**3GPP TSG-RAN WG4 Meeting #111 R4-2407842**

**Fukuoka City, Fukuoka, Japan, 20th – 24th May, 2024**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **<38.133>** | **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:*** | draftCR on test case for L3-RSRP measurement without gap under non-DRX with SSB index reading in above 10 GHz scenario | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Xiaomi | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_NTN\_enh-Perf | | | | |  | ***Date:*** | | | 2024-04-30 |
|  |  | | | |  | |  | | |  |
| ***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 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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | According to the approved WF R4-2406430, the test case for intra-frequency measurment without gap under non-DRX with SSB index reading in above 10 GHz scenario needs to be added. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce the test case for intra-frequency measurment without gap under non-DRX with SSB index reading in above 10 GHz scenario. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The test case will be missing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | (New) A.14.5.1.X | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

=================================Start of Change #1====================================

#### A.14.5.1.X SA event triggered reporting test with SSB time index reading without gap under non-DRX for FR2-NTN

##### A.14.5.1.X.1 Test purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event. This test will partly verify the FDD intra-frequency cell search requirements in FR2-NTN in clause 9.2C.7.1 and 9.2C.7.2.

##### A.14.5.1.X.2 Test parameters

Two cells are deployed in the test, which are FR2 PCell (Cell 1) and a FR2 neighbour cell (Cell 2) on the same frequency as the PCell. The test parameters for FDD PCell and neighbour cell are given in Table A.14.5.1.X.2-1 and A.14.5.1.X.2-2 below. In the measurement control information, a measurement object is configured for the frequency of the PCell, and it is indicated to the UE that event-triggered reporting with Event A3 is used. The test consists of two successive time periods, with time duration of T1, and T2 respectively. During time duration T1, the UE shall not have any timing information of Cell 2.

The UE shall be provided with the valid information about the SAN serving the each cell in the test before the test.

UE is configured with 1 SMTC for the intra-frequency measurement. Both Cell 1 and Cell 2 are associated with the configured SMTC.

Table A.14.5.1.X.2-1: Supported test configurations

|  |  |
| --- | --- |
| **Configuration** | **Description** |
| 1 | GSO, NR FDD, SSB SCS 120 kHz, data SCS 120 kHz, BW 100 MHz |
| 2 | NGSO, NR FDD, SSB SCS 120 kHz, data SCS 120 kHz, BW 100 MHz |
| Note: The UE is only required to be tested in one of the supported test configurations | |

Table A.14.5.1.X.2-2: General test parameters for SA intra-frequency event triggered reporting without gap for FDD PCell in FR2-NTN with SSB index reading

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Unit | Test configuration | Value | Comment |
| Active cell |  | 1, 2 | Cell 1 |  |
| Neighbour cell |  | 1, 2 | Cell 2 | Cell to be identified. |
| RF Channel Number |  | 1, 2 | 1: Cell 1 and Cell 2 |  |
| SMTC configuration |  | 1, 2 | SMTC.2 |  |
| A3-Offset | dB | 1, 2 | -11 |  |
| CP length |  | 1, 2 | Normal |  |
| Hysteresis | dB | 1, 2 | 0 |  |
| Time To Trigger | s | 1, 2 | 0 |  |
| Filter coefficient |  | 1, 2 | 0 | L3 filtering is not used |
| DRX | ms | 1, 2 |  | OFF |
| Time offset between serving and neighbour cells |  | 1, 2 | 3 μs | Synchronous cells |
| T1 | s | 1, 2 | 5 |  |
| T2 | s | 1, 2 | 5 |  |

