**3GPP TSG CT WG3 Meeting #135 *C3-243102r1***

**Hyderabad, IN, 27th – 31st May, 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.538** | **CR** | **0052** | **rev** | **-** | **Current version:** |  |  |
|  |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Correct references and clarify regarding NBI usage. |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | NBI18 |  | ***Date:*** | 2024-05-20 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | This TS is NBI but refers to TS 29.500 at many places, which is updated to refer TS 29.122 as required by NBI specifications.Additionally, some errors related to references are corrected. |
|  |  |
| ***Summary of change:*** | Reference is updated to point to appropriate clauses |
|  |  |
| ***Consequences if not approved:*** | This may lead to misunderstanding and confusion due to incorrect references. |
|  |  |
| ***Clauses affected:*** | 7.1, 7.3, 7.4, 7.5.1, 7.7, 7.8, 7.9, 8.1.2.2.3.1, 8.1.2.3.3.1, 8.2.3.2.2, 8.2.3.4.2, 8.3.2.2.3.1, 8.3.2.3.3.1, 8.3.3.2.2, 8.3.3.3.2, 8.3.4, 8.3.4.2.3.1, 9.1.3.2.2, 9.1.3.3.2, 9.2.3.2.2, 9.2.3.3.2, 9.3.3.2.2 |
|  |  |
|  | **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 does not impact the OpenAPI descriptions of the APIs defined in this specification. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* First change \* \* \* \*

## 7.1 General

MSGin5G APIs allow secure access to the capabilities provided by the MSGin5G.

This document specifies the procedures triggered at different functional entities as a result of API invocation requests and event notifications. The stage-2 level requirements and signalling flows are defined in 3GPP TS 23.554 [2].

Several design aspects, as mentioned in the following clauses, are specified in 3GPP TS 29.122 [24] and referenced by this specification.

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

## 7.3 Usage of HTTP

For MSGin5G APIs, support of HTTP/1.1 (IETF RFC 9110 [11], IETF RFC 9111 [14] and IETF RFC 9112 [10]) over TLS is mandatory and support of HTTP/2 (IETF RFC 9113 [16]) over TLS is recommended.

A functional entity desiring to use HTTP/2 shall use the HTTP upgrade mechanism to negotiate applicable HTTP version as described in IETF RFC 9113 [16].

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

## 7.4 Content type

JSON, IETF RFC 8259 [17], shall be used as content type of the HTTP bodies specified in the present specification as specified in clause 5.2.3 of 3GPP TS 29.122 [24]. The use of the JSON format shall be signalled by the content type "application/json".

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

### 7.5.1 Resource URI structure

The resource URI structure of all the APIs specified in this document shall be as specified in clause 4.4.1 of 3GPP TS 29.501 [9].

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

## 7.7 Error Handling

HTTP error handling shall be supported as specified in clause 5.2.6 of 3GPP TS 29.122 [24].

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

## 7.8 Feature negotiation

The procedures in clause 5.2.7 of 3GPP TS 29.122 [24] shall be applicable for the APIs defined in the present specification. For each of the APIs defined, the applicable list of features is contained in the related API definition.

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

## 7.9 HTTP headers

The MSGin5G API shall support HTTP custom header fields specified in clause 5.2.8 of 3GPP TS 29.122 [24]. No specific custom headers are defined for the MSGin5G API in the present specification.

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

###### 8.1.2.2.3.1 POST

This method shall support the URI query parameters specified in table 8.1.2.2.3.1-1.

Table 8.1.2.2.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

This method shall support the request data structures specified in table 8.1.2.2.3.1-2 and the response data structures and response codes specified in table 8.1.2.2.3.1-3.

