3GPP TSG-RAN WG4 Meeting # 111 R4-2410419

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

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **DraftCR** | **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:*** | Draft CR on TS38.133 for Con-NCSG TC4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MG\_enh2-Perf | | | | |  | ***Date:*** | | | 2024-05-20 |
|  |  | | | |  | |  | | |  |
| ***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 agreed WF R4-2403542 and online discussion in RAN4 #111 meeting, a test case for Event triggered reporting test on deactivated SCell in FR1 with concurrent gap and NCSG is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce the test case for Event triggered reporting test on deactivated SCell in FR1 with concurrent gap and NCSG in NR FR1 SA. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The test case will be missing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | (new) A.6.6.X | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/38.533 | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**----------------------NEXT CHANGE---------------------------**

#### A.6.6.x.4 Event triggered reporting on SCC with deactivated SCell test with per-UE Con-NCSG under non-DRX

##### A.6.6.x.4.1 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 cell search requirements on SCC with deactivated SCell in clauses 9.2.7.1 and 9.2.7.2.

##### A.6.6.x.4.2 Test parameters

Three cells are deployed in the test, which are FR1 PCell (Cell 1) on NR RF channel 1, FR1 SCell (Cell 2) and FR1 neighbour cell (Cell 3) on the same frequency as the SCell on NR RF channel 2.

The SCell is deactivated during the test. The test parameters for PCell, the SCell and the neighbour cell are given in Table A.6.6.x.4.2-1 and A.6.6.x.4.2-2 below.

One measurement gap patterns (MeasGapId #1) and one NCSG pattern(NCSGId #1) are configured with the gap pattern ID #0 and NCSG pattern ID #0 as defined in Table A.6.6.x.1.1-2. [NCSGId #1 is associated with the MO for RF channel numbers #2, respectively.]

In the measurement control information, a measurement object is configured for the frequency of the SCell, and it is indicated to the UE that event-triggered reporting with Event A6 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 3. The PCell shall continuously scheduled with data in the DL starting from T1 until the UE has sent the measurement report during T2.

Table A.6.6.x.4.2-1: Supported test configurations

|  |  |
| --- | --- |
| **Configuration** | **Description** |
| 1 | 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 2 | 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 3 | 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note: The UE is only required to be tested in one of the supported test configurations. | |

Table A.6.6.x.4.2-2: General test parameters for event triggered reporting on SCC with deactivated SCell with per-UE Con-NCSG for FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Value** | **Comment** |
| Active cell |  | 1, 2, 3 | Cell 1 |  |
| Configured deactivated SCell |  | 1, 2, 3 | Cell 2 |  |
| Neighbour cell |  | 1, 2, 3 | Cell 3 | Cell to be identified. |
| RF Channel Number |  | 1, 2, 3 | 1: Cell 1 |  |
| RF Channel Number |  | 1, 2, 3 | 2: Cell 2 and Cell 3 |  |
| NCSG type |  | 1, 2, 3 | Per-UE NCSG |  |
| NCSG pattern Id |  | 1, 2, 3 | ID # 1 | Defined in Table 9.1.9.3-1 |
| NCSG offset |  | 1, 2, 3 | 39 |  |
| Measurement gap type |  | 1, 2, 3 | Per-UE MG |  |
| MG pattern Id |  | 1, 2, 3 | ID #1 | Defined in Table 9.1.2-1 |
| Measurement gap offset |  | 1, 2, 3 | 19 |  |
| MGTA | ms | 1, 2, 3 | 0 |  |
| SSB configuration |  | 1 | SSB.1 FR1 |  |
|  |  | 2 | SSB.1 FR1 |  |
|  |  | 3 | SSB.2 FR1 |  |
| SMTC configuration |  | 1 | SMTC.2 |  |
|  |  | 2 | SMTC.1 |  |
|  |  | 3 | SMTC.1 |  |
| A6-Offset | dB | 1, 2, 3 | -4.5 |  |
| CP length |  | 1, 2, 3 | Normal |  |
| Hysteresis | dB | 1, 2, 3 | 0 |  |
| Time To Trigger | s | 1, 2, 3 | 0 |  |
| Filter coefficient |  | 1, 2, 3 | 0 | L3 filtering is not used |
| DRX |  | 1, 2, 3 |  | OFF |
| SCell measurement cycle (measCycleSCell) | ms | 1, 2, 3 | 160 |  |
| Cell 2 timing offset to Cell 1 | μs | 1, 2, 3 | 0 |  |
| Time alignment error between Cell 2 and Cell 1 | μs | 1, 2, 3 | ≤ Time alignment error as specified in TS 38.104 [13] clause 6.5.3.1. | The value of time alignment error depends upon the type of carrier aggregation. |
| Cell 3 timing offset to Cell 1 | μs | 1, 2, 3 | 3 | Synchronous cells |
| T1 | s | 1, 2, 3 | 5 |  |
| T2 | s | 1, 2, 3 | 5 |  |

