**3GPP TSG-CT WG3 Meeting #140 *C3-251117***

**Wuhan, CN, 7 - 11 April 2025**

|  |
| --- |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Support of Short-Range based positioning information procedure  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | C3 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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:*** | SA6 defines the procedures, information flows and API to support Short-Range based positioning information configuration in clauses 9.3.25 and 9.4.11 of TS 23.434. |
|  |  |
| ***Summary of change:*** | 1/ Re-use existing SS\_SLPositioningManagement API and update the related clauses. |
|  |  |
| ***Consequences if not approved:*** | Short-Range based positioning information function cannot be supported. |
|  |  |
| ***Clauses affected:*** | 3.2, 5.1, 5.2.10.1, 5.2.10.2.1, 5.2.10.2.4 (new), 7.1.6.4, 7.1.6.6.1, 7.1.6.6.2.6 (new), 7.1.6.6.2.7 (new), 7.1.6.6.2.8 (new),7.1.6.6.2.9 (new), 7.1.6.6.2.10 (new), A.27 |
|  |  |
|  | **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 introduces backward compatible feature to the following APIs:TS29549\_SS\_SLPositioningManagement.yaml  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* First Change \* \* \* \*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

5GS 5G System

ADAE Application Data Analytics Enablement

A-ADRF Application layer - Analytical Data Repository Function

A-DCCF Application layer - Data Collection and Coordination Function

ADAES ADAE Server

AEF API Exposing Function

API Application Programming Interface

BDT Background Data Transfer

DA Digital Asset

DS-TT Device-Side TSN Translator

JSON JavaScript Object Notation

NDS Network Domain Security

NDS/IP NDS for IP based protocols

NRM Network Resource Management

NSCE Network Slice Capability Enablement

PLMN Public Land Mobile Network

REST Representational State Transfer

SAn Spatial Anchors

SCEF Service Capability Exposure Function

SCS Service Capability Server

SR Short Range

SEAL Service Enabler Architecture Layer for Verticals

SEALDD SEAL Data Delivery

SM Spatial Map

TMGI Temporary Mobile Group Identity

TSC Time Sensitive Communication

TSN Time Sensitive Networking

UE User Equipment

VAL Vertical Application Layer

UASS UAS Application Specific Server

\* \* \* Next Change \* \* \* \*

## 5.1 Introduction of SEAL services

The table 5.1-1 lists the SEAL server APIs below the service name. A service description clause for each API gives a general description of the related API.

