**3GPP TSG-CT WG1 Meeting #137-eC1-22abcd**

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

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.538** | **CR** | **0005** | **rev** | **1** | **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 | **X** |

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| ***Title:*** | Differentiate the functionalities and procedures between MSGin5G Gateway UE and MSGin5G Relay UE | | | | | | | | | |
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| ***Source to WG:*** | ZTE | | | | | | | | | |
| ***Source to TSG:*** | CT1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GMARCH | | | | |  | ***Date:*** | | | 2022-08-07 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | The MSGin5G Gateway UE and the MSGin5G Relay UE provide different functionalities via the MSGin5G-5 interfaces and the MSGin5G-6 interfaces. However, some descriptions in the latest specification mix such two cases. | | | | | | | | |
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| ***Summary of change:*** | | Differentiate the functionalities and procedures between MSGin5G Gateway UE and MSGin5G Relay UE. | | | | | | | | |
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| ***Consequences if not approved:*** | | It brings confusion for implemenatation of the MSGin5G-5 interfaces and the MSGin5G-6 interfaces. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4, 6.4.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

# 4 General description

The MSGin5G Service (message service for MIoT over 5G System) is basically designed and optimized for massive IoT device communication including thing-to-thing communication and person-to-thing communication. The MSGin5G Service provides messaging communication capability in 5GS including the following message communication models:

a) Point-to-Point message;

b) Application-to-Point message/ Point-to-Application message;

c) Group message;

d) Broadcast message.

The MSGin5G Service support the message exchanging between the following UE types:

a) MSGin5G UE:

1) light weight Constrained UEs (e.g. sensors, actuators) and

2) Unconstrained UEs with advanced capabilities (e.g. washing machine, micro-ovens).

b) Legacy 3GPP UE.

c) Non-3GPP UE.

The MSGin5G Client contained in the MSGin5G UE communicates with the MSGin5G Server over the MSGin5G-1 interface (see 3GPP TS 23.554 [2]). CoAP specified in IETF RFC 7252 [5] is used as the basic transport protocol of MSGin5G service in this reference point and shall be supported by the MSGin5G Client and MSGin5G Server. For supporting sending/receiving MSGin5G message for the MSGin5G Client contained in Constrained UE, the transport protocols of MSGin5G-6 interface is also CoAP specified in IETF RFC 7252 [5].

An MSGin5G UE-1 may be Constrained UEs which do not have enough capability to communicate with MSGin5G Server. If allowed by configuration, an Unconstrained UE MSGin5G UE-2 may act as an MSGin5G Gateway UE or an MSGin5G Relay UE to MSGin5G UE-1. In this scenario, the MSGin5G UE-1 communicates with the MSGin5G UE-2 over the MSGin5G-5 and/or MSGin5G-6 interfaces (see 3GPP TS 23.554 [2]).

Additionally, the MSGin5G Client(s) may interacts with SEAL Clients over the SEAL-C reference point specified for each SEAL service as specified in 3GPP TS 23.434 [3]. The MSGin5G Server(s) may interacts with SEAL Servers over the SEAL-S reference point specified for each SEAL service as specified in 3GPP TS 23.434 [3]. The interaction between a SEAL Client and the corresponding SEAL Server is supported by SEAL-UU reference point specified for each SEAL service as specified in 3GPP TS 23.434 [3].

By means of using the MSGin5G-1 interface, the following aspects can be provided:

a) MSGin5G UE registration and de-registration towards the MSGin5G Server;

b) MSGin5G message delivery and MSGin5G message delivery status report; and

c) Messaging Topic Subscription.

By means of using the MSGin5G-5 interfaces, the following aspects can be provided:

a) Constrained device registration and de-registration towards the MSGin5G Gateway UE; and

b) The exchanging of message and message delivery status report between Constrained UE and MSGin5G Server by using MSGin5G Gateway UE.

By means of using the MSGin5G-6 interfaces, the following aspects can be provided:

a) Constrained device registration and de-registration towards the MSGin5G Server by using MSGin5G Relay UE; and

b) The exchanging of MSGin5G message and MSGin5G message delivery status report between Constrained UE and MSGin5G Server by using MSGin5G Relay UE.

The necessary 5GC Network Capabilities, e.g. device triggering, may be used in MSGin5G Service as specified in 3GPP TS 23.554 [2]. The device trigger is delivered to the MSGin5G Client via SCEF/NEF and the Core Network as specified in 3GPP TS 23.502 [17] and is out of scope of this document.

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

#### 6.4.2.1 General

Clause 6.4.2.2 and 6.4.2.3 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 1: 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 2: 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.

Clauses 6.4.2.4 and 6.4.2.5 define the procedures used for MSGin5G message or MSGin5G message delivery report sending/receiving over MSGin5G-6. The MSGin5G Relay UE relays the CoAP POST request/response as traffic between the MSGin5G Server and the Constrained UE.

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