**Table A.14.5.1.X.2-3: NR Cell specific test parameters for SA intra-frequency event triggered reporting without gap for FDD PCell in FR2-NTN with SSB index reading**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | | Unit | Config | Cell 1 | | Cell 2 | |
|  | |  |  | T1 | T2 | T1 | T2 |
| FDD configuration | |  | 1, 2 | TBD | | TBD | |
| BWchannel | | MHz | 1, 2 | 100: NRB,c = 66 | | 100: NRB,c = 66 | |
| Data RBs allocated | |  | 1 | 24 | | 24 | |
| 2 | 48 | | 48 | |
| Intial BWP configuration | |  | 1, 2 | DLBWP.0.1  ULBWP.0.1 | | DLBWP.0.1  ULBWP.0.1 | |
| Active DL BWP configuration | |  | 1, 2 | DLBWP.1.1 | | DLBWP.1.1 | |
| Active UL BWP configuration | |  | 1, 2 | ULBWP.1.1 | | ULBWP.1.1 | |
| RLM-RS | |  | 1, 2 | SSB | | SSB | |
| PDSCH RMC configuration | |  | 1 | TBD | | N/A | |
| 2 | TBD | |
| RMSI CORESET RMC configuration | |  | 1 | TBD | | N/A | |
| 2 | TBD | | N/A | |
| Dedicated CORESET RMC configuration | |  | 1 | TBD | | N/A | |
| 2 | TBD | | N/A | |
| TRS configuration | |  | 1, 2 | TBD | | N/A | |
| PDSCH/PDCCH TCI states | |  | 1, 2 | TCI.State.2 | | N/A | |
| PDSCH/PDCCH subcarrier spacing | | kHz | 1, 2 | 120 | | 120 | |
| OCNG Patterns | |  | 1, 2 | OP.5 | | N/A | |
| cellIndividualOffset | | dB | 1~2 | N/A | | 16 | |
| SSB | |  | 1 | SSB.1 FR2 | | SSB.7 FR2 | |
|  | |  | 2 | SSB.2 FR2 | | SSB.8 FR2 | |
| Propagation Condition | |  | 1, 2 | No external noise (Note 1) | | No external noise (Note 1) | |
| Note 1: The downlink connection between the System Simulator and the UE is without Additive White Gaussian Noise, and has no fading or multipath effects as specified in TS 38.521-2 B.0 [40]. | | | | | | | |

Table 14.5.1.X.2-4: NR OTA Cell specific test parameters for intra-frequency event triggered reporting for SA with FDD PCell in FR2-NTN without gap without DRX

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Unit | Config | Cell 1 | | Cell 2 | | |
|  |  |  | T1 | T2 | T1 | | T2 |
| Satellite information |  | 1 | [SSC.1] | | [NSC.1] | | |
|  |  | 2 | [SSC.2] | | [NSC.2] | | |
| AoA setup |  | 1, 2 | [Setup 1 as defined in A.3.15] | | | | |
| Beam assumptionNote 4 |  | 1,2 | [Rough] | | [Rough] | | |
| Es | dBm/SCS | 1 | -89 | -89 | | -Infinity | -89 |
|  |  | 2 | -86 | -86 | | -Infinity | -86 |
| BB Note 5 | dB | 1, 2 | -0.12 | -0.12 | | -Infinity | -0.12 |
| SSB\_RP | dBm/SCS | 1 | -89 | -89 | -Infinity | | -89 |
|  |  | 2 | -86 | -86 | -Infinity | | -86 |
|  | dBm/95.04MHz | 1 | -64.41 | -64.41 | -Infinity | | -64.41 |
| 2 | -61.41 | -61.41 | -Infinity | | -61.41 |
| Note 1: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.  Note 2: Void  Note 3: Es/Iot, SSB\_RP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 4: Information about types of UE beam is given in B.2.1.3, and does not limit UE implementation or test system implementation  Note 5: Calculation of Es/IotBB includes the effect of UE internal noise up to the value assumed for the associated Refsens requirement in clause 7.3.2 of TS 38.101-2 [19], and an allowance of 1dB for UE multi-band relaxation factor ΔMBP from TS 38.101-2 [19] Table 6.2.1.3-4. | | | | | | | |

##### A.14.5.1.X.3 Test Requirements

For both UE indicating [Type 1] and [Type 2] via UE capability [Beam steering], the UE shall send one Event A3 triggered measurement report, with a measurement reporting delay less than 920 ms from the beginning of time period T2. The UE is required to read the neighbour cell SSB index and report the acquired SSB index in this test.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

NOTE: The actual overall delays measured in the test may be up to 2xTTIDCCH higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in DCCH.

=================================End of Change #1====================================