**3GPP TSG CT WG3 Meeting #139 *C3-250249***

**Athens, Greece, 17th – 21st February, 2025**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **0390** | **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:***  | Updates and corrections to the CAPIF\_Events\_API |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | NBI19 |  | ***Date:*** | 2024-02-10 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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 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:*** | There are several issues that need to be fixed in the definition of the CAPIF\_Events\_API. For example:* Some service operations description clauses are missing the description of the failure cases.
* The PUT and PATCH methods are missing in Table 8.3.2.1-1.
* Incorrect resources' names in several provisions.
* There are several missing data types in both the API specific and reused data types tables.
* Unclear and/or incomplete description fields for the attributes in the data model clauses.
* etc.
 |
|  |  |
| ***Summary of change:*** | This CR proposes to:* Address all the above-detailed issues and apply additional editorial and drafting rule related corrections.
 |
|  |  |
| ***Consequences if not approved:*** | * The above-detailed issues remain in the specification.
 |
|  |  |
| ***Clauses affected:*** | 5.1, 5.4.1.1, 5.4.2, 5.4.2.1, 5.4.2.2.2, 5.4.2.3.2, 5.4.2.4.1, 5.4.2.4.2, 5.4.2.5.1, 5.4.2.5.2, 8.3.2, 8.3.2.1, 8.3.2.2.1, 8.3.2.2.2, 8.3.2.2.3.1, 8.3.2.2.4, 8.3.2.3.1, 8.3.2.3.2, 8.3.2.3.3.1, 8.3.2.3.3.2, 8.3.2.3.3.3, 8.3.2.3.4, 8.3.3.1, 8.3.3.2.1, 8.3.3.2.2, 8.3.3.2.2.1, 8.3.3.2.2.2, 8.3.3.2.2.2.1, 8.3.4.1, 8.3.4.2.1, 8.3.4.2.2, 8.3.4.2.3, 8.3.4.2.4, 8.3.4.2.5, 8.3.4.2.6, 8.3.4.2.7, 8.3.4.2.8, 8.3.4.3.2, 8.3.4.3.3, 8.3.4.4, 8.3.4.5 (new clause), 8.3.4.5.1, 8.3.6, A.4 |
|  |  |
|  | **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 backwards compatible corrections to the OpenAPI descriptions of the following APIs:* TS29222\_CAPIF\_Events\_API.yaml
 |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* Start of changes \* \* \* \*

## 5.1 Introduction of Services

The table 5.1-1 lists the CCF APIs below the service name. A service description clause for each API gives a general description of the related API.

Table 5.1-1: List of CAPIF Services

|  |  |  |  |
| --- | --- | --- | --- |
| Service Name | Service Operations | Operation Semantics | Consumer(s) |
| CAPIF\_Discover\_Service\_API | Discover\_Service\_API | Request/ Response | API Invoker, CCF |
| Event operations (NOTE) | (NOTE) | API Invoker |
| CAPIF\_Publish\_Service\_API | Publish\_Service\_API | Request/ Response | API Publishing Function, CCF |
| Unpublish\_Service\_API | Request/ Response | API Publishing Function, CCF |
| Update\_Service\_API | Request/ Response | API Publishing Function, CCF |
| Get\_Service\_API | Request/ Response | API Publishing Function, CCF |
| CAPIF\_Events\_API | Subscribe\_Event | Subscribe/Notify  | API Invoker, API Publishing Function, API Management Function, API Exposing Function |
| Update\_Event\_Subscription | Subscribe/Notify  | API Invoker, API Publishing Function, API Management Function, API Exposing Function |
| Notify\_Event | Subscribe/Notify | API Invoker, API Publishing Function, API Management Function, API Exposing Function |
| Unsubscribe\_Event | Subscribe/Notify  | API Invoker, API Publishing Function, API Management Function, API Exposing Function |
| CAPIF\_API\_Invoker\_Management\_API | Onboard\_API\_Invoker | Request/ Response | API Invoker |
| Offboard\_API\_Invoker | Request/ Response | API Invoker |
| Notify\_Onboarding\_Completion | Subscribe/Notify | API Invoker |
| Update\_API\_Invoker\_Details | Request/Response | API Invoker |
| Notify\_Update\_Completion | Subscribe/Notify | API Invoker |
| CAPIF\_Security\_API | Obtain\_Security\_Method | Request/ Response | API Invoker |
| Obtain\_Authorization | Request/ Response | API Invoker |
| Obtain\_API\_Invoker\_Info | Request/ Response | API exposing function |
| Revoke\_Authorization | Request/ Response | API exposing function |
| CAPIF\_Monitoring\_API | Event operations (NOTE) | (NOTE) | API Management Function |
| CAPIF\_Logging\_API\_Invocation\_API | Log\_API\_Invocation | Request/ Response | API exposing function |
| CAPIF\_Auditing\_API | Query\_API\_Invocation\_Log | Request/ Response | API management function |
| CAPIF\_Access\_Control\_Policy\_API | Obtain\_Access\_Control\_Policy | Request/Response | API Exposing Function |
| CAPIF\_API\_Provider\_Management\_API | Register\_API\_Provider | Request/Response | API Management Function |
| Update\_API\_Provider | Request/Response | API Management Function |
| Deregister\_API\_Provider | Request/Response | API Management Function |
| CAPIF\_Routing\_Info\_API | Obtain\_ Routing\_Info | Request/Response | API exposing function |
| NOTE: The service operations of CAPIF Events API are reused by the CAPIF\_Discover\_Service\_API, CAPIF\_Publish\_Service\_API and CAPIF\_Monitoring\_API for events related services. |

