**3GPP TSG-RAN4 Meeting #112 *R4-241xxxx***

**Maastricht, The Netherlands, 19 – 23 August, 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** | 1 | **Current version:** |  |  |
|  | | | | | | | | |
| *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 TCs for RRC\_IDLE | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_pos\_enh2-Perf | | | | |  | ***Date:*** | | | 2024-08-05 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | RAN4#111 agreed to define PRS measurement TCs for RRC\_IDLE. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Based on work split in R4-2410191, define PRS measurement TCs for RRC\_IDLE, including sets 10-13, 10-14, 10-18, 11-13, 11-14, 11-18. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Performance requirements for R18 POS WI are incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.6.10.2.2 (new), A.7.10.2.2 (new), A.17.10.2.2 (new), A.6.11.2.2 (new), A.7.11.2.2 (new), A.17.11.2.2 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **x** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | The draftCR is based on Big draftCR R4-2410160 from RAN4#111. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<Start of Change 1: Set 10-13>

#### A.6.10.2.2 PRS-RSRP reporting delay test case in RRC\_IDLE state in FR1 for case 2 when eDRX cycle > 10.24s

##### A.6.10.2.2.1 Test purpose and Environment

The purpose of the test is to verify that the PRS-RSRP measurement in RRC\_IDLE with eDRX meets the delay requirements specified in clause 4.5.3.5 in an environment with AWGN propagation conditions.

The supported test configurations in Table A.6.8.2.X.1-1 apply for this test.

The test procedure in clause A.6.8.2.X.1 apply for this test, except that during T2, UE is in RRC\_IDLE state.

The general test parameters as specified in Table A.6.8.2.X.1-2 apply for this test, except those specified in Table A.6.10.2.2.1-1.

The cell specific test parameters as specified in Table A.6.8.2.X.1-3 apply for this test.

Table A.6.10.2.2.1-1: General test parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Value** | **Comment** |
| eDRX cycle length (for CN eDRX) | s | 1, 2, 3 | 40.96 |  |

##### A.6.10.2.2.2 Test Requirements

The test requirements in clause A.6.8.2.X.2 apply for this test, except that the time limits are specified in clause 4.5.3.5.

<End of Change 1: Set 10-13>

<Start of Change 2: Set 10-14>

#### A.7.10.2.2 PRS-RSRP reporting delay test case in RRC\_IDLE state in FR2 for case 2 when eDRX cycle > 10.24s

##### A.7.10.2.2.1 Test Purpose and Environment

The purpose of the test is to verify the PRS RSRP measurement requirements specified in Clause 4.5.3.5 for single positioning frequency layer under AWGN propagation conditions in RRC\_IDLE when configured with eDRX.

The supported test configurations in Table A.7.8.2.X.1-1 apply for this test.

The test procedure in clause A.7.8.2.X.1 apply for this test, except that during T2, UE is in RRC\_IDLE state.

The general test parameters as specified in Table A.7.8.2.X.1-2 apply for this test, except those specified in Table A.7.10.2.2.1-1.

The cell specific test parameters as specified in Table A.7.8.2.X.1-3 apply for this test.

Table A.7.10.2.2.1-1: General test parameters for PRS RSRP measurement reporting delay

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Unit | Test configuration | Value | Comment |
| CN eDRX configuration |  | Config 1 | eDRX cycle = 40.96s  PTW length = 1.28s |  |

##### A.7.10.2.2.2 Test Requirements

The test requirements in clause A.6.8.2.X.2 apply for this test, except that the time limits are specified in clause 4.5.3.5.

<End of Change 2: Set 10-14>

<Start of Change 3: Set 10-18>

#### A.17.10.2.2 PRS-RSRP reporting delay test case in RRC\_IDLE state in FR2 for case 2 when eDRX cycle > 10.24s

##### A.17.10.2.2.1 Test Purpose and Environment

The purpose of the test is to verify the PRS RSRP measurement requirements specified in Clause 4.6.3.5 for single positioning frequency layer under AWGN propagation conditions in RRC\_IDLE when configured with eDRX.

The supported test configurations in Table A.17.A.X2.3-1 apply for this test.

The test procedure in clause A.17.A.X2.3.1 apply for this test, except that during T2, UE is in RRC\_IDLE state.

The general test parameters as specified in Table A.17.A.X2.3.1-2 apply for this test, except those specified in Table A.17.10.2.2.1-1.

The cell specific test parameters as specified in Table A.17.A.X2.3.1-3 apply for this test.

