell group across all serving cells in frequency range 2 (FR2). The maximum transmit power that the UE may use may be additionally limited by *p-Max* (configured in *FrequencyInfoUL*) and by *p-UE-FR2* (configured total for all serving cells operating on FR2). This field is only used in NR-DC. |
| ***ps-RNTI***  RNTI value for scrambling CRC of DCI format 2-6 used for power saving (see TS 38.213 [13], clause 10.1). |
| ***ps-Offset***  The start of the search-time of DCI format 2-6 with CRC scrambled by PS-RNTI relative to the start of the *drx-onDurationTimer* of Long DRX (see TS 38.213 [13], clause 10.3). Value in multiples of 0.125ms (milliseconds). 1 corresponds to 0.125 ms, 2corresponds to 0.25 ms, 3 corresponds to 0.375 ms and so on. |
| ***ps-WakeUp***  Indicates the UE to wake-up if DCI format 2-6 is not detected outside active time (see TS 38.213 [13], clause 10.3). If the field is absent, the UE does not wake-up if DCI format 2-6 is not detected outside active time. |
| ***ps-PositionDCI-2-6***  Starting position of UE wakeup and SCell dormancy indication in DCI format 2-6 (see TS 38.213 [13], clause 10.3). |
| ***ps-TransmitPeriodicL1-RSRP***  Indicates the UE to transmit periodic L1-RSRP report(s) when the *drx-onDurationTimer* does not start (see TS 38.321 [3], clause 5.7). If the field is absent, the UE does not transmit periodic L1-RSRP report(s) when the *drx-onDurationTimer* does not start. |
| ***ps-TransmitOtherPeriodicCSI***  Indicates the UE to transmit periodic CSI report(s) other than L1-RSRP reports when the *drx-onDurationTimer* does not start (see TS 38.321 [3], clause 5.7). If the field is absent, the UE does not transmit periodic CSI report(s) other than L1-RSRP reports when the *drx-onDurationTimer* does not start. |
| ***p-UE-FR1***  The maximum total transmit power to be used by the UE across all serving cells in frequency range 1 (FR1) across all cell groups. The maximum transmit power that the UE may use may be additionally limited by *p-Max* (configured in *FrequencyInfoUL*) and by *p-NR-FR1* (configured for the cell group). |
| ***p-UE-FR2***  The maximum total transmit power to be used by the UE across all serving cells in frequency range 2 (FR2) across all cell groups. The maximum transmit power that the UE may use may be additionally limited by p-Max (configured in FrequencyInfoUL) and by p-NR-FR2 (configured for the cell group). |
| ***pdsch-HARQ-ACK-Codebook***  The PDSCH HARQ-ACK codebook is either semi-static or dynamic. This is applicable to both CA and none CA operation (see TS 38.213 [13], clauses 9.1.2 and 9.1.3). If *pdsch-HARQ-ACK-Codebook-r16* is signalled, UE shall ignore the *pdsch-HARQ-ACK-Codebook* (without suffix). For the HARQ-ACK transmitted for sidelink, if *pdsch-HARQ-ACK-Codebook-r16* is signalled, the UE still uses *pdsch-HARQ-ACK-Codebook* (without suffix) and ignores *pdsch-HARQ-ACK-Codebook-r16*. If the field *pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup* is present, *pdsch-HARQ-ACK-Codebook* is applied to primary PUCCH group. Otherwise, this field is applied to the cell group (i.e. for all the cells within the cell group). For the HARQ-ACK transmitted for sidelink, if the field *pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup* is present, *pdsch-HARQ-ACK-Codebook* is applied to primary and secondary PUCCH group. |
| ***pdsch-HARQ-ACK-CodebookList***  A list of configuration for at least two simultaneously constructed HARQ-ACK codebooks. Each configuration in the list is defined in the same way as *pdsch-HARQ-ACK-Codebook* (see TS 38.212 [17], clause 7.3.1.2.2 and TS 38.213 [13], clauses 7.2.1, 9.1.2, 9.1.3 and 9.2.1). If this field is present, the field *pdsch-HARQ-ACK-Codebook* is ignored for the case at least two HARQ-ACK codebooks are simultaneously constructed. For the HARQ-ACK transmitted for sidelink, the UE still uses *pdsch-HARQ-ACK-Codebook* and ignores *pdsch-HARQ-ACK-CodebookList* even if this field is present. |
| ***pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup***  The PDSCH HARQ-ACK codebook is either semi-static or dynamic. This is applicable to both CA and none CA operation (see TS 38.213 [13], clauses 9.1.2 and 9.1.3). It is configured for secondary PUCCH group*.* |
| ***pdsch-HARQ-ACK-OneShotFeedback***  When configured, the DCI\_format 1\_1 can request the UE to report A/N for all HARQ processes and all CCs configured in the PUCCH group (see TS 38.212 [17], clause 7.3.1). |
| ***pdsch-HARQ-ACK-OneShotFeedbackCBG***  When configured, the DCI\_format 1\_1 can request the UE to include CBG level A/N for each CC with CBG level transmission configured. When not configured, the UE will report TB level A/N even if CBG level transmission is configured for a CC.The network configures this only when *pdsch-HARQ-ACK-OneShotFeedback* is configured. |
| ***pdsch-HARQ-ACK-OneShotFeedbackNDI***  When configured, the DCI\_format 1\_1 can request the UE to include NDI for each A/N reported.The network configures this only when *pdsch-HARQ-ACK-OneShotFeedback* is configured. |
| ***sizeDCI-2-6***  Size of DCI format 2-6 (see TS 38.213 [13], clause 11.5). |
| ***sp-CSI-RNTI***  RNTI for Semi-Persistent CSI reporting on PUSCH (see *CSI-ReportConfig*) (see TS 38.214 [19], clause 5.2.1.5.2). Network always configures the UE with a value for this field when at least one *CSI-ReportConfig* with *reportConfigType* set to *semiPersistentOnPUSCH* is configured. |
| ***tpc-PUCCH-RNTI***  RNTI used for PUCCH TPC commands on DCI (see TS 38.213 [13], clause 10.1). |
| ***tpc-PUSCH-RNTI***  RNTI used for PUSCH TPC commands on DCI (see TS 38.213 [13], clause 10.1). |
| ***tpc-SRS-RNTI***  RNTI used for SRS TPC commands on DCI (see TS 38.213 [13], clause 10.1). |
| ***ul-TotalDAI-Included***  Indicates whether the total DAI fields of the additonal PDSCH group is included in the non-fallback UL grant DCI (see TS 38.212 [17], clause 7.3.1). The network configures this only when enhanced dynamic codebook is configured (*pdsch-HARQ-ACK-Codebook* is set to *enhancedDynamic*). |
| ***xScale***  The UE is allowed to drop NR only if the power scaling applied to NR results in a difference between scaled and unscaled NR UL of more than *xScale* dB (see TS 38.213 [13]). If the value is not configured for dynamic power sharing, the UE assumes default value of 6 dB. |

