**3GPP TSG-CT WG1 Meeting #135-eC1-222779-r3**

**E-Meeting, 6th – 12th April 2022**

**Source: Huawei, CMCC, ZTE, HiSilicon, Samsung**

**Title: Basic procedures on MSGin5G-5**

**Spec: 3GPP TS 24.538**

**Agenda item: 17.2.30**

**Document for: Approval**

**1. Introduction**

This pCR is to propose basic message procedure based on MSGin5G-5, related message protocol/format is described in Annex A included in another pCR.

**2. Reason for Change**

MSGin5G-5 procedure is specified in TS 23.554.

**3. Conclusions**

<Conclusion part (optional)>

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.538 v1.0.0.

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

### 6.4.2 Message delivery and message delivery status report delivery for Constrained device

Clause 6.4.2.1 and 6.4.2.2 define the procedures used for message or message delivery report sending/receiving over MSGin5G-5.

In the procedures, for delivering messages or message delivery reports to MSGin5G Client in MSGin5G Gateway UE, the Application Client in Constrained UE may use any message format or protocol supported by the MSGin5G Client.

NOTE: How the Application Client knows the message protocol/format supported by the MSGin5G Client is out of scope of this specification.

In the procedures, for delivering messages or message delivery reports to Application Client in Constrained UE, the MSGin5G Client in MSGin5G Gateway UE may use any message format or protocol supported by the Application Client.

NOTE: How the MSGin5G Client knows the message protocol/format supported by the Application Client is out of scope of this specification.

Annex A lists some message formats/protocols examples (only for implementation reference) which may be used for the interaction between Application Client in Constrained UE and MSGin5G Client in MSGin5G Gateway UE.

#### 6.4.2.1 Procedure at MSGin5G Gateway UE

##### 6.4.2.1.1 Sending of an message to Constrained device

Upon successfully receiving a MSGin5G message including an Application ID from MSGin5G Server, if the Application ID is registered by an Application Client in Constrained UE, based on Constrained UE registration information, the MSGin5G Client on the MSGin5G Gateway UE shall send a request/message to the Application Client, including the following information elements:

a) the Message Type IE with the value "MESSAGE RECEIVED REQUEST" indicating the request/message is for delivering a message;

b) the Message ID IE with the unique identity of this message;

c) if the received message is a point-to-point or application-to-point message, the Originator Address IE indicating the originating UE or AS;

d) if the received message is a group message, the Group ID IE indicating the originating group;

NOTE: the information included in the Originator Address IE is generated based on the received originating UE/AS Service ID, the information included in the Group ID IE is generated based on received Group Service ID. How to generate the value of Originator Address IE and Group ID IE is implementation specific.

e) the Payload IE indicating the application message content included in the received message;

f) if the delivery status report is required by the originator, the Delivery Status Required IE with "true"; and

g) optionally, the Priority IE indicating the application priority level.

##### 6.4.2.1.2 Reception of an message from Constrained device

Upon receiving a request from Application Client in Constrained UE, and the request is for initiating a MSGin5G message, i.e. with Message Type IE set to "MESSAGE SENDING REQUEST", the MSGin5G Client in the MSGin5G Gateway UE shall construct and send a CoAP POST request to MSGin5G Server as specified in clause 6.4.1.1.2. The MSGin5G Client generates the Recipient UE Service ID/AS Service ID based on Target address IE the included in the request from the constrained device.

##### 6.4.2.1.x Sending of a message delivery status report to Constrained device

Upon receiving a MSGin5G message delivery status report request including an Application ID from MSGin5G Server, and the Application ID is registered by the Application Client on Constrained UE, based on the Constrained UE registration information, the MSGin5G Client on the MSGin5G Gateway UE shall send a request/message to the Application Client, in the request, including the following information elements:

a) the Message Type IE with the value "DELIVERY REPORT RECEIVED REQUEST" indicating the request/message is for delivering a message delivery status;

b) the Message ID IE with the unique identity of this message delivery report;

c) the Reply-to Message ID IE indicating the delivery status is for which message; and

d) the Delivery Status IE indicating the delivery status.

##### 6.4.2.1.y Reception of an message delivery status report from Constrained device

Upon receiving a request/response from Application Client in Constrained UE, and the request is for delivering a message delivery report, i.e. with Message Type IE set to " DELIVERY REPORT SENDING REQUEST", the MSGin5G Client in the MSGin5G Gateway UE shall construct and send a CoAP POST request to MSGin5G Server as specified in clause 6.4.1.1.4.

##### 6.4.2.1.z Sending of an message sending response to Constrained device

Upon received the message request from Application Client in Constrain UE, the MSGin5G Client in the MSGin5G Gateway UE sends a response to the Application Client including the following information elements:

a) the Message Type IE with the value "MESSAGE SENDING RESPONSE" indicating this is a response to the message sending request.

b) the Result IE indicating success or failure of the message sending request; and

c) optionally, the Failure Reason IE indicating the reason of failure when the Result IE is set to failure.

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

#### 6.4.2.2 Procedure at Constrained device

##### 6.4.2.2.1 Sending of an message via MSGin5G Gateway UE

In order to initiate an MSGin5G message by using the MSGin5G Client in MSGin5G Gateway UE, the Application Client in Constrained UE shall send a request/message to the MSGin5G Client including the following information elements:

a) the Message Type IE with the value "MESSAGE SENDING REQUEST" indicating the request/message is for initiating a MSGin5G message;

b) the Message ID IE with the unique identity of this message;

c) the Target Address IE with the information for MSGin5G Client to generate the Recipient UE/AS/Group Service ID in the MSGin5G message request;

d) optionally, the Target Type IE indicating the type of the message recipient, with "UE" if the message is sent to a UE, with "AS" if the message is sent to an Application Server, or with "GROUP" if message is sent to a MSGin5G Group;

e) optionally, the Application ID IE indicating the application(s) for which the payload is intended;

f) the Payload IE including the application content of the message to send to the recipient; and

g) optionally, the Delivery Status Required IE with the value "true" if delivery status report is required.

##### 6.4.2.2.2 Sending of an message delivery status report via MSGin5G Gateway UE

In order to sending an message delivery report by using the MSGin5G Client in MSGin5G Gateway UE, the Application Client in Constrained UE shall send a request/response to the MSGin5G Client including the following information elements:

a) the Message Type IE with the value "DELIVERY REPORT SENDING REQUEST" indicating the request/response is for sending a delivery status report;

b) the Message ID IE with the unique identity of this message delivery report;

c) the Reply-to Message ID IE copied from the received message, to indicate the delivery status is for which message; and

d) the Delivery Status IE with delivery status.

##### 6.4.2.2.3 Sending of a message received response to MSGin5G Gateway UE

Upon received the message request from MSGin5G Client in MSGin5G Gateway UE, the Application Client in the Constrained UE sends a response to the MSGin5G Client, including the following information elements:

a) the Message Type IE with the value "MESSAGE RECEIVED RESPONSE" indicating the request/message is for initiating a MSGin5G message.

b) the Result IE indicating success or failure of the message received request; and

c) optionally, the Failure Reason IE indicating the reason of failure when the Result IE is set to failure.

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

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