**3GPP TSG-RAN WG4 Meeting #98-e**R4-2103817

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** | **DraftCR** | **rev** | **-** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | CR on NR V2X PSFCH demodulation requirements | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | MediaTek Inc. | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_V2X\_NRSL-Perf | | | | |  | ***Date:*** | | | 2021-1-14 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | The V2X PSFCH demodulation requirements are missing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the new requirements for PSFCH demodulation | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The specification is incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 11.x | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

<< Start of Change >>

11.1.5 PSFCH demodulation requirements

11.1.5.1 2Rx requirements

11.1.5.1.1 Minimum requirements

#### 11.5.1.1.1 NACK missed detection requirements

The NACK missed detection probability is the probability of not detecting an NACK when an NACK was sent. The test parameters are configured in table 11.5.1.1.1-1.

Table 11.5.1.1.1-1: Test Parameters

|  |  |  |
| --- | --- | --- |
| Parameter | unit | Test 1 |
| Communication resource pool configuration |  | [As specified in Table A.7-2  (Configuration #2-V2X)] |
| Allocated resource blocks | RB | 1 |
| The number of PSFCH symbols (Note 1) | symbol | 2 |
| Number of information bits | bit | 1 |
| Synchronization source |  | GNSS |
| Timing offset | Ts | CP/2-12\*64\*Tc |
| Frequency offset | Hz | 600 |
| Antenna configuration |  | 1x2 Low |
| Note 1: First symbol is included. First symbol is used for AGC and not used for demodulation | | |

The NACK missed detection probability shall not exceed 1% at the SNR given in table 11.5.1.1.1-2.

Table 11.5.1.1.1-2: Minimum requirements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test num.** | **Bandwidth** | **Subcarrier spacing** | **Propagation condition** | **Reference value** | |
| **NACK missed detection probability (%)** | **SNR (dB)** |
| 1 | 20 MHz | 30kHz | TDLA30-180 | 1 | TBD |

#### 11.5.1.1.2 DTX to NACK requirements

The DTX to NACK probability, i.e. the probability that NACK is detected when nothing was sent:

where:

- #(false NACK bits) denotes the number of detected NACK bits.

- #(NACK bits) denotes the number of encoded bits per slot

- #(PSFCH DTX) denotes the number of DTX occasions

The test parameters are configured in table 11.5.1.1.1-1.

The DTX to NACK probability shall not exceed 1%.

# A.7 SL reference resource pool configurations

Table A.7-2 V2X sidelink communication resource pool for PSFCH tests (Configuration #2-V2X)

|  |  |  |  |
| --- | --- | --- | --- |
| **Information Element** | | | **value** |
| SL-ResourcePool-r16 | sl-PSFCH-Config-r16 | sl-PSFCH-Period-r16 | Sl1 |
|  |  | sl-PSFCH-RB-Set-r16 | [10] |
|  |  | sl-NumMuxCS-Pair-r16 | n1 |
|  |  | sl-MinTimeGapPSFCH-r16 | [sl2] |
|  |  | sl-PSFCH-HopID-r16 | 0 |
|  |  | sl-PSFCH-CandidateResourceType-r16 | startSubCH |

<< End of Change >>