**GPP TSG-RAN WG4 Meeting # 110 *R4-2403292***

**Athens, GR, 26 February – 01 March, 2024**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **Draft CR** | **Rev** | **-** | **Current version:** | **18.4.0** |  |
|  |
| *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:***  | CR SL positioning performance requirements structure |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_pos\_enh2-Perf |  | ***Date:*** | 2024-02-19 |
|  |  |  |  |  |
| ***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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | No accuracy requirements are defined for SL positioning |
|  |  |
| ***Summary of change:*** | A structure for new sections for SL positioning measurement accuracy requirements.Measurement report mapping is based on the earlier RAN4 agreement:*RAN4 #108bis agreements:* * *Reuse the existing report mapping for SL positioning:*
	+ *The report mapping for SL UE Rx-Tx is the same as for UE Rx-Tx.*
	+ *The report mapping for SL RSTD is the same as for RSTD.*
	+ *The report mapping for SL RTOA is the same as for UL-RTOA.*
 |
|  |  |
| ***Consequences if not approved:*** | No accuracy requirements are defined for SL positioning |
|  |  |
| ***Clauses affected:*** | New sections:10.4A, 10.4A.1,10.4A.2, 10.4A.2.1, 10.4A.2.1.1, 10.4A.2.2;10.4A.3, 10.4A.3.1, 10.4A.3.1.1, 10.4A.3.2;10.4A.4, 10.4A.4.1, 10.4A.4.1.1, 10.4A.4.2;10.4A.5, 10.4A.5.1, 10.4A.5.1.1, 10.4A.5.2;10.4A.6, 10.4A.6.1, 10.4A.6.1.1;10.4A.7, 10.4A.7.1, 10.4A.7.1.1. |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  |  |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **Y** |  |  Test specifications | TS 38.533 |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | R4-2402803 |

## 10.4A NR Sidelink Measurements for Positioning

### 10.4A.1 Introduction

The SL measurements for positioning are performed based on SL-PRS. The SL-PRS reception procedure is as described in TS 38.321 [7]. The UE shall monitor PSCCH to receive the associated SL-PRS in the same slot [26].

### 10.4A.2 SL RSTD measurements

#### 10.4A.2.1 Measurement Report Mapping

##### 10.4A.2.1.1 Absolute SL RSTD Measurement Reporting

The reporting range for the SL RSTD measurement is defined from -985024×Tc to 985024×Tc with the resolution step of 2*k*×Tc, where

 Tc is defined in TS 38.211 [6],

 *kmin*≤*k*≤*kmax*,

 *kmin*=2 and *kmax*=5, when configured SL-PRS resource of at least one of the reference cell and neighbor cell measured for the SL RSTD measurement is in FR1.

The measurement report mapping for different *k* values are specified in Tables 10.4A.2.1.1-1 − 10.4A.2.1.1-4.

Table 10.4A.2.1.1-1: Report mapping for *k*=2

|  |  |  |
| --- | --- | --- |
| Reported Quantity Value, | Measured Quantity Value, | Unit |
| SL\_RSTD\_i | SL\_RSTD |  |
| SL\_RSTD\_000000 | SL\_RSTD < -985024 | Tc |
| SL\_RSTD\_000001 | -985024 ≤ SL\_RSTD < -985020 | Tc |
| SL\_RSTD\_000002 | -985020 ≤ SL\_RSTD < -985016 | Tc |
| … | … | … |
| SL\_RSTD\_246256 | -4 ≤ SL\_RSTD < 0 | Tc |
| SL\_RSTD\_246257 | 0 ≤ SL\_RSTD < 4 | Tc |
| … | … | … |
| SL\_RSTD\_492511 | 985016 ≤ SL\_RSTD < 985020 | Tc |
| SL\_RSTD\_492512 | 985020 ≤ SL\_RSTD < 985024 | Tc |
| SL\_RSTD\_492513 | 985024 ≤ SL\_RSTD | Tc |

