**3GPP TSG-RAN WG2 Meeting #121bis-e *R2-230xxxx***

**Online, 17th – 26th April, 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** |  | **rev** | **-** | **Current version:** | **17.4.0** |  |
|  |
| *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:***  | Miscellaneous corrections on 38.331 for SL enhancements |
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| ***Source to WG:*** | Huawei, HiSilicon (Rapporteur), Xiaomi |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_SL\_enh-Core |  | ***Date:*** | 2023-04-07 |
|  |  |  |  |  |
| ***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 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | 1. In 5.8.7 Sidelink communication reception, from the procedfure “4> configure lower layers to monitor sidelink control information and the corresponding data using the pool of resources indicated by sl-RxPool;”, only one resoure pool indicated in *sl-Rxpool* is usedto monitor sidelink control information. However, accoring to the field description in *sl-RxPool*, one or more resource pools can be used to monitor sidelink control information and the corresponding data.2. In clause 5.8.9.1.3, a “implementation” is missing in "It is up to the UE whether or not to indicate the rejection to the peer UE for a received sidelink DRX configuration."3. N/A4. In 6.3.5, the unit of the meter in description of "*sl-TransRange*" is missing. 5. In clause 6.3.5, these related DRX paramters such as "SL-DRX-ConfigGC-BC" and "SL-DRX-ConfigUC" are for SL communication, thus the TB was received should in the SL BWP not BWP of Uu, regarding the field description for "SL-DRX-ConfigGC-BC" and "SL-DRX-ConfigUC", all "the BWP" should be changed into "the sidelink BWP".6. In 6.3.5, the abbreviation of "sidelink Synchronization Signal Block" shall be "S-SSB" to avoid ambiguity. For the term S-SSB, it is used in PHY specs for sidelink SSB. So, the following SL-SSB in 331 shall be changed to S-SSB7. In 6.3.5, Some editorials within *SL-ConfiguredGrantConfig* still exist in the specification8. In 6.6.1, In the description of the “SCCH-Message”, the *SCCH-Message* class is the set of RRC messages that may be sent from the UE to the UE. Actually, SCCH message is a PC5-RRC message.   |
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| ***Summary of change:*** | 1. Change “using the pool of resources indicated by sl-RxPool”changed to “using the pool(s) of resources indicated by sl-RxPool”.2. Change " the UE" into "UE implementation" within "It is up to the UE whether or not to indicate the rejection to the peer UE for a received sidelink DRX configuration."3. N/A4. Add "the unit of meter" in description of "sl-TransRange" in the SL-ZoneConfigMCR field descriptions5. In clause 6.3.5, change all "the BWP" regarding the field description for "SL-DRX-ConfigGC-BC" and "SL-DRX-ConfigUC", into "the SL BWP".6. Change “SL-SSB” to "S-SSB".7. Fix the editorials within *SL-ConfiguredGrantConfig.*8. Chane "SCCH-message class is the set RRC message" to "SCCH-message class is the set PC5-RRC message". **Impact analysis****Impacted 5G architecture options:**NR SA, NR-DC**Impacted functionality:**DRX for SL.**Inter-operability:** For all corrections: 1. If the UE is implemented according to this CR but the network is not, there is no inter-operability issue.2. If the network is implemented according to this CR but the UE is not, there is no inter-operability issue. 3. If one UE is implemented according to this CR while the other UE is not, there is no inter-operability issue. |
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| ***Consequences if not approved:*** | 1. The UE can not reception SL signaling or data in multiple resource pools.2. SL UE can not determine whether or not indicate the rejection to the peer UE for a received sidelink DRX configuration if a “implementation” is missing3. N/A 4. The UE can not derive the range of the sidelink transmission. 5.SL UE can not use the configuration in "SL-DRX-ConfigGC-BC" and "SL- DRX-ConfigUC".6. The abbreviation of sidelink Synchronization Signal Block may be confusing.7. Some editorials still exist in the specification.8. The SCCH messge can be with wrong class.  |
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| ***Clauses affected:*** |  5.8.7, 5.8.9, 6.3.2, 6.3.5, 6.6.1. |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| *1st CHANGE* |

