**3GPP TSG-CT WG1 Meeting #132-eC1-215796**

**E-meeting, 11-15 October 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.545** | **CR** | **0037** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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:*** | Message Id and Reply-to Message Id for SEAL offnetwork location management protocol | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eSEAL | | | | |  | ***Date:*** | | | 2021-09-26 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***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 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Off network location management procedures are agreed in SA6 in TDoc - S6-211069.  It is required to provide stage#3 support for off-network location management procedures.  In off network, message order is not confirmed and it is possible that terminal UE may receive off network message from multiple UEs. While sending a reply message, it is required for the UE to specify for which message reply is being sent.  stage#2 just defines which message to send from UE-1 to UE-2 and what parameters to use. Stage#3 defines how the messages (as defined by Stage#2) will be sent | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Added MessageID and Reply-to message ID IEs in all off network location management procedures  Added MessageId and Reply-to messageID format  Correcting clause numbers in Table 8.1.2.1-1 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Off network location management procedures will not work and originating UE and terminating UE will not remain in sync. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.3.1.3, 6.3.2.1.1, 6.3.2.1.2, 6.3.2.2.1, 6.3.2.3.1, 6.3.2.3.2, 6.3.3.1, 6.3.3.2, 8.1.2.1, 8.2, 8.2.x (NEW), 8.2.y (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 \*\*\*\*\*

#### 6.3.1.3 Sending acknowledgement

The SLM-C:

a) shall generate the Off-network location management message according to clause 8.1.2 by setting:

i) the Message type IE to "LOCATION MANAGEMENT ACK";

ii) the Originating VAL user ID IE to its own VAL user ID; and

iii) the Terminating VAL user ID IE to the VAL user ID of the target VAL user;

iv) the Message ID IE to the value of the Message ID IE of the received message; and

b) shall send the message as specified in clause 6.3.1.2.

\*\*\*\*\* Next change \*\*\*\*\*

##### 6.3.2.1.1 Client originating procedure

Upon receiving a request from a VAL user to configure the location information trigger to another VAL user, the SLM-C:

a) shall generate the Off-network location management message according to clause 8.1.2. In the Off-network location management message:

i) shall set the Message type IE to "LOCATION REPORTING TRIGGER CONFIGURATION REQUEST";

ii) shall set the Originating VAL user ID IE to its own VAL user ID;

iii) shall set the Terminating VAL user ID IE to the VAL user ID of the target VAL user;

iv) shall generate an application/vnd.3gpp.seal-location-info+xml MIME body and in the <location-info> root element including a <configuration> element with at least one of the followings:

1) the location reporting elements which are requested;

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

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

v) shall set the Location Management Data IE to the application/vnd.3gpp.seal-location-info+xml MIME body; and

vi) shall set the Message ID IE to the unique identify of this message; and

b) shall send the message as specified in clause 6.3.1.2.

Upon reception of Off-network location management message containing a Message type IE set to "LOCATION REPORTING TRIGGER CONFIGURATION RESPONSE", the SLM-C shall send the acknowledgement message as specified in clause 6.3.1.3.

\*\*\*\*\* Next change \*\*\*\*\*

##### 6.3.2.1.2 Client terminating procedure

Upon reception of Off-network location management message containing a Message type IE set to "LOCATION REPORTING TRIGGER CONFIGURATION REQUEST", the SLM-C:

a) shall store the content of the <configuration> elements;

b) shall set the location reporting triggers accordingly;

c) shall start the minimum-report-interval timer;

d) shall generate the Off-network location management message according to clause 8.1.2 by setting:

i) the Message type IE to "LOCATION REPORTING TRIGGER CONFIGURATION RESPONSE";

ii) the Originating VAL user ID IE to its own VAL user ID;

iii) the Terminating VAL user ID IE to the VAL user ID of the originating VAL user;

iv) the Message ID IE to the unique identify of this message; and

v) the Reply-to message ID IE to the value of the Message ID IE of the received message; and

e) shall send the message as specified in clause 6.3.1.2.