Table 10.4A.2.1.1-2: Report mapping for *k*=3

|  |  |  |
| --- | --- | --- |
| Reported Quantity Value | Measured Quantity Value, | Unit |
| SL\_RSTD\_i | SL\_RSTD |  |
| SL\_RSTD\_000000 | SL\_RSTD < -985024 | Tc |
| SL\_RSTD\_000001 | -985024 ≤ SL\_RSTD < -985016 | Tc |
| SL\_RSTD\_000002 | -985016 ≤ SL\_RSTD < -985008 | Tc |
| … | … | … |
| SL\_RSTD\_123128 | -8 ≤ SL\_RSTD < 0 | Tc |
| SL\_RSTD\_123129 | 0 ≤ SL\_RSTD < 8 | Tc |
| … | … | … |
| SL\_RSTD\_246255 | 985008 ≤ SL\_RSTD < 985016 | Tc |
| SL\_RSTD\_246256 | 985016 ≤ SL\_RSTD < 985024 | Tc |
| SL\_RSTD\_246257 | 985024 ≤ SL\_RSTD | Tc |

Table 10.4A.2.1.1-3: Report mapping for *k*=4

|  |  |  |
| --- | --- | --- |
| Reported Quantity Value, | Measured Quantity Value, | Unit |
| SL\_RSTD\_i | SL\_RSTD |  |
| SL\_RSTD\_000000 | SL\_RSTD < -985024 | Tc |
| SL\_RSTD\_000001 | -985024 ≤ SL\_RSTD < -985008 | Tc |
| SL\_RSTD\_000002 | -985008 ≤ SL\_RSTD < -984992 | Tc |
| … | … | … |
| SL\_RSTD\_061564 | -16 ≤ SL\_RSTD < 0 | Tc |
| SL\_RSTD\_061565 | 0 ≤ SL\_RSTD < 16 | Tc |
| … | … | … |
| SL\_RSTD\_123127 | 984992 ≤ SL\_RSTD < 985008 | Tc |
| SL\_RSTD\_123128 | 985008 ≤ SL\_RSTD < 985024 | Tc |
| SL\_RSTD\_123129 | 985024 ≤ SL\_RSTD | Tc |

Table 10.4A.2.1.1-4: Report mapping for *k*=5

|  |  |  |
| --- | --- | --- |
| Reported Quantity Value, | Measured Quantity Value, | Unit |
| SL\_RSTD\_i | SL\_RSTD |  |
| SL\_RSTD\_00000 | SL\_RSTD < -985024 | Tc |
| SL\_RSTD\_00001 | -985024 ≤ SL\_RSTD < -984992 | Tc |
| SL\_RSTD\_00002 | -984992 ≤ SL\_RSTD < -984960 | Tc |
| … | … | … |
| SL\_RSTD\_30782 | -32 ≤ SL\_RSTD < 0 | Tc |
| SL\_RSTD\_30783 | 0 ≤ SL\_RSTD < 32 | Tc |
| … | … | … |
| SL\_RSTD\_61563 | 984960 ≤ SL\_RSTD < 984992 | Tc |
| SL\_RSTD\_61564 | 984992 ≤ SL\_RSTD < 985024 | Tc |
| SL\_RSTD\_61565 | 985024 ≤ SL\_RSTD | Tc |

#### 10.4A.2.2 Measurement Accuracy

### 10.4A.3 SL PRS-RSRP measurements

#### 10.4A.3.1 Measurement Report Mapping

10.4A.3.1.1 Absolute SL PRS-RSRP Measurement Report Mapping

The reporting range of absolute SL PRS-RSRP measurement is defined from -156 dBm to -31 dBm with 1 dB resolution.

The mapping of measured quantity is defined in Table 10.4A.3.1.1-1. The range in the signalling may be larger than the guaranteed accuracy range.

