**3GPP TSG-RAN WG4 Meeting # 112 *R4-241xxxx***

**Maastricht, NL, 19 August - 23 August, 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.133** | **CR** | **Draft CR** | **rev** | **1** | **Current version:** | **18.6.0** |  |
|  | | | | | | | | |
| *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:*** | Draft CR on SL PRS-RSRP(P) measurement delay and accuracy test cases in FR1 | | | | | | | | | |
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| ***Source to WG:*** | CATT | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_pos\_enh2-Perf | | | | |  | ***Date:*** | | | 2024-08-08 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | 1. Define SL PRS-RSRP(P) measurement delay and accuracy test cases in FR1. | | | | | | | | |
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| ***Summary of change:*** | | 1. Change #1: SL PRS-RSRP measurement delay test case in FR1. 2. Change #2: SL PRS-RSRPP measurement delay test case in FR1. 3. Change #3: SL PRS-RSRP measurement accuracy test case in FR1. 4. Change #4: SL PRS-RSRPP measurement accuracy test case in FR1. | | | | | | | | |
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| ***Consequences if not approved:*** | | Performance requirements for SL positioning are incomplete. | | | | | | | | |
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| ***Clauses affected:*** | | New clauses: A.9A.1.1.5, A.9A.1.1.6, A.9A.1.2.3, A.9A.1.2.4. | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | NA | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | R4-2411334. | | | | | | | | |

<Start of Change 1>

#### A.9A.1.1.5 NR SL PRS-RSRP measurement reporting delay test case in FR1 SA

##### A.9A.1.1.5.1 Test Purpose and Environment

The purpose of the test is to verify that the measurement time of both SL PRS PRS-RSRP and SL PRS RSTD measurements meet the requirements specified in clause 12A.3.5and 12A.2.5 respectively in an environment with AWGN propagation conditions in FR1 in standalone NR scenario, with additionally configured single frequency layer for SL positioning.

The test environment and configurations refer to A.9A.1.1.1. And if UE passes this test case, then UE does not need to take the reporting delay test with RSTD measurement only defined in A.9A.1.1.1.

##### A.9A.1.1.5.2 Test Requirements

The SL PRS-RSRP and SL RSTD measurement times fulfil the requirements specified in clause 12A.3.5 and 12A.2.5 respectively.

The UE shall perform and report to LMF the SL PRS-RSRP measurements for anchor UE 2 and anchor UE 3 within the time duration specified in clause 12A.3.5 starting from the beginning of time interval T2. UE also performs and report to LMF the SL RSTD measurements for anchor UE 2 and anchor UE 3 with respect to the reference anchor UE 1, within the time duration specified in clause 12A.2.5 starting from the beginning of time interval T2.

NOTE: The actual overall delays measured in the test may be up to 2xTTIDCCH higher than the time duration above because of TTI insertion uncertainty of the measurement report in DCCH.

The rate of the correct events for each anchor UE observed during repeated tests shall be at least 90%, where the reported SL PRS-RSRP measurement for each correct event shall be within the SL PRS-RSRP reporting range specified in clause 10.4A.3.1.1, i.e., between SL\_PRS\_RSRP\_0 and SL\_PRS\_RSRP\_126, and the reported SL RSTD measurement for each correct event shall be within the SL RSTD reporting range specified in clause 10.4A.2.1.1.

<End of Change 1>

<Start of Change 2>

#### A.9A.1.1.6 NR SL PRS-RSRPP measurement reporting delay test case in FR1 SA

##### A.9A.1.1.6.1 Test Purpose and Environment

The purpose of the test is to verify that the measurement time of both SL PRS PRS-RSRPP and SL Rx-Tx measurements meet the requirements specified in clause 12A.5.5 and 12A.4.5 respectively in an environment with two-tap propagation conditions in FR1 in standalone NR scenario, with additionally configured single frequency layer for SL positioning.

The test environment and configurations refer to A.9A.1.1.2, except that the propagation shall be two-tap channel. And if UE passes this test case, then UE does not need to take the reporting delay test case with SL Rx-Tx measurement only defined in A.9A.1.1.2.

##### A.9A.1.1.6.2 Test Requirements

The SL PRS-RSRPP and SL Rx-Tx measurement times fulfil the requirements specified in clause 12A.5.5 and 12A.4.5 respectively.

The UE shall perform and report to LMF the SL PRS-RSRPP measurements for anchor UE 2 and anchor UE 3 within the time duration specified in clause 12A.5.5 starting from the beginning of time interval T2. UE also performs and report to LMF the SL Rx-Tx measurements for anchor UE 2 and anchor UE 3 within the time duration specified in clause 12A.4.5 starting from the beginning of time interval T2.

NOTE: The actual overall delays measured in the test may be up to 2xTTIDCCH higher than the time duration above because of TTI insertion uncertainty of the measurement report in DCCH.

The rate of the correct events for each anchor UE observed during repeated tests shall be at least 90%, where the reported SL PRS-RSRPP measurement for each correct event shall be within the SL PRS-RSRPP reporting range specified in clause 10.4A.5.1.1, i.e., between SL\_PRS\_RSRPP\_0 and SL\_PRS\_RSRPP\_126, and the reported SL Rx-Tx measurement for each correct event shall be within the SL Rx-Tx reporting range specified in clause 10.4A.4.1.1.

<End of Change 2>

<Start of Change 3>

#### A.9A.1.2.3 NR SL PRS-RSRP measurement accuracy test case in FR1 SA

##### A.9A.1.2.3.1 Test Purpose and Environment

The purpose of the test is to verify that the SL PRS PRS-RSRP measurement accuracy meets the requirements specified in clause 10.4A.3.2 in an environment with AWGN propagation conditions in FR1 in standalone NR scenario, with additionally configured single frequency layer for SL positioning.

The test environment and configurations refer to A.9A.1.2.1. During the test, both SL RSTD and SL PRS-RSRP measurements are requested by LMF.

##### A.9A.1.2.3.2 Test Requirements

In each test, the PRS-RSRP measurement accuracies shall fulfil the accuracy requirement defined in clause 10.4A.3.2.

<End of Change 3>

<Start of Change 4>

#### A.9A.1.2.4 NR SL PRS-RSRPP measurement accuracy test case in FR1 SA

##### A.9A.1.2.4.1 Test Purpose and Environment

The purpose of the test is to verify that the SL PRS PRS-RSRPP measurement accuracy meets the requirements specified in clause 10.4A.5.2 in an environment with two-tap propagation conditions in FR1 in standalone NR scenario, with additionally configured single frequency layer for SL positioning.

The test environment and configurations refer to A.9A.1.2.2, except that the propagation shall be two-tap channel. During the test, both SL Rx-Tx and SL PRS-RSRPP measurements are requested by LMF.

##### A.9A.1.2.4.2 Test Requirements

In each test, the PRS-RSRPP measurement accuracies shall fulfil the accuracy requirement defined in clause 10.4A.5.2.

<End of Change 4>