Table 5.1-2 summarizes the corresponding APIs defined in this specification.

Table 5.1-2: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Service Name** | **Clause** | **Description** | **OpenAPI Specification File** | **apiName** | **Annex** |
| CAPIF\_Discover\_Service\_API | 8.1 | CAPIF API discovery service | TS29222\_CAPIF\_Discover\_Service\_API.yaml | service-apis | A.2 |
| CAPIF\_Publish\_Service\_API | 8.2 | CAPIF API Publish Service | TS29222\_CAPIF\_Publish\_Service\_API.yaml | published-apis | A.3 |
| CAPIF\_Events\_API | 8.3 | CAPIF Events Service | TS29222\_CAPIF\_Events\_API.yaml | capif-events | A.4 |
| CAPIF\_API\_Invoker\_Management\_API | 8.4 | CAPIF API Invoker Management Service | TS29222\_CAPIF\_API\_Invoker\_Management\_API.yaml | api-invoker-management | A.5 |
| CAPIF\_Security\_API | 8.5 | CAPIF Security Service | TS29222\_CAPIF\_Security\_API.yaml | capif-security | A.6 |
| CAPIF\_Access\_Control\_Policy\_API | 8.6 | CAPIF Access Control Policy API Service | TS29222\_CAPIF\_Access\_Control\_Policy\_API.yaml | access-control-policy | A.7 |
| CAPIF\_Logging\_API\_Invocation\_API | 8.7 | CAPIF Logging API Invocation Service | TS29222\_CAPIF\_Logging\_API\_Invocation\_API.yaml | api-invocation-logs | A.8 |
| CAPIF\_Auditing\_API | 8.8 | CAPIF Auditing API Service | TS29222\_CAPIF\_Auditing\_API.yaml | logs | A.9 |
| CAPIF\_API\_Provider\_Management\_API | 8.9 | CAPIF API Provider Management API Service | TS29222\_CAPIF\_API\_Provider\_Management\_API.yaml | api-provider-management | A.11 |
| CAPIF\_Routing\_Info\_API | 8.10 | CAPIF Routing Information API Service | TS29222\_CAPIF\_Routing\_Info\_API.yaml | capif-routing-info | A.12 |

\* \* \* \* Next changes \* \* \* \*

#### 5.4.1.1 Overview

The CAPIF events APIs, as defined in 3GPP TS 23.222 [2], allow an API invoker via CAPIF-1/1e reference points, API exposure function via CAPIF-3/3e reference points, API publishing function via CAPIF-4/4e reference points and API management function via CAPIF-5/5e reference points to subscribe to and unsubscribe from CAPIF events and to receive notifications from CCF.

NOTE: The functional elements listed above are referred to as Subscriber in the service operations described in the clauses below.

\* \* \* \* Next changes \* \* \* \*

### 5.4.2 Service Operations

\* \* \* \* Next changes \* \* \* \*

#### 5.4.2.1 Introduction

The service operations defined for the CAPIF\_Events\_API are shown in table 5.4.2.1-1.