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| **Conditional Presence** | **Explanation** |
| *MCG-Only* | This field is optionally present, Need R, in the *PhysicalCellGroupConfig* of the MCG. It is absent otherwise. |
| *SCG-Only* | This field is optionally present, Need S, in the *PhysicalCellGroupConfig* of the SCG in (NG)EN-DC as defined in TS 38.213 [13]. It is absent otherwise. |
| *twoPUCCHgroup* | This field is optionally present, Need R, if secondary PUCCH group is configured. It is absent otherwise. |

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| NEXT CHANGE |

### 6.3.5 Sidelink information elements

– *SL-CBR-PriorityTxConfigList*

The IE *SL-CBR-PriorityTxConfigList* indicates the mapping between PSSCH transmission parameter (such as MCS, PRB number, retransmission number, CR limit) sets by using the indexes of the configurations provided in *sl-CBR-PSSCH-TxConfigList*, CBR ranges by an index to the entry of the CBR range configuration in *sl-CBR-RangeConfigList*, and priority ranges. It also indicates the default PSSCH transmission parameters to be used when CBR measurement results are not available, and MCS range for the MCS tables used in the resource pool.

***SL-CBR-PriorityTxConfigList* information element**

-- ASN1START

-- TAG-SL-CBR-PRIORITYTXCONFIGLIST-START

SL-CBR-PriorityTxConfigList-r16 ::= SEQUENCE (SIZE (1..8)) OF SL-PriorityTxConfigIndex-r16

SL-CBR-PriorityTxConfigList-v16xy ::= SEQUENCE (SIZE (1..8)) OF SL-PriorityTxConfigIndex-v16xy

SL-PriorityTxConfigIndex-r16 ::= SEQUENCE {

sl-PriorityThreshold-r16 INTEGER (1..8) OPTIONAL, -- Need M

sl-DefaultTxConfigIndex-r16 INTEGER (0..maxCBR-Level-1-r16) OPTIONAL, -- Need M

sl-CBR-ConfigIndex-r16 INTEGER (0..maxCBR-Config-1-r16) OPTIONAL, -- Need M

sl-Tx-ConfigIndexList-r16 SEQUENCE (SIZE (1.. maxCBR-Level-r16)) OF SL-TxConfigIndex-r16 OPTIONAL -- Need M

}

SL-TxConfigIndex-r16 ::= INTEGER (0..maxTxConfig-1-r16)

SL-PriorityTxConfigIndex-v16xy ::= SEQUENCE {

sl-MCS-RangeList-r16 SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-MinMaxMCS-List-r16 OPTIONAL -- Need M

}

-- TAG-SL-CBR-PRIORITYTXCONFIGLIST-STOP

-- ASN1STOP

| ***SL-CBR-PriorityTxConfigList* field descriptions** |
| --- |
| ***sl-CBR-ConfigIndex***  Indicates the CBR ranges to be used by an index to the entry of the CBR range configuration in *sl-CBR-RangeConfigList*. |
| ***sl-DefaultTxConfigIndex***  Indicates the PSSCH transmission parameters to be used by the UEs which do not have available CBR measurement results, by means of an index to the corresponding entry in *tx-ConfigIndexList*. Value 0 indicates the first entry in *tx-ConfigIndexList*. The field is ignored if the UE has available CBR measurement results. |
| ***sl-MCS-RangeList***  Indicates the minimum MCS value and maximum MCS value for the associated MCS table(s) indicated in *sl-Additional-MCS-Table*. |
| ***sl-PriorityThreshold***  Indicates the upper bound of priority range which is associated with the configurations in *sl-CBR-ConfigIndex* and in *sl-Tx-ConfigIndexList*. The upper bounds of the priority ranges are configured in ascending order for consecutive entries of *SL-Priority-TxConfigIndex* in *SL-CBR-PriorityTxConfigList*. For the first entry of S*L-Priority-TxConfigIndex*, the lower bound of the priority range is 1. |

– *SL-ConfiguredGrantConfig*

The IE *SL-ConfiguredGrantConfig* specifies the configured grant configuration information for NR sidelink communication.