**Table 10.4A.3.1.1-1: Measurement report mapping for SL PRS-RSRP**

|  |  |  |
| --- | --- | --- |
| **Reported value** | **Measured quantity value** | **Unit** |
| SL\_PRS-RSRP\_0 | SL\_PRS-RSRP<-156 | dBm |
| SL\_PRS-RSRP\_1 | -156≤SL\_PRS-RSRP<-155 | dBm |
| SL\_PRS-RSRP\_2 | -155≤SL\_PRS-RSRP<-154 | dBm |
| SL\_PRS-RSRP\_3 | -154≤SL\_PRS-RSRP<-153 | dBm |
| SL\_PRS-RSRP\_4 | -153≤SL\_PRS-RSRP<-152 | dBm |
| SL\_PRS-RSRP\_5 | -152≤SL\_PRS-RSRP<-151 | dBm |
| SL\_PRS-RSRP\_6 | -151≤SL\_PRS-RSRP<-150 | dBm |
| SL\_PRS-RSRP\_7 | -150≤SL\_PRS-RSRP<-149 | dBm |
| SL\_PRS-RSRP\_8 | -149≤SL\_PRS-RSRP<-148 | dBm |
| SL\_PRS-RSRP\_9 | -148≤SL\_PRS-RSRP<-147 | dBm |
| SL\_PRS-RSRP\_10 | -147≤SL\_PRS-RSRP<-146 | dBm |
| SL\_PRS-RSRP\_11 | -146≤SL\_PRS-RSRP<-145 | dBm |
| SL\_PRS-RSRP\_12 | -145≤SL\_PRS-RSRP<-144 | dBm |
| SL\_PRS-RSRP\_13 | -144≤SL\_PRS-RSRP<-143 | dBm |
| SL\_PRS-RSRP\_14 | -143≤SL\_PRS-RSRP<-142 | dBm |
| SL\_PRS-RSRP\_15 | -142≤SL\_PRS-RSRP<-141 | dBm |
| SL\_PRS-RSRP\_16 | -141≤SL\_PRS-RSRP<-140 | dBm |
| SL\_PRS-RSRP\_17 | -140≤SL\_PRS-RSRP<-139 | dBm |
| SL\_PRS-RSRP\_18 | -139≤SL\_PRS-RSRP<-138 | dBm |
| … | … | … |
| SL\_PRS-RSRP\_111 | -46≤SL\_PRS-RSRP<-45 | dBm |
| SL\_PRS-RSRP\_112 | -45≤SL\_PRS-RSRP<-44 | dBm |
| SL\_PRS-RSRP\_113 | -44≤SL\_PRS-RSRP<-43 | dBm |
| SL\_PRS-RSRP\_114 | -43≤SL\_PRS-RSRP<-42 | dBm |
| SL\_PRS-RSRP\_115 | -42≤SL\_PRS-RSRP<-41 | dBm |
| SL\_PRS-RSRP\_116 | -41≤SL\_PRS-RSRP<-40 | dBm |
| SL\_PRS-RSRP\_117 | -40≤SL\_PRS-RSRP<-39 | dBm |
| SL\_PRS-RSRP\_118 | -39≤SL\_PRS-RSRP<-38 | dBm |
| SL\_PRS-RSRP\_119 | -38≤SL\_PRS-RSRP<-37 | dBm |
| SL\_PRS-RSRP\_120 | -37≤SL\_PRS-RSRP<-36 | dBm |
| SL\_PRS-RSRP\_121 | -36≤SL\_PRS-RSRP<-35 | dBm |
| SL\_PRS-RSRP\_122 | -35≤SL\_PRS-RSRP<-34 | dBm |
| SL\_PRS-RSRP\_123 | -34≤SL\_PRS-RSRP<-33 | dBm |
| SL\_PRS-RSRP\_124 | -33≤SL\_PRS-RSRP<-32 | dBm |
| SL\_PRS-RSRP\_125 | -32≤SL\_PRS-RSRP<-31 | dBm |
| SL\_PRS-RSRP\_126 | -31≤SL\_PRS-RSRP | dBm |

#### 10.4A.3.2 Measurement Accuracy

### 10.4A.4 SL Rx-Tx measurements

#### 10.4A.4.1 Measurement Report Mapping

10.4A.4.1.1 Absolute SL Rx-Tx Measurement Report Mapping

The reporting range for the absolute SL Rx-Tx time difference measurement (TSL Rx-Tx) is defined from -985024´Tc to 985024´Tc with the resolution step of 2*k*´Tc, where:

Tc is defined in TS 38.211 [6],

*kmin*≤*k*≤*kmax*,

*kmin*=2 and *kmax*=5, when at least one of the PRS and the SRS resources configured for TSL Rx-Tx is in FR1.

