**3GPP TSG CT WG3 Meeting #138 *C3-246374***

**Orlando, US, 18 - 22 November, 2024 was C3-246118**

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| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **549** | **CR** | **0342** | **rev** | **-** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| --- |
|  |
| ***Title:***  | Define SS\_SLPositioningManagement API procedures |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | eLSAPP |  | ***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:*** | Stage-2 (SA6) agreed CR S6-244617 (TS 23.434 CR#337) defines new API - SS\_SLPositioningManagement API, where SEAL LMS (SL positioning enabler capability) provides support to the provisioning/delivery of ranging services in an area to the subscribed VAL server (SL Positioning / Ranging Server). |
|  |  |
| ***Summary of change:*** | New API procedure is defined to support SS\_SLPositioningManagement API.  |
|  |  |
| ***Consequences if not approved:*** | Stage-2 requirements not supported. |
|  |  |
| ***Clauses affected:*** | 5.2.8 (new) and sub clauses. |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR 23.434 CR 0337  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR does not impact open API defined in this specification |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\* First 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 |
| 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\_SLPositioningManagement | Subscribe\_SL\_Positioning\_Management | Subscribe/Notify | VAL server |
| Notify\_SL\_Positioning\_Management\_Events |
| Update\_Subscription\_SL Positioning\_Management |
| Unsubscribe\_SL\_Positioning\_Management |
| 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 | VAL server |
| Request\_Unicast\_Resource | Request/Response | VAL server |
| Update\_Unicast\_Resource | Request/Response | VAL server |
| Request\_Multicast\_Resource | Request/Response | VAL server |
| Notify\_UP\_Delivery\_Mode | Subscribe/Notify | VAL server |
| Discover\_TSC\_Stream\_Availability | Request/Response | VAL server |
| Create\_TSC\_Stream | Request/Response | VAL server |
| Delete\_TSC\_Stream | Request/Response | VAL server |
| Create\_MBS\_Resource | Request/Response | VAL server |
| Update\_MBS\_Resource | Request/Response | VAL server |
| Delete\_MBS\_Resource | Request/Response | VAL server |
| Activate\_MBS\_Resource | Request/Response | VAL server |
| Deactivate\_MBS\_Resource | Request/Response | VAL server |
| Reliable\_Transmission\_Request | Request/Response | e.g., SEALDD Server, VAL Server |
| Subscribe\_Unified\_Traffic\_Pattern\_and\_Monitoring\_Management | Subscribe/Notify | 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, EESVAL server, EAS, EESVAL server, EAS, EES |
| Notify\_Edge\_Load |
| Unsubscribe\_Edge\_Load |
| Get\_Edge\_Load\_Data | Request/Response | VAL server, EAS, EES |
| 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]. |

