**3GPP TSG-RAN WG4 Meeting #111R4-24xxxxx**

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

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **4394** | **rev** | **1** | **Current version:** | **17.13.0** |  |
|  |
| *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\_MG\_enh-Perf) Maintenance CR for MGE perf part R17 |
|  |  |
| ***Source to WG:*** | MediaTek inc. |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_MG\_enh-Perf |  | ***Date:*** | 2024-05-13 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | Rel-17 |
|  | *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:*** | In A.6.6.18.3* A4 event is used for the test case.
* Correct the Io values in Table A.6.6.18.3.1-3

In A.6.6.18.4* There are errors in SS-RSRP and Io in Table A.6.6.18.4.1-3
 |
|  |  |
| ***Summary of change:*** | In A.6.6.18.3* Correct Io in Table A.6.6.18.3.1-3

In A.6.6.18.4* Correct SS-RSRP and Io in Table A.6.6.18.4.1-3
 |
|  |  |
| ***Consequences if not approved:*** | The test cases contain error. |
|  |  |
| ***Clauses affected:*** | A.6.6.18.3, A.6.6.18.4 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **x** |  |  Test specifications | TS38.533 |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

<Start of change #1>

#### A.6.6.18.3 SA NR - E-UTRAN and NR FR1 concurrent event-triggered reporting in non-DRX in FR1

##### A.6.6.18.3.1 Test Purpose and Environment

The purpose of this set of tests is to verify that the UE makes correct event-triggered reporting of concurrent inter-RAT E-UTRAN and NR FR1 measurements when operating in standalone (SA) operation with PCell in FR1. This test shall partly verify the cell search and measurement requirements in Clauses 9.4.2, 9.4.3, 9.3.4 and 9.3.5.

In each test there are three cells: Cell 1, Cell 2 and Cell 3. Cell 1 is the NR PCell, Cell 2 is an Inter-frequency NR FR1 neighbour cell on NR RF channel 2 and Cell 3 is an inter-RAT E-UTRAN neighbour cell on LTE RF channel 3.

In the measurement control information from the PCell it is indictated to the UE that event-triggered reporting with Event B2 (PCell becomes worse than threshold1 and inter RAT neighbour becomes better than threshold2) is to be used for the E-UTRAN cell (cell 3). In the measurement control information, it is indicated to the UE that event-triggered reporting with Event A4 is used for the NR FR1 cell (cell 2).

Each test consists of two consecutive time periods, with durations T1 and T2, respectively. Prior to the start of time duration T1, the UE shall be fully synchronized to Cell 1. During T1, the UE shall not have any information on Cell 2 and Cell 3.

In the test two concurrent per-UE measurement gap pattern configurations # 0 as defined in Table A.6.6.18.3.1-2 are provided for a UE. Two measurement gap patterns (MeasGapId #1 and MeasGapId #2) are configured with the gap pattern ID #1 as defined in Table A.6.6.18.3.1-2. MeasGapId #2 is configured with a higher priority than MeasGapId #1. MeasGapId #1 and MeasGapId #2 are associated with the MOs for NR RF channel numbers #2 and LTE RF channel #3, respectively.

Supported test configurations are shown in table A.6.6.18.3.1-1. General test parameters are provided in Table A.6.6.18.3.1-2 below. Test parameters for Cell 1, Cell 2 and Cell 3, valid for both time duration T1 and T2, are provided in Tables A.6.6.18.3.1-3 and A.6.6.18.3.1-4, respectively.

The test parameters and configurations are given in Tables A.6.6.18.3.1-1, A.6.6.18.3.1-2, and A.6.6.18.3.1-3.

Table A.6.6.18.3.1-1: Supported test configurations in SA concurrent inter-RAT E-UTRAN and NR FR1 inter-frequency event triggered reporting in non-DRX with PCell in FR1

