**3GPP TSG-CT WG1 Meeting #136-eC1-22abcd**

**E-Meeting, 12th – 20th May 2022 (was C1-223452)**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.545** | **CR** | **0046** | **rev** | **1** | **Current version:** | **17.2.0** |  |
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| *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:***  | Addition of CoAP for Client-triggered or VAL server-triggered location reporting procedure |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | eSEAL |  | ***Date:*** | 2022-05-05 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***Release:*** | Rel-17 |
|  | *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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | 24.545 needs to be updated to support CoAP following stage 2 requirements, and Client-triggered or VAL server-triggered location reporting procedure is proposed to be updated. |
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| ***Summary of change:*** | Client-triggered or VAL server-triggered location reporting procedure is updated for CoAP |
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| ***Consequences if not approved:*** | CoAP is not supported following stage 2 requirements |
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| ***Clauses affected:*** | 6.2.4.1, 6.2.4.2, 6.2.4.3 (new), 6.2.4.4 (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 \* \* \* \*

### 6.2.4 Client-triggered or VAL server-triggered location reporting procedure

#### 6.2.4.1 SLM client HTTP procedure

Upon receiving a request from a VAL user to obtain the location information of another VAL user or to update the location reporting trigger, the SLM-C shall send an HTTP POST request according to procedures specified in IETF RFC 7231 [16]. In the HTTP POST request, the SLM-C:

a) shall set the Request-URI to the URI included in the received HTTP response message for location report configuration;

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

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

1) shall include an <identity> element with a <VAL-user-id> child element set to the identity of the VAL user which requests the location report;

2) shall include a <requested-identity> element with a <VAL-user-id> child element set to the identity of the VAL user for which a location report is requested. The VAL user should belong to the same VAL service as the identity of the VAL user which requests the location report; and

3) a <report-request> element which shall include at least one of the followings:

i) an <immediate-report-indicator> child element to indicate that an immediate location report is required;

ii) the location reporting elements which are requested;

iii) a <triggering-criteria> child element which indicate a specified location trigger criteria to send the location report;

iv) a <minimum-interval-length>child element specifying the minimum time between consecutive reports. The value is given in seconds; and

v) if an <immediate-report-indicator> element is set to required, an <endpoint-info> child element set to the information of the endpoint of the requesting VAL server to which the location report notification has to be sent.

Upon reception of an HTTP POST request message containing:

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

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

where the Request-URI of the HTTP POST request identifies an element of a XML document as specified in application usage of the specific vertical application, the SLM-C shall follow the procedure as specified in clause 6.2.2.3.2.

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

#### 6.2.4.2 SLM server HTTP procedure

Upon reception of an HTTP POST request where the Request-URI of the HTTP POST request identifies an element of a XML document as specified in application usage of the specific vertical application, 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 obtain location information of another VAL user, shall respond with a HTTP 403 (Forbidden) response to the HTTP POST request and shall skip rest of the steps; and

2) shall support handling an HTTP POST request from a SLM-C according to procedures specified in IETF RFC 4825 [9] where the Request-URI of the HTTP POST request identifies an element of XML document as specified in application usage of the specific vertical application. Depending on the information specified by the HTTP POST request, the SLM-S initiates either an event-triggered location reporting procedure as specified in clause 6.2.2.2 or an on-demand location reporting procedure as specified in clause 6.2.2.3 for providing the SLM-C with the location of the requested VAL user; and

b) For on-demand location report request, upon receiving the location information of the SLM-C, the SLM-S sends location report to the requesting SLM-C or VAL server as specified in clause 6.2.2.2.

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

#### 6.2.4.3 SLM client CoAP procedure

Upon receiving a request from a VAL user to obtain the location information of another VAL user, the SLM-C shall:

1. if trigger configuration is provided, send a CoAP FETCH request according to procedures specified in IETF RFC 8132 [rfc8132] to SLM-S to observe the location information of another VAL user; and
2. otherwise, send a CoAP GET request according to procedure specified in in IETF RFC 7252 [rfc7252] to SLM-S to retrieve the location information of another VAL user.