Table 5.1-1: List of SEAL Service APIs

|  |  |  |  |
| --- | --- | --- | --- |
| Service Name | Service Operations | Operation Semantics | Consumer(s) |
| SS\_LocationReporting | Create\_Trigger\_Location\_Reporting | Request/ Response | VAL server |
| Fetch\_Location\_Report\_Trigger | Request/Response | VAL server |
| Update\_Trigger\_Location\_Reporting | Request/ Response | VAL server |
| Cancel\_Trigger\_Location\_Reporting | Request/ Response | VAL server |
| Notify\_Trigger\_Location\_Reporting | Notify | VAL server |
| Notify\_Adaptive\_Configuration | Notify | VAL server |
| SS\_LocationInfoEvent | Subscribe\_Location\_Info | Subscribe/Notify | VAL server |
| Update\_Location\_Info\_Subscription | VAL server |
| Unsubscribe\_Location\_Info | VAL server |
| Notify\_Location\_Info | VAL server |
| SS\_LocationInfoRetrieval | Obtain\_Location\_Info | Request/ Response | VAL server |
| SS\_LocationAreaInfoRetrieval | Obtain\_UEs\_Info | Request/ Response | VAL server |
| SS\_LocationMonitoring | Subscribe\_Location\_Monitoring | Subscribe/Notify | VAL server |
| Update\_Location\_Monitoring\_Subscription |
| Unsubscribe\_Location\_Monitoring |
| Notify\_Location\_Monitoring\_Events |
| SS\_LocationAreaMonitoring | Subscribe\_Location\_Area\_Monitoring | Subscribe/Notify | VAL server |
| Notify\_Location\_Area\_Monitoring\_Events |
| Update\_Location\_Area\_Monitoring\_Subscribe |
| Unsubscribe\_Location\_Area\_Monitoring |
| SS\_VALServiceAreaConfiguration | Configure\_VAL\_Service\_Area | Request/Response | VAL server |
| Obtain\_VAL\_Service\_Area | Request/Response | VAL server |
| Update\_VAL\_Service\_Area | Request/Response | VAL server |
| Delete\_VAL\_Service\_Area | Request/Response | VAL server |
| Subscribe\_VAL\_Service\_Area\_Change\_Event | Subscribe/Notify | SEAL server |
| Update\_Subscription\_VAL\_Service\_Area\_Change\_Event |
| Unsubscribe\_VAL\_Service\_Area\_Change\_Event |
| Notify\_VAL\_Service\_Area\_Change\_Event |
| SS\_LocationHistoryInfoEvent | Create | Request/Response | e.g., VAL Server |
| Update | e.g., VAL Server |
| Delete | e.g., VAL Server |
| Query | e.g., VAL Server |
| SS\_ConfirmLocation | Subscribe | Subscribe/Notify | e.g., VAL Server |
| Notify | LM Server |
| SS\_SLPositioningManagement | Subscribe | Subscribe/Notify | VAL server |
| Notify | VAL server |
| SR\_Positioning\_Information | Request/Response | VAL server |
| SS\_GroupManagement | Query\_Group\_Info | Request/ Response | VAL server |
| Update\_Group\_Info | Request/ Response | VAL server |
| Create\_Group | Request/ Response | VAL server |
| Delete\_Group | Request/Response | VAL server |
| SS\_GroupManagementEvent | Subscribe\_Group\_Info\_Modification | Subscribe/Notify | VAL server |
| Notify\_Group\_Info\_Modification | VAL server |
| Notify\_Group\_Creation | VAL server |
| SS\_UserProfileRetrieval | Obtain\_User\_Profile | Request/ Response | VAL server |
| SS\_VALServiceData | Obtain\_VAL\_Service\_Data | Request/Response | SEAL server |
| SS\_UserProfileEvent | Subscribe\_User\_Profile\_Update | Subscribe/Notify | VAL server |
| Notify\_User\_Profile\_Update | VAL server |
| SS\_NetworkResourceAdaptation(NOTE 3) | Reserve\_Network\_Resource | Request/Response | e.g., VAL server, SEALDD Server |
| Request\_Unicast\_Resource | Request/Response | e.g., VAL server, SEALDD Server |
| Update\_Unicast\_Resource | Request/Response | e.g., VAL server, SEALDD Server |
| Request\_Multicast\_Resource | Request/Response | e.g., VAL server |
| Notify\_UP\_Delivery\_Mode | Subscribe/Notify | e.g., VAL server |
| Discover\_TSC\_Stream\_Availability | Request/Response | e.g., VAL server |
| Create\_TSC\_Stream | Request/Response | e.g., VAL server |
| Delete\_TSC\_Stream | Request/Response | e.g., VAL server |
| Create\_MBS\_Resource | Request/Response | e.g., VAL server |
| Update\_MBS\_Resource | Request/Response | e.g., VAL server |
| Delete\_MBS\_Resource | Request/Response | e.g., VAL server |
| Activate\_MBS\_Resource | Request/Response | e.g., VAL server |
| Deactivate\_MBS\_Resource | Request/Response | e.g., VAL server |
| Reliable\_Transmission\_Request | Request/Response | e.g., SEALDD Server, VAL Server |
| BDT\_Configuration\_Request | Request/Response | e.g., VAL server, SEALDD Server |
| BDT\_Negotiation\_Notification | Subscribe/Notify | e.g., VAL server, SEALDD Server |
| BDT\_Configuration\_Get | Request/Response | e.g., VAL server, SEALDD Server |
| BDT\_Configuration\_Update | Request/Response | e.g., VAL server, SEALDD Server |
| BDT\_Configuration\_Delete | Request/Response | e.g., VAL server, SEALDD Server |
