**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** |  | **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:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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:*** | SDT power levels and and SDT change threshold not correctly configured |
|  |  |
| ***Summary of change:*** | Fig on power levels and TC parameters, according to the discussion on R4-2409134 |
|  |  |
| ***Consequences if not approved:*** | Incorrect test cases can lead to unpredictable UE behaviour in conformance tests.  |
|  |  |
| ***Clauses affected:*** | A.6.2.1 |
|  |  |
|  | **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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

## <Start of Change #1>

## A.6.2 SA: RRC\_INACTIVE state mobility

### A.6.2.1 Configured Grant based Small Data Transmissions (CG-SDT)

#### A.6.2.1.1 Test purpose and Environment

The purpose of this test is to partly verify that the UE properly perform TA validation for CG-SDT transmission in clause 5.5.3. The test includes two sub-tests, Sub-test#1 for testing valid TA where UE can initiat CG-SDT transmission, and Sub-test#2 for testing invalid TA where UE does not initiate CG-SDT transmission. Subtest#2 is only tested if Sub-test#1 is passed. For each sub-test, UE is configured with CG-SDT configurations when entering RRC Inactive state. Sub-test#1 consists of four successive time periods, with time duration of T1, T2, T3 and T4 repectively. Sub-test#2 consists of two successive time periods, with time duration of T5 and T6 respectively. There is one cell, which is the active NR cell in FR1. Figure A.6.2.1.1-1 shows the variation of the RSRP over the duration of Sub-test#1, and Figure A.6.2.1.1-2 shows the variation of the RSRP over the duration of Sub-test#2.

In Sub-test#1:

Prior to the time point TA, the UE shall be fully synchronized to PCell (Cell 1), be registered to the cell and have entered RRC connected mode.

Before starting the test at time point TA, test equipment configures RSRP to P0.

At time point TB, RSRP is changed from P0 to P1.

At time point TC, which is W1 after time point TB, UE expect to receive RRC release with CG SDT configuration and RRC status is changed to INACTIVE status.

At time point TD, RSRP is changed from P1 to P0.

At time point TE, RSRP is changed from P0 to P2. TE must be W2 before TF.

Test equipment triggers UL data arrival at UE lower layer at time point TF. After time point TF, test equipment observes whether UE transmits with CG-SDT no later than TG which is W3 after TF.

After time point TG, RRC status is changed from RRC INACTIVE to RRC CONNECTED.

In Sub-test#2:

Prior to the time point TA, the UE shall pass Sub-test#1 and have entered RRC connected mode. Otherwise, Sub-test#2 shall not be executed.

From time point TA to time point TD, RSRP is set to P2.

At time point TC, which is W1 after time point TB, UE expect to receive RRC release with CG SDT configuration and RRC status is changed to INACTIVE status.

At time point TD, RSRP is changed from P2 to P0.

Test equipment triggers UL data arrival at UE lower layer at time point TF. TF is 3360ms after TD. After time point TF, test equipment observes whether UE transmits with CG-SDT no later than TG which is W3 after TF.

W1 equals to 640ms and W2 equals to 640ms based on requirements in clause 5.5.3. W3 is 860ms.



Figure A.6.2.1.1-1: RSRP variation model for CG-SDT Sub-test#1



Figure A.6.2.1.1-2: RSRP variation model for CG-SDT Sub-test#2

#### A.6.2.1.2 Test Parameters

There is one cells in the test, the FR1 PCell. The test parameters for the PCell are given in Table A.6.2.1.2-1, Table A.6.2.1.2-2, and Table A.6.2.1.2-3.

Table A.6.2.1.2-1: NR configuration for FR1 SSB

|  |  |
| --- | --- |
| Config | 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.6.2.1.2-2: General test parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Unit | Test configuration | Value | Comment |
| TDD Configuration |  | 1 | N/A |  |
|  |  | 2 | TDDConf.1.1 |  |
|  |  | 3 | TDDConf.2.1 |  |
| BWchannel | MHz | 1,2 | 10: NRB,c = 52 |  |
|  |  | 3 | 40: NRB,c = 106 |  |
| PDSCH Reference measurement channel |  | 1 | SR.1.1 FDD |  |
|  |  | 2 | SR.1.1 TDD |  |
|  |  | 3 | SR.2.1 TDD |  |
| RMSI CORESET Reference Channel |  | 1 | CR.1.1 FDD |  |
|  |  | 2 | CR.1.1 TDD |  |
|  |  | 3 | CR.2.1 TDD |  |
| Dedicated CORESET Reference Channel |  | 1 | CCR.1.1 FDD |  |
|  |  | 2 | CCR.1.1 TDD |  |
|  |  | 3 | CCR.2.1 TDD |  |
| SSB configuration |  | 1,2 | SSB.1 FR1 |  |
|  |  | 3 | SSB.2 FR1 |  |
| OCNG Patterns |  | 1,2,3 | OP.1 |  |
| Initial BWP Configuration |  | 1,2,3 | DLBWP.0.1ULBWP.0.1 |  |
| Dedicated BWP configuration |  | 1,2,3 | DLBWP.1.1ULBWP.1.1 |  |
| SMTC configuration |  | 1,2,3 | SMTC.1 |  |
| DRX configuration | ms | 1,2,3 | 640 |  |
| T1 | s | 1,2,3 | 0.4 |  |
| T2 | s | 1,2,3 | 1.28 |  |
| T3 | s | 1,2,3 | 2.72 |  |
| T4 | s | 1,2,3 | 1.5 |  |
| T5 | s | 1,2,3 | 1.68 |  |
| T6 | s | 1,2,3 | 4.22 |  |
| cg-SDT-RSRP-ChangeThreshold | dB | 1,2,3 | 8 |  |
| cg-SDT-RSRP-ThresholdSSB | dBm | 1,2,3 | -110dB |  |
| cg-SDT-TimeAlignmentTime |  | 1,2,3 | infinity |  |
| CG-SDT resource period | ms |  | 320 | configuredGrantConfig Peridocity at 38.331Config 1,2 : sym320x14, config 3 : sym640x14 |
| Propagation condition |  | 1,2,3 | AWGN |  |

Table A.6.2.1.2-3: SSB specific test parameters

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| Parameter | Config | Unit | SSB#0 |
|  |  |  | T1 | T2 | T3 | T4 | T5 | T6 |
|  | 1,2,3 | dBm/15kHz | -100 |
|  | 1,2 | dBm/SSB SCS | -100 |
| 3 | dBm/SSB SCS | -97 |
|  | 1,2,3 | dB | 0 | 12 | 0 | 14 | 14 | 0 |
| SS RSRP | 1,2 | dBm/SSB SCS | -100 | -88 | -100 | -86 | -86 | -100 |
| 3 | dBm/SSB SCS | -97 | -85 | -97 | -83 | -83 | -97 |
| Io  | 1,2 | dBm/9.36MHz | -69.04 | -59.78 | -69.04 | -57.88 | -57.88 | -69.04 |
| 3 | dBm/38.16MHz | -62.93 | -53.68 | -62.93 | -51.78 | -51.78 | -62.93 |
|  | 1,2,3 | dB | 0 | 12 | 0 | 14 | 14 | 0 |

#### A.6.2.1.3 Test requirements

The UE behaviour in each test during time durations shall be as follows:

During Sub-test#1, UE shall transmit PUSCH at CG-SDT resource within 860ms after time point TF.

During Sub-test#2, after passing Sub-test#1, UE shall not transmit PUSCH at CG-SDT resources after TF until the end of the test at time point TG.

The rate of correct events observed during repeated tests shall be at least 90%.

## <End of Change #1>