***SL-ConfiguredGrantConfig* information element**

-- ASN1START

-- TAG-SL-CONFIGUREDGRANTCONFIG-START

SL-ConfiguredGrantConfig-r16 ::= SEQUENCE {

sl-ConfigIndexCG-r16 SL-ConfigIndexCG-r16,

sl-PeriodCG-r16 SL-PeriodCG-r16 OPTIONAL, -- Need M

sl-NrOfHARQ-Processes-r16 INTEGER (1..16) OPTIONAL, -- Need M

sl-HARQ-ProcID-offset-r16 INTEGER (1..16) OPTIONAL, -- Need M

sl-CG-MaxTransNumList-r16 SL-CG-MaxTransNumList-r16 OPTIONAL, -- Need M

rrc-ConfiguredSidelinkGrant-r16 SEQUENCE {

sl-TimeResourceCG-Type1-r16 INTEGER (0..496) OPTIONAL, -- Need M

sl-StartSubchannelCG-Type1-r16 INTEGER (0..26) OPTIONAL, -- Need M

sl-FreqResourceCG-Type1-r16 INTEGER (0..6929) OPTIONAL, -- Need M

sl-TimeOffsetCG-Type1-r16 INTEGER (0..7999) OPTIONAL, -- Need R

sl-N1PUCCH-AN-r16 PUCCH-ResourceId OPTIONAL, -- Need M

sl-PSFCH-ToPUCCH-CG-Type1-r16 INTEGER (0..15) OPTIONAL, -- Need M

sl-ResourcePoolID-r16 SL-ResourcePoolID-r16 OPTIONAL, -- Need M

sl-TimeReferenceSFN-Type1-r16 ENUMERATED {sfn512} OPTIONAL -- Need S

} OPTIONAL, -- Need M

...

}

SL-ConfigIndexCG-r16 ::= INTEGER (1..maxNrofCG-SL-r16)

SL-CG-MaxTransNumList-r16 ::= SEQUENCE (SIZE (1..8)) OF SL-CG-MaxTransNum-r16

SL-CG-MaxTransNum-r16 ::= SEQUENCE {

sl-Priority-r16 INTEGER (1..8),

sl-MaxTransNum-r16 INTEGER (1..32)

}

SL-PeriodCG-r16 ::= CHOICE{

sl-PeriodCG1-r16 ENUMERATED {ms100, ms200, ms300, ms400, ms500, ms600, ms700, ms800, ms900, ms1000, spare6,

spare5, spare4, spare3, spare2, spare1},

sl-PeriodCG2-r16 INTEGER (1..99)

}

-- TAG-SL-CONFIGUREDGRANTCONFIG-STOP

-- ASN1STOP

| ***SL-ConfiguredGrantConfig* field descriptions** |
| --- |
| ***sl-ConfigIndexCG***  This field indicates the ID to identify configured grant for sidelink. |
| ***sl-CG-MaxTransNumList***  This field indicates the maximum number of times that a TB can be transmitted using the resources provided by the configured grant. *sl-Priority* corresponds to the logical channel priority. |
| ***sl-FreqResourceCG-Type1***  Indicates the frequency resource location of sidelink configured grant type 1. An index giving valid combinations of one or two starting sub-channel and length (joinly encoded) as resource indicator (RIV), as defined in TS 38.214 [19]. |
| ***sl-N1PUCCH-AN***  This field indicates the HARQ resource for PUCCH for sidelink configured grant type 1 and PSCCH/PSSCH transmissions without a corresponding PDCCH on sidelink configured grant type 2. The actual PUCCH-Resource is configured in sl-PUCCH-Config and referred to by its ID. |
| ***sl-NrOfHARQ-Processes***  This field indicates the number of HARQ processes configured for a specific configured grant. It applies for both Type 1 and Type 2. |
| ***sl-PeriodCG***  This field indicates the period of sidelink configured grant in the unit of ms. |
| ***sl-PSFCH-ToPUCCH-CG-Type1***  This field, for configured grant type 1, indicates slot offset between the PSFCH associated with the last PSSCH resource of each period and the PUCCH occasion used for reporting sidelink HARQ. |
| ***sl-ResourcePoolID***  Indicates the resource pool in which the configured sidelink grant Type 1 is applied. |
| ***sl-StartSubchannelCG-Type1***  This field indicates the starting sub-channel of sidelink configured grant Type 1. An index giving valid sub-channel index. |
| ***sl-TimeOffsetCG-Type1***  This field indicates the time offset related to SFN= *sl-TimeReferenceSFN-Type1*, as specified in TS 38.321 [3]. |
| ***sl-TimeReferenceSFN-Type1***  Indicates SFN used for determination of the offset of a resource in time domain. If it is present, the UE uses the closest SFN with the indicated number preceding the reception of the sidelink configured grant configuration Type 1, see TS 38.321 [3], clause 5.8.3. If it is not present, the reference SFN is 0. |
| ***sl-TimeResourceCG-Type1***  This field indicates the time resource location of sidelink configured grant Type 1. An index giving valid combinations of up to two slot positions (jointly encoded) as time resource indicator (TRIV), as defined in TS 38.212 [17]. |

