**3GPP TSG-CT WG1 Meeting #141eC1-232598**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.545** | **CR** | **0069** | **rev** | **1** | **Current version:** | **18.0.1** |  |
|  | | | | | | | | |
| *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 | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Adding the location service registration procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CATT | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GFLS | | | | |  | ***Date:*** | | | 2023-04-07 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | According to [S6-230483](https://www.3gpp.org/ftp/tsg_sa/WG6_MissionCritical/TSGS6_052-bis-e/Docs/S6-230483.zip), stage2 has added the procedure and information flow for location service registration. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the description of the location service registration | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The procedures for location service registration are not supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.2.x(new), B.3.1.3.1, B.3.1.2.x(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

### 6.2.x Location service registration procedure

#### 6.2.x.1 SLM client HTTP procedure

The SLM-C sends a location service registration request when it needs to register the available location service to the SLM-S to report the UE’s location capabilities before the SLM-S requesting the location information. In order to send the location service registration request, the SLM-C shall send an HTTP POST request message according to procedures specified in IETF RFC 7231 [16]. In the HTTP POST request message, the SLM-C:

a) shall include a Request-URI set to the URI corresponding to the identity of the SLM-S.

b) shall include an Authorization header field with the "Bearer" authentication scheme set to an access token of the "bearer" token type as specified in IETF RFC 6750 [13];

c) shall include an application/vnd.3gpp.seal-location-info+xml MIME body and in the <location-info> root element:

1) shall include a <requested-identity> element with a <VAL-user-id> child element set to the identity of the VAL user or VAL group to which the location reporting configuration is targeted or identity of the VAL UE;

2) may include a <location-capability> element specifying the information of the location capabilities of VAL UE for which the location service is registered. In the <location-capability> element, the SLM-C may include:

i) a <access-type> child element specifying the identity of the available access type of the VAL UE; and/or

ii) a <positioning-method>child element specifying the identity of the available positioning methods of the VAL UE;

#### 6.2.x.2 SLM server HTTP procedure

Upon receiving an HTTP POST request containing:

a) an Accept header field set to "application/vnd.3gpp.seal-location-info+xml";

b) a Content-Type header field set to "application/vnd.3gpp.seal-location-info+xml";

c) an application/vnd.3gpp.seal-location-info+xml MIME body with a < location-capability > element included in the <location-info> root element;

the SLM-S:

a) shall determine the identity of the sender of the received HTTP POST request as specified in clause 6.2.1.1; and

1) if the identity of the sender of the received HTTP POST request is not authorized to register any location services, shall respond with a HTTP 403 (Forbidden) response to the HTTP POST request and shall skip rest of the steps;

2) shall support handling an HTTP POST request from a SLM-C according to procedures specified in IETF RFC 4825 [9] "POST Handling";

3) may authorize the identity of the available access type of the VAL UE if received from SLM-C; and/or

4) may authorize the identity of the available positioning methods of the VAL UE if received from SLM-C;

b) shall generate an HTTP 200 (OK) response according to IETF RFC 7231 [16] and send the HTTP 200 (OK) response towards the SLM-C.

#### 6.2.x.3 SLM client CoAP procedure

In order to register the available location services to the SLM-S to report the UE’s location capabilities before the SLM-S requesting the location information, the SLM-C shall send a CoAP POSTrequest message to the SLM-S according to procedures specified in IETF RFC 7252 [21]. In the CoAP POST request, the SLM-C:

a) shall include a CoAP URI set to the URI corresponding to the identity of the SLM-S as specified in clause B.3.1.2.x;

1) the "apiRoot" is set to the SLM-S URI;

2) the "valServiceId" is set to specific VAL service; and

b) shall include an Accept option set to "application/vnd.3gpp.seal-location-configuration+cbor"; and

b) may include a "location-capability" object:

1) may include a "access-type" is set to the identity of the available access type of the VAL UE;

2) may include a "positioning-method " is set to the identity of the available positioning methods of the VAL UE; and/or

c) shall send the request protected with the relevant ACE profile (OSCORE profile or DTLS profile) as described in 3GPP TS 24.547 [6].

#### 6.2.x.4 SLM server CoAP procedre

Upon receiving of a CoAP POST request where the CoAP URI of the CoAP POST request identifies a registration as specified in clause B.3.1.2.x, the SLM-S:

a) shall determine the identity of the sender of the received CoAP POST request as specified in clause 6.2.1.2, and:

1) if the identity of the sender of the received CoAP POST request is not authorized to register any location services, shall respond with a CoAP 4.03 (Forbidden) response to the CoAP POST request and skip rest of the steps;

b) may authorize the location-capability including:

1) the identity of the available access type of the VAL UE if received from SLM-C; and/or

2) the identity of the available positioning methods of the VAL UE if received from SLM-C;

c) shall generate a CoAP 2.05 (Content) response according to IETF RFC 7252 [21] and send the CoAP 2.05 (Content) response towards the SLM-C.

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

#### B.3.1.2.1 Overview



Figure B.3.1.2.1-1: Resource URI structure of the SU\_LocationReporting API provided by SLM-S

Table B.3.1.2.1-1 provides an overview of the resources and applicable CoAP methods.

Table B.3.1.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | CoAP method | Description |
| Registration | /val-services/{valServiceId}/registration | POST | Register the available location services of the SLM-C. |
| Trigger Configurations | /val-services/{valServiceId}/trigger-configurations | GET | Retrieve trigger configuration of the SLM-C for a given VAL service, according to query criteria. |
| Location Report | /location-reports/{valTgtUe} | PUT | Report location information of the SLM-C. |
| Locations | /locations | FETCH | Observe the location information of another SLM-C. |
| GET | Retrieve location information of another SLM-C. |
| Location Area Information | /location-area-info | FETCH | Query the information, e.g., user information based on the specific location area. |

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

#### B.3.1.2.x Resource: Registration

##### B.3.1.2.x.1 Description

The Registration resource allows a SLM-C to register the available location services to SLM-S.

##### B.3.1.2.x.2 Resource Definition

Resource URI: **{apiRoot}/su-lr/<apiVersion>/val-services/{valServiceId}/registration**

This resource shall support the resource URI variables defined in the table B.3.1.2.x.2-1.

Table B.3.1.2.x.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause C.1.1 of 3GPP TS 24.546 [29]. |
| apiVersion | string | See clause B.3.1.1. |
| valServiceId | string | Identifier of a VAL service. |

##### B.3.1.2.x.3 Resource Standard Methods

B.3.1.2.x.3.1 POST

This operation retrieves the allowed registration.

This method shall support URI query options specified in table B.3.1.2.x.3.1-1, the response data structures and response codes specified in table B.3.1.2.x.3.1-1.

Table B.3.1.2.x.3.1-1: URI query options supported by the POST Request on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| val-tgt-ue | string | M | 1 | The identifier of VAL UE owns the registration. |
| NOTE: Other request options also apply in accordance with normal CoAP procedures. | | | | |

Table B.3.1.2.x.3.1-2: Data structures supported by the POST Request payload on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| LocationCapability | O | 0..1 | The information of location capability of VAL UE for which the location service is registered. |

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

##### B.3.1.3.2.3 Type: LocationCapability

Table B.3.1.3.2.3-1: Definition of type LocationCapability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| accessType | AccessType | O | 0..1 | The identity of the available access type of the VAL UE. |  |
| positioningMethod | PositioningMethod | O | 0..1 | The identity of the available positioning methods of the VAL UE. |  |

\* \* \* End of changes \* \* \*