| Subscribe\_Unified\_Traffic\_Pattern\_and\_Monitoring\_Management | Subscribe/Notify | e.g., VAL server |
| Update\_Unified\_Traffic\_Pattern\_and\_Monitoring\_Management\_Subscription |
| Unsubscribe\_Unified\_Traffic\_Pattern\_and\_Monitoring\_Management |
| Notify\_Unified\_Traffic\_Pattern\_Update |
| SS\_EventsMonitoring | Subscribe\_Monitoring\_Events | Subscribe/Notify | VAL server |
| Notify\_Monitoring\_Events |
| SS\_Events | Subscribe\_Event | Subscribe/Notify | VAL server |
| Notify\_Event | VAL server |
| Unsubscribe\_Event | VAL server |
| Update\_Subscription | VAL server |
| SS\_KeyInfoRetrieval | Obtain\_Key\_Info | Request/Response | VAL server |
| SS\_KMParametersProvisioning | Request | Request/Response | VAL server |
| SS\_NetworkResourceMonitoring | Subscribe\_Unicast\_QoS\_Monitoring\_Data | Subscribe/Notify | VAL server |
| Unsubscribe\_Unicast\_QoS\_Monitoring\_Data | VAL server |
| Notify\_Unicast\_QoS\_Monitoring\_Data | VAL server |
| Obtain\_Unicast\_QoS\_Monitoring\_Data | Request/Response | VAL server |
| Update\_Unicast\_QoS\_Monitoring\_Subscription | VAL server |
| SS\_IdmParameterProvisioning | Provide\_Configuration | Request/Response | VAL server |
| Get\_Configuration |
| Update\_Configuration |
| Delete\_Configuration |
| SS\_ADAE\_VALPerformanceAnalytics | Subscribe\_VAL\_Performance\_Analytics | Subscribe/Notify | VAL server |
| Notify\_VAL\_Performance\_Analytics |
| Unsubscribe\_VAL\_Performance\_Analytics |
| SS\_ADAE\_SlicePerformanceAnalytics API | Subscribe\_Slice\_Performance\_Analytics | Subscribe/Notify | VAL server |
| Notify\_Slice\_Performance\_Analytics |
| Unsubscribe\_Slice\_Performance\_Analytics |
| SS\_ADAE\_Ue2UePerformanceAnalytics | UE-to-UE\_Performance\_Analytics\_Subscribe | Subscribe/Notify | VAL server |
| UE-to-UE\_Performance\_Analytics\_Notify |
| UE-to-UE\_Performance\_Analytics\_Unsubscribe |
| SS\_ADAE\_LocationAccuracyAnalytics | Subscribe\_Location\_Accuracy\_Analytics | Subscribe/Notify | VAL server |
| Notify\_Location\_Accuracy\_Analytics |
| Unsubscribe\_Location\_Accuracy\_Analytics |
| SS\_ADAE\_ServiceApiAnalytics | Subscribe\_Service\_API\_Analytics | Subscribe/Notify | VAL server |
| Notify\_Service\_API\_Analytics |
| Unsubscribe\_Service\_API\_Analytics |
| SS\_ADAE\_SliceUsagePatternAnalytics | Subscribe\_Slice\_Usage\_Pattern\_Analytics | Subscribe/Notify | VAL server, NSCE server |
| Notify\_Slice\_Usage\_Pattern\_Analytics |
| Unsubscribe\_Slice\_Usage\_Pattern\_Analytics |
| Get\_Slice\_Usage\_Stats | Request/Response | VAL server, NSCE server |
| SS\_ADAE\_EdgeLoadAnalytics | Subscribe\_Edge\_Load | Subscribe/Notify | VAL server, EAS, EES |
| Notify\_Edge\_Load |
| Unsubscribe\_Edge\_Load |
| Get\_Edge\_Load\_Data | Request/Response | VAL server, EAS, EES |
| SS\_ADAE\_LocationRelatedUeGroupAnalytics | Subscribe | Subscribe/Notify | e.g. LM Server |
| Notify |
| SS\_ADAE\_CollisionDetectionAnalytics | Subscribe | Subscribe/Notify | e.g., VAL Server, LM Server, UAE Server, UASS |
| Notify |
| SS\_AADRF\_DataManagement | SS\_AADRF\_DataManagement\_Subscribe | Subscribe/Notify | ADAE server |
| SS\_AADRF\_DataManagement\_Unsubscribe |
| SS\_AADRF\_DataManagement\_Notify |
| NOTE 1: The service operations of SS\_Events API are reused by the SS\_LocationInfoEvent, SS\_LocationMonitoring, SS\_LocationAreaMonitoring, SS\_GroupManagementEvent, SS\_UserProfileEvent and SS\_EventsMonitoring for events related services.NOTE 2: The service APIs exposed by the SEALDD Server and the corresponding service operations, operation semantics and service consumers are specified in clause 5 of 3GPP TS 29.548 [35].NOTE 3: The "Create\_MBS\_Resource", "Update\_MBS\_Resource", "Delete\_MBS\_Resource", "Activate\_MBS\_Resource" and "Deactivate\_MBS\_Resource" service operations correspond to the stage 2 "Request\_Multicast/Broadcast\_Resource", "Update\_Multicast/Broadcast\_Resource", "Delete\_Multicast/Broadcast\_Resource", "Activate\_Multicast\_Resource" and "Deactivate\_Multicast\_Resource" service operations defined in clause 14.4.2 of 3GPP TS 23.434 [2].NOTE 4: The service APIs exposed by the NSCE Server and the corresponding service operations, operation semantics and service consumers are specified in clause 5 of 3GPP TS 29.435 [42].NOTE 5: The service APIs exposed by the SAn Server and SM Server, and the corresponding service operations, operation semantics and service consumers are specified in 3GPP TS 29.437 [49].NOTE 6: The SS\_SLPositioningManagement API is reused by the SS\_SRPositioningInformation API defined in clause 9.4.11 of 3GPP TS 23.434 [2]. |