|  |  |  |
| --- | --- | --- |
| **Configuration** | **Description** | **Description of target cell** |
| 1 | NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode | LTE: FDD.NR: 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 2 | NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode | LTE: FDD.NR: 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 3 | NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode | LTE: FDD.NR: 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| 4 | NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode | LTE: TDD.NR: 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 5 | NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode | LTE: TDD.NR: 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 6 | NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode | LTE: TDD.NR: 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.6.6.18.3.1-2: General test parameters for SA concurrent inter-RAT E-UTRAN and NR FR1 inter-frequency event triggered reporting in non-DRX with PCell in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Value** | **Comment** |
| NR RF Channel Number |  | 1 - 6 | 1, 2 | 2 NR carrier frequency is used in the test. |
| LTE RF Channel Number |  |  | 3 | 1 LTE carrier frequency is used in the test |
| Channel Bandwidth | MHz | 1 - 6 | As specified in Tables A.6.6.18.3.1-3 and A.6.6.18.3.1-4. |  |
| Active cell |  | 1 - 6 | NR Cell 1 (PCell in FR1) | Cell 1 is on NR RF channel number 1 |
| Neighbour cell 1 |  | 1 - 6 | Cell 2 (NR FR1) | Cell 2 is on NR RF channel number 2 |
| Neighbour cell 2 |  | 1 - 6 | Cell 3 (LTE) | Cell 3 is on LTE RF channel number 3 |
| Gap Pattern Id  |  | 1 - 6 | 1 for MeasGapId #11 for MeasGapId #2 | As specified in Clause Table 9.1.2-1. Per-UE gap pattern. |
| Measurement gap offset | ms | 1 – 6 | 19 for MeasGapId #139 for MeasGapId #2 |  |
| NR measurement quantity |  |  | SS-RSRP | Measurement quantity for Cell 1 and Cell 2 |
| Inter-RAT E-UTRAN measurement quantity |  |  | RSRP | Measurement quantity for Cell 3 |
| b2-Threshold1 | dBm |  | As specified in Table A.6.6.18.3.1-3 | SS-RSRP threshold for SS-RSRP measurement on Cell 1 for event B2 |
| b2-Threshold2EUTRA | dBm |  | -101 | E-UTRAN RSRP threshold for SS-RSRP measurement on Cell 3 for event B2 |
| Hysteresis | dB | 1 – 6 | 0 |  |
| TimeToTrigger | s | 1 – 6 | 0 |  |
| Filter coefficient |  | 1 – 6 | 0 | L3 filtering is not used |
| *offsetMO* | dB | 1 - 6 | 6 | NR Cell 2 |
| *a4-Threshold* | dBm | 1 – 6 | -105 | NR Cell 2 |
| DRX |  |  | OFF | N.A |
| Time offset between serving and neighbour cells |  | 1, 4 | 3ms | Asynchronous cells NR cells.The timing of Cell 2 is 3ms later than the timing of Cell 1. |
| 2, 3, 5, 6 | 3μs | Synchronous NR cells. |
| T1 | s | 1 – 6 | 5 | for LTE Cell 3 and NR FR1 Cell 2 |
| T2 | s | 1 - 6 | 5 | for LTE Cell 3 |
| 10.3 for PC1 and PC5; 6.5 for other PC | for NR FR1 Cell 2 |

Table A.6.6.18.3.1-3: Cell specific test parameters for SA inter-frequency event triggered reporting for FR1 without SSB time index detection