– *SL-PSSCH-TxConfigList*

The IE *SL-PSSCH-TxConfigList* indicates PSSCH transmission parameters. When lower layers select parameters from the range indicated in IE *SL-PSSCH-TxConfigList*, the UE considers both configurations in IE *SL-PSSCH-TxConfigList* and the CBR-dependent configurations represented in IE *SL-CBR-PriorityTxConfigList*. Only one IE *SL-PSSCH-TxConfig* is provided per *SL-TypeTxSync*.

***SL-PSSCH-TxConfigList* information element**

-- ASN1START

-- TAG-SL-PSSCH-TXCONFIGLIST-START

SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16

SL-PSSCH-TxConfig-r16 ::= SEQUENCE {

sl-TypeTxSync-r16 SL-TypeTxSync-r16 OPTIONAL, -- Need R

sl-ThresUE-Speed-r16 ENUMERATED {kmph60, kmph80, kmph100, kmph120,

kmph140, kmph160, kmph180, kmph200},

sl-ParametersAboveThres-r16 SL-PSSCH-TxParameters-r16,

sl-ParametersBelowThres-r16 SL-PSSCH-TxParameters-r16,

...,

[[

sl-ParametersAboveThres-v16xy SL-MinMaxMCS-List-r16, OPTIONAL, -- Need M

sl-ParametersBelowThres-v16xy SL-MinMaxMCS-List-r16 OPTIONAL, -- Need M

]]

}

SL-PSSCH-TxParameters-r16 ::= SEQUENCE {

sl-MinMCS-PSSCH-r16 INTEGER (0..27),

sl-MaxMCS-PSSCH-r16 INTEGER (0..31),

sl-MinSubChannelNumPSSCH-r16 INTEGER (1..27),

sl-MaxSubchannelNumPSSCH-r16 INTEGER (1..27),

sl-MaxTxTransNumPSSCH-r16 INTEGER (1..32),

sl-MaxTxPower-r16 SL-TxPower-r16 OPTIONAL -- Cond CBR

}

-- TAG-SL-PSSCH-TXCONFIGLIST-STOP

-- ASN1STOP

| ***SL-PSSCH-TxConfigList* field descriptions** |
| --- |
| ***sl-MaxTxTransNumPSSCH***  Indicates the maximum transmission number (including new transmission and retransmission) for PSSCH. |
| ***sl-MaxTxPower***  This field indicates the maximum transmission power for transmission on PSSCH and PSCCH. |
| ***sl-MinMCS-PSSCH, sl-MaxMCS-PSSCH***  This field indicates the minimum and maximum MCS values used for transmissions on PSSCH. *sl-MinMCS-PSSCH-r16* and *sl-MaxMCS-PSSCH-r16* in *sl-ParametersAboveThres-r16* and *sl-ParametersBelowThres-r16* are MCS values used for table of 64QAM. *sl-MinMCS-PSSCH-r16* and *sl-MaxMCS-PSSCH-r16* in *sl-ParametersAboveThres-v16xy* and *sl-ParametersBelowThres-v16xy* are MCS values used for the associated MCS table(s) indicated in *sl-Additional-MCS-Table*. UE shall ignore MCS values used for table of 64QAM indicated in *sl-ParametersAboveThres-v16xy* and *sl-ParametersBelowThres-v16xy* if *sl-ParametersAboveThres-v16xy* and *sl-ParametersBelowThres-v16xy*are present. |
| ***sl-MinSubChannelNumPSSCH, sl-MaxSubChannelNumPSSCH***  This field indicates the minimum and maximum number of sub-channels which may be used for transmissions on PSSCH. |
| ***sl-TypeTxSync***  This field indicates the synchronization reference type. For configurations by the eNB/gNB, only gnbEnb can be configured; and for pre-configuration or when this field is absent, the configuration is applicable for all synchronization reference types. |
| ***sl-ThresUE-Speed***  This field indicates a UE absolute speed threshold. |

|  |  |
| --- | --- |
| **Conditional Presence** | **Explanation** |
| *CBR* | The field is optionally present, Need R, when the IE *SL-PSSCH-TxParameters* is present in *SL-CBR-CommonTxConfigList,* *SL-UE-SelectedConfig,* *SIB12* or *SidelinkPreconfigNR*; otherwise the field is not present, need R. |

– *SL-ResourcePool*

The IE *SL-ResourcePool* specifies the configuration information for NR sidelink communication resource pool.

