**3GPP TSG- Meeting #1 *R2-2302030***

**Athens, Greece, 27, Feb – 03, Mar, 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **3801** | **rev** | 1 | **Current version:** |  |  |
|  |
| *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 |  | Core Network |  |

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|  |
| ***Title:***  | Corrections on 38.331 |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon (Rapporteur) |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NR\_SL\_enh-Core |  | ***Date:*** | 03 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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)* |
|  |  |
| ***Reason for change:*** | 1. In the last RAN2#120 meeting, RAN2 has made the following agreement:* SL UE information including GC/BC on/off indication is limited to mode 1.

According to current RRC, for SUI procedure in clause 5.8.3, the sub-clause 5.8.3.2 and 5.8.3.3 are aligned with above agreement, but in sub-clause 5.8.3.1 the mode-1 trigger condition is still missing. Therefore, some clarification should be made in subclause 5.8.3.1 correspondingly.1. If *sl-TxResourceReqList-v1700* is present, it shall contain the same number of entries, listed in the same order as in *sl-TxResourceReqList-r16.* The suffix ‘-r16’ is essential to identify the list, since there is no such IE without the suffix defined.
2. For *sl-TypeTxSyncList,* the UE shall include the same number of entries, listed in the same order, as in *sl-TxInterestedFreqList-r16*, i.e. one for each carrier frequency included in *sl-TxInterestedFreqList-r16*. The suffix ‘-r16’ is essential to identify the list, since there is no such IE without the suffix defined.

4. Event C1/C2 are defined as followsin clause 5.5.4.11.・Event C1 (The NR sidelink channel busy ration is above a threshold)・Event C2 (The NR sidelink channel busy ration is below a threshold)However, the current description of ReportConfigNR-SL IE in 6.3.2 is as follows.・Event C1: CBR of NR sidelink communication becomes better than absolute threshold;・Event C2: CBR of NR sidelink communication becomes worse than absolute threshold;Since CBR (Channel Busy Ratio) is an index that indicates the occupancy of the channel, it is appropriate to express it as being higher or lower (as described in 5.5.4.11), rather than being expressed as better or worse (as described in 6.3.2).To align the description for Event C1/C2, the modification for 6.3.2 should be needed.5. In 6.3.5 Sidelink information elements, in the current field description of *sl-TxPoolExceptional*, it is stated that the resource in the pool is used for NR sidelink communication. Actually, the resource in the pool can also be applied to transmit NR sidelink discovery, which is not included in the current description.6. In RAN1#111 the below agreement for IUC Scheme 2 was modified to not mention “for current TB transmission”, which should be aligned with RAN2 spec. 7. R2 confirms that the Tx profile(s) in RRC pre-configuration only conveys thevalue of Tx profile codes (i.e. SL-DRX compatible or SL-DRX incompatible), and is independent of any service-to-TxProfile mapping provisioned to the UE by upper layers, thus clarification on whether/how to apply field *sl-TxProfileList* is needed based on this confirmation.  |
|  |  |
| ***Summary of change:*** | 1. In sub-clause 5.8.3.1, clarify that SL UE information including GC/BC on/off indication is limited to mode 1.
2. Add suffix -r16 to *sl-TxResourceReqList* in its field description, remove (without suffix)*.*
3. Add suffix -r16 to *sl-TxInterestedFreqList* in field description of *sl-TypeTxSyncList*.
4. Modify triggering criteria of Event C1/C2 in Section 6.3.2 Radio resource control information elements.
5. In both IE SL-BWP-PoolConfig and SL-BWP-PoolConfigCommon, change the field description of *sl-TxPoolExceptional*, i.e., change "transmit NR sidelink communication" into "perform NR sidelink transmission“.
6. Deleted “for current TB transmission” from the field description of *sl-SlotLevelResourceExclusion*
7. Change FD of *sl-TxProfileList* to " List of one or multiple Tx profiles, indicating the compatibility of supporting SL DRX as specified in TS 38.321 [3]. It is up to the UE implementation whether/how to apply this field."

**Impact analysis****Impacted 5G architecture options:**NR SA, NR DC**Impacted functionality**NR Sidelink enhancements, NR sidelink DRX, Sidelink IUC**Inter-operability:** If network implements the change but not the UE, there is no inter-operability issue.If the UE implements the change but not the network, there is no inter-operability issue.If one UE implements the CR but not the other UE, there is no inter-operability issue. |
|  |  |
| ***Consequences if not approved:*** | 1. The description on Mode-1 trigger condition for SL DRX on/off indication is not aligned across different sub-clauses in SUI procedure.
2. Incorrect IE name
3. The discrepancy of Event C1/C2 will remain in the specification.
4. If the change is not approved, the SL UE shall not transmit the discovery message in the exceptional pool with said resource.
5. RAN2 and RAN1 specifications are not aligned.
6. It is not clear how the field *sl-TxProfileList* is applied by the UE.
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|  |  |
| ***Clauses affected:*** | 5.8.3.1, 6.2.2, 6.3.2, 6.3.5, 9.3 |
|  |  |
|  | **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:*** |  |

*Start of Changes*

### 5.8.3 Sidelink UE information for NR sidelink communication/discovery

#### 5.8.3.1 General



Figure 5.8.3.1-1: Sidelink UE information for NR sidelink communication/discovery

The purpose of this procedure is to inform the network that the UE:

- is interested or no longer interested to receive or transmit NR sidelink communication/discovery,

- is requesting assignment or release of transmission resource for NR sidelink communication/discovery,

- is reporting QoS parameters and QoS profile(s) related to NR sidelink communication,

- is reporting that a sidelink radio link failure or sidelink RRC reconfiguration failure has been detected,

- is reporting the sidelink UE capability information of the associated peer UE for unicast communication,

- is reporting the RLC mode information of the sidelink data radio bearer(s) received from the associated peer UE for unicast communication,

- is reporting the accepted sidelink DRX configuration received from the associated peer UE for NR sidelink unicast reception,

- is reporting the sidelink DRX assistance information received from the associated peer UE for NR sidelink unicast transmission, when the UE is configured with *sl-ScheduledConfig*,

- is reporting, for NR sidelink groupcast transmission, the sidelink DRX on/off indication for the associated Destination Layer-2 ID, when the UE is configured with *sl-ScheduledConfig*,

- is reporting, for NR sidelink groupcast or broadcast reception, the Destination Layer-2 ID and QoS profile(s) associated with its interested services to which sidelink DRX is applied,

- is reporting DRX configuration reject information from its associated peer UE for NR sidelink unicast transmission, when the UE is configured with *sl-ScheduledConfig*,

- is reporting parameters related to U2N relay operation.

*Next Change*

### 6.2.2 Message definitions

*<<<<Skipped>>>>*

– *SidelinkUEInformationNR*

The *SidelinkUEinformationNR* message is used for the indication of NR sidelink UE information to the network.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to Network

***SidelinkUEInformationNR* message**

-- ASN1START

-- TAG-SIDELINKUEINFORMATIONNR-START

SidelinkUEInformationNR-r16::= SEQUENCE {

 criticalExtensions CHOICE {

 sidelinkUEInformationNR-r16 SidelinkUEInformationNR-r16-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

SidelinkUEInformationNR-r16-IEs ::= SEQUENCE {

 sl-RxInterestedFreqList-r16 SL-InterestedFreqList-r16 OPTIONAL,

 sl-TxResourceReqList-r16 SL-TxResourceReqList-r16 OPTIONAL,

 sl-FailureList-r16 SL-FailureList-r16 OPTIONAL,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension SidelinkUEInformationNR-v1700-IEs OPTIONAL

}

SidelinkUEInformationNR-v1700-IEs ::= SEQUENCE {

 sl-TxResourceReqList-v1700 SL-TxResourceReqList-v1700 OPTIONAL,

 sl-RxDRX-ReportList-v1700 SL-RxDRX-ReportList-v1700 OPTIONAL,

 sl-RxInterestedGC-BC-DestList-r17 SL-RxInterestedGC-BC-DestList-r17 OPTIONAL,

 sl-RxInterestedFreqListDisc-r17 SL-InterestedFreqList-r16 OPTIONAL,

 sl-TxResourceReqListDisc-r17 SL-TxResourceReqListDisc-r17 OPTIONAL,

 sl-TxResourceReqListCommRelay-r17 SL-TxResourceReqListCommRelay-r17 OPTIONAL,

 ue-Type-r17 ENUMERATED {relayUE, remoteUE} OPTIONAL,

 sl-SourceIdentityRemoteUE-r17 SL-SourceIdentity-r17 OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

SL-InterestedFreqList-r16 ::= SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER (1..maxNrofFreqSL-r16)

SL-TxResourceReqList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16

SL-TxResourceReq-r16 ::= SEQUENCE {

 sl-DestinationIdentity-r16 SL-DestinationIdentity-r16,

 sl-CastType-r16 ENUMERATED {broadcast, groupcast, unicast, spare1},

 sl-RLC-ModeIndicationList-r16 SEQUENCE (SIZE (1.. maxNrofSLRB-r16)) OF SL-RLC-ModeIndication-r16 OPTIONAL,

 sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 OPTIONAL,

 sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 OPTIONAL,

 sl-TxInterestedFreqList-r16 SL-TxInterestedFreqList-r16 OPTIONAL,

 sl-CapabilityInformationSidelink-r16 OCTET STRING OPTIONAL

}

SL-TxResourceReqList-v1700 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-v1700

SL-RxDRX-ReportList-v1700 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-RxDRX-Report-v1700

SL-TxResourceReq-v1700 ::= SEQUENCE {

 sl-DRX-InfoFromRxList-r17 SEQUENCE (SIZE (1..maxNrofSL-RxInfoSet-r17)) OF SL-DRX-ConfigUC-SemiStatic-r17 OPTIONAL,

 sl-DRX-Indication-r17 ENUMERATED {on, off} OPTIONAL,

 ...

}

SL-RxDRX-Report-v1700 ::= SEQUENCE {

 sl-DRX-ConfigFromTx-r17 SL-DRX-ConfigUC-SemiStatic-r17,

 ...}

SL-RxInterestedGC-BC-DestList-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-RxInterestedGC-BC-Dest-r17

SL-RxInterestedGC-BC-Dest-r17 ::= SEQUENCE {

 sl-RxInterestedQoS-InfoList-r17 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16,

 sl-DestinationIdentity-r16 SL-DestinationIdentity-r16

}

SL-TxResourceReqListDisc-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReqDisc-r17

SL-TxResourceReqDisc-r17 ::= SEQUENCE {

 sl-DestinationIdentityDisc-r17 SL-DestinationIdentity-r16,

 sl-SourceIdentityRelayUE-r17 SL-SourceIdentity-r17 OPTIONAL,

 sl-CastTypeDisc-r17 ENUMERATED {broadcast, groupcast, unicast, spare1},

 sl-TxInterestedFreqListDisc-r17 SL-TxInterestedFreqList-r16,

 sl-TypeTxSyncListDisc-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16,

 sl-DiscoveryType-r17 ENUMERATED {relay, non-Relay},

 ...