The TSL Rx-Tx report mapping for *k* = 2, 3, 4, and 5 are specified in Tables 10.4A.4.1.1-1, 10.4A.4.1.1-2, 10.4A.4.1.1-3, and 10.4A.4.1.1-4, respectively.

**Table 10.4A.4.1.1-1: Absolute SL Rx-Tx time difference measurement report mapping for *k*=2**

|  |  |  |
| --- | --- | --- |
| **Reported Quantity Value** | **Measured Quantity Value** | **Unit** |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0000 | TSL Rx-Tx < -985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0001 | -985024 £ TSL Rx-Tx < -985020 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0002 | -985020 £ TSL Rx-Tx < -985016 | Tc |
| ¼ | ¼ | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_246256 | -4 £ TSL Rx-Tx < 0 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_246257 | 0 £ TSL Rx-Tx < 4 | Tc |
| … | … | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_492511 | 985016 £ TSL Rx-Tx < 985020 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_492512 | 985020 £ TSL Rx-Tx < 985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_492513 | 985024 £ TSL Rx-Tx | Tc |

**Table 10.4A.4.1.1-2: Absolute SL Rx-Tx time difference measurement report mapping for *k*=3**

|  |  |  |
| --- | --- | --- |
| **Reported Quantity Value** | **Measured Quantity Value** | **Unit** |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0000 | TSL Rx-Tx < -985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0001 | -985024 £ TSL Rx-Tx < -985016 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0002 | -985016 £ TSL Rx-Tx < -985008 | Tc |
| ¼ | ¼ | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_123128 | -8 £ TSL Rx-Tx < 0 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_123129 | 0 £ TSL Rx-Tx < 8 | Tc |
| … | … | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_246255 | 985008 £ TSL Rx-Tx < 985016 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_246256 | 985016 £ TSL Rx-Tx < 985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_246257 | 985024 £ TSL Rx-Tx | Tc |

**Table 10.4A.4.1.1-3: Absolute SL Rx-Tx time difference measurement report mapping for *k*=4**

|  |  |  |
| --- | --- | --- |
| **Reported Quantity Value** | **Measured Quantity Value** | **Unit** |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0000 | TSL Rx-Tx < -985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0001 | -985024 £ TSL Rx-Tx < -985008 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0002 | -985008 £ TSL Rx-Tx < -984992 | Tc |
| ¼ | ¼ | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_61564 | -16 £ TSL Rx-Tx < 0 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_61565 | 0 £ TSL Rx-Tx < 16 | Tc |
| … | … | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_123127 | 984992 £ TSL Rx-Tx < 985008 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_123128 | 985008 £ TSL Rx-Tx < 985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_123129 | 985024 £ TSL Rx-Tx | Tc |

**Table 10.4A.4.1.1-4: Absolute SL Rx-Tx time difference measurement report mapping for *k*=5**

|  |  |  |
| --- | --- | --- |
| **Reported Quantity Value** | **Measured Quantity Value** | **Unit** |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0000 | TSL Rx-Tx < -985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0001 | -985024 £ TSL Rx-Tx < -984992 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_0002 | -984992 £ TSL Rx-Tx < -984960 | Tc |
| ¼ | ¼ | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_30782 | -32 £ TSL Rx-Tx < 0 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_30783 | 0 £ TSL Rx-Tx < 32 | Tc |
| … | … | … |
| SL\_RX-TX\_TIME\_DIFFERENCE\_61563 | 984960 £ TSL Rx-Tx < 984992 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_61564 | 984992 £ TSL Rx-Tx < 985024 | Tc |
| SL\_RX-TX\_TIME\_DIFFERENCE\_61565 | 985024 £ TSL Rx-Tx | Tc |

#### 10.4A.4.2 Measurement Accuracy

### 10.4A.5 SL PRS-RSRPP measurements

#### 10.4A.5.1 Measurement Report Mapping

10.4A.5.1.1 Absolute SL PRS-RSRPP Measurement Report Mapping

The reporting range of absolute SL PRS-RSRPP measurement is defined from -156 dBm to -31 dBm with 1 dB resolution.