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Cell 1** | **Cell 2** |
|  |  |  | **T1** | **T2** | **T1** | **T2** |
| NR RF Channel Number |  | Config 1-6 | 1 | 2 |
| Duplex mode |  | Config 1, 4 | FDD | FDD |
|  |  | Config 2, 3, 5, 6 | TDD | TDD |
| TDD configuration |  | Config 1, 4 | Not Applicable | Not Applicable |
|  |  | Config 2, 5 | TDDConf.1.1 | TDDConf.1.1 |
|  |  | Config 3, 6 | TDDConf.2.1 | TDDConf.2.1 |
| BWchannel | MHz | Config 1, 4 | 10: NRB,c = 52 | 10: NRB,c = 52 |
|  |  | Config 2, 5 | 10: NRB,c = 52 | 10: NRB,c = 52 |
|  |  | Config 3, 6 | 40: NRB,c = 106 | 40: NRB,c = 106 |
| BWP configuration | Initial DL BWP |  | Config 1-6 | DLBWP.0.1 | N/A |
|  | Initial UL BWP |  |  | ULBWP.0.1 | N/A |
|  | Dedicated DL BWP |  |  | DLBWP.1.1 | N/A |
|  | Dedicated UL BWP |  |  | ULBWP.1.1 | N/A |
| CSI-RS for tracking parameters on NR RF Channel 1 |  | Config 1, 4 | TRS.1.1 FDD |  |
|  | Config 2, 5 | TRS.1.1 TDD |  |
|  | Config 3, 6 | TRS.1.2 TDD |  |
| OCNG Patterns  |  | Config 1-6 | OP.1 | OP.1 |
| PDSCH Reference  |  | Config 1, 4 | SR.1.1 FDD | - |
| measurement channel |  | Config 2, 5 | SR.1.1 TDD |  |
|  |  | Config 3, 6 | SR.2.1 TDD |  |
| RMSI CORESET Reference  |  | Config 1, 4 | CR.1.1 FDD | - |
| Channel |  | Config 2, 5 | CR.1.1 TDD |  |
|  |  | Config 3, 6 | CR.2.1 TDD |  |
| Dedicated CORESET RMC configuration |  | Config 1, 4 | CCR.1.1 FDD | - |
|  | Config 2, 5 | CCR.1.1 TDD |  |
|  | Config 3, 6 | CCR.2.1 TDD |  |
| SMTC configuration |  | Config 1, 4 | SMTC.2 | SMTC.2 |
|  |  | Config 2, 3, 5, 6 | SMTC.1 | SMTC.1 |
| SSB configuration |  | Config 1, 4 | SSB.1 FR1 | SSB.1 FR1 |
|  | Config 2, 5 | SSB.1 FR1 | SSB.1 FR1 |
|  | Config 3, 6 | SSB.2 FR1 | SSB.2 FR1 |
| PDSCH/PDCCH subcarrier spacing | kHz | Config 1, 2, 4, 5 | 15 | 15 |
|  |  | Config 3, 6 | 30 | 30 |
| b2-Threshold1 | dBm | Config 1, 2, 4, 5 | -81 | - |
|  |  | Config 3, 6 | -78 | - |
| EPRE ratio of PSS to SSS |  |  |  |  |
| EPRE ratio of PBCH DMRS to SSS |  |  |  |  |
| EPRE ratio of PBCH to PBCH DMRS |  |  |  |  |
| EPRE ratio of PDCCH DMRS to SSS |  |  |  |  |
| EPRE ratio of PDCCH to PDCCH DMRS |  | Config 1-6 | 0 | 0 |
| EPRE ratio of PDSCH DMRS to SSS  |  |  |  |  |
| EPRE ratio of PDSCH to PDSCH  |  |  |  |  |
| EPRE ratio of OCNG DMRS to SSS(Note 1) |  |  |  |  |
| EPRE ratio of OCNG to OCNG DMRS (Note 1) |  |  |  |  |
| *Noc* note2 | dBm/15 KHz | 1-6 | -98 |
| *Noc* note2 | dBm/SCS | Config 1, 2, 4, 5 | -98 |
| Config 3, 6 | -95 |
| Ês/Noc | dB | Config 1 - 6 | 4 | -Infinity | 4 |
| Ês/Iot note3 | dB | Config 1 - 6 | 4 | -Infinity | 4 |
| SSB\_RP note3 | dBm/SCS | Config 1, 2, 4, 5 | -94 | -Infinity | -94 |
| Config 3, 6 | -91 | -Infinity | -91 |
| Io note3 | dBm/9.36 MHz | Config 1, 2, 4, 5 | -64.59 | -70.05 | -64.59 |
| dBm/38.16 MHz | Config 3, 6 | -58.49 | -63.94 | -58.49 |
| Propagation condition |  | Config 1 - 6 | AWGN |
| Antenna Configuration and Correlation Matrix |  | Config 1 - 6 | 1x2 |
| Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.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 B\_RP, Es/Iot and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.Note 4: SS-RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.Note 5: VoidNote 6: VoidNote 7: VoidNote 8: Void |

Table A.6.6.18.3.1-4: E-UTRAN neighbour cell specific test parameters for SA inter-RAT E-UTRAN event triggered reporting in non-DRX with PCell in FR1

