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

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

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.133** | **CR** | **-** | **rev** | 1 | **Current version:** | **18.6.0** |  |
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| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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 RRM requirements for CPP | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_pos\_enh2-Core | | | | |  | ***Date:*** | | | 2024-08-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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:*** | | It is unclear in current requirements which PFL will be impacted by the periodicity of the periodic time window, when multiple PFLs are configured but not all of them are associated with the time window. | | | | | | | | |
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| ***Summary of change:*** | | Clarify that when periodic time window is configured, the window periodicity should be accounted in the measurement period for the PFL associated with the window, and does not impact measurement period for other PFLs. | | | | | | | | |
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| ***Consequences if not approved:*** | | Core requirements for CPP are incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.6.7.5, 5.6.8.5, 9.9.7.5, 9.9.8.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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>

5.6.7.5 Measurements Period Requirements

After receiving both *NR-DL-TDOA-ProvideAssistanceData* message and *NR-DL-TDOA-RequestLocationInformation* message with *nr-DL-PRS-RSCPD-Request* from the LMF via LPP [34]*,* when LMF configures measurement time window(s) for a PFL, the UE shall be able to measure multiple (up to the UE capability specified in Clause 5.6.7.3) DL RSTD and RSCPD measurements, defined in TS 38.215 [4], during the time window configured to UE via *nr-DL-PRS-MeasurementTimeWindowsConfig* during the measurement period defined as:

Where:

- is the index of positioning frequency layer,

- is total number of positioning frequency layers, and

- is the periodicity of the PRS RSTD measurement in positioning frequency layer i

is the measurement period for PRS RSTD with RSCPD measurement in positioning frequency layer *i* as specified below:

,

where:

- , , , , , , , and are defined in clause 5.6.2.5

- is the time duration of available PRS in the positioning frequency layer to be measured during , and is calculated in the same way as PRS duration K defined in clause 5.1.6.5 of TS 38.214 [26]. For calculation of , only unmuted PRS resources that are not fully overlapped with other higher-priority DL signals/channels are considered.

- When periodic time window(s) are configured by the LMF and PFL *i* is associated with the configured time window, , the least common multiple between , the DRX cycle length and Twindow being the maximum periodicity of the indicated time window(s). is defined in clause 5.6.2.5.

- When periodic time window(s) are configured by the LMF and PFL *i* is not associated with the configured time window(s), , the least common multiple between and the DRX cycle length . is defined in clause 5.6.2.5.

- and are calculated by only considering the PRS resources in the indicated resources sets overlapping with the indicated time window(s).

The time *s*tarts from the first time window (TDL RSCPD) configured by LMF within DRX cycle containing the DL PRS resource(s) in the assistance data after both the *NR-DL-TDOA-ProvideAssistanceData* message and *NR-DL-TDOA-RequestLocationInformation* message are delivered from LMF to the UE via LPP [34].

When LMF does not configure measurement time window(s) for a PFL or UE does not support FG 41-2-3:

- For a single PFL: existing requirements without time window apply.

- FFS: When multiple PFLs are configured for legacy measurements.

If the DRX cycle is reconfigured during the measurement period, then the measurement period can be longer.

When PRS-RSRP is configured for DL-TDOA, RSTD and PRS-RSRP are performed over the same measurement period.

The measurement requirements do not apply to any PRS resource that always collides with other higher-priority DL signals/channels, as specified in clause 5.6.1.

Longer measurement period is expected when there are collisions between PRS resources and other higher-priority DL signals/channels.

If changes for the PFL during the measurement period, the measurement period can be longer.

The measurement requirements do not apply for a PRS resource, if the PRS resource is across two sampling duration of N within duration .

The measurement requirements do not apply for a PRS resource, if time span of the PRS resource instance (including at least the minimum number of repetitions specified in the accuracy requirements) is greater than UE reported capability N.

The requirements in clause 5.6.7 do not apply if the PRS configuration given by higher layer paramters *NR-DL-PRS-AssistanceData* exceeds any of the UE measurement capabilities given by *NR-DL-PRS-ResourcesCapability* in *NR-DL-TDOA-ProvideCapabilities*, and it is up to UE implementation which PRS resources are measured, subject to UE measurement capabilities*.*

If cell re-selection occurs while RSCPD together with RSTD measurements are being performed, then the UE shall continue and complete the on-going RSCPD and RSTD measurements after the cell re-selection is completed. The measurement period can be longer.