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 | Group Management Service | TS29549\_SS\_GroupManagement.yaml | ss-gm | A.3 |
| SS\_UserProfileRetrieval | 7.3 | User Profile Retrieval Service | TS29549\_SS\_UserProfileRetrieval.yaml | ss-upr | A.4 |
| SS\_NetworkResourceAdaptation | 7.4 | Network Resource Adaptation Service | TS29549\_SS\_NetworkResourceAdaptation.yaml | ss-nra | A.5 |
| SS\_Events | 7.5 | Events Notify Service | TS29549\_SS\_Events.yaml | ss-events | A.6 |
| SS\_KeyInfoRetrieval(NOTE 2) | 7.6 | 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 | Network Resource Monitoring | TS29549\_SS\_NetworkResourceMonitoring.yaml | ss-nrm | A.10 |
| SS\_VALServiceData | 7.3 | 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 | Key Management Parameters Provisioning Service | TS29549\_SS\_KMParametersProvisioning.yaml | ss-kpp | A.14 |
| SS\_ADAE\_VALPerformanceAnalytics | 7.10 | ADAE VAL performance analytics service | TS29549\_SS\_ADAE\_VALPerformanceAnalytics.yaml | ss-adae-pa | A.15 |
| SS\_ADAE\_SlicePerformanceAnalytics | 7.10 | ADAE slice specific application performance analytics service | TS29549\_SS\_ADAE\_SlicePerformanceAnalytics.yaml | ss-adae-sspa | A.16 |
| SS\_ADAE\_Ue2UePerformanceAnalytics | 7.10 | ADAE UE-to-UE PerformanceAnalytics Service | TS29549\_SS\_ADAE\_Ue2UePerformanceAnalytics.yaml | ss-adae-uupa | A.17 |
| SS\_ADAE\_LocationAccuracyAnalytics | 7.10 | ADAE location accuracy performance analytics service | TS29549\_SS\_ADAE\_LocationAccuracyAnalytics.yaml | ss-adae-laa | A.18 |
| SS\_ADAE\_ServiceApiAnalytics | 7.10 | ADAE service API analytics service | TS29549\_SS\_ADAE\_ServiceApiAnalytics.yaml | ss-adae-sa | A.19 |
| SS\_ADAE\_SliceUsagePatternAnalytics | 7.10 | 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\_SLPositioningManagement | 7.1.4 | SL Positioning Management service | TS29549\_SS\_SLPositioningManagement.yaml | ss-slpm | A.23 |
| 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]. |

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

### 5.2.8 SS\_SLPositioningManagement API

#### 5.2.8.1 Service Description

##### 5.2.8.1.1 Overview

The SS\_SLPositioningManagement API, as defined 3GPP TS 23.434 [2], enables a VAL Server to provision the SL Positioning Management information to the VAL UE(s) via the LM-S reference point and subscribe for SL Positioning change event(s) reporting.

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

#### 5.2.8.2 Service Operations

##### 5.2.8.2.1 Introduction

The service operations defined for the SS\_SLPositioningManagement API are shown in the table 5.2.8.2.1-1.

Table 5.2.8.2.1-1: Service operations of the SS\_SLPositioningManagement API

|  |  |  |
| --- | --- | --- |
| Service operation name | Description | Initiated by |
| Subscribe\_SL\_Positioning\_Management | This service operation is used by a VAL Server to provision SL Positioning management information and subscribe to the SL Positioning change event(s) reporting. | VAL Server |
| Notify\_SL\_Positioning\_Management\_Events | This service operation is used by a LM Server to notify for the SL Positioning Management change event(s). | SEAL Server |
| Update\_Subscription\_SL\_Positioning\_Management | This service operation is used by a VAL Server to update the SL Positioning management subscription information. | VAL Server |
| Unsubscribe\_SL\_Positioning\_Management | This service operation is used by a VAL Server to unsubscribe the SL Positioning management information. | VAL Server |

##### \*\*\* Next Change \*\*\*5.2.8.2.2 Subscribe\_SL\_Positioning\_Management

###### 5.2.8.2.2.1 General

This service operation is used by a VAL Server to subscribe to the SEAL LM server for SL Positioning Management change event(s) reporting.

###### 5.2.8.2.2.2 VAL Server subscribes for the SL Positioning Management change event(s) reporting using the Subscribe\_SL\_Positioning\_Management service operation

In order to subscribe to the SL Positioning Management change event(s) reporting, the VAL Server shall send an HTTP POST request message targeting the URI of the "SL Positioning Management Subscriptions" resource as specified in clause 7.1.4.3.2.2. The request body shall include the SlPositionMgmtSubsc data structure defined in clause 7.1.4.5.2.2.

Upon reception of the HTTP POST request message, the LM Server shall:

1. verify the identity of the VAL Server and whether the VAL Server is authorized to subscribe to the SL Positioning change event(s) reporting at the LM Server;

2. if the VAL Server is authorized, the LM Server shall create a new "Individual SL Positioning Management Subscription" resource and respond to the VAL server with an HTTP "201 Created" status code, including a Location header field containing the URI for the created "Individual SL Positioning Management Subscription" resource and the response body including the SlPositionMgmtSubsc data structure containing a representation of the created resource as defined in clause 7.1.4.3.3.2; and

3. if errors occur when processing the request, the LM Server shall respond to the VAL Server with an appropriate error response as specified in clause 7.1.4.5.