Table 5.1-2 summarizes the corresponding APIs defined in this specification.

Table 5.1-2: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Service Name** | **Clause** | **Description** | **OpenAPI Specification File** | **apiName** | **Annex** |
| SS\_LocationReporting | 7.1.1 | Report Location Information Service. | TS29549\_SS\_LocationReporting.yaml | ss-lr | A.2 |
| SS\_GroupManagement | 7.2.1 | Group Management Service | TS29549\_SS\_GroupManagement.yaml | ss-gm | A.3 |
| SS\_UserProfileRetrieval | 7.3.1 | User Profile Retrieval Service | TS29549\_SS\_UserProfileRetrieval.yaml | ss-upr | A.4 |
| SS\_NetworkResourceAdaptation | 7.4.1 | Network Resource Adaptation Service | TS29549\_SS\_NetworkResourceAdaptation.yaml | ss-nra | A.5 |
| SS\_Events | 7.5.1 | Events Notify Service | TS29549\_SS\_Events.yaml | ss-events | A.6 |
| SS\_KeyInfoRetrieval(NOTE 2) | 7.6.1 | Key Information Retrieval Service | TS29549\_SS\_KeyInfoRetrieval.yaml | ss-kir | A.7 |
| SS\_LocationAreaInfoRetrieval | 7.1.2 | Location Area Info Retrieval Service | TS29549\_SS\_LocationAreaInfoRetrieval.yaml | ss-lair | A.8 |
| SS\_NetworkResourceMonitoring | 7.4.2 | Network Resource Monitoring | TS29549\_SS\_NetworkResourceMonitoring.yaml | ss-nrm | A.10 |
| SS\_VALServiceData | 7.3.2 | VAL Service Data Service | TS29549\_SS\_VALServiceData.yaml | ss-vsd | A.11 |
| SS\_VALServiceAreaConfiguration | 7.1.3 | VAL Service Area Configuration Service | TS29549\_SS\_VALServiceAreaConfiguration.yaml | ss-vsac | A.12 |
| SS\_KMParametersProvisioning(NOTE 3) | 7.6.2 | Key Management Parameters Provisioning Service | TS29549\_SS\_KMParametersProvisioning.yaml | ss-kpp | A.14 |
| SS\_ADAE\_VALPerformanceAnalytics | 7.10.1 | ADAE VAL performance analytics service | TS29549\_SS\_ADAE\_VALPerformanceAnalytics.yaml | ss-adae-pa | A.15 |
| SS\_ADAE\_SlicePerformanceAnalytics | 7.10.2 | ADAE slice specific application performance analytics service | TS29549\_SS\_ADAE\_SlicePerformanceAnalytics.yaml | ss-adae-sspa | A.16 |
| SS\_ADAE\_Ue2UePerformanceAnalytics | 7.10.3 | ADAE UE-to-UE PerformanceAnalytics Service | TS29549\_SS\_ADAE\_Ue2UePerformanceAnalytics.yaml | ss-adae-uupa | A.17 |
| SS\_ADAE\_LocationAccuracyAnalytics | 7.10.4 | ADAE location accuracy performance analytics service | TS29549\_SS\_ADAE\_LocationAccuracyAnalytics.yaml | ss-adae-laa | A.18 |
| SS\_ADAE\_ServiceApiAnalytics | 7.10.5 | ADAE service API analytics service | TS29549\_SS\_ADAE\_ServiceApiAnalytics.yaml | ss-adae-sa | A.19 |
| SS\_ADAE\_SliceUsagePatternAnalytics | 7.10.6 | ADAE slice usage pattern analytics service | TS29549\_SS\_ADAE\_SliceUsagePatternAnalytics.yaml | ss-adae-sup | A.20 |
| SS\_ADAE\_EdgeLoadAnalytics | 7.10.7 | Edge load analytics service | TS29549\_SS\_ADAE\_EdgeLoadAnalytics.yaml | ss-adae-el | A.21 |
| SS\_AADRF\_DataManagement | 7.10.8 | A-ADRF Data Management Service | TS29549\_SS\_AADRF\_DataManagement.yaml | ss-aadrf-datamanagement | A.22 |
| SS\_ADAE\_LocationRelatedUeGroupAnalytics | 7.10.9 | ADAE Location-Related UE Group Analytics service | TS29549\_ADAE\_LocationRelatedUeGroupAnalytics.yaml | ss-adae-lruga | A.23 |
| SS\_ADAE\_CollisionDetectionAnalytics | 7.10.10 | ADAE Collision Detection Analytics service | TS29549\_ADAE\_CollisionDetectionAnalytics.yaml | ss-adae-cda | A.24 |
| SS\_LocationHistoryInfoEvent | 7.1.4 | Location Tracing Configuration Management | TS29549\_SS\_LocationHistoryInfoEvent.yaml | ss-lhie | A.25 |
| SS\_ConfirmLocation | 7.1.5 | Location Confirmation Service Management | TS29549\_SS\_ConfirmLocation.yaml | ss-cl | A.26 |
| SS\_SLPositioningManagement | 7.1.6 | SL Positioning Management service | TS29549\_SS\_SLPositioningManagement.yaml | ss-slpm | A.27 |
| NOTE 1: The APIs exposed by the SEALDD Server are specified in clause 5 of 3GPP TS 29.548 [35].NOTE 2: The stage 2 requirements for this API are defined in clause 5.3 of 3GPP TS 33.434 [26].NOTE 3: The stage 2 requirements for this API are defined in clause 5.8 of 3GPP TS 33.434 [26].NOTE 4: The APIs exposed by the NSCE Server are specified in clause 5 of 3GPP TS 29.435 [42].NOTE 5: The APIs exposed by the SAn Server and SM Server are specified in 3GPP TS 29.437 [49]. |

\* \* \* Next Change \* \* \* \*

#### 5.2.10.1 Service Description

The SS\_SLPositioningManagement API, as defined 3GPP TS 23.434 [2], enables a service consumer to:

- create/update/delete a SL Positioning Management Subscription;

- receive SL Positioning Management related event(s) notification; and

- request SR based positioning information.