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Unit** | **Configuration** | **Cell 3** |
|  |  |  | **T1** | **T2** |
| RF channel number |  | 1, 2, 3, 4, 5, 6 | 3 |
| Duplex mode |  | 1, 2, 3 | FDD |
|  |  | 4, 5, 6 | TDD |
| TDD special subframe configurationNote1 |  | 4, 5, 6 | 6 |
| TDD uplink-downlink configurationNote1 |  | 4, 5, 6 | 1 |
| BWchannel | MHz | 1, 2, 3, 4, 5, 6 | 5 MHz: NRB,c = 2510 MHz: NRB,c = 5020 MHz: NRB,c = 100 |
| PDSCH parameters:DL Reference Measurement ChannelNote2 |  | 1, 2, 3 | 5 MHz: R.7 FDD10 MHz: R.3 FDD20 MHz: R.6 FDD |
|  |  | 4, 5, 6 | 5 MHz: R.4 TDD10 MHz: R.0 TDD20 MHz: R.3 TDD |
| PCFICH/PDCCH/PHICH parameters:DL Reference Measurement ChannelNote2 |  | 1, 2, 3 | 5 MHz: R.11 FDD10 MHz: R.6 FDD20 MHz: R.10 FDD |
|  |  | 4, 5, 6 | 5 MHz: R.11 TDD10 MHz: R.6 TDD20 MHz: R.10 TDD |
| OCNG PatternsNote2 |  | 1, 2, 3 | 5 MHz: OP.20 FDD10 MHz: OP.10 FDD20 MHz: OP.17 FDD |
|  |  | 4, 5, 6 | 5 MHz: OP.9 TDD10 MHz: OP.1 TDD20 MHz: OP.7 TDD |
| PBCH\_RA | dB | 1, 2, 3, 4, 5, 6 | 0 |
| PBCH\_RB |  |  |  |
| PSS\_RA |  |  |  |
| SSS\_RA |  |  |  |
| PCFICH\_RB |  |  |  |
| PHICH\_RA |  |  |  |
| PHICH\_RB |  |  |  |
| PDCCH\_RA |  |  |  |
| PDCCH\_RB |  |  |  |
| PDSCH\_RA |  |  |  |
| PDSCH\_RB |  |  |  |
| OCNG\_RANote3 |  |  |  |
| OCNG\_RBNote3 |  |  |  |
| NocNote4 | dBm/15kHz | 1, 2, 3, 4, 5, 6 | -104 |
| Ês/Noc | dB | 1, 2, 3, 4, 5, 6 | -Infinity | 17 |
| Ês/IotNote5 | dB | 1, 2, 3, 4, 5, 6 | -Infinity | 17 |
| RSRPNote5 | dBm/15kHz | 1, 2, 3, 4, 5, 6 | -Infinity | -87 |
| SCH\_RPNote5 | dBm/15kHz | 1, 2, 3, 4, 5, 6 | -Infinity | -87 |
| IoNote5 | dBm/9MHz | 1, 2, 3, 4, 5, 6 | -76.22+10log (NRB,c /50) | -59.13+10log (NRB,c /50) |
| Propagation Condition |  | 1, 2, 3, 4, 5, 6 | AWGN |
| Antenna Configuration and Correlation Matrix |  | 1, 2, 3, 4, 5, 6 | 1x2 |
| Note 1: Special subframe and uplink-downlink configurations are specified in table 4.2-1 in TS 36.211 [23].Note 2: DL RMCs and OCNG patterns are specified in clauses A 3.1 and A 3.2 of TS 36.133 [15] respectively.Note 3: OCNG shall be used such that all cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.Note 4: 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 Noc to be fulfilled.Note 5: Ês/Iot, RSRP, SCH\_RP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves. |

##### A.6.6.18.3.2 Test Requirements

In this test with per-UE gap, the UE shall send one Event A4 triggered measurement report for Cell 2, with a measurement reporting delay less than X ms from the beginning of time period T2, where X is

10240 for UE supporting power class 1 and 5, or

6400 for UE supporting other power class.

The UE shall send one Event B2 triggered measurement report for Cell 3 to the PCell, with a measurement reporting delay less than 3.84s from the start of period T2.

The measurement reporting delay is defined as the time from the beginning of time period T2 to the moment when the UE sends the measurement report on PUSCH.

The UE shall not send event-triggered measurement reports as long as the reporting criteria is 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>

<Start of change #2>

#### A.6.6.18.4 SA event triggered reporting tests for PRS and SSB measurement in FR1 without SSB time index detection when DRX is not used

##### A.6.6.18.4.1 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 SA NR measurements with concurrent gaps requirements in clause 9.2.6(when one of concurrent gaps in same frequency layer of serving cells), 9.3.6(when one of concurrent gaps in the different frequency layer of serving cells) and 9.9.2(when one of concurrent gaps used for PRS measurement).