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

##### 5.2.8.2.3 Notify\_SL\_Positioning\_Management\_Events

###### 5.2.8.2.3.1 General

This service operation is used by a LM Server to notify for the SL Positioning Management change event(s).

###### 5.2.8.2.3.2 LM server notifies the VAL Server on SL Positioning Management change event(s) using Notify\_SL\_Positioning\_Management\_Events

In order to notify the VAL server about SL Positioning Management change event(s), the LM Server shall send an HTTP POST request message to the VAL Server targeting the notification URI provided during subscription creation as specified in clause 7.1.4.4.2.2.

Upon receiving the HTTP POST request message, the VAL Server shall:

1. process the SL Positioning change event(s) notification; and

2. upon success, respond to the LM Server with a "204 No Content" status code; and

3. if errors occur when processing the request, the VAL Server shall respond to the LM Server with an appropriate error response as specified in clause 7.1.4.5.

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

##### 5.2.8.2.4 Update\_Subscription\_SL\_Positioning\_Management

###### 5.2.8.2.4.1 General

This service operation is used by a VAL Server to update the subscription for the SL Positioning management information.

###### 5.2.8.2.4.2 VAL Server updates the subscription for the SL Positioning Management information using the Update\_Subscription\_SL\_Positioning\_Management service operation

In order to update an existing individual SL Positioning Management subscription, the VAL Server shall send an HTTP PUT request message including the SlPositionMgmtSubsc data structure to the LM Server, targeting the corresponding "Individual SL Positioning Management Subscription" resource URI as specified in clause 7.1.4.3.3.3.1.

In order to modify an existing individual SL Positioning Management subscription, the VAL Server shall send an HTTP PATCH request message including the SlPositionMgmtSubscPatch data structure targeting the "Individual SL Positioning Management Subscription" resource URI as specified in clause 7.1.4.3.3.3.2.

Upon receiving the HTTP PUT or HTTP PATCH request message, the LM Server shall:

1. verify the identity of the VAL Server and check if the VAL Server is authorised to update or modify the "Individual SL Positioning Management Subscription" resource;

2. if the VAL Server is authorized, then the LM Server shall:

a. update/modify the resource identified by the Resource URI of the configuration received in the request; and

b. respond to the VAL server with an HTTP "200 OK" with the response body containing the updated "Individual SL Positioning Management Subscription" resource within the SlPositionMgmtSubsc data structure or "204 No Content" status code;

and

3. if errors occur when processing the request, the LM Server shall respond to the VAL Server with an appropriate error response as specified in clause 7.1.3.5.

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

##### 5.2.8.2.5 Unsubscribe\_SL\_Positioning\_Management

###### 5.2.8.2.5.1 General

This service operation is used by a VAL Server to unsubscribe from the SL Positioning Management subscription.

###### 5.2.8.2.5.2 VAL server unsubscribes from the SL Positioning Management information using Unsubscribe\_SL\_Positioning\_Management

In order to terminate an individual SL Positioning Management subscription, the VAL server shall send an HTTP DELETE request message to the LM Server, on the corresponding "Individual SL Positioning Management Subscription" resource URI as specified in clause 7.1.4.3.3.3.3.

Upon reception of the HTTP DELETE request message, the LM server shall:

1. verify the identity of the VAL Server and check if the VAL Server is authorised to terminate the targeted "Individual SL Positioning Management Subscription" associated with the resource URI;

2. if the VAL Server is authorized to unsubscribe from SL Positioning Management subscription, the LM Server shall delete the related "Individual SL Positioning Management Subscription" subscription resource at the LM Server;

3. upon success, respond to the SEAL server with a "204 No Content" status code; and

4. if errors occur when processing the request, the LM Server shall respond to the VAL Server with an appropriate error response as specified in clause 7.1.4.5.

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