If the RRC state transition occurs from RRC\_INACTIVE to RRC\_CONNECTED state during the measurement period then the UE shall continue the RSCPD and RSTD measurements in the RRC\_CONNECTED state. The measurement period can be longer.

<End of Change 1>

<Start of Change 2>

5.6.8.5 Measurement Period Requirements

When physical layer receives last of *NR-Multi-RTT-ProvideAssistanceData* message and *NR-Multi-RTT-RequestLocationInformation* message with *nr-UE-RSCP-Request* from LMF via LPP [34]*,* UE shall be able to measure multiple (up to the UE capability specified in clause 5.6.8.3) UE Rx-Tx and RSCP measurements, defined in TS 38.215 [4], during the time window configured to UE via *nr-DL-PRS-MeasurementTimeWindowsConfig* but the time window periodicity is not configured, and the start of the measurement period is the start of the window.

Otherwise, the UE shall be able to measure multiple (up to the UE capability specified in Clause 5.6.7.3) UE Rx-Tx and DL RSCP measurements, defined in TS 38.215 [4], during during the measurement period defined as:

Where:

- is the index of positioning frequency layer,

- is total number of positioning frequency layers, and

- is the periodicity of the PRS RSTD measurement in positioning frequency layer i

is the measurement period for RSCP with UE Rx-Tx measurement in positioning frequency layer *i* as specified below:

,

where:

- , , , , , , , and are defined in clause 5.6.4.5.

- DL-RSCP performed during is a single sample measurement where DL-RSCP and UE Rx-Tx measurements are performed on the same PFL.

- is the time duration of available PRS resources in the positioning frequency layer, to be measured during , and is calculated in the same way as PRS duration K defined in clause 5.1.6.5 of TS 38.214 [26]. For calculation of , only unmuted PRS resources that are not fully overlapped with other higher-priority DL signals/channels are considered.

- When periodic time window(s) are configured by the LMF and PFL *i* is associated with the configured time window, , the least common multiple between , and Twindow being the maximum periodicity of the indicated time window(s).

- When periodic time window(s) are configured by the LMF and PFL *i* is not associated with the configured time window(s), , the least common multiple between and the DRX cycle length .

- and are calculated by only considering the PRS resources in the indicated resources sets overlapping with the indicated time window(s).

The time starts from the first time window (TDL RSCP) configured by LMF within DRX cycle containing the DL PRS resources in the assistance data after both the *NR-Multi-RTT-RequestLocationInformation* message and *NR-Multi-RTT-ProvideAssistanceData* message from LMF via LPP [34] are delivered to the physical layer of UE.

If the RRC state transion occurs from RRC\_INACTIVE to RRC\_CONNECTED state during the measurement period then the UE shall continue the DL RSCP measurement and shall restart the UE Rx-Tx time difference measurement after it obtains SRS configuration and Timing Advance command from the serving cell.

If cell reselection occurs during the measurement period then the UE shall restart the DL RSCP and UE Rx-Tx time difference measurements after it obtains SRS configuration and Timing Advance command from the new serving cell.

The measurement requirements do not apply for a PRS resource:

- if the PRS resource is across two sampling duration of N within duration or

- if time span of the PRS resource instance (including at least the minimum number of repetitions specified in the accuracy requirements) is greater than UE reported capability N.

If the DRX cycle is reconfigured during the measurement period then the measurement period can be longer.

If during the measurement period, PRS resources overlap with other DL signals/channels then the measurement period can be longer.

When PRS-RSRP is configured for multi-RTT, the UE Rx-Tx time difference measurements and PRS-RSRP measurements are performed over the same measurement period.

The requirements in clause 5.6.8 do not apply if the PRS configuration given by higher layer paramters *NR-DL-PRS-AssistanceData* exceeds any of the UE measurement capabilities given by *NR-DL-PRS-ResourcesCapability* in *NR-Multi-RTT-ProvideCapabilities*, and it is up to UE implementation which PRS resources are measured, subject to UE measurement capabilities*.*

If UE uplink transmission timing changes due to the network-configured Timing Advance command during the UE Rx-Tx measurement period, then the UE Rx-Tx time difference measurement period is restarted after uplink transmission timing changes, and the UE Rx-Tx time difference measurement period requirements in this clause shall not apply.