}

SL-TxResourceReqListCommRelay-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReqCommRelayInfo-r17

SL-TxResourceReqCommRelayInfo-r17 ::= SEQUENCE {

 sl-RelayDRXConfig-r17 SL-TxResourceReq-v1700 OPTIONAL,

 sl-TxResourceReqCommRelay-r17 SL-TxResourceReqCommRelay-r17

}

SL-TxResourceReqCommRelay-r17 ::= CHOICE {

 sl-TxResourceReqL2U2N-Relay-r17 SL-TxResourceReqL2U2N-Relay-r17,

 sl-TxResourceReqL3U2N-Relay-r17 SL-TxResourceReq-r16

}

SL-TxResourceReqL2U2N-Relay-r17 ::= SEQUENCE {

 sl-DestinationIdentityL2U2N-r17 SL-DestinationIdentity-r16 OPTIONAL,

 sl-TxInterestedFreqListL2U2N-r17 SL-TxInterestedFreqList-r16,

 sl-TypeTxSyncListL2U2N-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16,

 sl-LocalID-Request-r17 ENUMERATED {true} OPTIONAL,

 sl-PagingIdentityRemoteUE-r17 SL-PagingIdentityRemoteUE-r17 OPTIONAL,

 sl-CapabilityInformationSidelink-r17 OCTET STRING OPTIONAL,

 ...

}

SL-TxInterestedFreqList-r16 ::= SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER (1..maxNrofFreqSL-r16)

SL-QoS-Info-r16 ::= SEQUENCE {

 sl-QoS-FlowIdentity-r16 SL-QoS-FlowIdentity-r16,

 sl-QoS-Profile-r16 SL-QoS-Profile-r16 OPTIONAL

}

SL-RLC-ModeIndication-r16 ::= SEQUENCE {

 sl-Mode-r16 CHOICE {

 sl-AM-Mode-r16 NULL,

 sl-UM-Mode-r16 NULL

 },

 sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16

}

SL-FailureList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-Failure-r16

SL-Failure-r16 ::= SEQUENCE {

 sl-DestinationIdentity-r16 SL-DestinationIdentity-r16,

 sl-Failure-r16 ENUMERATED {rlf,configFailure, drxReject-v1710, spare5, spare4, spare3, spare2, spare1}

}

-- TAG-SIDELINKUEINFORMATIONNR-STOP

-- ASN1STOP

| ***SidelinkUEinformationNR* field descriptions** |
| --- |
| ***sl-RxDRX-ReportList***Indicates the accepted DRX configuration that is received from the peer UE and reported to the network for NR sidelink unicast communication.  |
| ***sl-RxInterestedFreqList***Indicates the index of frequency on which the UE is interested to receive NR sidelink communication. The value 1 corresponds to the frequency of first entry in *sl-FreqInfoList* broadcast in *SIB12*, the value 2 corresponds to the frequency of second entry in *sl-FreqInfoList* broadcast in *SIB12* and so on. In this release, only value 1 can be included in the interested frequency list.  |
| ***sl-RxInterestedGC-BC-DestList***Indicates the reported QoS profile and associated destination for which UE is interested in reception to the network for NR sidelink groupcast and broadcast communication, or NR sidelink discovery. |
| ***sl-SourceIdentityRemoteUE***This field is used to indicate the Source Layer-2 ID to be used to establish PC5 link with the target L2 U2N Relay UE for path switch. |
| ***sl-TxResourceReq***Parameters to request the transmission resources for NR sidelink communication to the network in the Sidelink UE Information report. |
| ***sl-TxResourceReqList***List of parameters to request the transmission resources for NR sidelink communication for the associated destination. If *sl-TxResourceReqList-v1700* is present, it shall contain the same number of entries, listed in the same order as in *sl-TxResourceReqList-r16*. |
| ***ue-Type***Indicates the UE is acting as U2N Relay UE or U2N Remote UE. |