\*\*\*\*\* Next change \*\*\*\*\*

##### 6.3.2.2.1 Client originating procedure

In order to report the location information, the SLM-C:

a) shall generate the Off-network location management message according to clause 8.1.2. In the Off-network location management message:

i) shall set the Message type IE to "LOCATION REPORT";

ii) shall set the Originating VAL user ID IE to its own VAL user ID;

iii) shall set the Terminating VAL user ID IE to the VAL user ID of the target VAL user;

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

1) shall include a <report> element and, in the <report> element:

A) shall include a <trigger-id> child element set to the value of each <trigger-id> value of the triggers that have been met; and

B) shall include the location reporting elements corresponding to the triggers that have been met; and

2) if the report was triggered by a location request, include the <report-id> attribute set to the value of the <request-id> attribute in the received request;

v) shall set the Location Management Data IE to the application/vnd.3gpp.seal-location-info+xml MIME body; and

vi) shall set the Message ID IE to the unique identify of this message;

b) shall send the message as specified in clause 6.3.1.2;

c) shall set the minimum-report-interval timer to the minimum-report-interval time and start this timer; and

d) shall reset all the trigger criteria for location reporting.

\*\*\*\*\* Next change \*\*\*\*\*

##### 6.3.2.3.1 Client originating procedure

Upon receiving a request from a VAL user to cancel the location information trigger to another VAL user, the SLM-C:

a) shall generate the Off-network location management message according to clause 8.1.2. In the Off-network location management message:

i) shall set the Message type IE to "LOCATION REPORTING TRIGGER CANCEL REQUEST";

ii) shall set the Originating VAL user ID IE to its own VAL user ID;

iii) shall set the Terminating VAL user ID IE to the VAL user ID of the target VAL user;

iv) shall generate an application/vnd.3gpp.seal-location-info+xml MIME body and in the <location-info> root element including a <configuration> element which shall not include any child element;

v) shall set the Location Management Data IE to the application/vnd.3gpp.seal-location-info+xml MIME body; and

vi) shall set the Message ID IE to the unique identify of this message; and

b) shall send the message as specified in clause 6.3.1.2.

Upon reception of Off-network location management message containing a Message type IE set to "LOCATION REPORTING TRIGGER CANCEL RESPONSE", the SLM-C shall acknowledge the acknowledgement message as specified in clause 6.3.1.3.

\*\*\*\*\* Next change \*\*\*\*\*

##### 6.3.2.3.2 Client terminating procedure

Upon reception of Off-network location management message containing a Message type IE set to "LOCATION REPORTING TRIGGER CANCEL REQUEST", the SLM-C:

a) shall delete the content of the <configuration> elements;

b) shall stop the location reporting;

d) shall generate the Off-network location management message according to clause 8.1.2 by setting:

i) the Message type IE to "LOCATION REPORTING TRIGGER CANCEL RESPONSE";

ii) the Originating VAL user ID IE to its own VAL user ID;

iii) the Terminating VAL user ID IE to the VAL user ID of the originating VAL user;

iv) the Message ID IE to the unique identify of this message; and

v) the Reply-to message ID IE to the value of the Message ID IE of the received message; and

e) shall send the message as specified in clause 6.3.1.2.

\*\*\*\*\* Next change \*\*\*\*\*

#### 6.3.3.1 Client originating procedure

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

a) shall generate the Off-network location management message according to clause 8.1.2. In the Off-network location management message:

i) shall set the Message type IE to "LOCATION REQUEST (ON-DEMAND)";

ii) shall set the Originating VAL user ID IE to its own VAL user ID;

iii) shall set the Terminating VAL user ID IE to the VAL user ID of the target VAL user;

iv) shall generate an application/vnd.3gpp.seal-location-info+xml MIME body and in the <location-info> root element shall include a <report-request> element which shall include at least one of the followings:

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

2) the location reporting elements which are requested;

v) shall set the Location Management Data IE to the application/vnd.3gpp.seal-location-info+xml MIME body;

vi) shall set the Message ID IE to the unique identify of this message; and

b) shall send the message as specified in clause 6.3.1.2.