\* \* \* Next Change \* \* \* \*

##### 5.2.10.2.1 Introduction

The service operations defined for the SS\_SLPositioningManagement API are shown in the table 5.2.10.2.1-1.

Table 5.2.10.2.1-1: Service operations of the SS\_SLPositioningManagement API

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
| SS\_SLPositioningManagement\_Subscribe | This service operation is used by a service consumer to to create/update/delete a SL Positioning Management Subscription. | VAL Server |
| SS\_SLPositioningManagement\_Notify | This service operation is used by the LM Server to notify on the SL Positioning Management event(s). | SEAL Server |
| SS\_SLPositioningManagement\_SR\_Positioning\_Information | This service operation is used by a service consumer to request SR based positioning information. | VAL Server |

\* \* \* Next Change \* \* \* \*

##### 5.2.10.2.4 SR\_Positioning\_Information

###### 5.2.10.2.4.1 General

This service operation is used by a service consumer to request SR based positioning information to the LM Server.

###### 5.2.10.2.4.2 Short-Range based positioning information request

This procedure is used by a service consumer to request Short-Range based positioning information.

1. In order to request the Short-Range based positioning information, the service consumer shall send an HTTP POST request to the LM Server with the request body including the SrPosInfoReq data structure specified in clause 7.1.6.4.

2a. Upon success, the LM Server shall respond with an HTTP "200 OK" status code with the response body containing a representation of the Short-Range based positioning information within the SrPosInfoResp data structure.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 7.1.6.4.

\* \* \* Next Change \* \* \* \*

#### 7.1.6.4 Custom Operations without associated resources

##### 7.1.6.4.1 Overview

The structure of the custom operation URIs of the SS\_SLPositioningManagement API is shown in Figure 7.1.6.4.1-1.

Figure 7.1.6.4.1-1 depicts the resource URIs structure for the SS\_SLPositioningManagement API.



Figure 7.1.6.4.1-1: Custom operation URI structure of the SS\_SLPositioningManagement API

Table 7.1.6.4.1-1 provides an overview of the custom operations and applicable HTTP methods defined for the SS\_SLPositioningManagement API.

Table 7.1.6.4.1-1: Custom operations without associated resources

|  |  |  |  |
| --- | --- | --- | --- |
| Custom operation name | Custom operation URI | Mapped HTTP method | Description |
| SR Positioning Information Request | /request-srp | POST | Enables to request SR Positioning Information. |

The custom operations shall support the URI variables defined in table 7.1.6.4.1-2.

Table 7.1.6.4.1-2: URI variables for this custom operation

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 7.6.2.1. |

##### 7.1.6.4.2 Operation: SR Positioning Information Request

###### 7.1.6.4.2.1 Description

This custom operation enables a service consumer to request SR based positioning information to the LM Server.

###### 7.1.6.4.2.2 Operation Definition

This operation shall support the request data structures specified in table 7.1.6.4.2.2-1 and the response data structures and response codes specified in table 7.1.6.4.2.2-2.

Table 7.1.6.4.2.2-1: Data structures supported by the POST Request Body on this custom operation

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SrPosInfoReq | M | 1 | Contains the SR Positioning Information Request. |

Table 7.1.6.4.2.2-2: Data structures supported by the POST Response Body on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SrPosInfoResp |  |  | 200 OK | Successful case. The SR based positioning information result is successfully returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI representing the end point of an alternative LM Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI representing the end point of an alternative LM Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [3]. |
| NOTE: The manadatory HTTP error status code for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [3] shall also apply. |

Table 7.1.6.4.2.2-3: Headers supported by the 307 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative LM Server. |

Table 7.1.6.4.2.2-4: Headers supported by the 308 Response Code on this custom operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative LM Server. |

\* \* \* Next Change \* \* \* \*

##### 7.1.6.6.1 General

This clause specifies the application data model supported by the API.

Table 7.1.6.6.1-1 specifies the data types defined for the SS\_SLPositioningManagement API.