| ***SL-TxResourceReq* field descriptions** |
| --- |
| ***sl-CapabilityInformationSidelink***Includes the *UECapabilityInformationSidelink* message (which can be also included in *ueCapabilityInformationSidelink-r16* in *UECapabilityEnquirySidelink* from peer UE) received from the peer UE. |
| ***sl-CastType***Indicates the cast type for the corresponding destination for which to request the resource. |
| ***sl-DestinationIdentity***Indicates the destination for which the TX resource request and allocation from the network are concerned. |
| ***sl-DRX-Indication***Indicates the sidelink DRX is applied (value *on*) or not applied (value *off*) for the associated destination. This field is only valid for NR sidelink groupcast communication. |
| ***sl-DRX-InfoFromRxList***Indicates list of the sidelink DRX configurations as assistance information received from the peer UE for NR sidelink unicast communication. |
| ***sl-QoS-InfoList***Includes the QoS profile of the sidelink QoS flow as specified in TS 23.287 [55]. |
| ***sl-QoS-FlowIdentity***This identity uniquely identifies one sidelink QoS flow between the UE and the network in the scope of UE, which is unique for different destination and cast type. |
| ***sl-RLC-ModeIndication***This field indicates the RLC mode and optionally the related QoS profiles for the sidelink radio bearer, which has not been configured by the network and is initiated by another UE in unicast. The RLC mode for one sidelink radio bearer is aligned between UE and NW by the *sl-QoS-FlowIdentity*. |
| ***sl-TxInterestedFreqList***Each entry of this field indicates the index of frequency on which the UE is interested to transmit NR sidelink communication. The value 1 corresponds to the frequency of first entry in *sl-FreqInfoList* broadcast in *SIB12*, the value 2 corresponds to the frequency of second entry in *sl-FreqInfoList broadcast* in *SIB12* and so on. In this release, only value 1 can be included in the interested frequency list. In this release, only one entry can be included in the list. |
| ***sl-TypeTxSyncList***A list of synchronization reference used by the UE. The UE shall include the same number of entries, listed in the same order, as in *sl-TxInterestedFreqList-r16*, i.e. one for each carrier frequency included in *sl-TxInterestedFreqList-r16*. |

*Next Change*

6.3.2 Radio resource control information elements

*<<<<Skipped>>>>*

– *ReportConfigNR-SL*

The IE *ReportConfigNR-SL* specifies criteria for triggering of a CBR measurement reporting event for NR sidelink communication. Measurement reporting events are based on CBR measurement results on the corresponding transmission resource pools. These events are labelled CN with N equal to 1 and 2.

Event C1: CBR of NR sidelink communication is above a threshold;

Event C2: CBR of NR sidelink communication is below a threshold;

***ReportConfigNR-SL* information element**

-- ASN1START

-- TAG-REPORTCONFIGNR-SL-START

ReportConfigNR-SL-r16 ::= SEQUENCE {

 reportType-r16 CHOICE {

 periodical-r16 PeriodicalReportConfigNR-SL-r16,

 eventTriggered-r16 EventTriggerConfigNR-SL-r16

 }

}

EventTriggerConfigNR-SL-r16::= SEQUENCE {

 eventId-r16 CHOICE {

 eventC1 SEQUENCE {

 c1-Threshold-r16 SL-CBR-r16,

 hysteresis-r16 Hysteresis,

 timeToTrigger-r16 TimeToTrigger

 },

 eventC2-r16 SEQUENCE {

 c2-Threshold-r16 SL-CBR-r16,

 hysteresis-r16 Hysteresis,

 timeToTrigger-r16 TimeToTrigger

 },

 ...

 },

 reportInterval-r16 ReportInterval,

 reportAmount-r16 ENUMERATED {r1, r2, r4, r8, r16, r32, r64, infinity},

 reportQuantity-r16 MeasReportQuantity-r16,

 ...

}

PeriodicalReportConfigNR-SL-r16 ::= SEQUENCE {

 reportInterval-r16 ReportInterval,

 reportAmount-r16 ENUMERATED {r1, r2, r4, r8, r16, r32, r64, infinity},

 reportQuantity-r16 MeasReportQuantity-r16,

 ...

}

MeasReportQuantity-r16 ::= SEQUENCE {

 cbr-r16 BOOLEAN,

 ...

}

-- TAG-REPORTCONFIGNR-SL-STOP

-- ASN1STOP

|  |
| --- |
| ***ReportConfigNR-SL* field descriptions** |
| ***reportType***Type of the configured CBR measurement report for NR sidelink communication. |

|  |
| --- |
| ***EventTriggerConfigNR-SL* field descriptions** |
| ***cN-Threshold***Threshold used for events C1 and C2 specified in clauses 5.5.4.11 and 5.5.4.12, respectively. |
| ***eventId***Choice of NR event triggered reporting criteria. |
| ***reportAmoun***Number of measurement reports applicable for *eventTriggered* as well as for *periodical* report types. |
| ***reportQuantity***The sidelink measurement quantities to be included in the measurement report. In this release, this is set as the CBR measurement result. |
| ***timeToTrigger***Time during which specific criteria for the event needs to be met in order to trigger a measurement report. |

|  |
| --- |
| ***PeriodicalReportConfigNR-SL* field descriptions** |
| ***reportAmount***Number of measurement reports applicable for *eventTriggered* as well as for *periodical* report types. |
| ***reportQuantity***The sidelink measurement quantities to be included in the measurement report. In this release, this is set as the CBR measurement result. |

*Next Change*

6.3.5 Sidelink information elements

### *<<<<Skipped>>>>*

– *SL-BWP-PoolConfig*

The IE *SL-BWP-PoolConfig* is used to configure NR sidelink communication resource pool.