The mapping of measured quantity is defined in Table 10.4A.5.1.1-1. The range in the signalling may be larger than the guaranteed accuracy range.

**Table 10.4A.5.1.1-1: Measurement report mapping for SL PRS-RSRPP**

|  |  |  |
| --- | --- | --- |
| **Reported value** | **Measured quantity value** | **Unit** |
| SL\_PRS-RSRPP\_0 | SL\_PRS-RSRPP<-156 | dBm |
| SL\_PRS-RSRPP\_1 | -156≤SL\_PRS-RSRPP<-155 | dBm |
| SL\_PRS-RSRPP\_2 | -155≤SL\_PRS-RSRPP<-154 | dBm |
| SL\_PRS-RSRPP\_3 | -154≤SL\_PRS-RSRPP<-153 | dBm |
| SL\_PRS-RSRPP\_4 | -153≤SL\_PRS-RSRPP<-152 | dBm |
| SL\_PRS-RSRPP\_5 | -152≤SL\_PRS-RSRPP<-151 | dBm |
| SL\_PRS-RSRPP\_6 | -151≤SL\_PRS-RSRPP<-150 | dBm |
| SL\_PRS-RSRPP\_7 | -150≤SL\_PRS-RSRPP<-149 | dBm |
| SL\_PRS-RSRPP\_8 | -149≤SL\_PRS-RSRPP<-148 | dBm |
| SL\_PRS-RSRPP\_9 | -148≤SL\_PRS-RSRPP<-147 | dBm |
| SL\_PRS-RSRPP\_10 | -147≤SL\_PRS-RSRPP<-146 | dBm |
| SL\_PRS-RSRPP\_11 | -146≤SL\_PRS-RSRPP<-145 | dBm |
| SL\_PRS-RSRPP\_12 | -145≤SL\_PRS-RSRPP<-144 | dBm |
| SL\_PRS-RSRPP\_13 | -144≤SL\_PRS-RSRPP<-143 | dBm |
| SL\_PRS-RSRPP\_14 | -143≤SL\_PRS-RSRPP<-142 | dBm |
| SL\_PRS-RSRPP\_15 | -142≤SL\_PRS-RSRPP<-141 | dBm |
| SL\_PRS-RSRPP\_16 | -141≤SL\_PRS-RSRPP<-140 | dBm |
| SL\_PRS-RSRPP\_17 | -140≤SL\_PRS-RSRPP<-139 | dBm |
| SL\_PRS-RSRPP\_18 | -139≤SL\_PRS-RSRPP<-138 | dBm |
| … | … | … |
| SL\_PRS-RSRPP\_111 | -46≤SL\_PRS-RSRPP<-45 | dBm |
| SL\_PRS-RSRPP\_112 | -45≤SL\_PRS-RSRPP<-44 | dBm |
| SL\_PRS-RSRPP\_113 | -44≤SL\_PRS-RSRPP<-43 | dBm |
| SL\_PRS-RSRPP\_114 | -43≤SL\_PRS-RSRPP<-42 | dBm |
| SL\_PRS-RSRPP\_115 | -42≤SL\_PRS-RSRPP<-41 | dBm |
| SL\_PRS-RSRPP\_116 | -41≤SL\_PRS-RSRPP<-40 | dBm |
| SL\_PRS-RSRPP\_117 | -40≤SL\_PRS-RSRPP<-39 | dBm |
| SL\_PRS-RSRPP\_118 | -39≤SL\_PRS-RSRPP<-38 | dBm |
| SL\_PRS-RSRPP\_119 | -38≤SL\_PRS-RSRPP<-37 | dBm |
| SL\_PRS-RSRPP\_120 | -37≤SL\_PRS-RSRPP<-36 | dBm |
| SL\_PRS-RSRPP\_121 | -36≤SL\_PRS-RSRPP<-35 | dBm |
| SL\_PRS-RSRPP\_122 | -35≤SL\_PRS-RSRPP<-34 | dBm |
| SL\_PRS-RSRPP\_123 | -34≤SL\_PRS-RSRPP<-33 | dBm |
| SL\_PRS-RSRPP\_124 | -33≤SL\_PRS-RSRPP<-32 | dBm |
| SL\_PRS-RSRPP\_125 | -32≤SL\_PRS-RSRPP<-31 | dBm |
| SL\_PRS-RSRPP\_126 | -31≤SL\_PRS-RSRPP | dBm |