### 5.8.7 Sidelink communication reception

A UE capable of NR sidelink communication that is configured by upper layers to receive NR sidelink communication shall:

1> if the conditions for NR sidelink communication operation as defined in 5.8.2 are met:

2> if the frequency used for NR sidelink communication is included in *sl-FreqInfoToAddModList* in *RRCReconfiguration* message or *sl-FreqInfoList* included in *SIB12*:

3> if the UE is configured with *sl-RxPool* included in *RRCReconfiguration* message with *reconfigurationWithSync* (i.e. handover):

4> configure lower layers to monitor sidelink control information and the corresponding data using the pool(s) of resources indicated by *sl-RxPool*;

3> else if the cell chosen for NR sidelink communication provides *SIB12*:

4> configure lower layers to monitor sidelink control information and the corresponding data using the pool(s) of resources indicated by *sl-RxPool in SIB12*;

2> else:

3> configure lower layers to monitor sidelink control information and the corresponding data using the pool(s) of resources that were preconfigured by *sl-RxPool* in *SL-PreconfigurationNR*, asdefined in clause 9.3;

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| *2nd CHANGE* |

### 5.8.9 Sidelink RRC procedure

##### 5.8.9.1.3 Reception of an *RRCReconfigurationSidelink* by the UE

The UE shall perform the following actions upon reception of the *RRCReconfigurationSidelink*:

1> if the *RRCReconfigurationSidelink* includes the *sl-ResetConfig*:

2> perform the sidelink reset configuration procedure as specified in 5.8.9.1.10;

1> if the *RRCReconfigurationSidelink* includes the *slrb-ConfigToReleaseList*:

2> for each entryvalue included in the *slrb-ConfigToReleaseList* that is part of the current UE sidelink configuration;

3> perform the sidelink DRB release procedure, according to clause 5.8.9.1a.1;

1> if the *RRCReconfigurationSidelink* includes the *slrb-ConfigToAddModList*:

2> for each *slrb-PC5-ConfigIndex* value included in the *slrb-ConfigToAddModList* that is not part of the current UE sidelink configuration:

3> if *sl-MappedQoS-FlowsToAddList* is included:

4> apply the *SL-PQFI* included in *sl-MappedQoS-FlowsToAddList*;

3> perform the sidelink DRB addition procedure, according to clause 5.8.9.1a.2;

2> for each *slrb-PC5-ConfigIndex* value included in the *slrb-ConfigToAddModList* that is part of the current UE sidelink configuration:

3> if *sl-MappedQoS-FlowsToAddList* is included:

4> add the *SL-PQFI* included in *sl-MappedQoS-FlowsToAddList* to the corresponding sidelink DRB;

3> if *sl-MappedQoS-FlowsToReleaseList* is included:

4> remove the *SL-PQFI* included in *sl-MappedQoS-FlowsToReleaseList* from the corresponding sidelink DRB;

3> if the sidelink DRB release conditions as described in clause 5.8.9.1a.1.1 are met:

4> perform the sidelink DRB release procedure according to clause 5.8.9.1a.1.2;

3> else if the sidelink DRB modification conditions as described in clause 5.8.9.1a.2.1 are met:

4> perform the sidelink DRB modification procedure according to clause 5.8.9.1a.2.2;

1> if the *RRCReconfigurationSidelink* message includes the *sl-MeasConfig*:

2> perform the sidelink measurement configuration procedure as specified in 5.8.10;

1> if the *RRCReconfigurationSidelink* message includes the *sl-CSI-RS-Config*:

2> apply the sidelink CSI-RS configuration;

1> if the *RRCReconfigurationSidelink* message includes the *sl-LatencyBoundCSI-Report*:

2> apply the configured sidelink CSI report latency bound;

1> if the *RRCReconfigurationSidelink* includes the *sl-RLC-ChannelToReleaseListPC5*:

2> for each *SL-RLC-ChannelID* value included in the *sl-RLC-ChannelToReleaseListPC5* that is part of the current UE sidelink configuration;

3> perform the PC5 Relay RLC channel release procedure, according to clause 5.8.9.7.1;

