**3GPP TSG- Meeting # *R4-2406047***

**, China, April 15 – 19, 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **.101-4** | **CR** |  | **rev** |  | **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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | \_SL\_enh2-Perf |  | ***Date:*** | -04-17 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | -18 |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | To introduce PSSCH demodulation requirements for SL-CA based on single carrier performance |
|  |  |
| ***Summary of change:*** | Add PSSCH demodulation requirements for SL-CA based on single carrier performance |
|  |  |
| ***Consequences if not approved:*** | No PSSCH demodulation requirements for SL-CA in 38.101-4 |
|  |  |
| ***Clauses affected:*** | New 11.1.1.1.3, new 11.1.2A |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **X** |  |  Test specifications | TS38.521-4 |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

**----------------------START OF CHANGE----------------------------**

##### 11.1.1.1.3 Applicability of requirements for CA

The performance requirement for sidelink CA UE demodulation and decoding capability tests in Clause 11.1.2A, 11.1.8A and 11.1.9A are defined independent of CA configurations and bandwidth combination sets specified in Clause 5.3E.1A of TS 38.101-1. For simplicity, CA configuration below refers to combination of CA configuration and bandwidth combination set.

Table 11.1.1.1.3-1: Applicability and test rules for sidelink CA UE demodulation and decoding capability tests

|  |  |  |
| --- | --- | --- |
| Tests | CA configuration  | CA Bandwidth combination to be tested in priority order |
| Test 1 in Clause 11.1.2A.1.1  | Table 5.3E.1A-1 of TS38.101-1 | Largest aggregated CA bandwidth combination |
| Test 1 in Clause 11.1.8A.1.1 | Table 5.3E.1A-1 of TS38.101-1 | Largest aggregated CA bandwidth combination |
| Test 1 in Clause 11.1.9A.1.1 | Table 5.3E.1A-1 of TS38.101-1 | Largest aggregated CA bandwidth combination |

**----------------------NEXT CHANGE----------------------------**

### 11.1.2A PSSCH demodulation requirements for CA

#### 11.1.2A.1 2Rx requirements

##### 11.1.2A.1.1 Minimum requirements

The purpose of the requirements in this subclause is to verify the PSSCH for NR SL demodulation performance for CA based on single carrier performance.

For CA with various bandwidth combination of DL component carriers, the requirements are defined in Table 11.1.2A.1.1-3 based on the single carrier requirements for different bandwidth specified in Table 11.1.2A.1.1-2 with the addition of test parameters in Table 11.1.2A.1.1-1. The reference measurement channel R.PSSCH.2-1.2

Table 11.1.2A.1.1-1: Test parameters

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Value |
| Active cell(s) |  | None |
| Sidelink UE 1 | Sidelink transmissions |  | PSCCH + PSSCH  |
| PSSCH DMRS pattern (Note 1) |  | {2,3} |
| Index of sub-channel allocation |  |  [0,1] |
| Timing offset (Note 2) | μs | CP/2-12\*64\*Tc |
| Frequency offset (Note 3) | Hz | +600 |
| Synchronization |  | GNSS or GNSS-equivalent |
| Antenna configuration |  | 1x2 Low |
| PSFCH resource period | Slot | 4 |
| MinTimeGapPSFCH | Slot | 3 |
| Note 1: {x, y}: x and y means the number of DMRS symbols for slot with PSFCH transmission and without PSFCH transmission, respectively.Note 2: Time offset of transmitted Sidelink UE signal with respect to GNSS referring timing.Note 3: Frequency offset of transmitted Sidelink UE signal with respect to GNSS reference frequency. |

Table 11.1.2A.1.1-2: Single carrier performance for CA configurations

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test num. | Reference channel(Note 1) | Bandwidth (MHz)/Subcarrier spacing(kHz) | Modulation format and code rate | Propagation condition | Reference value |
| PSSCH BLER (%) | SNR(dB) of PSSCH |
| 1 | R.PSSCH.2-1.2 | 10 / 30 | 16QAM, 0.37 | TDLA30-1400 | 10% | 8.8 |
| 2 | R.PSSCH.2-1.2 | 20 / 30 | 16QAM, 0.37 | TDLA30-1400 | 8.8 |
| 3 | R.PSSCH.2-1.2 | 30 / 30 | 16QAM, 0.37 | TDLA30-1400 | 8.8 |
| 4 | R.PSSCH.2-1.2 | 40 / 30 | 16QAM, 0.37 | TDLA30-1400 | 8.8 |
| Note 1: Reference measurement channel R.PSSCH.2-1.2 can be used at all bandwidth regardless the value of CBW in the reference measurement channel table. |

Table 11.1.2A.1.1-3: Minimum performance for CA configuration

|  |  |  |
| --- | --- | --- |
| Test number | CA Bandwidth combination | Minimum performance requirement |
| 1 | Largest aggregated CA bandwidth combination | Test 1 as defined in Table11.1.2A.1.1-2 |

**----------------------END OF CHANGE----------------------------**