#### 10.4A.5.2 Measurement Accuracy

### 10.4A.6 SL AoA measurements

#### 10.4A.6.1 Measurement Report Mapping

##### 10.4A.6.1.1 Absolute SL AoA Measurement Report Mapping

The UE shall report A-AoA measurement results based on measurement report mapping in this clause. The UE shall report Z-AoA measurement results based on measurement report mapping in this clause.

The reporting range of SL AoA, as defined in TS 38.215 [4], is defined from -180 degree to +180 degree for A-AoA. The reporting resolution is 0.1 degree. The mapping of A-AoA measured quantity is defined in Table 10.4A.6.1.1-1.

**Table 10.4A.6.1.1-1: A-AoA measurement report mapping**

|  |  |  |
| --- | --- | --- |
| **Reported value** | **Measured quantity value (A-AoA)** | **Unit** |
| A-AoA\_0 | -180 ≤ A-AoA < -179.9 | Degree |
| A-AoA\_1 | -179.9 ≤ A-AoA < -179.8 | Degree |
| A-AoA\_2 | -179.8 ≤ A-AoA < -179.7 | Degree |
| … | … | … |
| A-AoA\_1798 | -0.2 ≤ A-AoA < -0.1 | Degree |
| A-AoA\_1799 | -0.1 ≤ A-AoA < 0 | Degree |
| A-AoA\_1800 | 0 ≤ A-AoA < 0.1 | Degree |
| A-AoA\_1801 | 0.1 ≤ A-AoA < 0.2 | Degree |
| A-AoA\_1802 | 0.2 ≤ A-AoA < 0.3 | Degree |
| … | … | … |
| A-AoA\_3598 | 179.8 ≤ A-AoA < 179.9 | Degree |
| A-AoA\_3599 | 179.9 ≤ A-AoA < 180 | Degree |

The reporting range of SL AoA, as defined in TS 38.215 [4], is defined from 0 degree to +180 degree for Z-AoA. The reporting resolution is 0.1 degree. The reporting resolution is 0.1 degree. The mapping of Z-AoA measured quantity is defined in Table 10.4A.6.1.1-2.

**Table 10.4A.6.1.1-2: Z-AoA measurement report mapping**

|  |  |  |
| --- | --- | --- |
| **Reported value** | **Measured quantity value (Z-AoA)** | **Unit** |
| Z-AoA\_0 | 0 ≤ Z-AoA < 0.1 | degree |
| Z-AoA \_1 | 0.1 ≤ Z-AoA < 0.2 | degree |
| Z-AoA \_2 | 0.2 ≤ Z-AoA < 0.3 | degree |
| … | … | … |
| Z-AoA \_1798 | 179.8 ≤ Z-AoA < 179.9 | degree |
| Z-AoA \_1799 | 179.9 ≤ Z-AoA ≤ 180 | degree |

### 10.4A.7 SL RTOA measurements

#### 10.4A.7.1 Measurement Report Mapping

10.4A.7.1.1 Absolute SL Rx-Tx Measurement Report Mapping

The reporting range of SL RTOA measurement, as defined in Clause 5.2.2 of TS 38.215 [4], is defined from -985024Tc to +985024×Tc. The reporting resolution is uniform across the reporting range and is defined as T = Tc\*2k where k is selected from the set {0, 1, 2, 3, 4, 5}.