1> if the *RRCReconfigurationSidelink* includes the *sl-RLC-ChannelToAddModListPC5*:

2> for each *sl-RLC-ChannelID-PC5* value included in the *sl-RLC-ChannelToAddModListPC5* that is not part of the current UE sidelink configuration:

3> perform the PC5 Relay RLC channel addition procedure, according to clause 5.8.9.7.2;

2> for each *sl-RLC-ChannelID-PC5* value included in the *sl-RLC-ChannelToAddModListPC5* that is part of the current UE sidelink configuration:

3> perform the PC5 Relay RLC channel modification procedure according to clause 5.8.9.7.2;

1> if the *RRCReconfigurationSidelink* message includes the *sl-DRX-ConfigUC-PC5*, and

1> if the UE accepts the *sl-DRX-ConfigUC-PC5*:

2> configure lower layers to perform sidelink DRX operation according to *sl-DRX-ConfigUC-PC5* for the associated destination as defined in TS 38.321 [3];

1> if the *RRCReconfigurationSidelink* message includes the *sl-LatencyBoundIUC-Report*:

2> apply the configured sidelink IUC report latency bound;

1> if the UE is unable to comply with (part of) the configuration included in the *RRCReconfigurationSidelink* (i.e. sidelink RRC reconfiguration failure):

2> continue using the configuration used prior to the reception of the *RRCReconfigurationSidelink* message;

2> set the content of the *RRCReconfigurationFailureSidelink* message;

3> submit the *RRCReconfigurationFailureSidelink* message to lower layers for transmission;

1> else:

2> set the content of the *RRCReconfigurationCompleteSidelink* message;

3> if the UE rejects the sidelink DRX configuration *sl-DRX-ConfigUC-PC5* received from the peer UE:

4> include the *sl-DRX-ConfigReject* in the *RRCReconfigurationCompleteSidelink* message;

4> consider no sidelink DRX to be applied for the corresponding sidelink unicast communication;

3> submit the *RRCReconfigurationCompleteSidelink* message to lower layers for transmission;

NOTE 1: When the same logical channel is configured with different RLC mode by another UE, the UE handles the case as sidelink RRC reconfiguration failure.

NOTE 2: It is up to the UE implementation whether or not to indicate the rejection to the peer UE for a received sidelink DRX configuration.

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| *3rd CHANGE* |

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| *4th CHANGE* |

### 6.3.5 Sidelink information elements

#### – *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-PBPS-CPS-Config-r17 SetupRelease { SL-PBPS-CPS-Config-r17 } OPTIONAL, -- Need M

 sl-InterUE-CoordinationConfig-r17 SetupRelease { SL-InterUE-CoordinationConfig-r17 } 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-Thres-RSRP-List-r16 SL-Thres-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-v1650 SL-CBR-PriorityTxConfigList-v1650 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

 ...,

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 dl-P0-PSSCH-PSCCH-r17 INTEGER (-202..24) OPTIONAL, -- Need M

 sl-P0-PSSCH-PSCCH-r17 INTEGER (-202..24) OPTIONAL, -- Need S

 dl-P0-PSFCH-r17 INTEGER (-202..24) OPTIONAL -- Need M

 ]]

}

-- TAG-SL-RESOURCEPOOL-STOP

-- ASN1STOP

| *SL-ZoneConfigMCR* field descriptions |
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| ***sl-TransRange***Indicates the communication range requirement for the corresponding *sl-ZoneConfigMCR-Index*. The unit is meter. |
| ***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. |

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| *5th CHANGE* |

### 6.3.5 Sidelink information elements

#### *– SL-DRX-ConfigGC-BC*

The IE *SL-DRX-ConfigGC-BC* is used to configure DRX related parameters for NR sidelink groupcast and broadcast communication, unicast/broadcast based communication of Direct Link Establishment Request (TS 24.587 [57]), and discovery message (TS 24.554 [72]).

