**3GPP TSG-CT WG1 Meeting #137-eC1-225018 r1**

**E-Meeting, 18th – 26th August 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
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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 | **x** |

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| ***Title:***  | Editorial corrections |
|  |  |
| ***Source to WG:*** | China Mobile |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GMARCH |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | F |  | ***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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | This CR is proposed to correct some editorials in TS24.538. . |
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| ***Summary of change:*** | Editorial corrections |
|  |  |
| ***Consequences if not approved:*** | The editorials are still existed. |
|  |  |
| ***Clauses affected:*** | 6.2.2.2, 6.4.1.2.6, 6.5.1.2.1, 6.5.3.2, A.3.1.1, A.3.1.5, A.3.1.6 |
|  |  |
|  | **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:*** |  |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 1\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 6.2.2.2 Procedure at Constrained device with MSGin5G Client

In order to send an MSGin5G UE Configuration request, the Configuration management client function on the Constrained device with MSGin5G Client shall use the procedures specified in clause 6.2.1.2.

Upon receiving an CoAP 2.05 (Content), 4.03 (Forbidden) or 4.04 (Not found) response and the recipient's address included in the CoAP Option is set to the MSGin5G Client itself, the MSGin5G Client shall handle the CoAP 2.05 (Content), 4.03 (Forbidden) or 4.04 (Not found) response as specified in clause 6.2.1.2.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 2\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.4.1.2.6 Sending of an MSGin5G message

In order to deliver the MSGin5G message to an MSGin5G UE, the MSGin5G Server shall send the MSGin5G message in an new CoAP message according to procedures specified in IETF RFC 7252 [5] via MSGin5G-1 reference point. The sending of the CoAP message shall follow the procedures below:

a) the MSGin5G Server shall set the "T" field in the CoAP header to 0 if delivery status report from the recipient is requested, i.e. indicate that this message is the type of Confirmable, to ensure the application layer delivery status report;

b) the MSGin5G Server shall set the CoAP Content-Format to "50", i.e. application/json;

c) the MSGin5G Server shall remove any "Priority type" element, "Store and forward flag" and related "Store and forward parameters" elements from the CoAP payload of the received message. If "Message is segmented" and related elements is included in the received message, the MSGin5G Server shall handle the message as specified in clause 6.5.3;

d) the MSGin5G Server shall determine the communication model of the message by checking the recipient of the message as specified in clause 6.4.1.2.1 and generate the new CoAP message:

1) if the Service ID of the recipient points to an MSGin5G Client, the MSGin5G Server:

i) shall include the recipient MSGin5G Client address in an CoAP Option, e.g. if the MSGin5G Client address is a URI, include a Uri-Path Option with the value of the URI; and

ii) shall copy other elements in the CoAP payload of the received message to the new CoAP POST request;

2) if the Service ID of the recipient points to an Application Server or a Message Gateway, the MSGin5G Server shall follow the procedure specified in 3GPP TS 29.538 [7];

3) if the MSGin5G message is a Group message, the MSGin5G Server:

i) shall obtain the group members by checking the group profile with the "Group Service ID" element included in the received MSGin5G message; and

ii) for each group member which is an MSGin5G UE, include its CoAP address got from the recipient MSGin5G UE registration specified in clause 6.3.1.2 in an CoAP Option, e.g. if the recipient client's address is a URI, includes a Uri-Path Option with the value of the URI. The MSGin5G Server shall add the "Recipient UE Service ID" element and set the value of it to the UE Service ID. The MSGin5G Server shall also copy other elements in the CoAP payload of the received message to the new CoAP POST request; and

4) if the MSGin5G message is needed to be distributed based on message topic, the MSGin5G Server:

i) shall obtain the UE Service ID/AS Service ID of the subscribers by checking the subscription with this Messaging Topic; and

ii) for each subscriber which is an MSGin5G UE, include its CoAP address got from the recipient MSGin5G UE registration specified in clause 6.3.1.2 in an CoAP Option, e.g. if the recipient client's address is a URI, includes a Uri-Path Option with the value of the URI. The MSGin5G Server shall add the "Recipient UE Service ID" element and set the value of it to the UE Service ID. The MSGin5G Server shall also copy other elements in the payload of the received message to the new CoAP 2.05 response;

e) before sending the new CoAP message generated in step d), the MSGin5G Server shall compare the size of the new CoAP message to the maximum allowed MSGin5G message segmentation size. If the size exceeds, the MSGin5G Server shall segment the MSGin5G message into a set of segmented MSGin5G messages such that each segmented MSGin5G message can fit within the maximum allowed MSGin5G message segmentation size. For each segmented MSGin5G message, the MSGin5G Server:

1) shall include a "Message is segmented" element with a "true" value to indicate that this message is part of a segmented message;

2) shall include a "Segmentation set identifier" element to indicate that this segmented message is associated within a set of segmented messages. The same unique identifier is assigned to all segmented messages associated with the same MSGin5G message;

3) shall include a "Total number of message segments" element in the first segment of the MSGin5G message to indicate the total number of segments for the MSGin5G message;

4) shall include a "Message segment number" element to indicate segmented message number of each segmented message within the set of segmented messages; and

5) shall include a "Last segment flag" element in the last segment in the set of segmented messages; and

f) the MSGin5G Server checks the availability of recipient by checking the UE registration status. The MSGin5G Server can also use UE reachability status monitoring specified in 3GPP TS 29.538 [7] to determine whether the recipient is available. If the recipient is available, the MSGin5G Server send the new CoAP message generated as above to the recipient. If the recipient is unavailable, the MSGin5G Server checks whether a "Store and forward flag" element is included in the received MSGin5G message:

1) if the "Store and forward flag" element is not included, the MSGin5G Server discards the message and may send a message response as specified in clause 6.4.1.2.2 which includes delivery status information in the "Delivery Status" element, e.g., that the message was discarded; and

2) if the "Store and forward flag" element is included:

i) the MSGin5G Server stores the message and uses the information obtained from the "Store and forward parameters" element to determine the forwarding. The MSGin5G Server may send a message response as specified in clause 6.4.1.2.2 which includes store and forward status information in the "Delivery Status" element, e.g., the delivery had been deferred; and

ii) when the recipient UE becomes available, the MSGin5G Server attempts delivery of the new CoAP message to the recipient. If the UE does not become available prior to the time included in the "Message expiration time" element, the MSGin5G Server attempts delivery of the new CoAP message at the message expiration time and the stored message is discarded afterwards. The MSGin5G Server may send a message response as specified in clause 6.4.1.2.2 which includes store and forward status information the "Delivery Status" element, e.g., that the message was discarded.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 3\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.5.1.2.1 Segments recovery procedure when failed to receive all segments

If not all segments are received within expected time, the Message Receiver shall send a CoAP POST request to the Message Sender for recovering the segments which are not received. In the CoAP POST request, the Message Receiver:

a) shall set the "T" field in the CoAP header to 0 to indicate this request is the type of Confirmable;

b) shall include the Message Sender address in a CoAP Option, e.g. if the Message Sender address is a URI, includes a Uri-Path Option with the value of the URI;

c) shall set the CoAP Content-Format to "50", i.e. application/json; and

d) shall include the following information elements in the CoAP payload encoded in JSON format:

1) an "MSGin5G service identifier" element to indicate that this CoAP POST request is used for MSGin5G service;

2) a "Message Type" element with a value "SEGREC" to indicate that this request is for segments recovery;

3) a "Segmentation Set Identifier" element copied from one of the previous received segments; and

4) a "List of Segment range" element to indicate the segments range which the client wants to recover, each segment range consist of start and end sequence number of missing segments e.g. (5-7, 10-10, 15-19).

If not all segments are received within the expected time (based on configuration), the Message Receiver may consider that the recovery is failed. The Message Receiver may initiate the procedure again with updated list of segment range.

NOTE: The MSGin5G message segment recovery procedure may repeat based on the configuration.

The corresponding JSON Schema used in step d) is defined in clause 7.3.6.2.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 4\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 6.5.3.2 Procedures on receiving message segments targeting to a MSGin5G UE

Upon receiving a message segment targeting to MSGin5G UE, the MSGin5G Server checks if the segment size exceeds the configured maximum message segment size of the targeted UE,

a) if exceed, upon receiving all segments,

1) reassembles them into a single MSGin5G message;

2) splits the re-assembled message to segments such that each segment is smaller than the maximum allowed message segment size of the targeted UE; and

3) sends each new segment to the target MSGin5G UE as specified in clause 6.4.1.2.6; and

b) if not exceed, upon receiving all segments, sends each segment to the target MSGin5G UE as specified in clause 6.4.1.2.6.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 5\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### A.3.1.1 for sending a message to MSGin5G Client

In order to send a message, the Application Client on the constrained UE may generate an CoAP POST request according to procedures specified in IETF RFC 7252 [5] to the MSGin5G Client on a MSGin5G UE. In the CoAP POST request message, the Application Client:

a) set the "T" field in the CoAP header to 0 if delivery status report from the recipient is requested, i.e. indicates this message is the type of Confirmable, to ensure the application layer delivery status report;

b) include the MSGin5G Client address in an CoAP Option, e.g. if the MSGin5G Client address is a URI, include a Uri-Path Option with the value of the URI;

c) set the CoAP Content-Format to "50", i.e. application/json; and

d) include the information elements specified in clause 6.4.2.3.1 in the CoAP payload encoded in JSON format as specified in clause A.3.2.1.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 6\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### A.3.1.5 for sending a message sending response to Application Client

After receiving a CoAP POST request for sending a message from Application Client, the MSGin5G Client may generate an CoAP 2.05 response according to procedures specified in IETF RFC 7252 [5] to the Application Client. In the response, the MSGin5G Client:

a) include the Application Client address in an CoAP Option, e.g. if the Application Client address is a URI, include a Uri-Path Option with the value of the URI;

b) set the CoAP Content-Format to "50", i.e. application/json; and

c) include the information elements specified in clause 6.4.2.2.5 in the CoAP payload encoded in JSON format as specified in clause A.3.2.5.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Change 7\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### A.3.1.6 for sending a message received response to MSGin5G Client

After receiving a CoAP POST request for sending a message from MSGin5G Client, the Application Client may generate an CoAP 2.05 response according to procedures specified in IETF RFC 7252 [5] to the Application Client. In the response, the MSGin5G Client:

a) include the MSGin5G Client address in an CoAP Option, e.g. if the MSGin5G Client address is a URI, include a Uri-Path Option with the value of the URI;

b) set the CoAP Content-Format to "50", i.e. application/json; and

c) include the information elements specified in clause 6.4.2.3.3 in the CoAP payload encoded in JSON format as specified in clause A.3.2.6.