***SL-ResourcePool* information element**

-- ASN1START

-- TAG-SL-RESOURCEPOOL-START

SL-ResourcePool-r16 ::= SEQUENCE {

sl-PSCCH-Config-r16 SetupRelease { SL-PSCCH-Config-r16 } OPTIONAL, -- Need M

sl-PSSCH-Config-r16 SetupRelease { SL-PSSCH-Config-r16 } OPTIONAL, -- Need M

sl-PSFCH-Config-r16 SetupRelease { SL-PSFCH-Config-r16 } OPTIONAL, -- Need M

sl-SyncAllowed-r16 SL-SyncAllowed-r16 OPTIONAL, -- Need M

sl-SubchannelSize-r16 ENUMERATED {n10, n12, n15, n20, n25, n50, n75, n100} OPTIONAL, -- Need M

dummy INTEGER (10..160) OPTIONAL, -- Need M

sl-StartRB-Subchannel-r16 INTEGER (0..265) OPTIONAL, -- Need M

sl-NumSubchannel-r16 INTEGER (1..27) OPTIONAL, -- Need M

sl-Additional-MCS-Table-r16 ENUMERATED {qam256, qam64LowSE, qam256-qam64LowSE } OPTIONAL, -- Need M

sl-ThreshS-RSSI-CBR-r16 INTEGER (0..45) OPTIONAL, -- Need M

sl-TimeWindowSizeCBR-r16 ENUMERATED {ms100, slot100} OPTIONAL, -- Need M

sl-TimeWindowSizeCR-r16 ENUMERATED {ms1000, slot1000} OPTIONAL, -- Need M

sl-PTRS-Config-r16 SL-PTRS-Config-r16 OPTIONAL, -- Need M

sl-UE-SelectedConfigRP-r16 SL-UE-SelectedConfigRP-r16 OPTIONAL, -- Need M

sl-RxParametersNcell-r16 SEQUENCE {

sl-TDD-Configuration-r16 TDD-UL-DL-ConfigCommon OPTIONAL, -- Need M

sl-SyncConfigIndex-r16 INTEGER (0..15)

} OPTIONAL, -- Need M

sl-ZoneConfigMCR-List-r16 SEQUENCE (SIZE (16)) OF SL-ZoneConfigMCR-r16 OPTIONAL, -- Need M

sl-FilterCoefficient-r16 FilterCoefficient OPTIONAL, -- Need M

sl-RB-Number-r16 INTEGER (10..275) OPTIONAL, -- Need M

sl-PreemptionEnable-r16 ENUMERATED {enabled, pl1, pl2, pl3, pl4, pl5, pl6, pl7, pl8} OPTIONAL, -- Need R

sl-PriorityThreshold-UL-URLLC-r16 INTEGER (1..9) OPTIONAL, -- Need M

sl-PriorityThreshold-r16 INTEGER (1..9) OPTIONAL, -- Need M

sl-X-Overhead-r16 ENUMERATED {n0,n3, n6, n9} OPTIONAL, -- Need S

sl-PowerControl-r16 SL-PowerControl-r16 OPTIONAL, -- Need M

sl-TxPercentageList-r16 SL-TxPercentageList-r16 OPTIONAL, -- Need M

sl-MinMaxMCS-List-r16 SL-MinMaxMCS-List-r16 OPTIONAL, -- Need M

...,

[[

sl-TimeResource-r16 BIT STRING (SIZE (10..160)) OPTIONAL -- Need M

]]

}

SL-ZoneConfigMCR-r16 ::= SEQUENCE {

sl-ZoneConfigMCR-Index-r16 INTEGER (0..15),

sl-TransRange-r16 ENUMERATED {m20, m50, m80, m100, m120, m150, m180, m200, m220, m250, m270, m300, m350,

m370, m400, m420, m450, m480, m500, m550, m600, m700, m1000, spare9, spare8,

spare7, spare6, spare5, spare4, spare3, spare2, spare1}

OPTIONAL, -- Need M

sl-ZoneConfig-r16 SL-ZoneConfig-r16 OPTIONAL, -- Need M

...

}

SL-SyncAllowed-r16 ::= SEQUENCE {

gnss-Sync-r16 ENUMERATED {true} OPTIONAL, -- Need R

gnbEnb-Sync-r16 ENUMERATED {true} OPTIONAL, -- Need R

ue-Sync-r16 ENUMERATED {true} OPTIONAL -- Need R

}

SL-PSCCH-Config-r16 ::= SEQUENCE {

sl-TimeResourcePSCCH-r16 ENUMERATED {n2, n3} OPTIONAL, -- Need M

sl-FreqResourcePSCCH-r16 ENUMERATED {n10,n12, n15, n20, n25} OPTIONAL, -- Need M

sl-DMRS-ScrambleID-r16 INTEGER (0..65535) OPTIONAL, -- Need M

sl-NumReservedBits-r16 INTEGER (2..4) OPTIONAL, -- Need M

...

}

SL-PSSCH-Config-r16 ::= SEQUENCE {

sl-PSSCH-DMRS-TimePatternList-r16 SEQUENCE (SIZE (1..3)) OF INTEGER (2..4) OPTIONAL, -- Need M

sl-BetaOffsets2ndSCI-r16 SEQUENCE (SIZE (4)) OF SL-BetaOffsets-r16 OPTIONAL, -- Need M

sl-Scaling-r16 ENUMERATED {f0p5, f0p65, f0p8, f1} OPTIONAL, -- Need M

...