*SL-DRX-ConfigGC-BC* information element

-- ASN1START

-- TAG-SL-DRX-CONFIGGC-BC-START

SL-DRX-ConfigGC-BC-r17 ::= SEQUENCE {

 sl-DRX-GC-BC-PerQoS-List-r17 SEQUENCE (SIZE (1..maxSL-GC-BC-DRX-QoS-r17)) OF SL-DRX-GC-BC-QoS-r17 OPTIONAL, -- Need M

 sl-DRX-GC-generic-r17 SL-DRX-GC-Generic-r17 OPTIONAL, -- Need M

 sl-DefaultDRX-GC-BC-r17 SL-DRX-GC-BC-QoS-r17 OPTIONAL, -- Need M

 ...

}

SL-DRX-GC-BC-QoS-r17 ::= SEQUENCE {

 sl-DRX-GC-BC-MappedQoS-FlowList-r17 SEQUENCE (SIZE (1..maxNrofSL-QFIs-r16)) OF SL-QoS-Profile-r16 OPTIONAL, -- Need M

 sl-DRX-GC-BC-OnDurationTimer-r17 CHOICE {

 subMilliSeconds INTEGER (1..31),

 milliSeconds ENUMERATED {

 ms1, ms2, ms3, ms4, ms5,ms6, ms8, ms10, ms20, ms30, ms40, ms50, ms60,

 ms80, ms100, ms200, ms300, ms400, ms500, ms600, ms800, ms1000, ms1200,

 ms1600, spare8, spare7, spare6, spare5, spare4, spare3, spare2, spare1}

 },

 sl-DRX-GC-InactivityTimer-r17 ENUMERATED {

 ms0, ms1, ms2, ms3, ms4, ms5, ms6, ms8, ms10, ms20, ms30, ms40, ms50, ms60, ms80,

 ms100, ms200, ms300, ms500, ms750, ms1280, ms1920, ms2560, spare9, spare8,

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

 sl-DRX-GC-BC-Cycle-r17 ENUMERATED {

 ms10, ms20, ms32, ms40, ms60, ms64, ms70, ms80, ms128, ms160, ms256, ms320, ms512,

 ms640, ms1024, ms1280, ms2048, ms2560, ms5120, ms10240, spare12, spare11, spare10,

 spare9, spare8, spare7, spare6, spare5, spare4, spare3, spare2, spare1},

 ...

}

SL-DRX-GC-Generic-r17 ::= SEQUENCE {

 sl-DRX-GC-HARQ-RTT-Timer1-r17 ENUMERATED {sl0, sl1, sl2, sl4, spare4, spare3, spare2, spare1} OPTIONAL, -- Need M

 sl-DRX-GC-HARQ-RTT-Timer2-r17 ENUMERATED {sl0, sl1, sl2, sl4, spare4, spare3, spare2, spare1} OPTIONAL, -- Need M

 sl-DRX-GC-RetransmissionTimer-r17 ENUMERATED {

 sl0, sl1, sl2, sl4, sl6, sl8, sl16, sl24, sl33, sl40, sl64, sl80, sl96, sl112, sl128,

 sl160, sl320, spare15, spare14, spare13, spare12, spare11, spare10, spare9, spare8,

