**3GPP TSG-CT WG1 Meeting #136-eC1-223878 r1**

**E-Meeting, 12th – 20th May 2022**

**Source: China Mobile**

**Title: Correction on Messaging Topic Subscription and Unsubscription**

**Spec: 3GPP TS 24.538 v1.1.0**

**Agenda item: 17.2.30**

**Document for: Agreement**

**1. Introduction**

Minor change of the scope

**2. Reason for Change**

Minor change of the scope

**3. Conclusions**

<Conclusion part (optional)>

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.538 v1.1.0.

**\*\*\*\*\*\*\***

**Formatting instructions (remove this section after drafting a pCR)**

This sentence uses 'Normal' style from '3gpp\_70.dot' template, which shall be used for most of the text.

- This sentence uses 'B1' style from '3gpp\_70.dot' template, which shall be used for most of the bullet points.

NOTE: This sentence uses 'NO' style from '3gpp\_70.dot' template, which shall be used for all informative notes.

Editor's note: This sentence uses 'Editor's Note' style from '3gpp\_70.dot' template, which shall be used for all editor's notes.

Table x: This is a caption for a table, which uses 'TH' style from '3gpp\_70.dot' template.

Figure x: This is a caption for a figure, which uses 'TF' style from '3gpp\_70.dot' template.

The text within a Table and a Figure cells shall use either 'TAH', 'TAL' or 'TAC' styles from '3gpp\_70.dot' template.

Styles in 3GPP Specifications

|  |  |
| --- | --- |
| Use this style | For this type of element |
| **Heading 1** | Clause (→ if numbered) |
| **Heading n** | Subclause level n In exceptional cases, for level 6 or beyond, use **Heading 5** if required in contents list or **H6** if not to appear. → |
| **Heading 8** | Annex title for TS |
| **Heading 9** | Annex title for TR |
| **Normal** | Standard paragraph, Definition |
| **EX** | Reference, Example → |
| **EW** | Symbol, Abbreviation, Example continuation in text → |
| **Bn** | List element level n → |
| **FP** | Free paragraph (left justified) |
| **NO** | Note integrated in the text → |
| **NW** | Note continuation in text → |
| **NF** | Note in figure → |
| **TAN** | Note in table → |
| **TH** | Table title, Figures |
| **TAH** | Heading within table |
| **TAC** | Centred text within table |
| **TAL** | Left justified text within table |
| **TAR** | Right justified text within table |
| **TF** | Figure title |
| **TT** | Contents list title |
| **PL** | Programming language |
| **EQ** | Equation |
| **Header** | Header (portrait and landscape pages) |
| → use "tab" between "item/number" and "text".  EXAMPLE: The "tab" is preceding this example text. | |

**Please do not create new styles!**

**\*\*\*\*\*\*\***

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

## 6.6 Messaging Topic Subscription and Unsubscription

### 6.6.1 General

As specified in 3GPP TS 23.554 [2], an MSGin5G Client may subscribe one or more Messaging Topic(s) on the MSGin5G Server.

The message topic subscription and unsubscription are based on the CoAP Observe method as specified in IETF RFC 7641 [4], the MSGin5G Client acts as an observer, the MSGin5G Server acts as a CoAP Server, the message topic is a resource to observe.

### 6.6.2 Procedure at MSGin5G Client

#### 6.6.2.1 Messaging Topic Subscription

Upon receiving a request to subscribe a messsage topic from an Application Client, MSGin5G Client shall send a CoAP GET request, as specified in IETF RFC 7641 [4], to the MSGin5G Server. In the CoAP GET request, the MSGin5G Client:

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

b) shall include the MSGin5G Server address in the Option header and set the Option header to a corresponding value, e.g. if the MSGin5G Server address is a URI, the Uri-Path Option is set to the value of such URI;

c) shall include the message topic name in the Uri-Path Option (e.g. "\top");

d) shall include the Observe Option with the value "0" which indicates the request is for observing a resource, i.e. for subscribing a message topic;

e) shall include the Content-Format Option with the value "50" which indicate the format of the CoAP payload is "application/json" as specified in RFC 7252 [5]; and

f) shall include the CoAP Payload in JSON format, including the following information elements as specified in clause 8.8.1 of 3GPP TS 23.554 [2]:

1) a "Originating UE Service ID" element set to the MSGin5G UE which requests the message topic subscription; and

2) optionally, an "Expiration time" element which indicates the expiration time of the message topic subscription.