***SL-BWP-PoolConfig* information element**

-- ASN1START

-- TAG-SL-BWP-POOLCONFIG-START

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

 sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 OPTIONAL, -- Cond HO

 sl-TxPoolSelectedNormal-r16 SL-TxPoolDedicated-r16 OPTIONAL, -- Need M

 sl-TxPoolScheduling-r16 SL-TxPoolDedicated-r16 OPTIONAL, -- Need N

 sl-TxPoolExceptional-r16 SL-ResourcePoolConfig-r16 OPTIONAL -- Need M

}

SL-TxPoolDedicated-r16 ::= SEQUENCE {

 sl-PoolToReleaseList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolID-r16 OPTIONAL, -- Need N

 sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 OPTIONAL -- Need N

}

SL-ResourcePoolConfig-r16 ::= SEQUENCE {

 sl-ResourcePoolID-r16 SL-ResourcePoolID-r16,

 sl-ResourcePool-r16 SL-ResourcePool-r16 OPTIONAL -- Need M

}

SL-ResourcePoolID-r16 ::= INTEGER (1..maxNrofPoolID-r16)

-- TAG-SL-BWP-POOLCONFIG-STOP

-- ASN1STOP

| *SL-BWP-PoolConfig* field descriptions |
| --- |
| ***sl-RxPool***Indicates the receiving resource pool on the configured BWP. For the PSFCH related configuration, if configured, will be used for PSFCH transmission/reception. If the field is included, it replaces any previous list, i.e. all the entries of the list are replaced and each of the SL-ResourcePool entries is considered to be newly created. |
| ***sl-TxPoolExceptional***Indicates the resources by which the UE is allowed to perform NR sidelink transmission in exceptional conditions on the configured BWP. For the PSFCH related configuration, if configured, will be used for PSFCH transmission/reception. |
| ***sl-TxPoolScheduling***Indicates the resources by which the UE is allowed to transmit NR sidelink communication based on network scheduling on the configured BWP. For the PSFCH related configuration, if configured, will be used for PSFCH transmission/reception. |
| ***sl-TxPoolSelectedNormal***Indicates the resources by which the UE is allowed to transmit NR sidelink communication by UE autonomous resource selection on the configured BWP. For the PSFCH related configuration, if configured, will be used for PSFCH transmission/reception. |

– *SL-BWP-PoolConfigCommon*

The IE *SL-BWP-PoolConfigCommon* is used to configure the cell-specific NR sidelink communication resource pool.

***SL-BWP-PoolConfigCommon* information element**

-- ASN1START

-- TAG-SL-BWP-POOLCONFIGCOMMON-START

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

 sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 OPTIONAL, -- Need R

 sl-TxPoolSelectedNormal-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 OPTIONAL, -- Need R

 sl-TxPoolExceptional-r16 SL-ResourcePoolConfig-r16 OPTIONAL -- Need R

}

-- TAG-SL-BWP-POOLCONFIGCOMMON-STOP

-- ASN1STOP

| *SL-BWP-PoolConfigCommon* field descriptions |
| --- |
| ***sl-TxPoolExceptional***Indicates the resources by which the UE is allowed to perform NR sidelink transmission in exceptional conditions on the configured BWP. For the PSFCH related configuration, if configured, will be used for PSFCH transmission/reception. This field is not present when SL-BWP-PoolConfigCommon is included in SidelinkPreconfigNR. |

*Next Change*

6.3.5 Sidelink information elements

### *<<<<Skipped>>>>*

– *SL-InterUE-CoordinationConfig*

The IE *SL*-*InterUE-CoordinationConfig* is used to configure the sidelink inter-UE coordination parameters.

***SL-InterUE-CoordinationConfig* information element**

-- ASN1START

-- TAG-SL-INTERUE-COORDINATIONCONFIG-START

SL-InterUE-CoordinationConfig-r17 ::= SEQUENCE {

 sl-InterUE-CoordinationScheme1-r17 SL-InterUE-CoordinationScheme1-r17 OPTIONAL, -- Need M

 sl-InterUE-CoordinationScheme2-r17 SL-InterUE-CoordinationScheme2-r17 OPTIONAL, -- Need M

 ...

}

SL-InterUE-CoordinationScheme1-r17 ::= SEQUENCE {

 sl-IUC-Explicit-r17 ENUMERATED {enabled, disabled} OPTIONAL, -- Need M

 sl-IUC-Condition-r17 ENUMERATED {enabled, disabled} OPTIONAL, -- Need M

 sl-Condition1-A-2-r17 ENUMERATED {disabled} OPTIONAL, -- Need M

 sl-ThresholdRSRP-Condition1-B-1-Option1List-r17 SEQUENCE (SIZE (1..8)) OF SL-ThresholdRSRP-Condition1-B-1-r17 OPTIONAL, -- Need M

 sl-ThresholdRSRP-Condition1-B-1-Option2List-r17 SEQUENCE (SIZE (1..8)) OF SL-ThresholdRSRP-Condition1-B-1-r17 OPTIONAL, -- Need M

 sl-ContainerCoordInfo-r17 ENUMERATED {enabled, disabled} OPTIONAL, -- Need M

 sl-ContainerRequest-r17 ENUMERATED {enabled, disabled} OPTIONAL, -- Need M

 sl-TriggerConditionCoordInfo-r17 INTEGER (0..1) OPTIONAL, -- Need M

 sl-TriggerConditionRequest-r17 INTEGER (0..1) OPTIONAL, -- Need M

 sl-PriorityCoordInfoExplicit-r17 INTEGER (1..8) OPTIONAL, -- Need M

 sl-PriorityCoordInfoCondition-r17 INTEGER (1..8) OPTIONAL, -- Need M

 sl-PriorityRequest-r17 INTEGER (1..8) OPTIONAL, -- Need M

 sl-PriorityPreferredResourceSet-r17 INTEGER (1..8) OPTIONAL, -- Need M

 sl-MaxSlotOffsetTRIV-r17 INTEGER (1..8000) OPTIONAL, -- Need M

 sl-NumSubCH-PreferredResourceSet-r17 INTEGER (1..27) OPTIONAL, -- Need M

 sl-ReservedPeriodPreferredResourceSet-r17 INTEGER (1..16) OPTIONAL, -- Need M

 sl-DetermineResourceType-r17 ENUMERATED {uea, ueb} OPTIONAL, -- Need M

 ...