Table A.17.10.2.2.1-1: General test parameters for PRS RSRP measurement reporting delay

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Unit | Test configuration | Value | Comment |
| CN eDRX configuration |  | Config 1 | eDRX cycle = 40.96s  PTW length = 1.28s |  |

##### A.17.10.2.2.2 Test Requirements

The test requirements in clause A.17.A.X2.3.2 apply for this test, except that the time limits are specified in clause 4.6.3.5.

<End of Change 3: Set 10-18>

<Start of Change 4: Set 11-13>

#### A.6.11.2.2 PRS-RSRP measurement accuracy test case in RRC\_IDLE state in FR1 for case 2 when eDRX cycle > 10.24s

##### A.6.11.2.2.1 Test purpose and Environment

The purpose of the test is to verify that the PRS-RSRP measurement in RRC\_IDLE with eDRX meets the accuracy requirements specified in clause 10.1.24.2.1 and 10.1.24.2.2 in an environment with AWGN propagation conditions.

##### A.6.11.2.2.1 Test parameters

The supported test configurations in Table A.6.9.2.1.2-1 apply for this test.

The test procedure in clause A.6.9.2.1.2 apply for this test, except that UE is in RRC\_IDLE state.

The test parameters as specified in Table A.6.9.2.1.2-2 apply for this test, except those additionally specified in Table A.6.11.2.2.1-1.

Table A.6.11.2.2.1-1: PRS-RSRP test parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Value** | **Comment** |
| eDRX cycle length (for CN eDRX) | s | 1, 2, 3 | 40.96 |  |
| PTW window length | s | 1, 2, 3 | 1.28 |  |

##### A.6.11.2.2.2 Test Requirements

The test requirements in clause A.6.9.2.1.3 apply for this test.

<End of Change 4: Set 11-13>

<Start of Change 5: Set 11-14>

#### A.7.11.2.2 PRS-RSRP measurement accuracy test case in RRC\_IDLE state in FR2 for case 2 when eDRX cycle > 10.24s

##### A.7.11.2.2.1 Test purpose and Environment

The purpose of the test is to verify that the PRS-RSRP measurement in RRC\_IDLE with eDRX meets the accuracy requirements specified in clause 10.1.24.2.1 and 10.1.24.2.2 in an environment with AWGN propagation conditions.

##### A.7.11.2.2.1 Test parameters

The supported test configurations in Table A.7.9.2.1.2-1 apply for this test.

The test procedure in clause A.7.9.2.1.2 apply for this test, except that UE is in RRC\_IDLE state.

The general test parameters as specified in Table A.7.9.2.1.2-2 apply for this test, except those additionally specified in Table A.7.11.2.2.1-1.

The OTA related test parameters in Table A.7.9.2.1.2-3 apply for this test.

Table A.7.11.2.2.1-1: PRS-RSRP test parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Value** | **Comment** |
| eDRX cycle length (for CN eDRX) | s | 1, 2, 3 | 40.96 |  |
| PTW window length | s | 1, 2, 3 | 1.28 |  |

##### A.7.11.2.2.2 Test Requirements

The test requirements in clause A.7.9.2.1.3 apply for this test.

<End of Change 5: Set 11-14>

<Start of Change 6: Set 11-18>

#### A.17.11.2.2 PRS-RSRP measurement accuracy test case in RRC\_IDLE state in FR2 for case 2 when eDRX cycle > 10.24s

##### A.17.11.2.2.1 Test purpose and Environment

The purpose of the test is to verify that the PRS-RSRP measurement in RRC\_IDLE with eDRX meets the accuracy requirements specified in clause 10.1A.Y.2.1 and 10.1A.Y.2.2 in an environment with AWGN propagation conditions.

##### A.17.11.2.2.1 Test parameters

The supported test configurations in Table A.17.B.X2.1.2-1 apply for this test.

The test procedure in clause A.17.B.X2.1.2 apply for this test, except that UE is in RRC\_IDLE state.

The general test parameters as specified in Table A.17.B.X2.1.2-2 apply for this test, except those additionally specified in Table A.17.11.2.2.1-1.

The OTA related test parameters in Table A.17.B.X2.1.2-3 apply for this test.

Table A.17.11.2.2.1-1: PRS-RSRP test parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Unit** | **Test configuration** | **Value** | **Comment** |
| eDRX cycle length (for CN eDRX) | s | 1, 2, 3 | 40.96 |  |
| PTW window length | s | 1, 2, 3 | 1.28 |  |

##### A.17.11.2.2.2 Test Requirements

The test requirements in clause A.17.B.X2.1.3 apply for this test.

<End of Change 6: Set 11-18>