The corresponding JSON Schema used in step g) is defined in 7.3.5.1.

#### 6.6.2.2 Messaging Topic Unsubscription

If the MSGin5G Client needs to unsubscribe a messsage topic, as specified in RFC 7641 [4], the MSGin5G Client shall send a CoAP GET request to MSGin5G Server. In the request, the MSGin5G Client:

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

b) shall include the MSGin5G Server address in the Option header and set the Option header to a corresponding value, e.g. if the MSGin5G Server address is a URI, the Uri-Path Option is set to the value of such URI;

c) shall include the message topic name in the Uri-Path Option (e.g. "\top");

d) shall include the Observe Option with the value "1" which indicates the observer request to cancel the previous resource observation, i.e. the MSGin5G Client requests to unsubscribe the message topic;

e) shall include the Content-Format Option with the value "50" which indicate the format of the CoAP payload is "application/json" as specified in RFC 7252 [5]; and

f) shall include the CoAP Payload in JSON format and an "Originating UE Service ID" element indicating the MSGin5G UE which requests the message topic unsubscription shall be included in the CoAP Payload.

### 6.6.3 Procedures at MSGin5G Server

The MSGin5G Server should support parsing CoAP request as specified in RFC 7252 [5] and RFC 7641 [4].

Upon receiving a CoAP GET request from MSGin5G Client, the MSGin5G Server shall parse the CoAP headers, Options and Payload in the request to get:

a) the value of Observe Option;

b) the message topic from the Uri-Path Option;

c) the Originating UE Service ID from the Payload; and

d) the Expiration time from the Payload if exists in the Payload.

#### 6.6.3.1 Messaging Topic Subscription

If the Observe Option is included in the CoAP GET request with a value "0" as specified in RFC 7641 [4], the MSGin5G Server shall:

a) if the message topic does not exist, create the message topic;

b) if the Originating UE Service ID is not in the list of the subscribers of the message topic, add the Originating UE Service ID to the list of the subscribers of the topic, and record its expiration time if exists;

c) if an entry with a matching Originating UE Service ID is already present in the list of the subscribers of the message topic, updates the expiration time of the subscription of this UE; and

d) send a CoAP Notifications with a 2.05 (Content) response code to the MSGin5G Client and with CoAP Payload in JSON format, including the following information elements as specified in clause 8.8.1 of 3GPP TS 23.554 [2]:

1) a "subscription status" element set to indicate whether the subscription was successfully added or deleted on the MSGin5G Server; and

2) optionally, an "Expiration time" element set to indicate the expiration time of the message topic subscription.

The MSGin5G Server shall remove the Originating UE Service ID from list of the subscribers of the message topic when the expiration time reached;

#### 6.6.3.2 Messaging Topic Unsubscription

If the Observe Option is included in the received CoAP GET request with a value "1" as specified in RFC 7461 [4], the MSGin5G Server shall handle the CoAP GET request according to procedures specified in IETF RFC 7252 [5] with the clarifications listed below:

a) if the message topic exists, the MSGin5G Server shall remove the Originating UE Service ID from list of the subscribers of the message topic; and

b) the MSGin5G Server sends a CoAP Notifications with a 2.05 (Content) response code to the MSGin5G Client, and with CoAP Payload in JSON format. A "subscription status" element set to indicate whether the subscription was successfully added or deleted on the MSGin5G Server shall be included in this CoAP Payload as specified in clause 8.8.3 of 3GPP TS 23.554 [2].

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