**3GPP TSG-RAN WG4 Meeting #98-bis-e *R4-2106416***

**E-meeting, 12th April – 20th April 2021**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** | **-** | **rev** | **-** | **Current version:** | **16.4.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Intel Corporation | | | | | | | | | |
| ***Source to TSG:*** | RAN4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_V2X\_NRSL-Perf | | | | |  | ***Date:*** | | | 2021-04-02 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Definition of general section for V2X requirements | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Changes in comparison to R4-2103976   * Update of Test list for applicability section * Remove “Symbols for all unused REs” from Table 11.1.1.2-1 because OCNG is not required for V2X requiremnets. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | NR V2X requirements are not defined | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 11.1.1.1.2, 11.1.1.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.521-4 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**START OF CHANGE**

11 V2X requirements

This clause contains the performance requirements for the sidelink physical channels specified for V2X Sidelink Communication.

## 11.1 Demodulation performance requirements (Conducted requirements)

11.1.1 General

#### 11.1.1.1 Applicability of requirements

##### 11.1.1.1.1 General

The minimum performance requirements are applicable to all V2X operating bands defined in TS 38.101-1[6] Clause 5.2E.

The minimum performance requirements in Clause 11.1 are mandatory for UE supporting NR SL operation (*sl-Reception-r16*), except test cases listed in Clauses 11.1.1.1.2.

##### 11.1.1.1.2 Applicability of requirements for mandatory UE V2X features with capability signalling

The performance requirements in Table 11.1.1.1.2-1 shall apply for V2X UEs which support mandatory UE features with capability signalling only.

Table 11.1.1.1.2-1: Requirements applicability for mandatory features with UE capability signalling

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| UE feature/capability [14] | Test type | | Test list | Applicability notes |
| Support of synchronization sources for NR sidelink (*sync-Sidelink-r16*) | FR1 | PSBCH | Clause 11.1.4.1.1 |  |
| Supports of PSFCH format 0 (*psfch-FormatZeroSidelink-r16)* | FR1 | PSSCH | Clause 11.1.2.1.1  Clause 11.1.6.1.1  Clause 11.1.7.1.1 |  |
| PSCCH | Clause 11.1.3.1.1 |
| PSFCH | Clause 11.1.5.1.1  Clause 11.1.9.1.1 |

#### 11.1.1.2 Common test parameters

Parameters specified in Table 11.1.1.2-1 are applied for all test cases in this clause unless otherwise stated.

Table 11.1.1.2-1: Common test parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | | Unit | Value |
| Carrier configuration | Offset between Point A and the lowest usable subcarrier on this carrier (Note 1) | RBs | 0 |
|  | Subcarrier spacing | kHz | 30 |
| SL BWP configuration #1 | Cyclic prefix |  | Normal |
|  | RB offset | RBs | 0 |
|  | Number of contiguous PRB | PRBs | Maximum transmission bandwidth configuration as specified in clause 5.3.2 of TS 38.101-1 [6] for tested channel bandwidth and subcarrier spacing |
| PT-RS configuration | |  | PT-RS is not configured |
| Resource pool configuration | PSCCH Time resource | Symbols | 2 |
|  | PSCCH Frequency resource | PRBs | 10 |
|  | PSFCH number of cyclic shift pairs |  | n1 |
|  | PSFCH hopping ID |  | 0 |
|  | PSFCH candidate resource type |  | allocSubCH |
|  | Set of PRBs for PSFCH transmission |  | ones(1,100) for 40 MHz and ones(1,50) for 20 MHz |
|  | PSSCH RSRP threshold |  | 66 (infinity dBm) |
|  | Synchronization reference |  | GNSS |
|  | Subchannel size | PRBs | 10 |
|  | Number of sub-channels |  | 5 for 20 MHz and 10 for 40 MHz |
|  | Start PRB for first sub-channel |  | 0 |
|  | Time resource bitmap |  | ones(1, 160) |
| Note 1: Point A coincides with minimum guard band as specified in Table 5.3.3-1 from TS 38.101-1 [6] for tested channel bandwidth and subcarrier spacing. | | | |

**END OF CHANGE**