**3GPP TSG-RAN WG4 Meeting#111R4-2410012**

**Fukuoka, JP, May 20 – May 24, 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.101-5** | **CR** | **Draft CR** | **rev** |  | **Current version:** | **18.5.0** |  |
|  |
| *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:***  | [NR\_NTN\_enh-Perf] Draft CR to 38.101-5 Reference measurement channel for PDCCH requirements and channel model for NR NTN enhancements |
|  |  |
| ***Source to WG:*** | Qualcomm Inc |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_NTN\_enh-Perf |  | ***Date:*** | 05/11/2024 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***Release:*** | *Rel-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:*** | * RAN4 agreed to introduce PDCCH requirement for NR NTN enhancements
* RAN4 agreed on a new channel model for simulation assumptions
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|  |  |
| ***Summary of change:*** | * Add PDCCH reference measurement channel and NTN-TDLC5-1200 channel model for NR NTN enhancements
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| ***Consequences if not approved:*** | Channel model and PDCCH reference measurement channel will remain undefined in the specfication |
|  |  |
| ***Clauses affected:*** | A.3.3 (new section), B.2.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** | **X** |  |  Test specifications | TS 38.521-5  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** | None |
|  |  |
| ***This CR's revision history:*** |  |

**--- Start of change 1 ---**

## A.3.3 Reference measurement channels for PDCCH performance requirements

### A.3.3.1 FDD

#### A.3.3.1.1 Reference measurement channels for SCS 120 kHz FR2-NTN

Table A.3.3.1.1-1: PDCCH Reference Channels

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Value |
| Reference channel |  | R.PDCCH.1-1.1 FDD | R.PDCCH.1-1.2 FDD |
| Subcarrier spacing | kHz | 120 | 120 |
| CORESET frequency domain allocation |  | 132 | 132 |
| CORESET time domain allocation |  | 1 | 2 |
| Aggregation level |  | 8 | 16 |
| DCI Format |  | 1\_0 | 1\_1 |
| Payload (without CRC) | Bits | 42 | 56 |

**--- End of change 1 ---**

**--- Start of change 2 ---**

## B.2.2 Combinations of channel model parameters

The propagation conditions used for the performance measurements in multi-path fading environment are indicated as a combination of a channel model name and a maximum Doppler frequency, i.e., NTN-TDLA<DS>-<Doppler>, or NTN-TDLC<DS>-<Doppler> where '<DS>' indicates the desired delay spread and '<Doppler>' indicates the maximum Doppler frequency (Hz).

Table B.2.2-1 show the propagation conditions that are used for the performance measurements in multi-path fading environment for NLOS and LOS propagation conditions.

Table B.2.2-1: Channel model parameters for NTN

|  |  |  |
| --- | --- | --- |
| Combination name | Model | Maximum Doppler frequency |
| NTN-TDLA100-200 | NTN-TDLA100 | 200 Hz |
| NTN-TDLC5-200 | NTN-TDLC5 | 200 Hz |
| NTN-TDLC5-1200 | NTN-TDLC5 | 1200Hz |

**--- End of change ---**