Upon reception of Off-network location management message containing a Message type IE set to "ON-DEMAND LOCATION RESPONSE", the SLM-C shall send the acknowledgement message as specified in clause 6.3.1.3.

\*\*\*\*\* Next change \*\*\*\*\*

#### 6.3.3.2 Client terminating procedure

Upon reception of Off-network location management message containing a Message type IE set to "ON-DEMAND LOCATION REQUEST", the SLM-C:

a) shall generate the Off-network location management message according to clause 8.1.2. In the Off-network location management message:

i) shall set the Message type IE to "LOCATION RESPONSE (ON-DEMAND)";

ii) shall set the Originating VAL user ID IE to its own VAL user ID;

iii) shall set the Terminating VAL user ID IE to the VAL user ID of the originating VAL user;

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

1) shall include a <report> element and, if the report was triggered by a location request, include the <report-id> attribute set to the value of the <request-id> attribute in the received request. The <report> element:

A) shall include a <trigger-id> child element set to the value of each <trigger-id> value of the triggers that have been met; and

B) shall include the location reporting elements corresponding to the triggers that have been met; and

v) shall set the Location Management Data IE to the application/vnd.3gpp.seal-location-info+xml MIME body;

vi) shall set the Message ID IE to the unique identify of this message; and

vii) shall set the Reply-to message ID IE to the value of the Message ID IE of the received message; and

b) shall send the message as specified in clause 6.3.1.2.

\*\*\*\*\* Next change \*\*\*\*\*

#### 8.1.2.1 Message definition

This message is used between SEAL location management clients (of UE-1 and UE-2) to send request, response or acknowledgement. The Message Type IE identifies the request, response, or acknowledgement. For contents of the message see Table 8.1.2.1-1.

Message type: Off-network location management message

Direction: UE to other UE

Table 8.1.2.1-1: Off-network location reporting trigger configuration message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Message Type | Message Type  8.2.2 | M | V | 1 |
|  | Originating VAL user ID | VAL user ID 8.2.3 | M | LV-E | 3-x |
|  | Terminating VAL user ID | VAL User ID 8.2.3 | M | LV-E | 3-x |
|  | Message ID | Message ID 8.2.x | M | V | 16 |
| X | Reply-to message ID | Reply-to message ID  8.2.y | O | TV | 17 |
| Z | Location Management Data | Message Data  8.2.4 | O | TLV-E | 4-x |
| A | Cause | Cause  8.2.5 | O | TLV-E | 3-x |

\*\*\*\*\* Next change \*\*\*\*\*

## 8.2 General message format and information elements coding

\*\*\*\*\* Next change \*\*\*\*\*

### 8.2.x Message ID

The Message ID information element uniquely identifies a message.

The Message ID information element is coded as shown in Figure 8.2.x-1 and Table 8.2.x-1.

The Message ID information element is a type 3 information element with a length of 16 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Message ID value | | | | | | | | octet 1  octet 16 |

Figure 8.2.x-1: Message ID value

Table 8.2.x-1: Message ID value

|  |
| --- |
| Message ID value (octet 1 to 16)  The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier as specified in IETF RFC 4122 [r4122]. |

\*\*\*\*\* Next change \*\*\*\*\*

### 8.2.y Reply-to message ID

The Reply-to message ID information element is used to associate a message within a conversation that is a reply to an existing message in a conversation.

The Reply-to message ID information element is coded as shown in Figure 8.2.y-1 and Table 8.2.y-1.

The Reply-to message ID information element is a type 3 information element with a length of 17 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Reply-to message ID IEI | | | | | | | | octet 1 |
| Reply-to message ID value | | | | | | | | octet 2  octet 17 |

Figure 8.2.y-1: Reply-to message ID value

Table 8.2.y-1: Reply-to message ID value

|  |
| --- |
| Reply-to message ID value (octet 2 to 17)  The Reply-to message ID contains a number uniquely identifying a message. The value is a universally unique identifier as specified in IETF RFC 4122 [r4122]. |

\*\*\*\*\* End of change \*\*\*\*\*