**3GPP TSG- Meeting #130 *C3-234351\_R2***

**Xiamen, China, 09th – 13th October, 2023**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0316** | **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:*** | Service API status monitoring in the CAPIF APIs | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SEAL\_Ph3 | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | |  |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In clauses 8.3.2.1, 8.3.2.2, 8.6.2.1, 8.6.2.2, 8.25.2.1 of 23.222 (CR#0111 of 23.222) the Service API status monitoring functionality is specified. Thus, the specified Service API status monitoring functionality in the CAPIF\_Discover\_Service\_API, CAPIF\_Publish\_Service\_API, CAPIF\_Events\_API shall be implemented in stage 3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | This CR introduces the implementation of the Service API status monitoring functionality in CAPIF layer (CAPIF\_Discover\_Service\_API, CAPIF\_Publish\_Service\_API, CAPIF\_Events\_API). | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Misalignment with stage 2 requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.2.4.2, 8.2.4.1, 8.2.4.2.2, 8.2.4.2.11, 8.2.4.2.12 (new), 8.2.6, 8.3.6, 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 provides backward compatible feature of the CAPIF\_Publish\_Service\_API. | | | | | | | | |
| ***()*** | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 5.4.2.4.2 Notifying CAPIF events using Notify\_Event service operation

To notify CAPIF events, the CAPIF core function shall send an HTTP POST message using the Notification Destination URI received in the subscription request. The body of the HTTP POST message shall include an Event Notification and CAPIF Resource URI.

If the Enhanced\_event\_report feature is supported, the CAPIF core function may include an event detail in the "eventDetail" attribute. The "eventDetail" attribute shall include:

- if the event is SERVICE\_API\_AVAILABLE or SERVICE\_API\_UNAVAILABLE, the API IDs in the "apiIds" attribute and, if the "ApiStatusMonitoring" feature is supported, additionally, the service API descriptions in the "serviceAPIDescriptions" attribute;

- if the event is SERVICE\_API\_UPDATE, the API descriptions in the "serviceAPIDescriptions" attribute;

- if the event is API\_INVOKER\_ONBOARDED or API\_INVOKER\_OFFBOARDED or API\_INVOKER\_UPDATED, the API invoker IDs in the "apiInvokerIds" attribute;

- if the event is ACCESS\_CONTROL\_POLICY\_UPDATE, the access control policy information in the "accCtrlPolList" attribute;

- if the event is SERVICE\_API\_INVOCATION\_SUCCESS or SERVICE\_API\_INVOCATION\_FAILURE, the API invocation logs in the "invocationLogs" attribute; or

- if the event is API\_TOPOLOGY\_HIDING\_CREATED or API\_TOPOLOGY\_HIDING\_REVOKED, the API topology hiding information in the "apiTopoHide" attribute.

Upon receiving the HTTP POST message, the Subscriber shall process the Event Notification.

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

#### 8.2.4.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 7.2 also apply to this API.

Table 8.2.4.1-1 specifies the data types defined specifically for the CAPIF\_Publish\_Service\_API service.

specifies the data types defined specifically for the CAPIF\_Publish\_Service\_API service.

Table 8.2.4.1-1: CAPIF\_Publish\_Service\_API specific Data Types

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data type | Section defined | | Description | | Applicability |
| ApiStatus | Clause 8.2.4.2.12 | Represents the API status. | | ApiStatusMonitoring | |
| AefLocation | Clause 8.2.4.2.10 | | Represents the location information (e.g. civic address, GPS coordinates, data center ID) where the AEF providing the service API is located. | |  |
| AefProfile | Clause 8.2.4.2.4 | | Represents the AEF profile data. | |  |
| CommunicationType | Clause 8.2.4.3.5 | | Indicates a communication type of the resource or a custom operation. | |  |
| CustomOperation | Clause 8.2.4.2.7 | | Represents the description of a custom operation. | |  |
| DataFormat | Clause 8.2.4.3.4 | | Indicates a data format, e.g., JSON. | |  |
| InterfaceDescription | Clause 8.2.4.2.3 | | Represents the description of the API interface. | |  |
| Operation | Clause 8.2.4.3.7 | | Indicates an HTTP method (e.g. PUT). | |  |
| Protocol | Clause 8.2.4.3.3 | | Indicates a protocol and protocol version used by the API. | |  |
| PublishedApiPath | Clause 8.2.4.2.9 | | Represents the published API path within the same CAPIF provider domain. | |  |
| Resource | Clause 8.2.4.2.6 | | Represents the API resource data. | |  |
| SecurityMethod | Clause 8.2.4.3.6 | | Indicates the security method (e.g. PKI). | |  |
| ServiceAPIDescription | Clause 8.2.4.2.2 | | Represents the description of a service API as published by the APF. | |  |
| ServiceAPIDescriptionPatch | Clause 8.2.4.2.11 | | Represents the parameters to request the modification of an APF published API resource. | | PatchUpdate |
| ShareableInformation | Clause 8.2.4.2.8 | | Indicates whether the service API and/or the service API category can be shared to the list of CAPIF provider domains. | |  |
| Version | Clause 8.2.4.2.5 | | Represents the API version information | |  |