}

SL-PSFCH-Config-r16 ::= SEQUENCE {

sl-PSFCH-Period-r16 ENUMERATED {sl0, sl1, sl2, sl4} OPTIONAL, -- Need M

sl-PSFCH-RB-Set-r16 BIT STRING (SIZE (10..275)) OPTIONAL, -- Need M

sl-NumMuxCS-Pair-r16 ENUMERATED {n1, n2, n3, n6} OPTIONAL, -- Need M

sl-MinTimeGapPSFCH-r16 ENUMERATED {sl2, sl3} OPTIONAL, -- Need M

sl-PSFCH-HopID-r16 INTEGER (0..1023) OPTIONAL, -- Need M

sl-PSFCH-CandidateResourceType-r16 ENUMERATED {startSubCH, allocSubCH} OPTIONAL, -- Need M

...

}

SL-PTRS-Config-r16 ::= SEQUENCE {

sl-PTRS-FreqDensity-r16 SEQUENCE (SIZE (2)) OF INTEGER (1..276) OPTIONAL, -- Need M

sl-PTRS-TimeDensity-r16 SEQUENCE (SIZE (3)) OF INTEGER (0..29) OPTIONAL, -- Need M

sl-PTRS-RE-Offset-r16 ENUMERATED {offset01, offset10, offset11} OPTIONAL, -- Need M

...

}

SL-UE-SelectedConfigRP-r16 ::= SEQUENCE {

sl-CBR-PriorityTxConfigList-r16 SL-CBR-PriorityTxConfigList-r16 OPTIONAL, -- Need M

sl-ThresPSSCH-RSRP-List-r16 SL-ThresPSSCH-RSRP-List-r16 OPTIONAL, -- Need M

sl-MultiReserveResource-r16 ENUMERATED {enabled} OPTIONAL, -- Need M

sl-MaxNumPerReserve-r16 ENUMERATED {n2, n3} OPTIONAL, -- Need M

sl-SensingWindow-r16 ENUMERATED {ms100, ms1100} OPTIONAL, -- Need M

sl-SelectionWindowList-r16 SL-SelectionWindowList-r16 OPTIONAL, -- Need M

sl-ResourceReservePeriodList-r16 SEQUENCE (SIZE (1..16)) OF SL-ResourceReservePeriod-r16 OPTIONAL, -- Need M

sl-RS-ForSensing-r16 ENUMERATED {pscch, pssch},

...,

[[

sl-CBR-PriorityTxConfigList-v16xy SL-CBR-PriorityTxConfigList-v16xy OPTIONAL -- Need M

]]

}

SL-ResourceReservePeriod-r16 ::= CHOICE {

sl-ResourceReservePeriod1-r16 ENUMERATED {ms0, ms100, ms200, ms300, ms400, ms500, ms600, ms700, ms800, ms900, ms1000},

sl-ResourceReservePeriod2-r16 INTEGER (1..99)

}

SL-SelectionWindowList-r16 ::= SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfig-r16

SL-SelectionWindowConfig-r16 ::= SEQUENCE {

sl-Priority-r16 INTEGER (1..8),

sl-SelectionWindow-r16 ENUMERATED {n1, n5, n10, n20}

}

SL-TxPercentageList-r16 ::= SEQUENCE (SIZE (8)) OF SL-TxPercentageConfig-r16

SL-TxPercentageConfig-r16 ::= SEQUENCE {

sl-Priority-r16 INTEGER (1..8),

sl-TxPercentage-r16 ENUMERATED {p20, p35, p50}

}

SL-MinMaxMCS-List-r16 ::= SEQUENCE (SIZE (1..3)) OF SL-MinMaxMCS-Config-r16

SL-MinMaxMCS-Config-r16 ::= SEQUENCE {

sl-MCS-Table-r16 ENUMERATED {qam64, qam256, qam64LowSE},

sl-MinMCS-PSSCH-r16 INTEGER (0..27),

sl-MaxMCS-PSSCH-r16 INTEGER (0..31)

}

SL-BetaOffsets-r16 ::= INTEGER (0..31)

SL-PowerControl-r16 ::= SEQUENCE {

sl-MaxTransPower-r16 INTEGER (-30..33),

sl-Alpha-PSSCH-PSCCH-r16 ENUMERATED {alpha0, alpha04, alpha05, alpha06, alpha07, alpha08, alpha09, alpha1} OPTIONAL, -- Need M

dl-Alpha-PSSCH-PSCCH-r16 ENUMERATED {alpha0, alpha04, alpha05, alpha06, alpha07, alpha08, alpha09, alpha1} OPTIONAL, -- Need S

sl-P0-PSSCH-PSCCH-r16 INTEGER (-16..15) OPTIONAL, -- Need S

dl-P0-PSSCH-PSCCH-r16 INTEGER (-16..15) OPTIONAL, -- Need M

dl-Alpha-PSFCH-r16 ENUMERATED {alpha0, alpha04, alpha05, alpha06, alpha07, alpha08, alpha09, alpha1} OPTIONAL, -- Need S

dl-P0-PSFCH-r16 INTEGER (-16..15) OPTIONAL, -- Need M

...

