**3GPP TSG- Meeting #**

**Fukuoka, Japan, May 20 - May 20, 2024**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **Draft** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **x** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Draft CR to 38.133 on Enhanced Intra-Frequency Measurements Test Case for HST FR2 Enhanced | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_HST\_FR2\_enh-Perf | | | | |  | ***Date:*** | | | 2024-05-13 |
|  |  | | | |  | |  | | |  |
| ***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-10 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | At RAN4#110 [WF R4-2403319] it was agreed to introduce a new test case:  Issue 1-2-2 Whether to define test case for enhancement on intra-frequency measurements with/without measurement gaps   * Agreement:   + RAN4 to define a new test case for A.7.6.1.X SA event triggered reporting test without gap under non-DRX for power class 6 UE supporting *measEnhCAInterFreqFR2-r18* | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | A new test case for SA event triggered reporting test without gap under non-DRX for power class 6 UE supporting measEnhCAInterFreqFR2-r18 is introduced. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | PC6 UEs for HST FR2 enhanced scenario are not fully tested against new Rel-18 requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.7.6.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | |  | | |
| ***affected:*** | | **x** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revision of R4-2405732 endorced at RAN4#110-bis. | | | | | | | | |

<Start of Change>

A.7.6.1.X *SA event triggered reporting test without gap under non-DRX for* *power class 6 UE supporting measEnhCAInterFreqFR2-r18*

A.7.6.1.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 SA SCC intra-frequency NR cell measurement requirements for FR2 power class 6 UE which is configured with *highSpeedMeasFlagFR2-r17* and supports *measEnhCAInterFreqFR2* in clause 9.2.5.

Three cells are deployed in the test, which are one FR2 PCell (Cell 1) on NR RF channel 1, one FR2 SCell (Cell 2) on NR RF channel 2, and one neighbouring cell (Cell 3) on NR RF channel 2. The supported test configurations are given in Table A.7.6.1.X.1.1-1. The test parameters are given in Tables A.7.6.1.X.1.1-2 and cell-specific parameters in A.7.6.1.X.1.1-3 below.

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.

This test consists of two successive time periods, with time durations of T1, and T2 respectively. During time duration T1, the UE shall not have any timing information of NR cell 3.

**Table A.7.6.1.X.1-1 SA event triggered reporting tests without SSB index reading for FR2-FR2**

|  |  |
| --- | --- |
| **Config** | **Description** |
| 1 | 120 kHz SSB SCS, 100 MHz bandwidth, TDD duplex mode |

**Table A.7.6.1.X.1-2: General test parameters for SA event triggered reporting test without gap under non-DRX for UE supporting *measEnhCAInterFreqFR2-r18***

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Unit** | **Value** | **Comment** |
| *highSpeedMeasFlagFR2-r17* |  | Set2 | *highSpeedMeasFlagFR2-r17* = Set2 is configured |
| NR RF Channel Number |  | 1, 2 | Two FR2 NR carrier frequencies are used. |
| Active cell |  | NR cell 1 (Pcell) | NR Cell 1 is on NR RF channel number 1. |
| Active cell |  | NR cell 2 (Scell) | NR Cell 2 is on NR RF channel number 2. |
| Neighbour cell |  | NR cell 3 | NR cell 2 is on NR RF channel number 2. |
| SMTC configuration |  | SMTC.1 | As specified in clause A.3.11 |
| A6-Offset | dB | -11 |  |
| Hysteresis | dB | 0 |  |
| CP length |  | Normal |  |
| Time to Trigger | s | 0 |  |
| Filter coefficient |  | 0 | L3 filtering is not used |
| DRX |  | OFF | DRX is not used |
| Time offset between serving and neighbour cells |  | 3ms | Synchronous cells. |
| T1 | s | 5 |  |
| T2 | s | 4.5 |  |

**Table A.7.6.1.X.1-3: Cell specific test parameters for SA event triggered reporting test without gap under non-DRX for UE supporting *measEnhCAInterFreqFR2-r18***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | | **Unit** | **Cell 1** | | **Cell 2** | | **Cell 3** | |
|  | |  | **T1** | **T2** | **T1** | **T2** | **T1** | **T2** |
| AoA setup Note 1 | |  | Setup 3 as specified in clause A.3.15 | | | | | |
|  | |  | AoA1 | | AoA1 | | AoA2 | |
| Beam AssumptionNote 2 | |  | Rough | | Rough | | Rough | |
| NR RF Channel Number | |  | 1 | | 2 | | 2 | |
| Duplex mode | |  | TDD | | TDD | | TDD | |
| TDD configuration | |  | TDDConf.3.1 | | TDDConf.3.1 | | TDDConf.3.1 | |
| BWchannel | | MHz | 100: NRB,c = 66 | | 100: NRB,c = 66 | | 100: NRB,c = 66 | |
| Data RBs allocated | |  | 66 | | 66 | | 66 | |
| BWP BW | | MHz | 100: NRB,c = 66 | | 100: NRB,c = 66 | | 100: NRB,c = 66 | |
| BWP configuration | Initial DL BWP |  | DLBWP.0.1 | | DLBWP.0.1 | | N/A | |
|  | Initial UL BWP |  | ULBWP.0.1 | | ULBWP.0.1 | | N/A | |
|  | Active DL BWP |  | DLBWP.1.1 | | DLBWP.1.1 | | N/A | |
|  | Active UL BWP |  | ULBWP.1.1 | | ULBWP.1.1 | | N/A | |
| OCNG Patterns defined in A.3.2.1.1 | |  | OP.1 | | OP.5 | | N/A | |
| PDSCH Reference measurement channel | |  | SR.3.2 TDD | | SR.3.2 TDD | | - | |
| CORESET Reference Channel | |  | CR.3.1 TDD | | CR.3.1 TDD | | - | |
| SMTC configuration defined in A.3.11.1 and A.3.11.2 | |  | SMTC.1 | | SMTC.1 | | SMTC.1 | |
| PDSCH/PDCCH subcarrier spacing | | kHz | 120 | | 120 | | 120 | |
| TRS configuration | |  | TRS.2.1 TDD | | TRS.2.1 TDD | | N/A | |
| PDSCH/PDCCH TCI state | |  | TCI.State.2 | | TCI.State.2 | | N/A | |
| Ês | | dBm/SCS | -89 | -89 | -89 | -89 | -Infinity | -89 |
| SSBRP Note 3 | | dBm/SCS Note4 | -89 | -89 | -89 | -89 | -Infinity | -89 |
| BB Note5 | | dB | -0.12 | -0.12 | -0.12 | -0.12 | -Infinity | -0.12 |
| Io Note3 | | dBm/95.04 MHz Note6 | -64.41 | -64.41 | -64.41 | -64.41 | -Infinity | -64.41 |
| Propagation Condition | |  | AWGN | | | | AWGN 19444Hz | |
| Note 1: The configuration for AoA1 and AoA2 can refer to Figure A.7.6.1.5.1.-1  Note 2: Information about types of UE beam is given in B.2.1.3, and does not limit UE implementation or test system implementation.  Note 3: SBRP, Es/Iot and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 4: Equivalent power received by an antenna with 0 dBi gain at the centre of the quiet zone.  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 ΔMBS from TS 38.101-2 [19] Table 6.2.1.3-4.  Note 6: As observed with 0 dBi gain antenna at the centre of the quiet zone. | | | | | | | | |

A.7.6.1.X.2 Test Requirements

The UE shall send one Event A6 triggered measurement report, with a measurement reporting delay less than 1000 ms from the beginning of time period T2.

The UE is not required to report SSB time index. 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>