If UE uplink transmission timing changes due to the change in the NTA\_offset defined in Table 7.1.2-2 during the UE Rx-Tx measurement period, then the UE Rx-Tx time difference measurement period is restarted after uplink transmission timing changes, and the UE Rx-Tx time difference measurement period requirements in this clause shall not apply.

If UE uplink transmission timing changes due to the network-configured Timing Advance command or due to the change in the NTA\_offset defined in Table 7.1.2-2 during the measurement period, the UE may continue and complete the DL RSCP measurement.

<End of Change 2>

<Start of Change 3>

9.9.7.5 Measurements Period Requirements for DL RSCPD reported with RSTD

After receiving both *NR-DL-TDOA-ProvideAssistanceData* message and *NR-DL-TDOA-RequestLocationInformation* message with *nr-DL-RSCPD-Request* from the LMF via LPP [34]*,* the UE shall be able to measure multiple (up to the UE capability specified in Clause 9.9.7.3) DL RSTD and RSCPD measurements, defined in TS 38.215 [4], during the time window configured to UE via *nr-DL-PRS-MeasurementTimeWindowsConfig* *,* the UE shall be able to measure multiple (up to the UE capability specified in clause 9.9.8.3) RSTD and DL RSCPD measurements, defined in TS 38.215 [4], during the time window only.

When LMF does not configure measurement time window(s):

- When a single PFL, requirements in Clause 9.9.2.5 apply to both RSCPD and RSTD measurements.

- When multiple PFLs are configured for legacy measurements, the UE performs RSCPD measurement on a single PFL that is common between the reference TRP and the target TRP. The requirement in Clause 9.9.2.5 apply to both RSTD and RSCPD measurements.

When LMF configures measurement time window(s), but UE does not support *supportOfRSCPD-MeasurementInTimeWindow*:

- The UE performs RSCPD measurement on the indicated PFL by the network. The requirement in Clause 9.9.2.5 apply to both RSTD and RSCPD measurements.

When LMF configures measurement time window(s), but UE does not support *supportOfLegacyMeasurementInTimeWindow* but supports *supportOfRSCPD-MeasurementInTimeWindow*:

- The requirements in the Clause 9.9.2.5 apply to RSTD measurements.

- The requirements in Clause 9.9.7.5 apply to RSCPD measurement for the PRS resource(s) that have occasions only within the measurement time window.

Otherwise, the UE shall be able to measure multiple (up to the UE capability specified in Clause 9.9.7.3) RSTD and DL RSCPD measurements, defined in TS 38.215 [4], during the measurement period defined as:

Where:

- is the index of positioning frequency layer,

- is total number of positioning frequency layers, and

- is the periodicity of the PRS RSTD measurement in positioning frequency layer i

is the measurement period for PRS RSTD with RSCPD measurement in positioning frequency layer *i* as specified below:

,

where:

DL-RSCPD measurement performed during is a single sample measurement. The DL-RSCPD measurement of reference TRP and the target TRP is performed on the same PFL.

, , , , , , and are defined in clause 9.9.2.5.

= 1 or 2 or 4 as defined in clause 9.9.2.5.

is the time duration of available PRS in the positioning frequency layer to be measured during , and is calculated in the same way as PRS duration K defined in clause 5.1.6.5 of TS 38.214 [26].

When periodic time window(s) are configured by the LMF and PFL *i* is associated with the configured time window, , the least common multiple between , and , being the maximum periodicity of the indicated time window(s).

When the periodic time window(s) are configured by the LMF and the PFL *i* is not associated with the configured time window, .

and are defined in clause 9.9.2.5.

and are calculated by only considering the PRS resources in the indicated resources sets overlapping with both the MG and the indicated time window(s).

is a scaling factor for a positioning frequency layer to be measured within the associated measurement gap pattern, which is defined as = Ntotal / Navailable for UE configured with concurrent measurement gap, and = 1 for UE not configured with concurrent measurement gap.

