**3GPP TSG-RAN WG2 Meeting #111-e *R2-2XXXXXX***

**Online, 17th – 28th Aug, 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** |  | **rev** | **-** | **Current version:** | **16.1.0** |  |
|  |
| *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:***  | Correction on the calculaion of CG occasion |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | 5G\_V2X\_NRSL-Core |  | ***Date:*** | 2020-8-17 |
|  |  |  |  |  |
| ***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 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | 1. In current MAC spec, *timeReferenceSFN* has been captured in the equation of sidelink configured grant type 1 occasion calculation, but this parameter is missing in the current sidelink configured grant type 1 configuration. In addition, this parameter has the same name as the one indicated in the uplink configured grant configuration, which is also misleading.
2. Currently, *sl-TimeOffsetCGType1* is specified as a offset of a resource with respect to SFN = 0 in time domain. However, the time offset should take the boundary given by *sl-TimeReferenceSFN-Type1* which can be configured as either SFN 0 or SFN 512 as a reference, not always the SFN0. In addition, to align with the MAC specification, *sl-TimeOffsetCGType1* should be clarified to refer to the number of logical slots that can be used for sidelink transmission.
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| ***Summary of change:*** | 1. Add “*sl-TimeReferenceSFN-Type1*” in the sidelink configured grant Type 1 configuration.
2. Clarify in the field description of *sl-TimeOffsetCG-Type1* that this field indicates the time offset related to SFN= *sl-TimeReferenceSFN-Type1* and refers to the number of logical slots that can be used for sidelink transmission.

**Impact analysis****Impacted functionality**Sidelink configured grant type 1**Inter-operability:** If the network is implemented according to this CR while the UE is not, the calculated CG occasion between the UE and the NW may be different, which may have some impact on retransmission scheduling.If the UE is implemented according to this CR while the network is not, the calculated CG occasion between the UE and the NW may be different, which may have some impact on retransmission scheduling.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:*** | The calculaiton of CG occasion remains unclear and UE will not correctly perform NR sidelink transmission on sidelink configured grant type 1.  |
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| ***Clauses affected:*** | 6.3.5 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR 38.321 CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

CHANGE START

6.3.5 Sidelink information elements

<Unrelated Texts Removed>

– *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 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-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 {ms0, ms100, ms200, ms300, ms400, ms500, ms600, ms700, ms800, ms900, ms1000},

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

}

-- TAG-SL-CONFIGUREDGRANTCONFIG-STOP

-- ASN1STOP

| ***SL- ConfiguredGrantConfig* field descriptions** |
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| ***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 SL configured grant type 1 or SL configured 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-StartSubchannelCG-Type1***This field indicates the starting sub-channel of sidelink configured grant Type 1. An index giving valid sub-channel index. |
| ***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-TimeReferenceSFN-Type1***Indicates SFN used for determination of the offset of a resource in time domain. 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 the field *sl-TimeReferenceSFN-Type1* is not present, the reference SFN is 0. |
| ***sl-TimeOffsetCG-Type1***This field indicates the time offset related to SFN= *sl-TimeReferenceSFN-Type1*, referring to the number of logical slots that can be used for sidelink transmission. |