}

-- TAG-SL-RESOURCEPOOL-STOP

-- ASN1STOP

| ***SL-ZoneConfigMCR* field descriptions** |
| --- |
| ***sl-TransRange***  Indicates the communication range requirement for the corresponding *sl-ZoneConfigMCR-Index*. |
| ***sl-ZoneConfig***  Indicates the zone configuration for the corresponding *sl-ZoneConfigMCR-Index*. |
| ***sl-ZoneConfigMCR-Index***  Indicates the codepoint of the communication range requirement field in SCI. |

|  |
| --- |
| ***SL-ResourcePool* field descriptions** |
| ***dummy***  This field is not used in the specification. If received it shall be ignored by the UE. |
| ***sl-FilterCoefficient***  This field indicates the filtering coefficient for long-term measurement and reference signal power derivation used for sideilnk open-loop power control. |
| ***sl-Additional-MCS-Table***  Indicates the MCS table(s) additionally used in the resource pool. 64QAM table is (pre-)configured as default. Zero, one or two can be additionally (pre-)configured using the 256QAM and/or low-SE MCS tables |
| ***sl-NumSubchannel***  Indicates the number of subchannels in the corresponding resource pool, which consists of contiguous PRBs only. |
| ***sl-PreemptionEnable***  Indicates whether pre-emption is disabled or enabled in a resource pool. If enabled, a priority level p\_preemption can be optionally configured. If the pre-emption is enabled but p\_preemption is not configured, pre-emption is applicable to all levels. |
| ***sl-PriorityThreshold-UL-URLLC***  Indicates the threshold used to determine whether NR sidelink transmission is prioritized over uplink transmission of priority index 1 as specified in TS 38.213[13], clause 16.2.4.3, or whether PUCCH transmission carrying SL HARQ is prioritized over PUCCH transmission carrying UCI of priority index 1 if they overlap in time as specified in TS 38.213 [13], clause 9.2.5.0. |
| ***sl-PriorityThreshold***  Indicates the threshold used to determine whether NR sidelink transmission is prioritized over uplink transmission of priority index 0 as specified in TS 38.213[13], clause 16.2.4.3, or whether PUCCH transmission carrying SL HARQ is prioritized over PUCCH transmission carrying UCI of priority index 0 if they overlap in time as specified in TS 38.213 [13], clause 9.2.5.0. |
| ***sl-RB-Number***  Indicates the number of PRBs in the corresponding resource pool, which consists of contiguous PRBs only. The remaining RB cannot be used (See TS 38.214[19], clause 8). |
| ***sl-StartRB-Subchannel***  Indicates the lowest RB index of the subchannel with the lowest index in the resource pool with respect to the lowest RB index of a SL BWP. |
| ***sl-SubchannelSize***  Indicates the minimum granularity in frequency domain for the sensing for PSSCH resource selection in the unit of PRB. |
| ***sl-SyncAllowed***  Indicates the allowed synchronization reference(s) which is (are) allowed to use the configured resource pool. |
| ***sl-SyncConfigIndex***  Indicates the synchronisation configuration that is associated with a reception pool, by means of an index to the corresponding entry *SL-SyncConfigList* of in *SIB12* for NR sidelink communication. |
| ***sl-TDD-Configuration***  Indicates the TDD configuration associated with the reception pool of the cell indicated by *sl-SyncConfigIndex*. |
| ***sl-ThreshS-RSSI-CBR***  Indicates the S-RSSI threshold for determining the contribution of a sub-channel to the CBR measurement. Value 0 corresponds to -112 dBm, value 1 to -110 dBm, value n to (-112 + n\*2) dBm, and so on. |
| ***sl-TimeResource***  Indicates the bitmap of the resource pool, which is defined by repeating the bitmap with a periodicity during a SFN or DFN cycle. |
| ***sl-TimeWindowSizeCBR***  Indicates the time window size for CBR measurement. |
| ***sl-TimeWindowSizeCR***  Indicates the time window size for CR evaluation. |
| ***sl-TxPercentageList***  Indicates the portion of candidate single-slot PSSCH resources over the toal resources. Value p20 corresponds to 20%, and so on. |
| ***sl-X-Overhead***  Accounts for overhead from CSI-RS, PT-RS. If the field is absent, the UE applies value *n0* (see TS 38.214 [19], clause 5.1.3.2). |

| ***SL-SyncAllowed* field descriptions** |
| --- |
| ***gnbEnb-Sync***  If configured, the (pre-) configured resources can be used if the UE is directly or indirectly synchronized to eNB or gNB (i.e., synchronized to a reference UE which is directly synchronized to eNB or gNB). |
| ***gnss-Sync***  If configured, the (pre-) configured resources can be used if the UE is directly or indirectly synchronized to GNSS (i.e., synchronized to a reference UE which is directly synchronized to GNSS). |
| ***ue-Sync***  If configured, the (pre-) configured resources can be used if the UE is synchronized to a reference UE which is not synchronized to eNB, gNB and GNSS directly or indirectly. |

| ***SL-PSCCH-Config* field descriptions** |
| --- |
| ***sl-FreqResourcePSCCH***  Indicates the number of PRBs for PSCCH in a resource pool where it is not greater than the number PRBs of the subchannel. |
| ***sl-DMRS-ScrambleID***  Indicates the initialization value for PSCCH DMRS scrambling. |
| ***sl-NumReservedBits***  Indicates the number of reserved bits in first stage SCI. |
| ***sl-TimeResourcePSCCH***  Indicates the number of symbols of PSCCH in a resource pool. |