When periodic time window(s) are configured by the LMF, for a window W of duration max(, MGRP\_max, ), where MGRP\_max is the maximum MGRP across all configured per-UE MG and per-FR MG within the same FR as the positioning frequency layer, and starting at the beginning of any associated gap occasions covering the PRS occasion and the periodic time window:

Ntotal is the total number of associated gap occasions covering PRS occasions and the periodic time window(s) within the window W, including both dropped and non-dropped instances of the associated measurement gap within the window W, and

Navailable is the number of non-dropped associated gap occasions covering PRS occasions and the periodic time window(s) within the window W, after further accounting for MG collisions by applying the selected gap collision rule

Requirements do not apply if Navailable =0.

Otherwise, for a window W of duration max(, MGRP\_max), where MGRP\_max is the maximum MGRP across all configured per-UE MG and per-FR MG within the same FR as the positioning frequency layer, and starting at the beginning of any associated gap occasions covering the PRS occasion:

Ntotal is the total number of associated gap occasions covering PRS occasions within the window W, including both dropped and non-dropped instances of the associated measurement gap within the window, and

Navailable is the number of non-dropped associated gap occasions covering PRS occasions within the window W, after further accounting for MG collisions by applying the selected gap collision rule

Requirements do not apply if Navailable =0.

Except for deferred MT-LR as defined in clause 4.1a.5 [TS 23.273], the time TRSCPD with RSTD *s*tarts from the first time window (TRSCPD) configured by LMF within MG instance aligned with a DL PRS resource(s) in the assistance data after both the *NR-TDOA-ProvideAssistanceData* message and *NR-TDOA-RequestLocationInformation* message are delivered from LMF to the physical layer of UE via LPP [34].

For deferred MT-LR with other event than “Periodic Location” as defined in clause 4.1a.5.1 [TS 23.273], the time TRSCPD with RSTD starts from the first time window (TRSCPD) configured by LMF within MG instance aligned with a DL PRS resource(s) in the assistance data after the associated event(s) occurs.

For deferred MT-LR with event “Periodic Location” as defined in clause 4.1a.5.1 [TS 23.273], the UE shall perform the RSCPD with RSTD measurement in each reporting period within the time window(TRSCPD) configured by LMF within MG instance and activate the location report at the time when the periodic timer expires.

If during the measurement period, the MG pattern is reconfigured or time window (TRSCPD) for RSCPD measurement is reconfigured, the measurement period can be longer. When PRS-RSRP is also configured to UE, RSCPD with RSTD and RSRP are performed over the same measurement period.

The measurement requirements in this clause apply, provided no PRS symbols are dropped during the measurement period TRSCPD with RSTD within measurement gaps due to collisions with other signals; otherwise, the measurement period can be longer.

If CSSF changes during the measurement period, the measurement period could be longer.

The measurement requirements do not apply for a PRS resource, if the PRS resource is across two sampling duration of N within duration .

The measurement requirements do not apply for a PRS resource, if time span of the PRS resource instance (including at least the minimum number of repetitions specified in the accuracy requirements) is greater than UE reported capability N.

The requirements in clause 9.9.7 do not apply if the PRS configuration given by higher layer paramters *NR-DL-PRS-AssistanceData* exceeds any of the UE measurement capabilities given by *NR-DL-PRS-ResourcesCapability* in *NR-DL-TDOA-ProvideCapabilities*, and it is up to UE implementation which PRS resources are measured, subject to UE measurement capabilities*.*

If handover occurs while RSTD and RSCPD measurements are being performed together by UE, then the UE shall continue and complete the on-going RSTD and RSCPD measurements. The measurement period for RSCPD with RSTD measurement can be longer. The UE shall meet the RSTD measurement accuracy requirements in clause 10.1.23. The UE shall also meet the RSCPD measurement accuracy requirements in clause 10.1.x.