Table A.6.6.x.4.2-3: NR Cell specific test parameters for event triggered reporting on SCC with deactivated SCell with per-UE Con-NCSG for FR1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Cell 1** | | **Cell 2** | | **Cell 3** | |
|  |  |  | **T1** | **T2** | **T1** | **T2** | **T1** | **T2** |
| TDD configuration |  | 1 | N/A | | N/A | | N/A | |
|  |  | 2 | TDDConf.1.1 | | TDDConf.1.1 | | TDDConf.1.1 | |
|  |  | 3 | TDDConf.2.1 | | TDDConf.2.1 | | TDDConf.2.1 | |
| PDSCH RMC configuration |  | 1 | SR.1.1 FDD | | N/A | | N/A | |
|  |  | 2 | SR.1.1 TDD | |  | |  | |
|  |  | 3 | SR.2.1 TDD | |  | |  | |
| RMSI CORESET RMC configuration |  | 1 | CR.1.1 FDD | | N/A | | N/A | |
|  |  | 2 | CR.1.1 TDD | | N/A | | N/A | |
|  |  | 3 | CR.2.1 TDD | | N/A | | N/A | |
| Dedicated CORESET RMC configuration |  | 1 | CCR.1.1 FDD | | N/A | | N/A | |
|  |  | 2 | CCR.1.1 TDD | | N/A | | N/A | |
|  |  | 3 | CCR.2.1 TDD | | N/A | | N/A | |
| OCNG Patterns |  | 1, 2, 3 | OP.1 | | OP.1 | | OP.1 | |
| TRS Configuration |  | 1 | TRS.1.1 FDD | | TRS.1.1 FDD | |  | |
|  |  | 2 | TRS.1.1 TDD | | TRS.1.1 TDD | | N/A | |
|  |  | 3 | TRS.1.2 TDD | | TRS.1.2 TDD | | N/A | |
| Initial BWP configuration |  | 1, 2, 3 | DLBWP.0.1 ULBWP.0.1 | | DLBWP.0.1 ULBWP.0.1 | | N/A | |
| Active DL BWP configuration |  | 1, 2, 3 | DLBWP.1.1 | | DLBWP.1.1 | | N/A | |
| Active UL BWP configuration |  | 1, 2, 3 | ULBWP.1.1 | | ULBWP.1.1 | | N/A | |
| Note 2 | dBm/SCS | 1 | -98 | | | | | |
|  |  | 2 | -98 | | | | | |
|  |  | 3 | -95 | | | | | |
| Note 2 | dBm/15 kHz | 1, 2, 3 | -98 | | | | | |
|  | dB | 1, 2, 3 | 4 | 4 | 4 | -1.46 | -Infinity | -1.46 |
|  | dB | 1, 2, 3 | 4 | 4 | 4 | 4 | -Infinity | 4 |
| SS-RSRP Note 3 | dBm/SCS kHz | 1 | -94 | -94 | -94 | -94 | -Infinity | -94 |
|  |  | 2 | -94 | -94 | -94 | -94 | -Infinity | -94 |
|  |  | 3 | -91 | -91 | -91 | -91 | -Infinity | -91 |
| Io | dBm/9.36 MHz | 1 | -64.60 | -64.60 | -64.60 | -62.25 | -64.60 | -62.25 |
|  | dBm/9.36 MHz | 2 | -64.60 | -64.60 | -64.60 | -62.25 | -64.60 | -62.25 |
|  | dBm/38.16 MHz | 3 | -58.50 | -58.50 | -58.50 | -56.16 | -58.50 | -56.16 |
| Propagation Condition |  | 1, 2, 3 | AWGN | | | | | |
| Note 1: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.  Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.  Note 3: SS-RSRP levels have been derived from other parameters for information purposes. They are not settable parameters themselves. | | | | | | | | |

##### A.6.6.x.4.3 Test Requirements

The UE shall send one Event A6 triggered measurement report, with a measurement reporting delay less than 1600 ms from the beginning of time period T2. The UE is not required to read the neighbour cell SSB index in this test.

The UE shall be scheduled on PCell continuously throughout the test. From the start of T1 until the measurement report is received during T2, UE shall send HARQ ACK/NACK for the corresponding PDSCH scheduled in PCell in all the slots except for the case where PDSCH or PUCCH is overlapped with the VIL of NCSG pattern and MGL of MG pattern.

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

For a test to be considered successful requirements on both Event A6 detection and percentage of transmitted ACK/NACKs have to be fulfilled simultaneously.

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 CHANGES--------------------------**