| ***SL-PSSCH-Config* field descriptions** |
| --- |
| ***sl-BetaOffsets2ndSCI***  Indicates candidates of beta-offset values to determine the number of coded modulation symbols for second stage SCI. The value indicates the index of Table 9.3-2 of TS 38.213 [13]. |
| ***sl-PSSCH-DMRS-TimePatternList***  Indicates the set of PSSCH DMRS time domain patterns in terms of PSSCH DMRS symbols in a slot that can be used in the resource pool. |
| ***sl-Scaling***  Indicates a scaling factor to limit the number of resource elements assigned to the second stage SCI on PSSCH. Value *f0p5* corresponds to 0.5, value *f0p65* corresponds to 0.65, and so on. |

| ***SL-PSFCH-Config* field descriptions** |
| --- |
| ***sl-PSFCH-CandidateResourceType***  Indicates the number of PSFCH resources available for multiplexing HARQ-ACK information in a PSFCH transmission (see TS 38.213 [13], clause 16.3). |
| ***sl-PSFCH-Period***  Indicates the period of PSFCH resource in the unit of slots within this resource pool. If set to *sl0*, no resource for PSFCH, and HARQ feedback for all transmissions in the resource pool is disabled. |
| ***sl-PSFCH-RB-Set***  Indicates the set of PRBs that are actually used for PSFCH transmission and reception. The leftmost bit of the bitmap refers to the lowest RB index in the resource pool, and so on |

| ***SL-UE-SelectedConfigRP* field descriptions** |
| --- |
| ***sl-CBR-PriorityTxConfigList***  Indicates the mapping between PSSCH transmission parameter (such as MCS, PRB number, retransmission number, CR limit) sets by using the indexes of the configurations provided in *sl-CBR-PSSCH-TxConfigList*, CBR ranges by an index to the entry of the CBR range configuration in *sl-CBR-RangeConfigList*, and priority ranges. It also indicates the default PSSCH transmission parameters to be used when CBR measurement results are not available, and MCS range for the MCS tables used in the resource pool. *sl-CBR-PriorityTxConfigList-v16xy*is present only when *sl-CBR-PriorityTxConfigList-r16* is configured. |
| ***sl-MaxNumPerReserve***  Indicates the maximum number of reserved PSCCH/PSSCH resources that can be indicated by an SCI. |
| ***sl-MultiReserveResource***  Indicates if it is allowed to reserve a sidelink resource for an initial transmission of a TB by an SCI associated with a different TB, based on sensing and resource selection procedure. |
| ***sl-ResourceReservePeriodList***  Set of possible resource reservation period allowed in the resource pool in the unit of ms. Up to 16 values can be configured per resource pool. |
| ***sl-RS-ForSensing***  Indicates whether DMRS of PSCCH or PSSCH is used for L1 RSRP measurement in the sensing operation. |
| ***sl-SensingWindow***  Parameter that indicates the start of the sensing window. |
| ***sl-SelectionWindowList***  Parameter that determines the end of the selection window in the resource selection for a TB with respect to priority indicated in SCI. Value n1 corresponds to 1\*2µ, value n5 corresponds to 5\*2µ, and so on, where µ = 0,1,2,3 refers to SCS 15,30,60,120 kHz respectively. |
| ***sl-ThresPSSCH-RSRP-List***  Indicates a list of 64 thresholds, and the threshold should be selected based on the priority in the decoded SCI and the priority in the SCI to be transmitted. A resource is excluded if it is indicated or reserved by a decoded SCI and PSSCH RSRP in the associated data resource is above a threshold. |

| ***SL-PowerControl* field descriptions** |
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| ***sl-MaxTransPower***  Indicates the maximum value of the UE's sidelink transmission power on this resource pool. The unit is dBm. |
| ***sl-Alpha-PSSCH-PSCCH***  Indicates alpha value for sidelink pathloss based power control for PSCCH/PSSCH when sl-P0-PSSCH is configured. When the field is absent the UE applies the value 1. |
| ***sl-P0-PSSCH-PSCCH***  Indicates P0 value for sidelink pathloss based power control for PSCCH/PSSCH. If not configured, sidelink pathloss based power control is disabled for PSCCH/PSSCH. |
| ***dl-Alpha-PSSCH-PSCCH***  Indicates alpha value for downlink pathloss based power control for PSCCH/PSSCH when dl-P0-PSSCH is configured. When the field is absent the UE applies the value 1. |
| ***dl-P0-PSSCH-PSCCH***  Indicates P0 value for downlink pathloss based power control for PSCCH/PSSCH. If not configured, downlink pathloss based power control is disabled for PSCCH/PSSCH. |
| ***dl-Alpha-PSFCH***  Indicates alpha value for downlink pathloss based power control for PSFCH when dl-P0-PSFCH is configured. When the field is absent the UE applies the value 1. |
| ***dl-P0-PSFCH***  Indicates P0 value for downlink pathloss based power control for PSFCH. If not configured, downlink pathloss based power control is disabled for PSFCH. |

| ***SL-MinMaxMCS-Config* field descriptions** |
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| ***sl-MaxMCS-PSSCH***  Indicates the maximum MCS value when using the associated MCS table. If no MCS is configured, UE autonomously selects MCS from the full range of values. |
| ***sl-MinMCS-PSSCH***  Indicates the minimum MCS value when using the associated MCS table. If no MCS is configured, UE autonomously selects MCS from the full range of values. |

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| NEXT CHANGE |