<End of Change 3>

<Start of Change 4>

9.9.8.5 Measurement Period Requirements for DL RSCP and UE Rx-Tx time difference

When the physical layer receives the last of *NR-Multi-RTT-ProvideAssistanceData* message and *NR-Multi-RTT-RequestLocationInformation* message from LMF via LPP [34] with *nr-UE-RSCP-Request* and configuring a measurement time window via *nr-DL-PRS-MeasurementTimeWindowsConfig,* subject to UE capabilities *supportOfRSCP-MeasurementInTimeWindow* and *supportOfLegacyMeasurementInTimeWindow,* the UE shall be able to measure multiple (up to the UE capability specified in clause 9.9.8.3) UE Rx-Tx and DL RSCP measurements, defined in TS 38.215 [4], during the time window only.

When LMF does not configure measurement time window(s):

- When a single PFL is configured, requirements in Clause 9.9.4.5 apply to both RSCP and UE Rx-Tx measurements.

- When multiple PFLs are configured for legacy measurements, the UE performs RSCP measurement on a single PFL that is common between the reference TRP and the target TRP. The requirement in Clause 9.9.4.5 apply to both RSCP and UE Rx-Tx measurements.

When LMF configures measurement time window(s), but UE does not support *supportOfRSCP-MeasurementInTimeWindow*:

* The UE performs RSCP measurement on the indicated PFL by the network. The requirement in Clause 9.9.4.5 apply to both UE Rx-Tx and RSCP measurements.

When LMF configures measurement time window(s), but UE does not support *supportOfLegacyMeasurementInTimeWindow* but supports *supportOfRSCP-MeasurementInTimeWindow*:

The requirements in the Clause 9.9.4.5 apply to UE Rx-Tx measurement.

The requirements in Clause 9.9.8.5 apply to RSCP measurement for the PRS resource(s) that have occasions only within the measurement time window.

If a periodic time window is configured, the UE shall be able to measure multiple (up to the UE capability specified in Clause 9.9.8.3) UE Rx-Tx and DL RSCP measurements, defined in TS 38.215 [4], during the measurement period defined as:

Where:

- is the index of positioning frequency layer,

- is total number of positioning frequency layers, and

- is the periodicity of the UE Rx-Tx time difference measurement in positioning frequency layer i

is the measurement period for DL RSCP with UE Rx-Tx measurement in positioning frequency layer *i* as specified below:

,

where:

DL RSCP performed during is a single sample measurement where DL RSCP and UE Rx-Tx measurements are performed on the same PFL.

, , , , , , and are defined in clause 9.9.4.5.

= 1 or 2 or 4 as defined in clause 9.9.4.5.

- is a scaling factor for a positioning frequency layer to be measured within the associated measurement gap pattern, which is defined as = Ntotal / Navailable for UE configured with concurrent measurement gap, and = 1 for UE not configured with concurrent measurement gap.

When periodic time window(s) are configured by the LMF, for a window W of duration max(, MGRP\_max, ), where MGRP\_max is the maximum MGRP across all configured per-UE MG and per-FR MG within the same FR as the positioning frequency layer, and starting at the beginning of any associated gap occasions covering the PRS occasion and the periodic time window:

Ntotal is the total number of associated gap occasions covering PRS occasions and the periodic time window(s) within the window W, including both dropped and non-dropped instances of the associated measurement gap within the window W, and

Navailable is the number of non-dropped associated gap occasions covering PRS occasions and the periodic time window(s) within the window W, after further accounting for MG collisions by applying the selected gap collision rule

Requirements do not apply if Navailable =0.

Otherwise, ror a window W of duration max(, MGRP\_max), where MGRP\_max is the maximum MGRP across all configured per-UE MG and per-FR MG within the same FR as the positioning frequency layer, and starting at the beginning of any associated gap occasions covering the PRS occasion:

Ntotal is the total number of associated gap occasions covering PRS occasions within the window W, including both dropped and non-dropped instances of the associated measurement gap within the window W, and

Navailable is the number of non-dropped associated gap occasions covering PRS occasions within the window W, after further accounting for MG collisions by applying the selected gap collision rule

Requirements do not apply if Navailable =0.

- is the time duration of available PRS resources in the positioning frequency layer, to be measured during , and is calculated in the same way as PRS duration K defined in clause 5.1.6.5 of TS 38.214 [26].

- When periodic time window(s) are configured by the LMF and PFL *i* is associated with the configured time window, , the least common multiple between , and , being the maximum periodicity of the indicated time window(s).

- When periodic time window(s) are configured by the LMF and the PFL *i* is not associated with the configured time window, .