Table 8.1.2.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ASRegistration | M | 1 | AS registration request information. |

Table 8.1.2.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| ASRegistrationAck | M | 1 | 201 Created | AS information is registered successfully at MSGin5G Server. The URI of the created resource shall be returned in the "Location" HTTP header. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [24] shall also apply. |

Table 8.1.2.2.3.1-4: Headers supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

Table 8.1.2.2.3.1-5: Headers supported by the 201 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/msgs-asregistration/<apiVersion>/registrations/{registrationId} |

Table 8.1.2.2.3.1-6: Links supported by the 200 Response Code on this endpoint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Resource name | HTTP method or custom operation | Link parameter(s) | Description |
| n/a |  |  |  |  |

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

###### 8.1.2.3.3.1 DELETE

This method deregisters an AS registration from the MSGin5G Server. This method shall support the URI query parameters specified in the table 8.1.2.3.3.1-1.

Table 8.1.2.3.3.1-1: URI query parameters supported by the DELETE method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

This method shall support the request data structures specified in table 8.1.2.3.3.1-2 and the response data structures and response codes specified in table 8.1.2.3.3.1-3.

Table 8.1.2.3.3.1-2: Data structures supported by the DELETE Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 8.1.2.3.3.1-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| ASRegistrationAck | M | 1 | 200 OK | The AS DeRegistration information matching the registrationId is deleted. |
| n/a |  |  | 204 No Content | Successful response. The individual AS registration matching the registrationId is successfully deleted. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [24] shall also apply. |

Table 8.1.2.3.3.1-4: Headers supported by the DELETE method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

Table 8.1.2.3.3.1-5: Headers supported by the 204 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

Table 8.1.2.3.3.1-6: Links supported by the 200 Response Code on this endpoint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Resource name | HTTP method or custom operation | Link parameter(s) | Description |
| n/a |  |  |  |  |

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

##### 8.2.3.2.2 Operation Definition

This operation shall support the response data structures and response codes specified in Table 8.2.3.2.2-1 and Table 8.2.3.2.2-2.

Table 8.2.3.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ASMessageDelivery | M | 1 | Represents the data to be used for AS to deliver message. |

Table 8.2.3.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MessageDeliveryAck | M | 1 | 200 OK | AS Message is delivered successfully. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

##### 8.2.3.4.2 Operation Definition

This operation shall support the response data structures and response codes specified in Table 8.2.3.4.2-1 and Table 8.2.3.4.2-2.

Table 8.2.3.4.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DeliveryStatusReport | M | 1 | Represents the data to be used for Message Gateway (on behalf of Legacy 3GPP UE or Non-3GPP UE) or the Application Server to deliver status report. |

Table 8.2.3.4.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| MessageDeliveryAck | M | 1 | 200 OK | The status report is delivered successfully. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

###### 8.3.2.2.3.1 POST

This method shall support the URI query parameters specified in table 8.3.2.2.3.1-1.

Table 8.3.2.2.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

This method shall support the request data structures specified in table 8.3.2.2.3.1-2 and the response data structures and response codes specified in table 8.3.2.2.3.1-3.

Table 8.3.2.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TopicListSubscription | M | 1 | Messaging Topic list subscription request information. |

Table 8.3.2.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| TopicListSubscriptionAck | M | 1 | 201 Created | The creation of an Messaging Topic list subscription resource is confirmed.The URI of the created resource shall be returned in the "Location" HTTP header. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [24] shall also apply. |

Table 8.3.2.2.3.1-4: Headers supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

Table 8.3.2.2.3.1-5: Headers supported by the 201 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/msgs-topiclistevent/<apiVersion>/topiclist-subscriptions/{subscriptionId} |

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

###### 8.3.2.3.3.1 POST

This method shall support the URI query parameters specified in table 8.3.2.3.3.1-1.

Table 8.3.2.3.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

This method shall support the request data structures specified in table 8.3.2.3.3.1-2 and the response data structures and response codes specified in table 8.3.2.3.3.1-3.