}

SL-InterUE-CoordinationScheme2-r17 ::= SEQUENCE {

 sl-IUC-Scheme2-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

 sl-RB-SetPSFCH-r17 BIT STRING (SIZE (10..275)) OPTIONAL, -- Need M

 sl-TypeUE-A-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

 sl-PSFCH-Occasion-r17 INTEGER (0..1) OPTIONAL, -- Need M

 sl-SlotLevelResourceExclusion-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

 sl-OptionForCondition2-A-1-r17 INTEGER (0..1) OPTIONAL, -- Need M

 sl-IndicationUE-B-r17 ENUMERATED {enabled, disabled} OPTIONAL, -- Need M

 ...,

 [[

 sl-DeltaRSRP-Thresh-v1720 INTEGER (-30..30) OPTIONAL -- Need M

 ]]

}

SL-ThresholdRSRP-Condition1-B-1-r17 ::= SEQUENCE {

 sl-Priority-r17 INTEGER (1..8),

 sl-ThresholdRSRP-Condition1-B-1-r17 INTEGER (0..66)

}

-- TAG-SL-INTERUE-COORDINATIONCONFIG-STOP

-- ASN1STOP

| ***SL-InterUE-CoordinationScheme1* field descriptions** |
| --- |
| ***sl-Condition1-A-2***Indicates disabling the use of condition of excluding from preferred resource set resource(s) in slot(s) where UE-A, when it is intended receiver of UE-B, does not expect to perform SL reception from UE-B due to half duplex operation. |
| ***sl-ContainerCoordInfo***Indicates whether a SCI format 2-C can be used as the container of inter-UE coordination information transmission from UE-A to UE-B in Scheme 1 in addition to using MAC CE. |
| ***sl-ContainerRequest***Indicates whether a SCI format 2-C can be used as the container of an explicit request for inter-UE coordination information transmission from UE-B to UE-A in Scheme 1 in addition to using MAC CE. |
| ***sl-DetermineResourceType***Indicates how to determine the resource set type to be provided by inter-UE coordination information transmission. Value "*uea*" means the resource set type is determined by UE-A's implementation. Value "*ueb*" means the resource set type is determined by UE-B's request. |
| ***sl-IUC-Condition***Indicates whether inter-UE coordination information triggered by a condition is enabled or not other than explicit request reception. |
| ***sl-IUC-Explicit***Indicates whether inter-UE coordination information triggered by an explicit request is enabled or not.  |
| ***sl-MaxSlotOffsetTRIV***Indicates the maximum value of logical slot offset with respect to a reference slot that is used for representing the first resource location of each TRIV to indicate the set of resources in Scheme 1 as specified in TS 38.214 [19]. |
| ***sl-NumSubCH-PreferredResousrceSet***Indicates the number of sub-channels used for determining the preferred resource set in Scheme 1 when the inter-UE coordination information transmission is triggered by a condition other than explicit request reception. |
| ***sl-PriorityCoordInfoCondition***Parameter used to determine the priority values for the purpose defined in TS 38.213 [13] and TS 38.214 [19] including, the priority value for sensing and candidate resource (re-)selection for transmitting the TB carrying the IUC MAC CE and the priority value in the SCI Format 1-A corresponding to the TB carrying the IUC MAC CE, triggered by a condition other than explicit request reception in Scheme 1. The priority value of IUC MAC CE used in LCP procedure (see TS 38.321 [3]) is fixed as "1". |
| ***sl-PriorityCoordInfoExplicit***Parameter used to determine the priority values for the purpose defined in TS 38.213 [13] and TS 38.214 [19] including, the priority value for sensing and candidate resource (re-)selection for transmitting the TB carrying the IUC MAC CE and the priority value in the SCI Format 1-A corresponding to the TB carrying the IUC MAC CE, triggered by an explicit request in Scheme 1. The priority value of IUC MAC CE used in LCP procedure (see TS 38.321 [3]) is fixed as "1". |
| ***sl-PriorityPreferredResourceSet***Indicates the priority value used for determining the preferred resource set in Scheme 1 when the inter-UE coordination information transmission is triggered by a condition other than explicit request reception. |
| ***sl-PriorityRequest***Parameter used to determine the priority values for the purpose defined in TS 38.213 [13] and TS 38.214 [19] including, the priority value for sensing and candidate resource (re-)selection for transmitting the TB carrying the IUC request MAC CE and the priority value in the SCI Format 1-A corresponding to the TB carrying the IUC request MAC CE, in an explicit request for inter-UE coordination information in Scheme 1. The priority value of IUC request MAC CE used in LCP procedure (see TS 38.321 [3]) is fixed as "1". |
| ***sl-ReservedPeriodPreferredResourceSet***Indicates the resource reservation interval used for determining the preferred resource set in Scheme 1 when the inter-UE coordination information transmission is triggered by a condition, by means of an index to the corresponding entry of *sl-ResourceReservePeriodList-r16*.  |
| ***sl-TriggerConditionCoordInfo***Indicates the additional alternative trigger condition of inter-UE coordination information triggered by a condition rather than request reception in Scheme-1 from UE-A to UE-B. Value 0 means inter-UE coordination information is triggered by UE-A's implementation. Value 1 means inter-UE coordination information can be triggered only when UE-A has data to be transmitted together with the inter-UE coordination information to UE-B. |
| ***sl-TriggerConditionRequest***Indicates the trigger condition of an explicit request from UE-B to UE-A. Value 0 means the explicit request is triggered by UE-B's implementation. Value 1 means the explicit request can be triggered only when UE-B has data to be transmitted to UE-A. |
| ***sl-ThresholdRSRP-Condition1-B-1-Option1List***Indicates the RSRP threshold used to determine reserved resource(s) of other UE(s) whose RSRP measurement is larger than it as the set of resource(s) non-preferred for UE-B's transmission for Condition 1-B-1 of Scheme 1, as specified in TS 38.214 [19]. Value 0 corresponds to minus infinity dBm, value 1 corresponds to -128dBm, value 2 corresponds to -126dBm, value n corresponds to (-128 + (n-1)\*2) dBm and so on, value 66 corresponds to infinity dBm. |
| ***sl-ThresholdRSRP-Condition1-B-1-Option2List***Indicates the RSRP threshold used to determine reserved resource(s) of other UE(s) whose RSRP measurement is smaller than it as the set of resource(s) non-preferred for UE-B's transmission for Condition 1-B-1 of Scheme 1, as specified in TS 38.214 [19]. Value 0 corresponds to minus infinity dBm, value 1 corresponds to -128dBm, value 2 corresponds to -126dBm, value n corresponds to (-128 + (n-1)\*2) dBm and so on, value 66 corresponds to infinity dBm. |