In this test, there are three cells: NR cell 1 as PCell in FR1 on NR RF channel 1, NR cell 2 as neighbour cell in FR1 on NR RF channel 2 and NR cell 3 as neighbor cell in FR1 on NR RF channel 1. The test parameters are given in Tables A.6.6.18.4.1-1, A.6.6.18.4.1-2 and A.6.6.18.4.1-3.

Two measurement gap patterns (MeasGapId #1 and MeasGapId #2) are configured with the gap pattern ID #0 and #24 as defined in Table A.6.6.18.4.1-2. MeasGapId #2 is configured with a higher priority than MeasGapId #1. MeasGapId #1 and MeasGapId #2 are associated with the MOs for RF channel numbers #1 and #2, respectively.

In the measurement control information, 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 NR cell 2 and NR cell 3. Cell 1 and cell 3 transmit PRS during T2.

The *NR-DL-AoD-RequestLocationInformation* message and *NR-DL-AoD-ProvideAssistanceData* message as defined in TS 37.355 shall be provided to the UE during T1. The last slot containing the two messages for the assistance data and location information request is denoted as #n.

The beginning of the time interval T2 shall be aligned with the beginning of the first MG instance of MeasGapId #2 containing the PRS resources that is ΔT after slot #n, where ΔT = 50 ms is the maximum processing time of the assistance data and location information request.

Table A.6.6.18.4.1-1: SA event triggered reporting tests without SSB index reading for FR1-FR1

|  |  |
| --- | --- |
| Config | Description |
| 1 | NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 2 | NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 3 | NR 30kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note 1: The UE is only required to be tested in one of the supported test configurationsNote 2: target NR cell has the same SCS, BW and duplex mode as NR serving cell |

Table A.6.6.18.4.1-2: General test parameters for SA inter-frequency event triggered reporting for concurrent gaps with partially partial overlapping scenario for SSB-based measurements and PRS measurement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Value** | **Comment** |
| NR RF Channel Number |  | 1,2,3 | 1: Cell 1 and Cell 32: Cell 2 | Two TDD carrier frequencies are used for the NR cells. |
| Active cell |  | 1,2,3 | NR cell 1 (Pcell) | Cell 1 is the PCell and the DL-AoD reference cell in the positioning assistance data. |
| Neighbour cell |  | 1,2,3 | NR cell 2, NR cell 3 | Cell 2 is an inter-frequency cell neighbor cellCell 3 is a neighbour cell in the positioning assistance data. |
| Gap Pattern Id  |  | 1,2,3 | 0 for MeasGapId #124 for MeasGapId #2 |  |
| Measurement gap offset | ms | 1,2,3 | 7 for MeasGapId #111 for MeasGapId #2 |  |
| DRX |  | 1, 2, 3 | NA | OFF |
| Time offset between serving and neighbour cells | μs | 1, 2, 3 | 3 | Synchronous cells |
| Expected RSTD | μs | 1, 2, 3 | 3 |  |
| Expected RSTD uncertainty | μs | 1, 2, 3 | 5 |  |
| T1 | s | 1, 2, 3 | 2 |  |
| T2 | s | 1, 2, 3 | 5 |  |
| NOTE 1: GP#24 is configured if UE supports MG#24, otherwise GP#0 is configured. |

Table A.6.6.18.4.1-3: Cell specific test parameters for SA inter-frequency event triggered reporting for FR1 concurrent gap with partially-partial overalpping scenario for SSB-based measurements and PRS measurement

