**3GPP TSG-RAN WG4 Meeting #111 R4-2407515**

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

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **TS 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:*** | (NFG6) DraftCR on FR2 inter-frequency measurements without gap without interruption for needforgap reporting | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MG\_enh2-Perf | | | | |  | ***Date:*** | | | 2024-04-25 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | The requirements for FR2 inter-frequency measurements without gap without interruption for needforgap reporting are defined and the corresponding test case should be introduced. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce test case for FR2 inter-frequency measurements without gap without interruption for needforgap reporting. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The test case for FR2 inter-frequency measurements without gap without interruption for needforgap reporting is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | New A.7.6.2.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.7.6.2.x SA event triggered reporting test without gap without interruption under non-DRX

##### A.7.6.2.x.1 Test Purpose and Environment

The purpose of this test is to verify that if UE reports “*no-gap*” via *interFreq-needForGap-r16* and reports “*no-gap-no-interruption*” via *interFreq-needForInterruption-r18*, the UE makes correct reporting of an event. This test will partly verify the inter-frequency without gap cell search requirements in clause 9.3.9. Supported test configurations are shown in table A.7.6.2.x.1-1.

Table A.7.6.2.x.1-1: supported test configurations

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

There are two cells in the test, NR cell 1 as PCell in FR2 on NR RF channel 1 and NR cell 2 as neighbour cell in FR2 on NR RF channel 2. The test parameters for the Cell 1 and Cell 2 are given in Table A.7.6.2.x.1-2, A.7.6.2.x.1-3 and A.7.6.2.x.1-4 below.

In the measurement control information, a measurement object is configured for the frequency of the neighbour cell, 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.

Table A.7.6.2.x.1-2: General test parameters for inter-frequency event triggered reporting for SA with TDD PCell in FR2 without gap without interruption

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Unit | Config | Value | Comment |
| Active cell |  | 1 | PCell (Cell 1) | NR Cell 1 is on NR RF channel number 1. |
| Neighbour cell |  | 1 | Cell 2 | NR cell 2 is on NR RF channel number 2. |
| RF Channel Number |  | 1 | 1, 2 | Two FR2 NR carrier frequencies are used. |
| SMTC configuration |  | 1 | SMTC.1 |  |
| A3-Offset | dB | 1 | -6 |  |
| CP length |  | 1 | Normal |  |
| Hysteresis | dB | 1 | 0 |  |
| Time To Trigger | s | 1 | 0 |  |
| Filter coefficient |  | 1 | 0 | L3 filtering is not used |
| DRX |  | 1 | OFF |  |
| Time offset between Cell 1 and Cell 2 |  | 1 | 3 μs | Synchronous cells |
| T1 | s | 1 | 5 |  |
| T2 | s | 1 | 5 |  |

Table A.7.6.2.x.1-3: NR Cell specific test parameters for intra-frequency event triggered reporting for SA with TDD PCell in FR2 without gap without DRX

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | Unit | Config | Cell 1 | | Cell 2 | |
| T1 | T2 | T1 | T2 |
| TDD configuration |  | 1 | TDDConf.3.1 | | TDDConf.3.1 | |
| BWchannel | MHz | 1 | 100: NRB,c = 66 | | 100: NRB,c = 66 | |
| Intial BWP configuration |  | 1 | DLBWP.0.1  ULBWP.0.1 | | - | |
| Active DL BWP configuration |  | 1 | DLBWP.1.1 | | - | |
| Active UL BWP configuration |  | 1 | ULBWP.1.1 | | - | |
| RLM-RS |  | 1 | SSB | | SSB | |
| PDSCH RMC configuration |  | 1 | SR.3.1 TDD | | N/A | |
| RMSI CORESET RMC configuration |  | 1 | CR.3.1 TDD | | CR.3.1 TDD | |
| Dedicated CORESET RMC configuration |  | 1 | CCR.3.1 TDD | | CCR.3.1 TDD | |
| TRS configuration |  | 1 | TRS.2.1 TDD | | N/A | |
| PDSCH/PDCCH TCI states |  | 1 | TCI.State.2 | | N/A | |
| OCNG Patterns |  | 1 | OP.1 | | OP.1 | |
| SSB |  | 1 | SSB.3 FR2 | | SSB.3 FR2 | |
| Propagation Condition |  | 1 | AWGN | | | |

Table A.7.6.2.x.1-4: NR OTA Cell specific test parameters for intra-frequency event triggered reporting for SA with TDD PCell in FR2 without gap without DRX

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | Unit | Config | Cell 1 | | Cell 2 | |
| T1 | T2 | T1 | T2 |
| AoA setup |  | 1 | Setup 1 defined in A.3.15.1 | | | |
|  |  |  |
| Beam assumptionNote 4 |  | 1 | Rough | | Rough | |
|  | dB | 1 | 4 | 4 | -Infinity | 8 |
| Note 2 | dBm/15 KHz | 1 | -102 | | | |
| Note 2 | dBm/SCS | 1 | -93 | | | |
|  |  |
| SS-RSRP | dBm/SCS | 1 | -89 | -89 | -Infinity | -85 |
|  |  |
|  | dB | 1 | 4 | 4 | -Infinity | 8 |
|  | dBm/95.04MHz | 1 | -58.56 | | -55.38 | |
| 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.  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 | | | | | | |

##### A.7.6.2.x.2 Test Requirements

In the test, the UE shall send one Event A3 triggered measurement report, with a measurement reporting delay less than X ms from the beginning of time period T2, where X is

- 2.4s for a UE supporting power class 1,

- 1.44s for a UE supporting power class 2, 3 and 4

The UE is not required to read the neighbour cell SSB index in this test.

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

During the T1 and T2, UE shall be able to report ACK/NACK for all slots with PDCCH/PDSCH on PCell excluding those symbles as defined in 9.3.9.4.

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>