| ***SL-InterUE-CoordinationScheme2* field descriptions** |
| --- |
| ***sl-DeltaRSRP-Thresh***Indicates the RSRP threshold delta value corresponding to *deltaRSRPThresh* specified in clause 16.3.0 of TS 38.213 [13] and used to determine reserved resource(s) of other UE(s). Value in dB. Only even values (step size 2) allowed. |
| ***sl-IndicationUE-B***Indicates whether to enable or disable the usage of 1 LSB of reserved bits of a SCI format 1-A to indicate of whether UE scheduling a conflict TB can be UE-B or not. |
| ***sl-IUC-Scheme2***Indicates whether inter-UE coordination Scheme 2 is enabled or not. |
| ***sl-OptionForCondition2-A-1***Indicates the RSRP threshold used to consider additional criteria for condition 2-A-1. Value 0 corresponds to using the RSRP threshold according to the priorities included in the SCI, UE uses thresholds *sl-Thres-RSRP-List*, in its resource pool configuration *sl-UE-SelectedConfigRP*, corresponding to *ThresPSSCH-RSRP-List* specified in clause 16.3.0 of TS 38.213 [13]. Value 1 corresponds to using a (pre)configured RSRP threshold delta value *sl-DeltaRSRP-Thresh,* corresponding to *deltaRSRPThresh* specified in clause 16.3.0 of TS 38.213 [13]. |
| ***sl-PSFCH-Occasion***Indicates the reference slot from which a PSFCH occasion for inter-UE coordination information transmission is derived. Value 0 corresponds to the slot where UE-B's SCI is transmitted and value 1 corresponds to the slot where expected/potential resource conflict occurs on PSSCH resource indicated by UE-B's SCI. |
| ***sl-RB-SetPSFCH***Indicates the set of PRBs that are actually used for inter-UE coordination information transmission and reception in Scheme 2. The leftmost bit of the bitmap refers to the lowest RB index in the resource pool, and so on. |
| ***sl-SlotLevelResourceExclusion***Indicates that physical layer of UE-B reports resources in a slot including the next reserved resource indicated by the corresponding UE-B's SCI to higher layer. |
| ***sl-TypeUE-A***Indicates that a non-destination UE of a TB transmitted by UE-B can be UE-A which sends inter-UE coordination information to UE-B, when UE-A is a destination UE of another TB conflicting with the TB transmitted by UE-B. |

*Next Change*

9.3 Sidelink pre-configured parameters

This ASN.1 segment is the start of the NR definitions of pre-configured sidelink parameters.

– *NR-Sidelink-Preconf*

-- ASN1START

-- TAG-NR-SIDELINK-PRECONF-DEFINITIONS-START

NR-Sidelink-Preconf DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

 SL-RemoteUE-Config-r17,

 SL-DRX-ConfigGC-BC-r17,

 SL-FreqConfigCommon-r16,

 SL-RadioBearerConfig-r16,

 SL-RLC-BearerConfig-r16,

 SL-EUTRA-AnchorCarrierFreqList-r16,

 SL-NR-AnchorCarrierFreqList-r16,

 SL-MeasConfigCommon-r16,

 SL-UE-SelectedConfig-r16,

 TDD-UL-DL-ConfigCommon,

 maxNrofFreqSL-r16,

 maxNrofSLRB-r16,

 maxSL-LCID-r16

FROM NR-RRC-Definitions;

-- TAG-NR-SIDELINK-PRECONF-DEFINITIONS-STOP

-- ASN1STOP

– *SL-PreconfigurationNR*

The IE *SL-PreconfigurationNR* includes the sidelink pre-configured parameters used for NR sidelink communication. Need codes or conditions specified for subfields in *SL-PreconfigurationNR* do not apply.

