**3GPP TSG-RAN WG4 Meeting # 98-eR4-2103814**

**Electronic Meeting, Jan. 25 - Feb. 5, 2021**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** |  | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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 |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | CR for 38.101-4: Introduce PSBCH performance requirements for NR V2X | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT, GOHIGH | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_V2X\_NRSL-Perf | | | | |  | ***Date:*** | | | 2021-01-05 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Introduce PSBCH performance requirements for NR V2X | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the subsection x.x for PSBCH performance requirements.  Add the RMC for PSBCH performance requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The performance requirements and RMC for NR V2X PSBCH would be missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.521-4 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revision of R4-2100411 | | | | | | | | |

## *<Start of Change 1>*

## x.x Demodulation of PSBCH

The purpose of the requirements in this subclause is to verify the PSBCH demodulation performance with a single active link.

The minimum requirements are specified in Table x.x-2 with the test parameters specified in Table x.x-1. The Sidelink UE 1 is synchronized to SLSS as synchronization reference.

Table x.x-1: Test Parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | | Unit | Test 1 |
| Communication resource pool configuration | |  | As specified in Table x |
| Active cell(s) | |  | 0 |
| Sidelink UE 1 | Sidelink Transmissions |  | SLSS+PSBCH (Note 3) |
| slssid |  | TBD |
| Time offset (Note 1) | μs | 0 |
| Frequency offset (Note 2) | Hz | 0 |
| Synchronization source |  | SLSS |
| Antenna configuration |  | 1x2 Low |
| Note 1: Time offset of Sidelink UE receive signal with respect to GNSS reference timing.  Note 2: Frequency offset of Sidelink UE with respect to GNSS reference frequency.  Note 3: PSBCH transmits together with corresponding SLSS in the same slot. | | | |

Table x.x-2: Minimum performance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test number | Bandwidth | PSBCH Reference channel | Propagation condition | Reference value | |
| Probability of missed PSBCH (%) | SNR (dB) of PSBCH |
| 1 | 20 MHz | TBD | TDLA30-180 | 1 | TBD |

## *<End of Change 1>*

## *<Start of Change 2>*

## A.x.x Reference measurement for PSBCH performance requirements

Table A.x.x-1: Fixed reference measurement channel for PSBCH performance requirement

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | |
| Reference channel |  | CD.x |
| Channel bandwidth | MHz | 20 |
| Allocated resource blocks |  | 11 |
| CP-OFDM Symbols per slot (see Note 1) |  | 8 |
| Modulation |  | QPSK |
| Transport Block Size (without CRC) | Bits | 32 |
| Transport block CRC | Bits | 24 |
| Binary Channel Bits | Bits | 1782 |
| Note 1: PSBCH transmissions are rate-matched for 9 CP-OFDM symbols per slot. The first symbol is used for AGC and the last symbol shall be punctured as per TS 38.211. | | | |

## *<End of Change 2>*