Table 7.1.6.6.1-1: SS\_SLPositioningManagement API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| SlPositionMgmtSubsc | 7.1.6.6.2.2 | Represents the SL Positioning Management subscription information. |  |
| SlPositionMgmtSubscPatch | 7.1.6.6.2.3 | Represents the update in the SL Positioning Management subscription. |  |
| SlPositionMgmtNotif | 7.1.6.6.2.4 | Represents the SL Positioning Management notification. |  |
| ValUeInfo | 7.1.6.6.2.5 | Represents the Val UE and its address information. |  |
| SrPosInfoReq | 7.1.6.6.2.6 | Contains the payload of the SR based positioning information request message. |  |
| SrPosFilter | 7.1.6.6.2.7 | Contains the requested SR based positioning information filters. |  |
| SrPosInfoResp | 7.1.6.6.2.8 | Contains the payload of the SR based positioning information response message. |  |
| SrUeList | 7.1.6.6.2.9 | Contains the list of UE identities of SR based positioning. |  |
| SrPosInfo | 7.1.6.6.2.10 | Contains the SR based positioning information. |  |

Table 7.1.6.6.1-2 specifies data types re-used by the SS\_SLPositioningManagement API service.

Table 7.1.6.6.1-2: SS\_SLPositioningManagement API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| 2DRelativeLocation | 3GPP TS 29.572 [31] | Represents 2D local co-ordinates with origin corresponding to another known point. |  |
| 3DRelativeLocation | 3GPP TS 29.572 [31] | Represents 3D local co-ordinates with origin corresponding to another known point. |  |
| DurationSec | 3GPP TS 29.122 [3] | Unsigned integer identifying a period of time in units of seconds. |  |
| LocationArea5G | 3GPP TS 29.122 [3] | Represents location information. |  |
| LocationQoS | 3GPP TS 29.572 [31] | Identifies QoS requested by VAL server. |  |
| RangeDirection | 3GPP TS 29.572 [31] | Represents the distance and direction between two points. |  |
| RelativeVelocityWithUncertainty | 3GPP TS 29.572 [31] | Represents relative velocity with uncertainty. |  |
| ReportingInformation | 3GPP TS 29.523 [20] | Used to indicate the reporting requirement, only the following information are applicable for LM Server. |  |
| SupportedFeatures | 3GPP TS 29.571 [21] | Used to negotiate the applicability of optional features defined in table 7.1.4.6-1. |  |
| Uri | 3GPP TS 29.122 [3] | Used to indicate the notification URI. |  |
| ValServiceArea | Clause 7.1.3.4.2.2 | Represents the VAL service area. |  |
| ValTargetUe | Clause 7.3.1.4.2.3 | Used to indicate either VAL User ID or VAL UE ID, to which location reporting applies. |  |
| ValUeAddrInfo | Clause 7.4.1.4.2.30 | Represents VAL UE address information. |  |

\* \* \* Next Change \* \* \* \*

###### 7.1.6.6.2.6 Type: SrPosInfoReq

Table 7.1.6.6.2.6-1: Definition of type SrPosInfoReq

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valSvcId | string | O | 0..1 | The VAL service ID of the VAL application. |  |
| ueList | SrUeList | M | 1 | Contains the list of UE identities. |  |
| srPosFltr | SrPosFilter | M | 1 | Contains the requested SR based positioning information filters. |  |
| locQoS | LocationQoS | O | 0..1 | Contains the requested location QoS. |  |
| expTime | DurationSec | O | 0..1 | The expiration timer for the SR based positioning information request. |  |

Editor's Note: Whether to define the information element "Reporting events" in the Table 9.3.2.65-1 of 3GPP TS 23.434 [2] is FFS.

\* \* \* Next Change \* \* \* \*

###### 7.1.6.6.2.7 Type: SrPosFilter

Table 7.1.6.6.2.7-1: Definition of type SrPosFilter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| rangeReq | boolean | C | 0..1 | When included and set to true, it indicates that the range is requested. (NOTE) |  |
| directionReq | boolean | C | 0..1 | When included and set to true, it indicates the direction is requested. (NOTE) |  |
| relativePosReq | boolean | C | 0..1 | When included and set to true, it indicates the relative position is requested. (NOTE) |  |
| relativeVelReq | boolean | C | 0..1 | When included and set to true, it indicates the relative velocity is requested. (NOTE) |  |
| NOTE: At least one of these attibutes shall be present. |

\* \* \* Next Change \* \* \* \*

###### 7.1.6.6.2.8 Type: SrPosInfoResp

Table 7.1.6.6.2.8-1: Definition of type SrPosInfoResp

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| srPosInfo | array(SrPosInfo) | M | 1..N | Contains the SR based positioning information. |  |

\* \* \* Next Change \* \* \* \*

###### 7.1.6.6.2.9 Type: SrUeList

Table 7.1.6.6.2.9-1: Definition of type SrUeList

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| clientUes | array(string) | M | 1..N | Contains the identity of client UE. |  |
| tgtUes | array(string) | M | 1..N | Contains the identity of target UE. |  |
| refUes | array(string) | M | 1..N | Contains the list of identities of reference UEs. |  |