In the CoAP FETCH request, the SLM-C shall:

a) set the CoAP URI identifying the location information to be observed according to the resource definition in Annex X.3.1.2.4.3.1;

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

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

1. set an Observe option to 0 (Register);
2. set a Content-Format option set to "application/vnd.3gpp.seal-location-configuration+cbor";

e) include a "LocationReportConfiguration" object:

1) shall include a "valTgtUes" object set to the identity of the observed VAL users;

2) shall include a "locationType" attribute which is requested; and

3) shall include at least one of the following:

i) a "triggeringCriteria" object which provides the triggers for the SLM-C to request a location report as described in Annex X; and

ii) a "minimum-interval-length" attribute specifying the minimum time between consecutive reports. The value is given in seconds; and

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

In the CoAP GET request, the SLM-C shall:

1. set the CoAP URI identifying the location information to be fetched according to the resource definition in Annex X.3.1.2.4.3.2;

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

2) the "val-tgt-ue" query option is set to either the VAL user identity or VAL UE identity for which the location is requested;

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

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

Upon receiving a CoAP 2.05 (Content) response from the SLM-S containing:

a) a Content-Format option set to "application/vnd.3gpp.seal-location-info+cbor"; and

b) including one or more "LocationReport" objects,

the SLM-C:

a) shall store the content of the received "LocationReport" object(s).

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

#### 6.2.4.4 SLM server CoAP procedure

Upon reception of a CoAP FETCH request message where the CoAP URI of the CoAP FETCH request identifies a location resource as specified in X.3.1.2.4.3.1, and containing:

a) an Accept option set to "application/vnd.3gpp.seal-location-info+cbor";

b) a Content-Format option set to "application/vnd.3gpp.seal-location-configuration+cbor";

c) an Observe option; and

d) a "LocationReportConfiguration" object;

the SLM-S:

a) shall determine the identity of the sender of the received CoAP FETCH request as specified in clause 6.2.1.2; and

1) if the identity of the sender of the received CoAP FETCH request is not authorized to obtain location information of another VAL user, shall respond with a CoAP 4.03 (Forbidden) response to the CoAP FETCH request and shall skip rest of the steps; and

2) shall generate a series of CoAP 2.05 (Content) response according to IETF RFC 8132 [rfc8132]. In the CoAP 2.05 (Content) response message, the SLM-S:

i) shall include a Content-Format option set to "application/vnd.3gpp.seal-location-info+cbor"; and

ii) shall include one or more "LocationReport" objects corresponding to the triggers that have been met; and

b) shall send the CoAP 2.05 (Content) response towards the SLM-C.

Upon reception of a CoAP GET request message where the CoAP URI of the CoAP GET request identifies a location resource as specified in X.3.1.2.4.3.2, and containing:

a) an Accept option set to "application/vnd.3gpp.seal-location-info+cbor"; and

b) a Content-Format option set to "application/vnd.3gpp.seal-location-configuration+cbor".

the SLM-S:

a) shall determine the identity of the sender of the received CoAP GET request as specified in clause 6.2.1.2; and

1) if the identity of the sender of the received CoAP GET request is not authorized to obtain location information of another VAL user, shall respond with a CoAP 4.03 (Forbidden) response to the CoAP GET request and shall skip rest of the steps;

b) shall generate a CoAP 2.05 (Content) response according to IETF RFC 7252 [rfc7252]. In the CoAP 2.05 (Content) response message, the SLM-S:

1) shall include a Content-Format option set to "application/vnd.3gpp.seal-location-info+cbor"; and

2) shall include a "LocationReport" object corresponding to the triggers that have been met; and

c) shall send the CoAP 2.05 (Content) response towards the SLM-C.

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