Tc is defined in TS 38.211 [6].

The mapping of measured quantity for each reporting resolution (k) is defined in Table 10.4A.7.1.1-1 to Table 10.4A.7.1.1-6.

**Table 10.4A.7.1.1-1: Absolute SL RTOA measurement report mapping for k=0**

|  |  |  |
| --- | --- | --- |
| **Reported Value** | **Measured Quantity Value** | **Unit** |
| SL\_RTOA\_0000 | -985024 > SL\_RTOA | Tc |
| SL\_RTOA\_0001 | -985024 ≤ SL\_RTOA < -985023 | Tc |
| SL\_RTOA\_0002 | -985023 ≤ SL\_RTOA < -985022 | Tc |
| … | … | … |
| SL\_RTOA\_985023 | -2 ≤ SL\_RTOA < -1 | Tc |
| SL\_RTOA\_985024 | -1 ≤ SL\_RTOA ≤ 0 | Tc |
| SL\_RTOA\_985025 | 0 < SL\_RTOA ≤ 1 | Tc |
| SL\_RTOA\_985026 | 1 < SL\_RTOA ≤ 2 | Tc |
| SL\_RTOA\_985027 | 2 < SL\_RTOA ≤ 3 | Tc |
| … | … | … |
| SL\_RTOA\_1970048 | 985023 < SL\_RTOA ≤ 985024 | Tc |
| SL\_RTOA\_1970049 | 985024 < SL\_RTOA | Tc |

**Table 10.4A.7.1.1-2: Absolute SL RTOA measurement report mapping for k=1**

|  |  |  |
| --- | --- | --- |
| **Reported Value** | **Measured Quantity Value** | **Unit** |
| SL\_RTOA\_0000 | -985024 > SL\_RTOA | Tc |
| SL\_RTOA\_0001 | -985024 ≤ SL\_RTOA < -985022 | Tc |
| SL\_RTOA\_0002 | -985022 ≤ SL\_RTOA < -985020 | Tc |
| … | … | … |
| SL\_RTOA\_492511 | -4 ≤ SL\_RTOA < -2 | Tc |
| SL\_RTOA\_492512 | -2 ≤ SL\_RTOA ≤ 0 | Tc |
| SL\_RTOA\_492513 | 0 < SL\_RTOA ≤ 2 | Tc |
| SL\_RTOA\_492514 | 2 < SL\_RTOA ≤ 4 | Tc |
| SL\_RTOA\_492515 | 4 < SL\_RTOA ≤ 6 | Tc |
| … | … | … |
| SL\_RTOA\_985024 | 985022 < SL\_RTOA ≤ 985024 | Tc |
| SL\_RTOA\_985025 | 985024 < SL\_RTOA | Tc |

**Table 10.4A.7.1.1-3: Absolute SL RTOA measurement report mapping for k=2**

|  |  |  |
| --- | --- | --- |
| **Reported Value** | **Measured Quantity Value** | **Unit** |
| SL\_RTOA\_0000 | -985024 > SL\_RTOA | Tc |
| SL\_RTOA\_0001 | -985024 ≤ SL\_RTOA < -985020 | Tc |
| SL\_RTOA\_0002 | -985020 ≤ SL\_RTOA < -985018 | Tc |
| … | … | … |
| SL\_RTOA\_246255 | -8 ≤ SL\_RTOA < -4 | Tc |
| SL\_RTOA\_246256 | -4 ≤ SL\_RTOA ≤ 0 | Tc |
| SL\_RTOA\_246257 | 0 < SL\_RTOA ≤ 4 | Tc |
| SL\_RTOA\_246258 | 4 < SL\_RTOA ≤ 8 | Tc |
| SL\_RTOA\_246259 | 8 < SL\_RTOA ≤ 12 | Tc |
| … | … | … |
| SL\_RTOA\_492512 | 985020 < SL\_RTOA ≤ 985024 | Tc |
| SL\_RTOA\_492513 | 985024 < SL\_RTOA | Tc |

