**3GPP TSG-CT3 Meeting #116e C3-213119\_r1**

**E-Meeting, 19th – 28th May 2021**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **29.222** | **CR** | **0206** | **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 |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Support of 204 No content response code for service API definition update(NBI17) |
|  |  |
| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | NBI17 |  | ***Date:*** | 2021-5-12 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | It’s possible that the server responds with 204 No content without any representation during service API definition update procedure. |
|  |  |
| ***Summary of change:*** | Add “204 No content” as a possible response code for update procedure of CAPIF\_Publish\_Service\_API. |
|  |  |
| ***Consequences if not approved:*** | “204 No content” response code is not supported for service API definition update procedure. |
|  |  |
| ***Clauses affected:*** | 8.2.2.3.3.2, A.3 |
|  |  |
|  | **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 introduces a backward compatible feature in the OpenAPI file for the CAPIF\_Publish\_Service\_API. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**…**

**Proposed changes:**

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

###### 8.2.2.3.3.2 PUT

This method shall support the URI query parameters specified in table 8.2.2.3.3.2-1.

Table 8.2.2.3.3.2-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 8.2.2.3.3.2-2 and the response data structures and response codes specified in table 8.2.2.3.3.2-3.

Table 8.2.2.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| ServiceAPIDescription | M | 1 | Updated definition of the service API. |

Table 8.2.2.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
|  ServiceAPIDescription | M | 1 | 200 OK | Definition of the service API updated successfully and the updated service API definition is returned. |
| n/a |  |  | 204 No Content | Definition of the service API updated successfully.  |

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

## A.3 CAPIF\_Publish\_Service\_API

openapi: 3.0.0

info:

 title: CAPIF\_Publish\_Service\_API

 description: |

 API for publishing service APIs.

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 version: "1.1.0"

externalDocs:

 description: 3GPP TS 29.222 V16.3.0 Common API Framework for 3GPP Northbound APIs

 url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.222/

servers:

 - url: '{apiRoot}/published-apis/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in subclause 7.5 of 3GPP TS 29.222.

paths:

# APF published API

 /{apfId}/service-apis:

 post:

 description: Publish a new API.

 parameters:

 - name: apfId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/apfId'

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ServiceAPIDescription'

 responses:

 '201':

 description: Service API published successfully The URI of the created resource shall be returned in the "Location" HTTP header.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ServiceAPIDescription'

 headers:

 Location:

 description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/published-apis/v1/{apfId}/service-apis/{serviceApiId}'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 get:

 description: Retrieve all published APIs.

 parameters:

 - name: apfId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/apfId'

 responses:

 '200':

 description: Definition of all service API(s) published by the API publishing function.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ServiceAPIDescription'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

# Individual APF published API

 /{apfId}/service-apis/{serviceApiId}:

 get:

 description: Retrieve a published service API.

 parameters:

 - name: serviceApiId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/serviceApiId'

 - name: apfId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/apfId'

 responses:

 '200':

 description: Definition of all service API published by the API publishing function.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ServiceAPIDescription'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 put:

 description: Update a published service API.

 parameters:

 - name: serviceApiId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/serviceApiId'

 - name: apfId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/apfId'

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ServiceAPIDescription'

 responses:

 '200':

 description: Definition of service API updated successfully.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ServiceAPIDescription'

 '204':

 description: No Content

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 delete:

 description: Unpublish a published service API.

 parameters:

 - name: serviceApiId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/serviceApiId'

 - name: apfId

 in: path

 required: true

 schema:

 $ref: '#/components/schemas/apfId'

 responses:

 '204':

 description: The individual published service API matching the serviceAPiId is deleted.

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

# Components

components:

 schemas:

# Data types uses as path variables

 apfId:

 type: string

 description: Identification of the API publishing function.

 serviceApiId:

 type: string

 description: String identifying an individual published service API.

# Data Type for representations

 ServiceAPIDescription:

 type: object

 properties:

 apiName:

 type: string

 description: API name, it is set as {apiName} part of the URI structure as defined in subclause 4.4 of 3GPP TS 29.501.

 apiId:

 type: string

 description: API identifier assigned by the CAPIF core function to the published service API. Shall not be present in the HTTP POST request from the API publishing function to the CAPIF core function. Shall be present in the HTTP POST response from the CAPIF core function to the API publishing function and in the HTTP GET response from the CAPIF core function to the API invoker (discovery API).

 aefProfiles:

 type: array

 items:

 $ref: '#/components/schemas/AefProfile'

 minItems: 1

 description: AEF profile information, which includes the exposed API details (e.g. protocol).

 description:

 type: string

 description: Text description of the API

 supportedFeatures:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 shareableInfo:

 $ref: '#/components/schemas/ShareableInformation'

 serviceAPICategory:

 type: string

 apiSuppFeats:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 pubApiPath:

 $ref: '#/components/schemas/PublishedApiPath'

 ccfId:

 type: string

 description: CAPIF core function identifier.

 required:

 - apiName

 InterfaceDescription:

 type: object

 properties:

 ipv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ipv6Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv6Addr'

 port:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Port'

 securityMethods:

 type: array

 items:

 $ref: '#/components/schemas/SecurityMethod'

 minItems: 1

 description: Security methods supported by the interface, it take precedence over the security methods provided in AefProfile, for this specific interface.

 oneOf:

 - required: [ipv4Addr]

 - required: [ipv6Addr]

 AefProfile:

 type: object

 properties:

 aefId:

 type: string

 description: Identifier of the API exposing function

 versions:

 type: array

 items:

 $ref: '#/components/schemas/Version'

 minItems: 1

 description: API version

 protocol:

 $ref: '#/components/schemas/Protocol'

 dataFormat:

 $ref: '#/components/schemas/DataFormat'

 securityMethods:

 type: array

 items:

 $ref: '#/components/schemas/SecurityMethod'

 minItems: 1

 description: Security methods supported by the AEF

 domainName:

 type: string

 description: Domain to which API belongs to

 interfaceDescriptions:

 type: array

 items:

 $ref: '#/components/schemas/InterfaceDescription'

 minItems: 1

 description: Interface details

 required:

 - aefId

 - versions

 oneOf:

 - required: [domainName]

 - required: [interfaceDescriptions]

 Resource:

 type: object

 properties:

 resourceName:

 type: string

 description: Resource name

 commType:

 $ref: '#/components/schemas/CommunicationType'

 uri:

 type: string

 description: Relative URI of the API resource, it is set as {apiSpecificResourceUriPart} part of the URI structure as defined in subclause 4.4 of 3GPP TS 29.501.

 custOpName:

 type: string

 description: it is set as {custOpName} part of the URI structure for a custom operation associated with a resource as defined in subclause 4.4 of 3GPP TS 29.501.

 operations:

 type: array

 items:

 $ref: '#/components/schemas/Operation'

 minItems: 1

 description: Supported HTTP methods for the API resource. Only applicable when the protocol in AefProfile indicates HTTP.

 description:

 type: string

 description: Text description of the API resource

 required:

 - resourceName

 - commType

 - uri

 CustomOperation:

 type: object

 properties:

 commType:

 $ref: '#/components/schemas/CommunicationType'

 custOpName:

 type: string

 description: it is set as {custOpName} part of the URI structure for a custom operation without resource association as defined in subclause 4.4 of 3GPP TS 29.501.

 operations:

 type: array

 items:

 $ref: '#/components/schemas/Operation'

 minItems: 1

 description: Supported HTTP methods for the API resource. Only applicable when the protocol in AefProfile indicates HTTP.

 description:

 type: string

 description: Text description of the custom operation

 required:

 - commType

 - custOpName

 Version:

 type: object

 properties:

 apiVersion:

 type: string

 description: API major version in URI (e.g. v1)

 expiry:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 resources:

 type: array

 items:

 $ref: '#/components/schemas/Resource'

 minItems: 1

 description: Resources supported by the API.

 custOperations:

 type: array

 items:

 $ref: '#/components/schemas/CustomOperation'

 minItems: 1

 description: Custom operations without resource association.

 required:

 - apiVersion

 ShareableInformation:

 type: object

 properties:

 isShareable:

 type: boolean

 description: Set to "true" indicates that the service API and/or the service API category can be shared to the list of CAPIF provider domain information. Otherwise set to "false".

 capifProvDoms:

 type: array

 items:

 type: string

 minItems: 1

 description: List of CAPIF provider domains to which the service API information to be shared.

 required:

 - isShareable

 PublishedApiPath:

 type: object

 properties:

 ccfIds:

 type: array

 items:

 type: string

 minItems: 1

 description: A list of CCF identifiers where the service API is already published.

 Protocol:

 anyOf:

 - type: string

 enum:

 - HTTP\_1\_1

 - HTTP\_2

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - HTTP\_1\_1: HTTP version 1.1

 - HTTP\_2: HTTP version 2

 CommunicationType:

 anyOf:

 - type: string

 enum:

 - REQUEST\_RESPONSE

 - SUBSCRIBE\_NOTIFY

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - REQUEST\_RESPONSE: The communication is of the type request-response

 - SUBSCRIBE\_NOTIFY: The communication is of the type subscribe-notify

 DataFormat:

 anyOf:

 - type: string

 enum:

 - JSON

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - JSON: JavaScript Object Notation

 SecurityMethod:

 anyOf:

 - type: string

 enum:

 - PSK

 - PKI

 - OAUTH

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - PSK: Security method 1 (Using TLS-PSK) as described in 3GPP TS 33.122

 - PKI: Security method 2 (Using PKI) as described in 3GPP TS 33.122

 - OAUTH: Security method 3 (TLS with OAuth token) as described in 3GPP TS 33.122

 Operation:

 anyOf:

 - type: string

 enum:

 - GET

 - POST

 - PUT

 - PATCH

 - DELETE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: >

 Possible values are

 - GET: HTTP GET method

 - POST: HTTP POST method

 - PUT: HTTP PUT method

 - PATCH: HTTP PATCH method

 - DELETE: HTTP DELETE method

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