Table 8.3.2.3.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TopicListUnsubscription | M | 1 | Messaging Topic list unsubscription request information. |

Table 8.3.2.3.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful response. The individual MSGin5G Server Messaging Topic list subscription matching the subscriptionId is successfully deleted. |
| TopicListUnsubcriptionAck | M | 1 | 200 OK | Response of successfully handled Topic list unsubscription request with status information if subscription is not deleted. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [24] shall also apply. |

Table 8.3.2.3.3.1-4: Headers supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

Table 8.3.2.3.3.1-5: Headers supported by the 204 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| n/a |  |  |  |  |

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

##### 8.3.3.2.2 Operation Definition

This operation shall support the request data structures shown in Table 8.3.3.2.2-1 and the response data structures and error codes specified in Tables 8.3.3.2.2-2.

Table 8.3.3.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TopicSubscription | M | 1 | Information about the Messaging Topic subscription that the MSGin5G Server shall create. |

Table 8.3.3.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| TopicSubscriptionAck | M | 1 | 200 OK | Successful request to trigger the creation of a subscription for Messaging Topic at the MSGin5G Server. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

##### 8.3.3.3.2 Operation Definition

This operation shall support the request data structures shown in Table 8.3.3.3.2-1 and the response data structures and error codes specified in Tables 8.3.3.3.2-2.

Table 8.3.3.3.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TopicUnsubscription | M | 1 | Reference used to identify the Messaging Topic subscription that the MSGin5G Server shall remove. |

Table 8.3.3.3.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful request to trigger the removal of a subscription for Messaging Topic(s) on the MSGin5G Server. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

### 8.3.4 Notifications

Notifications shall comply to clause 5.2.5 of 3GPP TS 29.122 [24].

Table 8.3.4.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| TopicList Notification | {notificationURI} | POST | Notify about Messaging Topic list changes from MSGin5G Server. |

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

###### 8.3.4.2.3.1 POST

This method shall support the request data structures specified in table 8.3.4.2.3.1-1 and the response data structures and response codes specified in table 8.3.4.2.3.1-2.

Table 8.3.4.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| TopicListNotification | M | 1 | Provides information about subscribed Messaging Topic list. |

Table 8.3.4.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | The receipt of the Notification is acknowledged.  |
| NOTE 1: The mandatory HTTP error status codes for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

##### 9.1.3.2.2 Operation Definition

This operation shall support the response data structures and response codes specified in table 9.1.3.2.2-1 and table 9.1.3.2.2-2.

Table 9.1.3.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| L3gMessageDelivery | M | 1 | Represents the data to be used for MSGin5G Server to deliver message. |

Table 9.1.3.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | The Message is Delivered successfully. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

##### 9.1.3.3.2 Operation Definition

This operation shall support the response data structures and response codes specified in Table 9.1.3.3.2-1 and Table 9.1.3.3.2-2.

Table 9.1.3.3.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DeliveryStatusReport | M | 1 | Represents the data to be used for MSGin5G Server to deliver status report. |

Table 9.1.3.3.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | The status report is Delivered successfully. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

##### 9.2.3.2.2 Operation Definition

This operation shall support the response data structures and response codes specified in table 9.2.3.2.2-1 and table 9.2.3.2.2-2.

Table 9.2.3.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| N3gMessageDelivery | M | 1 | Represents the data to be used for MSGin5G Server to deliver message. |

Table 9.2.3.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | The Message is Delivered successfully. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

##### 9.2.3.3.2 Operation Definition

This operation shall support the response data structures and response codes specified in table 9.2.3.3.2-1 and table 9.2.3.3.2-2.

Table 9.2.3.3.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DeliveryStatusReport | M | 1 | Represents the data to be used for MSGin5G Server to deliver status report. |

Table 9.2.3.3.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | The status report is Delivered successfully. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

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

##### 9.3.3.2.2 Operation Definition

This operation shall support the response data structures and response codes specified in table 9.3.3.2.2-1 and table 9.3.3.2.2-2.

Table 9.3.3.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| BgMessageDelivery | M | 1 | Represents the data to be used for MSGin5G Server to deliver message. |

Table 9.3.3.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | The Message is delivered successfully. |
| NOTE: The mandatory HTTP error status code for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [24] also apply. |

\* \* \* \* End of changes \* \* \* \*