Table 8.2.4.1-2 specifies data types re-used by the CAPIF\_Publish\_Service\_API service:

Table 8.2.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| CivicAddress | 3GPP TS 29.572 [30] | Used to indicate a civic address. |  |
| DateTime | 3GPP TS 29.122 [14] | Used to indicate an expiration timer. |  |
| Fqdn | 3GPP TS 29.571 [19] |  |  |
| GeographicArea | 3GPP TS 29.572 [30] | Used to indicate a geographic area. |  |
| Ipv4Addr | 3GPP TS 29.122 [14] | Used to indicate an IPv4 address. |  |
| Ipv6Addr | 3GPP TS 29.122 [14] | Used to indicate an IPv6 address. |  |
| Port | 3GPP TS 29.122 [14] | Used to indicate a port. |  |
| SupportedFeatures | 3GPP TS 29.571 [19] | Used to negotiate the applicability of optional features defined in table 8.2.6-1. | ApiSupportedFeaturePublishing |

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

##### 8.2.4.2.2 Type: ServiceAPIDescription

Table 8.2.4.2.2-1: Definition of type ServiceAPIDescription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| apiName | string | M | 1 | API name, it is set as {apiName} part of the URI structure as defined in clause 5.2.4 of 3GPP TS 29.122 [14]. |  |
| apiId | string | O | 0..1 | 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). |  |
| apiStatus | ApiStatus | O | 0..1 | Indicates the API status.  If this attribute is omitted, the Service API is active at all AEF(s) present in the "aefProfiles" attribute. | ApiStatusMonitoring |
| aefProfiles | array(AefProfile) | C | 1..N | AEF profile information, which includes the exposed API details (e.g. protocol). For CAPIF-4/4e interface, API publishing function shall provide this attribute to the CAPIF core function in service API publishing. For CAPIF-1/1e interface, the CAPIF core function shall provide this attribute to the API Invoker during service API discovery. (NOTE 2) |  |
| description | string | O | 0..1 | Text description of the API |  |
| supportedFeatures | SupportedFeatures | O | 0..1 | The supported optional features of the CAPIF API. (NOTE 1) |  |
| shareableInfo | ShareableInformation | O | 0..1 | Represents whether the service API and/or the service API category can be published to other CCFs. |  |
| serviceAPICategory | string | C | 0..1 | The service API category to which the service API belongs to. This attribute is only applicable for CAPIF-6/6e interface. (NOTE 2) |  |
| ccfId | string | C | 0..1 | CAPIF core function identifier which can be contacted further for discovering the details of service API information. This attribute is only applicable for CAPIF-6/6e interface and shall be provided with serviceAPICategory. (NOTE 2) |  |
| apiSuppFeats | SupportedFeatures | O | 0..1 | Provided by the consumer to indicate the features supported by the service API. | ApiSupportedFeaturePublishing |
| pubApiPath | PublishedApiPath | C | 0..1 | It contains the published API path within the same CAPIF provider domain. it shall be provided by the CCF when publishing the service API to other CCF via the CAPIF-6 reference point. |  |
| NOTE 1: For CAPIF\_Publish\_Service\_API, the supported features attribute shall be provided in the HTTP POST request and in the response of successful resource creation. In addition, the supportedFeatures attribute may include one or more the supported features as defined in clause 8.2.6.  NOTE 2: For CAPIF-6/6e interface, at least one of aefProfiles or serviceAPICategory and the corresponding ccfId shall be provided. | | | | | |