**Table 10.4A.7.1.1-4: Absolute SL RTOA measurement report mapping for k=3**

|  |  |  |
| --- | --- | --- |
| **Reported Value** | **Measured Quantity Value** | **Unit** |
| SL\_RTOA\_0000 | -985024 > SL\_RTOA | Tc |
| SL\_RTOA\_0001 | -985024 ≤ SL\_RTOA < -985016 | Tc |
| SL\_RTOA\_0002 | -985016 ≤ SL\_RTOA < -985008 | Tc |
| … | … | … |
| SL\_RTOA\_123127 | -16 ≤ SL\_RTOA < -8 | Tc |
| SL\_RTOA\_123128 | -8 ≤ SL\_RTOA ≤ 0 | Tc |
| SL\_RTOA\_123129 | 0 < SL\_RTOA ≤ 8 | Tc |
| SL\_RTOA\_123130 | 8 < SL\_RTOA ≤ 16 | Tc |
| SL\_RTOA\_123131 | 16 < SL\_RTOA ≤ 24 | Tc |
| … | … | … |
| SL\_RTOA\_246256 | 985016 < SL\_RTOA ≤ 985024 | Tc |
| SL\_RTOA\_246257 | 985024 < SL\_RTOA | Tc |

**Table 10.4A.7.1.1-5: Absolute SL RTOA measurement report mapping for k=4**

|  |  |  |
| --- | --- | --- |
| **Reported Value** | **Measured Quantity Value** | **Unit** |
| SL\_RTOA\_0000 | -985024 > SL\_RTOA | Tc |
| SL\_RTOA\_0001 | -985024 ≤ SL\_RTOA < -985008 | Tc |
| SL\_RTOA\_0002 | -985008 ≤ SL\_RTOA < -984992 | Tc |
| … | … | … |
| SL\_RTOA\_61563 | -32 ≤ SL\_RTOA < -16 | Tc |
| SL\_RTOA\_61564 | -16 ≤ SL\_RTOA ≤ 0 | Tc |
| SL\_RTOA\_61565 | 0 < SL\_RTOA ≤ 16 | Tc |
| SL\_RTOA\_61566 | 16 < SL\_RTOA ≤ 32 | Tc |
| SL\_RTOA\_61567 | 32 < SL\_RTOA ≤ 48 | Tc |
| … | … | … |
| SL\_RTOA\_123128 | 985008 < SL\_RTOA ≤ 985024 | Tc |
| SL\_RTOA\_123129 | 985024 < SL\_RTOA | Tc |

**Table 10.4A.7.1.1-6: Absolute SL RTOA measurement report mapping for k=5**

|  |  |  |
| --- | --- | --- |
| **Reported Value** | **Measured Quantity Value** | **Unit** |
| SL\_RTOA\_0000 | -985024 > SL\_RTOA | Tc |
| SL\_RTOA\_0001 | -985024 ≤ SL\_RTOA < -984992 | Tc |
| SL\_RTOA\_0002 | -984992 ≤ SL\_RTOA < -984960 | Tc |
| … | … | … |
| SL\_RTOA\_30781 | -64 ≤ SL\_RTOA < -32 | Tc |
| SL\_RTOA\_30782 | -32 ≤ SL\_RTOA ≤ 0 | Tc |
| SL\_RTOA\_30783 | 0 < SL\_RTOA ≤ 32 | Tc |
| SL\_RTOA\_30784 | 32 < SL\_RTOA ≤ 64 | Tc |
| SL\_RTOA\_30785 | 64 < SL\_RTOA ≤ 96 | Tc |
| … | … | … |
| SL\_RTOA\_61564 | 984992 < SL\_RTOA ≤ 985024 | Tc |
| SL\_RTOA\_61565 | 985024 < SL\_RTOA | Tc |