**3GPP TSG-RAN WG4 Meeting #94-e *R4-2002797***

**Online, 24th Feb. – 6th Mar. 2020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-3** | **CR** | **0183** | **rev** | **1** | **Current version:** | **16.2.1** |  |
|  | | | | | | | | |
| *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 for TS38.101-3, Introduce Rx requirements for NR V2X concurrent operation | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT | | | | | | | | | |
| ***Source to TSG:*** | RAN4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_V2X\_NRSL-Core | | | | |  | ***Date:*** | | | 2020-2-10 |
|  |  | | | |  | |  | | |  |
| ***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 Rx requirements for NR V2X concurrent operation to TS 38.101-3 based on agreed TR38.886 v0.5.0. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Specifying Rx requirements for NR V2X inter band concurrent operation with E-UTRA band in TS 38.101-3: | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The Rx requirements for NR V2X concurrent operation will not be defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | New sections: 7.3E, 7.4E, 7.5E, 7.6E, 7.7E, 7.8E | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS38.521-1 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

========================= First Change Request ===========================

## 7.3E Reference sensitivity for EN-V2X concurrent operation

For NR V2X UE operating on V2X band inter-band con-current with E-UTRA Uu carrier assigned to lecensed band of EN-V2X configurations listed in clause 5.5E. The REFSENS requirement specified in table 7.3E-1 in TS38.101-1 [2] shall apply on NR V2X carrier and the requirement specified in clasue 7.3.1 in TS36.101 [4] shall apply on E-UTRA carrier. The E-UTRA uplink resource blocks shall be located as close as possible to NR V2X operating band but confined within the transmission bandwidth configuration for the channel. The uplink configuration for the NR V2X/E-UTRA operating band is specified in Table 7.3E-1.

The minimum requirement for reference sensitivity shall be increased by the amount given in ΔRIB,c in Table 7.3E-2 for the corresponding NR V2X/E-UTRA band. The REFSENS of Uu downlink and PC5 sidelink will be tested at the same time.

Table 7.3E-1: Uplink configuration for reference sensitivity of NR V2X bands (PC5)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Inter-band EN-V2X con-current band configuration** | **band / Channel BW / NRB / Duplex mode** | | | |
| **UL band** | **Channel Bandwidth (MHz)** | **NRB** | **Duplex Mode** |
| V2X\_x\_n47 | X | TBD | TBD | TDD or FDD |
| n47 | 10 | [52] | HD |
| V2X\_20A\_n38A | 20 | TBD | TBD | FDD |
| n38 | 10 | [52] | HD |

Table 7.3E.1-2: ΔRIB,c (two bands)

|  |  |  |
| --- | --- | --- |
| V2X inter-band con-current band Combination | E-UTRA Band | ΔRIB,c [dB] |
| V2X\_X-n47 | X | TBD |
| n47 | TBD |
| V2X\_20A\_n38A | 20 | TBD |
| n38 | TBD |

========================= Second Change Request ===========================

## 7.4E Maximum input level for EN-V2X concurrent operation

For NR V2X UE operating on V2X band inter-band con-current with E-UTRA Uu carrier assigned to lecensed band of EN-V2X configurations listed in clause 5.5E. The maximum input level requirement specified in clause 7.4E in TS38.101-1 [2] shall apply on NR V2X carrier and the requirement specified in clause 7.4.1 in TS36.101 [4] shall apply on E-UTRA downlink reception in licensed band while all downlink carriers are active.

========================= Third Change Request ===========================

## 7.5E Adjacent channel selectivity for EN-V2X concurrent operation

For NR V2X UE operating on V2X band inter-band con-current with E-UTRA Uu carrier assigned to lecensed band of EN-V2X configurations listed in clause 5.5E. The ACS requirement specified in clause 7.5E in TS38.101-1 [2] shall apply on NR V2X carrier and the requirement specified in clause 7.5.1 in TS36.101 [4] shall apply on E-UTRA downlink reception in licensed band while all downlink carriers are active.

========================= Fourth Change Request ===========================

## 7.6E Blocking characteristics for EN-V2X concurrent operation

For NR V2X UE operating on V2X band inter-band con-current with E-UTRA Uu carrier assigned to lecensed band of EN-V2X configurations listed in clause 5.5E. The in-band blocking and out of band blocking requirement specified in clause 7.6E in TS38.101-1 [2] shall apply on NR V2X carrier and the requirement specified in clause 7.6 in TS36.101 [4] shall apply for the E-UTRA downlink reception in licensed band while all downlink carriers are active. PInterferer power is increased by ΔRIB,c in the requirement.

No narrow band blocking requirement applied for NR V2X carrier.

========================= Fifth Change Request ===========================

## 7.7E Spurious response for EN-V2X concurrent operation

For NR V2X UE operating on V2X band inter-band con-current with E-UTRA Uu carrier assigned to lecensed band of EN-V2X configurations listed in clause 5.5E. The spurious response requirements specified in clause 7.7E in TS38.101-1 [2] shall apply on NR V2X carrier and the requirement specified in clause 7.7.1 in TS36.101 [4] shall apply on E-UTRA downlink reception in licensed band while all downlink carriers are active.

========================= Sixth Change Request ===========================

## 7.8E Intermodulation characteristics for EN-V2X concurrent operation

For NR V2X UE operating on V2X band inter-band con-current with E-UTRA Uu carrier assigned to licensed band of EN-V2X configurations listed in clause 5.5E. The wideband inter-modulation requirement specified in clause 7.8E in TS38.101-1 [2] shall apply on NR V2X carrier and the requirement specified in clause 7.8.1 in TS36.101 [4] shall apply on E-UTRA downlink reception in licensed band while all downlink carriers are active. PInterferer power is increased by ΔRIB,c in the requirement.