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

##### 8.2.4.2.11 Type: ServiceAPIDescriptionPatch

Table 8.2.4.2.11-1: Definition of type ServiceAPIDescriptionPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| apiStatus | ApiStatus | O | 0..1 | Indicates the API status. | ApiStatusMonotiring |
| aefProfiles | array(AefProfile) | O | 1..N | AEF profile information, which includes the exposed API details (e.g. protocol). |  |
| description | string | O | 0..1 | Text description of the API |  |
| shareableInfo | ShareableInformation | O | 0..1 | Represents whether the service API and/or the service API category can be published to other CCFs. |  |
| serviceAPICategory | string | O | 0..1 | The service API category to which the service API belongs. This attribute is only applicable for CAPIF-6/6e interface.  (NOTE) |  |
| ccfId | string | C | 0..1 | CAPIF core function identifier which can be contacted further for discovering the details of service API information. This attribute is only applicable for CAPIF-6/6e interface and shall be provided if the "serviceAPICategory" attribute is provided.  (NOTE) |  |
| apiSuppFeats | SupportedFeatures | O | 0..1 | Indicates the features supported by the service API. | ApiSupportedFeaturePublishing |
| pubApiPath | PublishedApiPath | O | 0..1 | It contains the published API path within the same CAPIF provider domain. It is applicable only for the CAPIF-6 reference point. |  |
| NOTE: For CAPIF-6/6e interface, either the "aefProfiles" attribute or the "serviceAPICategory" attribute and the corresponding "ccfId" attribute may be provided. | | | | | |

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

##### 8.2.4.2.12 Type: ApiStatus

Table 8.2.4.2.12-1: Definition of type ApiStatus

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| aefIds | array(string) | M | 0..N | Indicates the list of AEF ID(s) where the API is active. |  |

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

### 8.2.6 Feature negotiation

General feature negotiation procedures are defined in clause 7.8.

Table 8.2.6-1: Supported Features

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Feature number** | | **Feature Name** | | **Description** | |
| 1 | | ApiSupportedFeaturePublishing | | Indicates the support of publishing with supported feature for a service API. | |
| 2 | | PatchUpdate | | Indicates the support of the PATCH method for updating an APF published API resource. | |
| 3 | | ExtendedIntfDesc | | Indicates the support of extended interface descriptions. | |
| 4 | | MultipleCustomOperations | | Indicates the support of modelling multiple custom operations associated with a resource. | |
| 5 | | ProtocDataFormats\_Ext1 | | Indicates the support of additional protocols and data formats with standardized values.  (NOTE) | |
| 6 | | ApiStatusMonitoring | | Indicates the support of the API status monitoring in CAPIF layer as a part of enhancement of SEAL framework.  This feature enables the following functionality:  - support API status information management. | |
| NOTE: In this release of the specification, this feature is only applicable for AEFs defined outside 3GPP (e.g. by other SDOs). It does not apply to AEFs defined by 3GPP (e.g. SCEF, NEF). | | | | | |

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

### 8.3.6 Feature negotiation

General feature negotiation procedures are defined in clause 7.8. Table 8.3.6-1 lists the supported features for CAPIF\_Events\_API.

Table 8.3.6-1: Supported Features

|  |  |  |
| --- | --- | --- |
| **Feature number** | **Feature Name** | **Description** |
| 1 | Notification\_test\_event | Testing of notification connection is supported according to clause 7.6. |
| 2 | Notification\_websocket | The delivery of notifications over Websocket is supported according to clause 7.6. This feature requires that the Notification\_test\_event feature is also supported. |
| 3 | Enhanced\_event\_report | This feature supports the enhanced event report including event reporting requirement and event reporting details as defined in clause 5.4.2.2.2. |
| 4 | ApiStatusMonitoring | Indicates the support of the API status monitoring in CAPIF layer as a part of enhancement of SEAL framework.  This feature enables the following functionality:  - enhancement of the CAPIF event notification. |

\* \* \* Next 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: "1.3.0-alpha.3"

externalDocs:

description: 3GPP TS 29.222 V18.2.0 Common API Framework for 3GPP Northbound APIs

url: https://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 clause 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:

type: string

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:

type: string

responses:

'200':

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

content:

application/json:

schema:

type: array

items:

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

minItems: 0

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'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:

type: string

- name: apfId

in: path

required: true

schema:

type: string

responses:

'200':

description: >

Definition of individual service API published by the API publishing function.

content:

application/json:

schema:

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

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'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:

type: string

- name: apfId

in: path

required: true

schema:

type: string

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

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'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'

patch:

description: Modify an existing published service API.

