**3GPP TSG-RAN WG1 Meeting #108-e *R1-22xxxxx***

**E-Meeting, 21 February – 3 March, 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **[DRAFT] CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **37.985** | **CR** | xxxx | **rev** | **-** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Addition of Rel-16 NR V2X bands to TR 37.985 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei (editor) | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_V2X\_NRSL-Core | | | | |  | ***Date:*** | | | 2022-02-22 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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:*** | | Rel-16 NR-V2X operating bands are omitted, but are present for LTE-V2X.  Re-use in NR-V2X of the terminology “multi-carrier” from the LTE-V2X clause title may give the impression of carrier aggregation in Rel-16 NR-V2X. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Addition of supported Rel-16 NR-V2X bands, equivalently to LTE-V2X.  Change clause 5.1.3 title to refer to “concurrent operation”, and use the same in NR-V2X. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incomplete description of RAN aspects of Rel-16 NR-V2X; inconsistency between descriptions of LTE-V2X and NR-V2X | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 5.1.3, 6.2.6(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |

**<Unchanged parts omitted>**

2 References

**<Unchanged parts omitted>**

[20] 3GPP TS 38.300: "NR; NR and NG-RAN Overall Description; Stage 2".

[21] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".

[22] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".

**<Unchanged parts omitted>**

# 5 LTE V2X

**<Unchanged parts omitted>**

5.1.3 Concurrent operation and carrier aggregation

V2X operation is defined in band 47 in TS 36.101 [11, clause 5.5G], which supports single-carrier and multi-carrier operation:

**Table 5.1.3-1: V2X operating band**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **E‑UTRA Operating Band** | **E-UTRA V2X Operating Band** | **V2X UE transmit** | | | **V2X UE receive** | | | **Duplex Mode** | **Interface** |
| **FUL\_low – FUL\_high** | | | **FDL\_low – FDL\_high** | | |
| 47 | 47 | 5855 MHz |  | 5925 MHz | 5855 MHz |  | 5925 MHz | HD | PC5 |

The V2X sidelink in band 47 can be operated concurrently with Uu FDD bands 3, 5, 7, 8, 20, 28, and Uu TDD bands 34, 39, 41, and 71.

**<Unchanged parts omitted>**

# 6 NR V2X

**<Unchanged parts omitted>**

### 6.2.6 Concurrent operation

NR-V2X operation is defined in bands n38 and n47 in TS 38.101-1 [22, clause 5.2E], which support single-carrier operation:

Table 6.2.6-1: NR-V2X operating bands

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| V2X Operating Band | Sidelink (SL) Transmission operating band | | | Sidelink (SL) Reception operating band | | | Duplex Mode | Interface |
|  | FUL\_low – FUL\_high | | | FDL\_low – FDL\_high | | |  |  |
| n381 | 2570 MHz | - | 2620 MHz | 2570 MHz | - | 2620 MHz | HD | PC5 |
| n47 | 5855 MHz | - | 5925 MHz | 5855 MHz | - | 5925 MHz | HD | PC5 |
| Note 1: When this band is used for V2X SL service, the band is exclusively used for NR V2X in particular regions. | | | | | | | | |

The NR-V2X sidelink in band n47 can be operated concurrently with Uu band n71.

## 6.3 V2X sidelink resource allocation

**<Unchanged parts omitted>**