***SL-PreconfigurationNR* information elements**

-- ASN1START

-- TAG-SL-PRECONFIGURATIONNR-START

SL-PreconfigurationNR-r16 ::= SEQUENCE {

 sidelinkPreconfigNR-r16 SidelinkPreconfigNR-r16,

 ...

}

SidelinkPreconfigNR-r16 ::= SEQUENCE {

 sl-PreconfigFreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 OPTIONAL,

 sl-PreconfigNR-AnchorCarrierFreqList-r16 SL-NR-AnchorCarrierFreqList-r16 OPTIONAL,

 sl-PreconfigEUTRA-AnchorCarrierFreqList-r16 SL-EUTRA-AnchorCarrierFreqList-r16 OPTIONAL,

 sl-RadioBearerPreConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 OPTIONAL,

 sl-RLC-BearerPreConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 OPTIONAL,

 sl-MeasPreConfig-r16 SL-MeasConfigCommon-r16 OPTIONAL,

 sl-OffsetDFN-r16 INTEGER (1..1000) OPTIONAL,

 t400-r16 ENUMERATED{ms100, ms200, ms300, ms400, ms600, ms1000, ms1500, ms2000} OPTIONAL,

 sl-MaxNumConsecutiveDTX-r16 ENUMERATED {n1, n2, n3, n4, n6, n8, n16, n32} OPTIONAL,

 sl-SSB-PriorityNR-r16 INTEGER (1..8) OPTIONAL,

 sl-PreconfigGeneral-r16 SL-PreconfigGeneral-r16 OPTIONAL,

 sl-UE-SelectedPreConfig-r16 SL-UE-SelectedConfig-r16 OPTIONAL,

 sl-CSI-Acquisition-r16 ENUMERATED {enabled} OPTIONAL,

 sl-RoHC-Profiles-r16 SL-RoHC-Profiles-r16 OPTIONAL,

 sl-MaxCID-r16 INTEGER (1..16383) DEFAULT 15,

 ...,

 [[

 sl-DRX-PreConfigGC-BC-r17 SL-DRX-ConfigGC-BC-r17 OPTIONAL,

 sl-TxProfileList-r17 SL-TxProfileList-r17 OPTIONAL,

 sl-PreconfigDiscConfig-r17 SL-RemoteUE-Config-r17 OPTIONAL

 ]]

}

SL-TxProfileList-r17 ::= SEQUENCE (SIZE (1..256)) OF SL-TxProfile-r17

SL-TxProfile-r17 ::= ENUMERATED {drx-Compatible, drx-Incompatible, spare6, spare5, spare4, spare3,spare2, spare1}

SL-PreconfigGeneral-r16 ::= SEQUENCE {

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

 reservedBits-r16 BIT STRING (SIZE (2)) OPTIONAL,

 ...

}

SL-RoHC-Profiles-r16 ::= SEQUENCE {

 profile0x0001-r16 BOOLEAN,

 profile0x0002-r16 BOOLEAN,

 profile0x0003-r16 BOOLEAN,

 profile0x0004-r16 BOOLEAN,

 profile0x0006-r16 BOOLEAN,

 profile0x0101-r16 BOOLEAN,

 profile0x0102-r16 BOOLEAN,

 profile0x0103-r16 BOOLEAN,

 profile0x0104-r16 BOOLEAN

}

-- TAG-SL-PRECONFIGURATIONNR-STOP

-- ASN1STOP

| ***SL-PreconfigurationNR* field descriptions** |
| --- |
| ***sl-DRX-PreConfig-GC-BC***This field indicates the sidelink DRX configuration for groupcast and broadcast communication, as specified in TS 38.321 [3]. |
| ***sl-OffsetDFN***Indicates the timing offset for the UE to determine DFN timing when GNSS is used for timing reference. Value 1 corresponds to 0.001 milliseconds, value 2 corresponds to 0.002 milliseconds, and so on. If the field is absent, no offset is applied. |
| ***sl-PreconfigDiscConfig***This field indicates the configuration for discovery message transmission used by NR sidelink U2N Remote UE.  |
| ***sl-PreconfigEUTRA-AnchorCarrierFreqList***This field indicates the EUTRA anchor carrier frequency list, which can provide the NR sidelink communication configuration. |
| ***sl-PreconfigFreqInfoList***This field indicates the NR sidelink communication and/ or NR sidelink discovery configuration some carrier frequency(ies). In this release, only one *SL-FreqConfig* can be configured in the list. |
| ***sl-PreconfigNR-AnchorCarrierFreqList***This field indicates the NR anchor carrier frequency list, which can provide the NR sidelink communication configuration. |
| ***sl-RadioBearerPreConfigList***This field indicates one or multiple sidelink radio bearer configurations. |
| ***sl-RLC-BearerPreConfigList***This field indicates one or multiple sidelink RLC bearer configurations. |
| ***sl-RoHC-Profiles***This field indicates the supported RoHC profiles for NR sidelink communications. |
| ***sl-SSB-PriorityNR***This field indicates the priority of NR sidelink SSB transmission and reception. |
| ***sl-TxProfileList***List of one or multiple Tx profiles, indicating the compatibility of supporting SL DRX as specified in TS 38.321 [3]. It is up to the UE implementation whether/how to apply this field. |

– *End of NR-Sidelink-Preconf*

-- ASN1START

END

-- ASN1STOP

*End of Changes*