operationId: ModifyIndAPFPubAPI

tags:

- Individual APF published API

parameters:

- name: serviceApiId

in: path

required: true

schema:

type: string

- name: apfId

in: path

required: true

schema:

type: string

requestBody:

required: true

content:

application/merge-patch+json:

schema:

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

responses:

'200':

description: >

The definition of the service API is modified successfully and a

representation of the updated service API is returned in the request body.

content:

application/json:

schema:

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

'204':

description: No Content. The definition of the service API is modified successfully.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'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:

type: string

- name: apfId

in: path

required: true

schema:

type: string

responses:

'204':

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

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'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 Type for representations

ServiceAPIDescription:

type: object

description: Represents the description of a service API as published by the APF.

properties:

apiName:

type: string

description: >

API name, it is set as {apiName} part of the URI structure as defined in

clause 5.2.4 of 3GPP TS 29.122.

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).

apiStatus:

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

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

description: The service API category to which the service API belongs to.

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

description: Represents the description of an API's interface.

properties:

ipv4Addr:

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

ipv6Addr:

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

fqdn:

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

port:

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

apiPrefix:

type: string

description: >

A string representing a sequence of path segments that starts with the slash character.

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]

- required: [fqdn]

AefProfile:

type: object

description: Represents the AEF profile data.

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

aefLocation:

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

required:

- aefId

- versions

oneOf:

- required: [domainName]

- required: [interfaceDescriptions]

Resource:

type: object

description: Represents the API resource data.

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 {apiSpecificSuffixes} part

of the URI structure as defined in clause 5.2.4 of 3GPP TS 29.122.

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 clause 5.2.4 of 3GPP TS 29.122.

custOperations:

type: array

items:

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

minItems: 1

description: >

Custom operations associated with this resource.

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

description: Represents the description of a custom operation.

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 clause 5.2.4 of 3GPP TS 29.122.

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

description: Represents the API version information.

properties:

apiVersion:

type: string

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

expiry:

$ref: 'TS29122\_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

description: >

Indicates whether the service API and/or the service API category can be shared

to the list of CAPIF provider domains.

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

description: Represents the published API path within the same CAPIF provider domain.

properties:

ccfIds:

type: array

items:

type: string

minItems: 1

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

AefLocation:

description: >

Represents the location information (e.g. civic address, GPS coordinates, data center ID)

where the AEF providing the service API is located.

type: object

properties:

civicAddr:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/CivicAddress'

geoArea:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

dcId:

type: string

description: >

Identifies the data center where the AEF providing the service API is located.

ServiceAPIDescriptionPatch:

type: object

description: >

Represents the parameters to request the modification of an APF published API resource.

properties:

apiStatus:

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

aefProfiles:

type: array

items:

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

description: AEF profile information, which includes the exposed API details.

minItems: 1

description:

type: string

description: Text description of the API

shareableInfo:

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

serviceAPICategory:

type: string

description: The service API category to which the service API belongs to.

apiSuppFeats:

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

pubApiPath:

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

ccfId:

type: string

description: CAPIF core function identifier.

ApiStatus:

type: object

description: >

Represents the API status.

properties:

aefIds:

type: array

items:

type: string

description: >

Indicates the list of AEF ID(s) where the API is active.

If this attribute is omitted, the API is inactive at all AEF(s)

defined in the "aefProfiles" attribute within

the ServiceAPIDescription data structure.

required:

- aefIds

Protocol:

anyOf:

- type: string

enum:

- HTTP\_1\_1

- HTTP\_2

- MQTT

- WEBSOCKET

- 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: |

Indicates a protocol and protocol version used by the API.

Possible values are:

- HTTP\_1\_1: Indicates that the protocol is HTTP version 1.1.

- HTTP\_2: Indicates that the protocol is HTTP version 2.

- MQTT: Indicates that the protocol is Message Queuing Telemetry Transport.

- WEBSOCKET: Indicates that the protocol is Websocket.

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: |

Indicates a communication type of the resource or the custom operation.

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

- XML

- PROTOBUF3

- 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: |

Indicates a data format.

Possible values are:

- JSON: Indicates that the data format is JSON.

- XML: Indicates that the data format is Extensible Markup Language.

- PROTOBUF3: Indicates that the data format is Protocol buffers version 3.

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: |

Indicates the security method.

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: |

Indicates an HTTP method.

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 \* \* \* \*