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 |
| BWchannel | MHz | Config 1,2 | 10: NRB,c = 52 | 10: NRB,c = 52 | 10: NRB,c = 52 |
|  |  | 3 | 40: NRB,c = 106 | 40: NRB,c = 106 | 40: NRB,c = 106 |
| BWP BW | MHz | Config 1,2 | 10: NRB,c = 52 | 10: NRB,c = 52 | 10: NRB,c = 52 |
|  |  | 3 | 40: NRB,c = 106 | 40: NRB,c = 106 | 40: NRB,c = 106 |
| BWP configuration | Initial DL BWP |  | Config 1,2,3 | DLBWP.0.1 | N/A | N/A |
|  | Initial UL BWP |  |  | ULBWP.0.1 | N/A | N/A |
|  | Dedicated DL BWP |  |  | DLBWP.1.1 | N/A | N/A |
|  | Dedicated UL BWP |  |  | ULBWP.1.1 | N/A | N/A |
| OCNG Patterns defined in A.3.2.1.1 (OP.1)  |  | Config 1,2,3 | OP.1 | OP.1 | OP.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 |
| SSB parameters |  | 1 | SSB.1 FR1 | SSB.1 FR1 | SSB.1 FR1 |
|  |  | 2 | SSB.1 FR1 | SSB.1 FR1 | SSB.1 FR1 |
|  |  | 3 | SSB.2 FR1 | SSB.2 FR1 | SSB.2 FR1 |
| SMTC configuration defined in A.3.11 |  | 1 | SMTC.2 | SMTC.2 | SMTC.2 |
|  |  | 2 | SMTC.1 | SMTC.1 | SMTC.1 |
|  |  | 3 | SMTC.1 | SMTC.1 | SMTC.1 |
| TRS Configuration |  | 1 | TRS.1.1 FDD | N/A | N/A |
|  | 2 | TRS.1.1 TDD | N/A | N/A |
|  | 3 | TRS.1.2 TDD | N/A | N/A |
| PRS configuration |  | 1 | PRS.1.4 FR1 | N/A | PRS.1.4 FR1 |
|  | 2 | PRS.1.4 FR1 | N/A | PRS.1.4 FR1 |
|  | 3 | PRS.2.4 FR1 | N/A | PRS.2.4 FR1 |
| PRS muting configuation |  | 1, 2, 3 | ‘10’ | ‘01’ | ‘01’ |
| PDSCH/PDCCH | KHz | 1, 2 | 15 |
| subcarrier spacing |  | 3 | 30 |
| Note2 | dBm/15kHz Note5 | 1 | -98 | -98 | -98 |
|  | 2 | -98 | -98 | -98 |
|  | 3 | -98 | -98 | -98 |
| Note2 | dBm/SCS Note4 | 1 | -98 | -98 | -98 |
|  | 2 | -98 | -98 | -98 |
|  | 3 | -95 | -95 | -95 |
| SS-RSRP Note 3 | dBm/SCS Note5 | 1 | -94 | -94 | -Infinity | -94 | N/A | N/A |
|  | 2 | -94 | -94 | -Infinity | -94 | N/A | N/A |
|  | 3 | -91 |  |  |  |  |  |
| PRS-RSRP Note 3 | dBm/SCS Note5 | 1 | -Infinity | -101 | N/A | N/A | -Infinity | -108 |
|  | 2 | -Infinity | -101 | N/A | N/A | -Infinity | -108 |
|  | 3 | -Infinity | -98 | N/A | N/A | -Infinity | -105 |
| PRS  | dB | 1,2,3 | -Infinity | -3 | N/A | N/A | -Infinity | -10 |
|  PRS  | dB | 1,2,3 | -Infinity | -3 | N/A | N/A | -Infinity | -10 |
| IoNote3 | dBm/9.36 MHz | 1 | -64.59 | -70.05 | -64.59 | -64.59 |
|  | dBm/9.36 MHz | 2 | -64.59 | -70.05 | -64.59 | -64.59 |
|  | dBm/38.16 MHz | 3 | -58.49 | -63.94 | -58.49 | -58.49 |
| Propagation Condition  |  | 1,2,3 | AWGN |
| Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.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/PRS-RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.Note 4: PRS-RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.Note 5: VoidNote 6: VoidNote 7: Void |

##### A.6.6.18.4.2 Test Requirements

The UE shall send one Event A3 triggered measurement report for cell 2, with a measurement reporting delay less than 1840ms from the beginning of time period T2.

The PRS RSRP measurement time fulfils the requirements specified in Clause 9.9.3.5. The UE shall perform and report the PRS RSRP measurements for Cell 3 with respect to the reference cell in the DL-AoD assistance data, Cell 1, within the time duration specified in section 9.9.3.5 starting from the beginning of time interval T2.

The rate of the correct events for the neighbour cell observed during repeated tests shall be at least 90%, where the reported PRS RSRP measurement for each correct event shall be within the PRS RSRP reporting range specified in Clause 10.1.24.3, i.e., between PRS RSRP\_0 and PRS RSRP\_126.

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%.

IUE is not required to report SSB time index.

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 #2>