**3GPP TSG-RAN WG4 Meeting #111 R4-2407520**

**Fukuoka City, Fukuoka, Japan, 20th – 24th May, 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:***  | (Set 7-3 & 7-4) Draft CR for RSCPD with RSTD measurement delay TC in RRC\_INACTIVE in FR1 and FR2 |
|  |  |
| ***Source to WG:*** | CATT |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_pos\_enh2-Perf |  | ***Date:*** |  |
|  |  |  |  |  |
| ***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 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)* |
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| ***Reason for change:*** | The requirements for RSCPD with RSTD measurement delay in RRC\_INACTIVE state are defined and the corresponding test cases need to be introduced.  |
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| ***Summary of change:*** | Introduce the the test case for RSCPD with RSTD measurement delay requirements in RRC\_INACTIVE in FR1 and FR2.  |
|  |  |
| ***Consequences if not approved:*** | The test cases for RSCPD with RSTD measurement delay requirements in RRC\_INACTIVE are missing. |
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| ***Clauses affected:*** | New A.6.8.X, A.7.8.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.6.8.X DL RSCPD reported with RSTD measurements

#### A.6.8.X.1 DL RSCPD reported with RSTD measurement reporting delay test case for single positioning frequency layer in FR1 SA in RRC\_INACTIVE state

##### A.6.8.X.1.1 Test Purpose and Environment

The purpose of the test is to verify that the DL RSCPD reported with RSTD measurement meets the requirements specified in Clause 9.9.7.5 in an environment with AWGN propagation conditions in FR1 in standalone scenario when single positioning frequency layer is configured.

The test environment is the same as in A.6.8.1.1 with the following additional configuration in Table A.6.8.X.1.1-1 and description.

In *nr-DL-TDOA-RequestLocationInformation,* the UE is configured to perform DL RSCPD measurement via *nr-DL-PRS-RSCPD-Request*. The UE also is configured to perform both RSCPD and RSTD measurements within the time window indicated to UE via *nr-DL-PRS-MeasurementTimeWindowsConfig*.

The beginning of the time interval T2 shall be aligned with the first DRX cycle containing a DL PRS resource(s) to be measured within the configured time window.

**Table A.6.8.X.1.1-1: Time window configuration**

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| Indicated time window configuration | Config 1,2,3 |  | [TBD] | As specified in clause A.3.Y |

##### A.6.8.X.1.2 Test Requirements

The DL RSCPD reported with RSTD measurement time fulfils the requirements specified in Clause 9.9.7.5.

The UE shall perform and report the DL RSCPD and DL RSTD measurements for Cell 2 and Cell 3 with respect to the reference cell in the DL-TDOA assistance data, Cell 1, within the time duration specified in section 9.9.7.5 starting from the beginning of time interval T2.

NOTE: The actual overall delays measured in the test may be higher than the time duration above because of the uncertainty in acquiring the first available PRACH occasion to transition to RRC\_CONNECTED state to report the measurements.

The rate of the correct events for each neighbour cell observed during repeated tests shall be at least 90%, where the reported RSTD measurement for each correct event shall be within the RSTD reporting range specified in Clause 10.1.23.3 and the reported RSCPD measurement for each correct event shall be within the RSCPD reporting range specified in Clause 10.1.Y1.3.

# <End of Change 1>

# <Start of Change 2>

### A.7.8.X DL RSCPD reported with RSTD measurements

#### A.7.8.X.1 DL RSCPD reported with RSTD measurement reporting delay test case for single positioning frequency layer in FR2 SA in RRC\_INACTIVE state

##### A.7.8.X.1.1 Test Purpose and Environment

The purpose of the test is to verify that the DL RSCPD reported with RSTD measurement meets the requirements specified in Clause 9.9.7.5 in an environment with AWGN propagation conditions in FR2 in standalone scenario when single positioning frequency layer is configured.

The test environment is the same as in A.7.8.1.1 with the following additional configuration in Table A.7.8.X.1.1-1 and description.

In *nr-DL-TDOA-RequestLocationInformation,* the UE is configured to perform DL RSCPD measurement via *nr-DL-PRS-RSCPD-Request*. The UE also is configured to perform both RSCPD and RSTD measurements within the time window indicated to UE via *nr-DL-PRS-MeasurementTimeWindowsConfig*.

The beginning of the time interval T2 shall be aligned with the first DRX cycle containing a DL PRS resource(s) to be measured within the configured time window.

**Table A.7.8.X.1.1-1: Time window configuration**

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| Indicated time window configuration | Config 1 |  | [TBD] | As specified in clause A.3.X |

##### A.7.8.X.1.2 Test Requirements

The DL RSCPD reported with RSTD measurement time fulfils the requirements specified in Clause 9.9.7.5.

The UE shall perform and report the DL RSCPD and DL RSTD measurements for Cell 2 and Cell 3 with respect to the reference cell in the DL-TDOA assistance data, Cell 1, within the time duration specified in section 9.9.7.5 starting from the beginning of time interval T2.

NOTE: The actual overall delays measured in the test may be higher than the time duration above because of the uncertainty in acquiring the first available PRACH occasion to transition to RRC\_CONNECTED state to report the measurements.

The rate of the correct events for each neighbour cell observed during repeated tests shall be at least 90%, where the reported RSTD measurement for each correct event shall be within the RSTD reporting range specified in Clause 10.1.23.3 and the reported RSCPD measurement for each correct event shall be within the RSCPD reporting range specified in Clause 10.1.Y1.3.

# <End of Change 2>