**3GPP TSG- Meeting #C3-231201**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.222** | **CR** | **0297** | **rev** | **-** | **Current version:** | **18.1.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Completing the support of CAPIF protocol and data formats extensibility requirements | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Nokia, Nokia Shanghai Bell, Intel, Ericsson? | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NBI18 | | | | |  | ***Date:*** | | | 2023-04-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | As per the LS received from SA6 in C3-231021 on CAPIF extensibility requirements, CAPIF APIs should support vendor specific functionalities and different protocol / architectural design style. These extensions are however not applicable to AEFs defined by 3GPP (i.e. NEF, SCEF).  In CT3#126 meeting, the Protocol and DataFormat enumerations were updated to contain new values that apply only to AEFs defined outside 3GPP. There is however a remaining Editor's Note on investigating the best mechanism to convey these additional values. In order to solve this remaining open point, it is proposed to specify the following 2 options:   * The additional protocol and/or data format values for AEFs defined by other SDOs are simply defined as additional enumeration values controlled by a new feature having the suffix "EXT1". If other values are needed in future releases (e.g. Rel-19), they can be introduced via a new feature that would have the following suffix (e.g. "EXT2"). * The additional protocol and/or data format values defined by other SDOs are conveyed using vendor-specifc extensions (i.e. vendor-specific attributes). In this case, the "protocol" and/or "dataFormat" attributes are either not provided or provided and set to the value "EXTERNAL". This enables that other SDOs provide new values without having to update the 3GPP specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * It is proposed to adopt the above detailed options to resolve the remaing Editor's Notes. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | * Stage 2 requirements not fully captured in stage 3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.4.2.4, 8.2.4.3.3, 8.2.4.3.4, 8.2.6, 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 introduces a backwards compatible feature to the OpenAPI description of the CAPIF\_Publish\_Service\_API defined in this specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

##### 8.2.4.2.4 Type: AefProfile

Table 8.2.4.2.4-1: Definition of type AefProfile

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| aefId | string | M | 1 | AEF identifier |  |
| versions | array(Version) | M | 1..N | API version |  |
| protocol | Protocol | O | 0..1 | Protocol used by the API.  (NOTE 3) |  |
| dataFormat | DataFormat | O | 0..1 | Data format used by the API  (NOTE 3) |  |
| securityMethods | array(SecurityMethod) | O | 1..N | Security methods supported by the AEF for all interfaces. Certain interfaces may have different security methods supported in the attribute interfaceDescriptions. |  |
| domainName | string | O | 0..1 | Domain to which API belongs to  (NOTE 1) |  |
| interfaceDescriptions | array(InterfaceDescription) | O | 1..N | Interface details  (NOTE 1) |  |
| aefLocation | AefLocation | O | 0..1 | The location information (e.g. civic address, GPS coordinates, data center ID) where the AEF providing the service API is located. |  |
| NOTE 1: Only one of the attributes "domainName" or "interfaceDescriptions" shall be included.  NOTE 2: Notification or callback type of resource is not included.  NOTE 3: When the ProtocDataFormats\_Ext1 feature is supported, the protocol and/or data format to be used for AEFs defined outside 3GPP (e.g. by other SDOs) should be indicated by providing the corresponding enumeration value (e.g. "MQTT" for the protocol, "XML" for the data format) within the "protocol" and/or "dataFormat" attribute respectively. The protocol and/or data format to be used for AEFs defined outside 3GPP (e.g. by other SDOs) may alternatively be indicated via vendor-specific extensions to the AefProfile data structure using the mechanism defined in clause 7.11. | | | | | |

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

##### 8.2.4.3.3 Enumeration: Protocol

Table 8.2.4.3.3-1: Enumeration Protocol

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| 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.  (NOTE 1) | ProtocDataFormats\_Ext1 |
| WEBSOCKET | Indicates that the protocol is Websocket.  (NOTE 1) | ProtocDataFormats\_Ext1 |
| NOTE 1: In this release of the specification, this enumeration value shall not be provided for AEFs defined by 3GPP (e.g. SCEF, NEF). It may only be provided for AEFs defined outside 3GPP (e.g. by other SDOs).  NOTE 2: In this release of the specification, this enumeration value shall only be used to indicate that the protocol used by an AEF that is defined outside 3GPP (e.g. defined by other SDOs) is conveyed via a dedicated vendor-specific extension using the mechanism defined in clause 7.11. | | |

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

##### 8.2.4.3.4 Enumeration: DataFormat

Table 8.2.4.3.4-1: Enumeration DataFormat

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| JSON | Indicates that the data format is JSON (JavaScript Object Notation). |  |
| XML | Indicates that the data format is Extensible Markup Language.  (NOTE 1) | ProtocDataFormats\_Ext1 |
| PROTOBUF3 | Indicates that the data format is Protocol buffers version 3.  (NOTE 1) | ProtocDataFormats\_Ext1 |
| NOTE 1: In this release of the specification, this enumeration value shall not be provided for AEFs defined by 3GPP (e.g. SCEF, NEF). It may only be provided for AEFs defined outside 3GPP (e.g. by other SDOs).  NOTE 2: In this release of the specification, this enumeration value shall only be used to indicate that the data format used by an AEF that is defined outside 3GPP (e.g. defined by other SDOs) is conveyed via a dedicated vendor-specific extension using the mechanism defined in clause 7.11. | | |

\* \* \* \* 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) |
| 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 \* \* \* \*

# 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.2"

externalDocs:

description: 3GPP TS 29.222 V18.1.0 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).

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:

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.

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 \* \* \* \*