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

}

-- TAG-SL-DRX-CONFIGGC-BC-STOP

-- ASN1STOP

|  |
| --- |
| *SL-DRX-ConfigGC-BC* field descriptions |
| ***sl-DefaultDRX-GC-BC***Indicates the default sidelink DRX configuration for groupcast and broadcast communications, which is used for QoS profile(s) that cannot be mapped into DRX configuration(s) configured for dedicated QoS profile(s). This field can be applied for the broadcast based or unicast based communication of Direct Link Establishment Request as described in TS 24.587 [57] and discovery message as described in TS 24.554 [72]. |
| ***sl-DRX-GC-BC-PerQoS-List***List of one or multiple sidelink DRX configurations for groupcast and broadcast communication, which are mapped from QoS profile(s). |
| ***sl-DRX-GC-BC-Cycle***Value in ms, ms10 corresponds to 10ms, ms20 corresponds to 20 ms, ms32 corresponds to 32 ms, and so on.  |
| ***sl-DRX-GC-BC-MappedQoS-FlowsList***List of QoS profiles of the NR sidelink communication, which are mapped to a sidelink DRX configuration. |
| ***sl-DRX-GC-BC-OnDurationTimer***Value in multiples of 1/32 ms (subMilliSeconds) or in ms (milliSecond). For the latter, value ms1 corresponds to 1 ms, value ms2 corresponds to 2 ms, and so on. |
| ***sl-DRX-GC-HARQ-RTT-Timer1, sl-DRX-GC-HARQ-RTT-Timer2***Value in number of slot lengths of the sidelink BWP where the transport block was received. Value sl0 corresponds to 0 slots, sl1 corresponds to 1 slot, sl2 corresponds to 2 slots, and so on. *sl-DRX-GC-HARQ-RTT-Timer1* is used for HARQ feedback enabled sidelink retransmission if SCI does not indicate retransmission resource(s). *sl-DRX-GC-HARQ-RTT-Timer2* is used for HARQ feedback disabled sidelink retransmission in resource pool configured with PSFCH if SCI does not indicate retransmission resource(s). |
| ***sl-DRX-GC-Generic***Indicates a sidelink DRX configuration for groupcast communication, which is applicable to any QoS profile or any Destination Layer-2 ID. |
| ***sl-DRX-GC-InactivityTimer***Value in multiple integers of 1 ms, ms0 corresponds to 0, ms1 corresponds to 1 ms, ms2 corresponds to 2 ms, and so on. This field is only valid for groupcast communication. |
| ***sl-DRX-GC-RetransmissionTimer***Value in number of slot lengths of the sidelink BWP where the transport block was received. Value sl0 corresponds to 0 slots, sl1 corresponds to 1 slot, sl2 corresponds to 2 slots, and so on. |

|  |
| --- |
| *6th CHANGE* |

### 6.3.5 Sidelink information elements

#### – *SL-BWP-Config*

The IE *SL-BWP-Config* is used to configure the UE specific NR sidelink communication on one particular sidelink bandwidth part.

*SL-BWP-Config* information element

-- ASN1START

-- TAG-SL-BWP-CONFIG-START

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

 sl-BWP-Id BWP-Id,

 sl-BWP-Generic-r16 SL-BWP-Generic-r16 OPTIONAL, -- Need M

 sl-BWP-PoolConfig-r16 SL-BWP-PoolConfig-r16 OPTIONAL, -- Need M

 ...,

 [[

 sl-BWP-PoolConfigPS-r17 SetupRelease {SL-BWP-PoolConfig-r16} OPTIONAL, -- Need M

 sl-BWP-DiscPoolConfig-r17 SetupRelease {SL-BWP-DiscPoolConfig-r17} OPTIONAL -- Need M

 ]]

}

SL-BWP-Generic-r16 ::= SEQUENCE {

 sl-BWP-r16 BWP OPTIONAL, -- Need M

 sl-LengthSymbols-r16 ENUMERATED {sym7, sym8, sym9, sym10, sym11, sym12, sym13, sym14} OPTIONAL, -- Need M

 sl-StartSymbol-r16 ENUMERATED {sym0, sym1, sym2, sym3, sym4, sym5, sym6, sym7} OPTIONAL, -- Need M

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

 sl-TxDirectCurrentLocation-r16 INTEGER (0..3301) OPTIONAL, -- Need M

 ...

}

-- TAG-SL-BWP-CONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *SL-BWP-Config* field descriptions |
| ***sl-BWP-DiscPoolConfig***This field indicates the NR sidelink discovery dedicated resource pool configurations on the configured sidelink BWP. The total number of Rx/Tx resource pools configured for communication and discovery does not exceed the maximum number of Rx/Tx resource pool for NR sidelink communication (i.e. *maxNrofRXPool-r16/maxNrofTXPool-r16*). |
| ***sl-BWP-Generic***This field indicates the generic parameters on the configured sidelink BWP. |
| ***sl-BWP-PoolConfig***This field indicates the resource pool configurations on the configured sidelink BWP. |
| ***sl-BWP-Id***An identifier for this sidelink bandwidth part. |
| ***sl-BWP-PoolConfigPS***This field indicates the resource pool configurations for power saving on the configured sidelink BWP. This field does not include *sl-TxPoolExceptional*. |