- and are defined in clause 9.9.8.5.

and are calculated by only considering the PRS resources in the indicated resources sets overlapping with both the MG and the indicated time window(s).

Except for deferred MT-LR as defined in clause 4.1a.5 [TS 23.273], the time starts from the first time window (TDL RSCP) configured by LMF within MG instance aligned with DL PRS resource(s) in the assistance data after both the *NR-Multi-RTT-RequestLocationInformation* message and *NR-Multi-RTT-ProvideAssistanceData* message from LMF via LPP [34] are delivered to the physical layer of UE.

For deferred MT-LR with other event than “Periodic Location” as defined in clause 4.1a.5.1 [TS 23.273], the time starts from the first time window (TDL RSCP) configured by LMF within MG instance aligned with DL PRS resource(s) in the assistance data after the associated event(s) occurs.

For deferred MT-LR with event “Periodic Location” as defined in clause 4.1a.5.1 [TS 23.273], the UE shall perform the DL RSCP with UE Rx-Tx time difference measurement in each reporting period and activate the location report at the time when the periodic timer expires.

The DL RSCP with UE Rx-Tx time difference measurement period is restarted if HO occurs during the measurement period and after SRS reconfiguration on the target cell is complete.

The measurement requirements do not apply for a PRS resource:

- if the PRS resource is across two sampling duration of N within duration or

- if time span of the PRS resource instance (including at least the minimum number of repetitions specified in the accuracy requirements) is greater than UE reported capability N.

If during the measurement period of the positioning frequency layer, the MG pattern is reconfigured either per UE request or not per UE request, the measurement period can be longer.

The requirements in this section apply, provided no PRS symbols are dropped during the measurement period within measurement gaps due to collisions with other signals; otherwise, a longer measurement period may be used.

When PRS-RSRP is configured for multi-RTT, the UE Rx-Tx time difference measurements and PRS-RSRP measurements are performed over the same measurement period.

The requirements in clause 9.9.8 do not apply if the PRS configuration given by higher layer parameters *NR-DL-PRS-AssistanceData* exceeds any of the UE measurement capabilities given by *NR-DL-PRS-ResourcesCapability* in *NR-Multi-RTT-ProvideCapabilities*, and it is up to UE implementation which PRS resources are measured, subject to UE measurement capabilities*.*

When PSCell or SCell addition or release does not cause SRS reconfiguration during the measurement period, UE shall continue and complete the DL RSCP and UE Rx-Tx time difference measurements, and the measurement period requirements apply.

When PSCell or SCell addition or release causes SRS reconfiguration during the measurement period, UE shall restart the DL RSCP and UE Rx-Tx time difference measurement after the SRS reconfiguration on the target cell is complete.

When SRS is reconfigured without serving cell change during the measurement period, UE shall restart the DL RSCP and UE Rx-Tx time difference measurement after the SRS reconfiguration is complete.

When a serving cell change occurs during the measurement period, the UE shall restart DL RSCP and UE Rx-Tx time difference measurements.

If UE uplink transmission timing changes due to the network-configured Timing Advance command during the measurement period, then the DL RSCP with UE Rx-Tx time difference measurement period is restarted after uplink transmission timing changes, and the DL RSCP and UE Rx-Tx time difference measurement period requirements in this clause shall not apply.

If UE uplink transmission timing changes due to the change in the NTA\_offset defined in Table 7.1.2-2 during the measurement period, then the DL RSCP with UE Rx-Tx time difference measurement period is restarted after uplink transmission timing changes, and the DL RSCP and UE Rx-Tx time difference measurement period requirements in this clause shall not apply.

If UE uplink transmission timing changes due to the UE autonomous timing adjustment defined in clause 7.1.2 during the measurement period, then:

- DL RSCP and UE Rx-Tx measurement period requirements in this clause shall apply for a cell, which is also the downlink reference cell (defined in section 7.1.1) for SRS transmission.

- DL RSCP and UE Rx-Tx measurement period requirements in this clause shall not apply for a cell, which is not the downlink reference cell (defined in section 7.1.1) for SRS transmission. The DL RSCP with UE Rx-Tx time difference measurement period may be restarted in such case.

<End of Change 4>