\* \* \* Next Change \* \* \* \*

###### 7.1.6.6.2.10 Type: SrPosInfo

Table 7.1.6.6.2.10-1: Definition of type SrPosInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| refUe | string | M | 1 | Contains the identity of reference UE. |  |
| tgtUe | string | M | 1 | Contains the identity of target UE. |  |
| 2dRelativeLocation | 2DRelativeLocation | C | 0..1 | Represents 2D local co-ordinates of the reference UE with origin corresponding to target UE.(NOTE) |  |
| 3dRelativeLocation | 3DRelativeLocation | C | 0..1 | Represents 3D local co-ordinates of the reference UE with origin corresponding to target UE.(NOTE) |  |
| relativeVelocity | RelativeVelocityWithUncertainty | C | 0..1 | Represents 3D relative velocity of the reference UE with origin corresponding to target UE.(NOTE) |  |
| distanceDirection | RangeDirection | C | 0..1 | Represents the distance and direction of the reference UE with origin corresponding to target UE.(NOTE) |  |
| NOTE: At least one of these attributes shall be present. |

\* \* \* Next Change \* \* \* \*

# A.27 SS\_SLPositioningManagement API

openapi: 3.0.0

info:

 title: SS\_SLPositioningManagement

 version: 1.0.0-alpha.1

 description: |

 API for SEAL SL Positioning management Service.

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externalDocs:

 description: >

 3GPP TS 29.549 V19.1.0 Service Enabler Architecture Layer for Verticals (SEAL);

 Application Programming Interface (API) specification; Stage 3.

 url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.549/

servers:

 - url: '{apiRoot}/ss-slpm/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /subscriptions:

 post:

 summary: Create individual SL Positioning Management subscription.

 operationId: SubscribeSlPositionMgmt

 tags:

 - SL Positioning Management Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtSubsc'

 responses:

 '201':

 description: >

 The requested individual SL Positioning MAnagement subscription

 resource is successfully created and a representation of the created

 resource is returned in the response body.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtSubsc'

 headers:

 Location:

 description: Contains the URI of the newly created resource.

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 callbacks:

 SlPositionMgmtNotif:

 '{$request.body#/notifUri}':

 post:

 summary: Notify on changes of the SL Positioning Management according to the

 requested reporting settings.

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtNotif'

 responses:

 '204':

 description: The notification is successfully received.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /subscriptions/{subscriptionId}:

 get:

 summary: Read an existing individual SL Positioning Management subscription resource

 according to the subscriptionId.

 operationId: ReadSlPositioningMgmtSubscription

 tags:

 - Individual SL Positioning Management Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of an individual SL Positioning Management

 subscription resource.

 required: true

 schema:

 type: string

 responses:

 '200':

 description: The requested individual SL Positioning Management subscription returned.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtSubsc'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 put:

 summary: >

 Update an individual SL Positioning Management subscription identified by the

 subscriptionId.

 operationId: UpdateSlPositionMgmt

 tags:

 - Individual Unicast SL Positioning Management Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of an individual unicast monitoring subscription resource.

 required: true

 schema:

 type: string

 requestBody:

 description: Updated details of the unicast QoS monitoring subscription.

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtSubsc'

 responses:

 '200':

 description: >

 The subscription is updated successfully, and the updated subscription

 information returned in the response.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtSubsc'

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 patch:

 summary: >

 Modify an individual SL Positioning Management subscription identified

 by the subscriptionId.

 operationId: ModifySlPositionMgmt

 tags:

 - Individual SL Positioning Management Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of an individual SL Positioning Management

 subscription resource.

 required: true

 schema:

 type: string

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtSubscPatch'

 responses:

 '200':

 description: >

 Individual individual SL Position Management resource is modified

 successfully and representation of the modified individual SL Positioning Management

 resource

 subscription resource is returned.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SlPositionMgmtSubscPatch'

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Remove an existing individual SL Positioning Management resource according to

 the subscriptionId.

 operationId: UnsubscribeSlPositionMgmt

 tags:

 - Individual SL Positioning Management Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of an individual SL Positioning Management

 subscription resource.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 The Individual SL Positioning Management Subscription resource matching the

 subscriptionId is deleted.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /request-srp:

 post:

 summary: Enables a service consumer to request SR based positioning information.

 operationId: Request

 tags:

 - SR based positioning information

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SrPosInfoReq'

 responses:

 '200':

 description: >

 OK. Successful case.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/SrPosInfoResp'

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 SlPositionMgmtSubsc:

 description: Indicate the SL Positioning Management subscription.

 type: object

 properties:

 valSvcId:

 type: string

 description: Identity of the VAL service

 tgtUes:

 type: array

 items:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 minItems: 1

 description: List of VAL Users or UE IDs for which SL location management is requested.

 valServArea:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

 eventReport:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 notifUri:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

 suppFeat:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 required:

 - notifUri

 - eventReport

 - valSvcId

 SlPositionMgmtSubscPatch:

 description: Indicate the SL Positioning Management subscription update.

 type: object

 properties:

 valSvcId:

 type: string

 description: Identity of the VAL service

 tgtUes:

 type: array

 items:

 $ref: 'TS29549\_SS\_UserProfileRetrieval.yaml#/components/schemas/ValTargetUe'

 minItems: 1

 description: List of VAL Users or UE IDs for which SL location management is requested.

 valServArea:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

 eventReport:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 notifUri:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

 SlPositionMgmtNotif:

 description: SL Positioning Management notification.

 type: object

 properties:

 subscId:

 type: string

 description: Subscription Identifier

 refUes:

 type: array

 items:

 $ref: '#/components/schemas/ValUeInfo'

 minItems: 1

 description: List of VAL UE(s) identified as Reference UE(s).

 tgtUes:

 type: array

 items:

 $ref: '#/components/schemas/ValUeInfo'

 minItems: 1

 description: List of VAL UE(s) identified as Target UE(s).

 clientUes:

 type: array

 items:

 $ref: '#/components/schemas/ValUeInfo'

 minItems: 1

 description: List of VAL UE(s) identified as Client UE(s).

 failCause:

 $ref: '#/components/schemas/Cause'

 required:

 - subscId

 - refUes

 - tgtUes

 ValUeInfo:

 description: Indicate the Val UE Information.

 type: object

 properties:

 valUeId:

 type: string

 description: Identity of the VAL UE ID.

 valUeAddr:

 $ref: 'TS29549\_SS\_NetworkResourceAdaptation.yaml#/components/schemas/ValUeAddrInfo'

 SrPosInfoReq:

 description: |

 Represents the payload of the Short-Range based positioning information request message.

 type: object

 properties:

 valSvcId:

 type: string

 ueList:

 $ref: '#/components/schemas/SrUeList'

 srPosFltr:

 $ref: '#/components/schemas/SrPosFilter'

 locQoS:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocationQoS'

 expTime:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/DurationSec'

 required:

 - ueList

 - srPosFltr

 SrPosFilter:

 description: |

 Represents the requested SR based positioning information filters.

 type: object

 properties:

 rangeReq:

 type: boolean

 directionReq:

 type: boolean

 relativePosReq:

 type: boolean

 relativeVelReq:

 type: boolean

 anyOf:

 - required: [ rangeReq ]

 - required: [ directionReq ]

 - required: [ relativePosReq ]

 - required: [ relativeVelReq ]

 SrPosInfoResp:

 description: |

 Represents the payload of the Short-Range based positioning information response message.

 type: object

 properties:

 srPosInfo:

 type: array

 items:

 $ref: '#/components/schemas/SrPosInfo'

 minItems: 1

 required:

 - srPosInfo

 SrUeList:

 description: |

 Contains the list of UE identities of Short-Range based positioning.

 type: object

 properties:

 clientUes:

 type: array

 items:

 type: string

 minItems: 1

 tgtUes:

 type: array

 items:

 type: string

 minItems: 1

 refUes:

 type: array

 items:

 type: string

 minItems: 1

 required:

 - clientUes

 - tgtUes

 - refUes

 SrPosInfo:

 description: |

 Contains the Short-Range based positioning information.

 type: object

 properties:

 refUe:

 type: string

 tgtUe:

 type: string

 2dRelativeLocation:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/2DRelativeLocation'

 3dRelativeLocation:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/3DRelativeLocation'

 relativeVelocity:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/RelativeVelocityWithUncertainty'

 distanceDirection:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/RangeDirection'

 required:

 - refUe

 - tgtUe

 anyOf:

 - required: [ 2dRelativeLocation ]

 - required: [ 3dRelativeLocation ]

 - required: [ relativeVelocity ]

 - required: [ distanceDirection ]

# Simple data types and Enumerations

 Cause:

 anyOf:

 - type: string

 enum:

 - NOTIFY\_CRITERIA\_MATCHED

 - NOTIFY\_NO\_REFERENCE\_UE\_FOUND

 - NOTIFY\_NO\_TARGET\_UE\_FOUND

 - NOTIFY\_NO\_CLIENT\_UE\_FOUND

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Possible values are:

 Enumeration of SL Positioning management failure cause.

 - NOTIFY\_CRITERIA\_MATCHED: This value indicates that the VAL UE in the report matches

 to the criteria indicated in the subscription.

 - NOTIFY\_NO\_REFERENCE\_UE\_FOUND: This value indicates that the none of the VAL UE matches

 the criteria for the Reference UE.

 - NOTIFY\_NO\_TARGET\_UE\_FOUND: This value indicates that the none of the VAL UE matches

 the criteria for the Target UE.

 - NOTIFY\_NO\_CLIENT\_UE\_FOUND: This value indicates that the none of the VAL UE matches

 the criteria for the Client UE.

\* \* \* End of Changes \* \* \* \*