|  |
| --- |
| *SL-BWP-Generic* field descriptions |
| ***sl-LengthSymbols***This field indicates the number of symbols used for sidelink in a slot without S-SSB. A single value can be (pre)configured per sidelink bandwidth part. |
| ***sl-StartSymbol***This field indicates the starting symbol used for sidelink in a slot without S-SSB. A single value can be (pre)configured per sidelink bandwidth part. |
| ***sl-TxDirectCurrentLocation***The sidelink Tx/Rx Direct Current location for the carrier. Only values in the value range of this field between 0 and 3299, which indicate the subcarrier index within the carrier corresponding to the numerology of the corresponding sidelink BWP and value 3300, which indicates "Outside the carrier" and value 3301, which indicates "Undetermined position within the carrier" are used in this version of the specification. |

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| --- |
| *7th CHANGE* |

### 6.3.5 Sidelink information elements

#### – *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 (0..15) 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-N1PUCCH-AN-Type2-r16 PUCCH-ResourceId OPTIONAL -- Need M

 ]]

}

SL-ConfigIndexCG-r16 ::= INTEGER (0..maxNrofCG-SL-1-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 sidelink configured grant. |
| ***sl-CG-MaxTransNumList***This field indicates the maximum number of times that a TB can be transmitted using the resources provided by the sidelink 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 (jointly encoded) as resource indicator value (RIV), as defined in TS 38.214 [19]. |
| ***sl-HARQ-ProcID-Offset***Indicates the offset used in deriving the HARQ process ID for sidelink configured grant type 1 or sidelink configured grant type 2, see TS 38.321 [3], clause 5.8.3. |
| ***sl-N1PUCCH-AN***This field indicates the HARQ resource for PUCCH for sidelink configured grant type 1. The actual PUCCH-Resource is configured in *sl-PUCCH-Config* and referred to by its ID. |
| ***sl-N1PUCCH-AN-Type2***This field indicates the HARQ resource for PUCCH for 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 sidelink 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 sidelink 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 sidelink configured 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 slot offset with respect to logical slot defined by *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 1st logical slot of associated resource pool after the starting time of the closest SFN with the indicated number preceding the reception of the sidelink configured grant configuration type 1 as reference logical slot, 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 value (TRIV), as defined in TS 38.212 [17]. |

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| --- |
| *8th CHANGE* |

### 6.6.1 General message structure

#### – *SCCH-Message*

The *SCCH-Message* class is the set of PC5-RRC messages that may be sent from the UE to the UE for unicast of NR sidelink communication on SCCH logical channel.

-- ASN1START

-- TAG-SCCH-MESSAGE-START

SCCH-Message ::= SEQUENCE {

 message SCCH-MessageType

}

SCCH-MessageType ::= CHOICE {

 c1 CHOICE {

 measurementReportSidelink MeasurementReportSidelink,

 rrcReconfigurationSidelink RRCReconfigurationSidelink,

 rrcReconfigurationCompleteSidelink RRCReconfigurationCompleteSidelink,

 rrcReconfigurationFailureSidelink RRCReconfigurationFailureSidelink,

 ueCapabilityEnquirySidelink UECapabilityEnquirySidelink,

 ueCapabilityInformationSidelink UECapabilityInformationSidelink,

 uuMessageTransferSidelink-r17 UuMessageTransferSidelink-r17,

 remoteUEInformationSidelink-r17 RemoteUEInformationSidelink-r17

 },

 messageClassExtension CHOICE {

 c2 CHOICE {

 notificationMessageSidelink-r17 NotificationMessageSidelink-r17,

 ueAssistanceInformationSidelink-r17 UEAssistanceInformationSidelink-r17,

 spare6 NULL, spare5 NULL, spare4 NULL, spare3 NULL, spare2 NULL, spare1 NULL

 },

 messageClassExtensionFuture-r17 SEQUENCE {}

 }

}

-- TAG-SCCH-MESSAGE-STOP

-- ASN1STOP

|  |
| --- |
| *END OF CHANGES* |