Table 5.4.2.1-1: Operations of the CAPIF\_Events\_API

| **Service operation name** | **Description** | **Initiated by** |
| --- | --- | --- |
| Subscribe\_Event | This service operation is used by a Subscriber to subscribe to CAPIF events. | Subscriber |
| Unsubscribe\_Event | This service operation is used by a Subscriber to unsubscribe from CAPIF events. | Subscriber |
| Notify\_Event | This service operation is used by CCF to send a notification on CAPIF event(s) to a Subscriber. | CCF |
| Update\_Event\_Subscription | This service operation is used by a Subscriber to update an existing subscription to CAPIF events. | Subscriber |

\* \* \* \* Next changes \* \* \* \*

##### 5.4.2.2.2 Subscribing to CAPIF events using Subscribe\_Event service operation

To subscribe to CAPIF events reporting, the Subscriber shall send an HTTP POST request message to the CCF targeting the "CAPIF Events Subscriptions" Collection resource with the request body including the EventSubscription data structure.

For all the events included in the HTTP POST message, if the "Enhanced\_event\_report" feature is supported, the Subscriber may include within the EventSubscription data structure the event reporting requirements within the "eventReq" attribute including:

- the event notification method (periodic, one time, on event detection) within the "notifMethod" attribute;

- the maximum Number of Reports within the "maxReportNbr" attribute;

- the monitoring duration within the "monDur" attribute;

- the repetition period for periodic reporting within the "repPeriod" attribute; and/or

- the immediate reporting indication within the "immRep" attribute.

If the "Enhanced\_event\_report" feature is supported, the Subscriber may also include within the EventSubscription data structure event filters within the "eventFilters" attribute that shall include:

- if the event is "SERVICE\_API\_AVAILABLE", "SERVICE\_API\_UNAVAILABLE" or "SERVICE\_API\_UPDATE", the API IDs within the "apiIds" attribute;

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

- if the event is "ACCESS\_CONTROL\_POLICY\_UPDATE", the API Invoker IDs within the "apiInvokerIds" attribute and/or API identifications within the "apiIds" attribute; and/or

- if the event is "SERVICE\_API\_INVOCATION\_SUCCESS" or "SERVICE\_API\_INVOCATION\_FAILURE", the API invoker IDs within the "apiInvokerIds" attribute, AEF identifiers within the "aefIds" attribute and/or API IDs within the "apiIds" attribute.

Upon receiving the above described HTTP POST message, the CCF shall:

1. verify the identity of the Subscriber and check if the Subscriber is authorized to subscribe to the CAPIF events mentioned in the HTTP POST request message;

2. if the Subscriber is authorized to subscribe to the CAPIF events, the CCF shall:

a. create a new "Individual CAPIF Events Subscription" resource; and

b. respond with an HTTP "201 Created" status code with the response body containing a representation of the created "Individual CAPIF Events Subscription" resource within the EventSubscription data structure, and an HTTP "Location" header field containing the URI of the created resource;

and

3. if errors occur when processing the request, the CCF shall respond to the Subscriber with an appropriate error status code as defined in clause 8.3.5.

\* \* \* \* Next changes \* \* \* \*

##### 5.4.2.3.2 Unsubscribing from CAPIF events using Unsubscribe\_Event service operation

To unsubscribe from CAPIF events, the Subscriber shall send an HTTP DELETE request message targeting the corresponding "Individual CAPIF Events Subscription" resource.

Upon reception of the HTTP DELETE request message, the CCF shall:

1. verify the identity of the Subscriber and check if the Subscriber is authorized to Unsubscribe from CAPIF events reporting;

2. if the Subscriber is authorized to unsubscribe from the CAPIF events, the CCF shall delete the resource and respond with an HTTP "204 No Content" status code; and

3. if errors occur when processing the request, the CCF shall respond to the Subscriber with an appropriate error status code as defined in clause 8.3.5.

\* \* \* \* Next changes \* \* \* \*

##### 5.4.2.4.1 General

This service operation is used by CCF to send a notification to a Subscriber.

\* \* \* \* Next changes \* \* \* \*

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

To notify on CAPIF events, the CCF shall send an HTTP POST request message using the Notification Destination URI received during the subscription creation/update request as defined in clauses 5.4.2.2 and 5.4.2.5, with the request body including the EventNotification data structure.

If the "Enhanced\_event\_report" feature is supported, the CCF may also include within the EventNotification data structure events related detail within the "eventDetail" attribute. The "eventDetail" attribute shall include:

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

- if the event is "SERVICE\_API\_UPDATE", the API information within the "serviceAPIDescriptions" attribute;

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

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

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

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

Upon reception of the HTTP POST request message, the Subscriber shall process the Event Notification, and upon success, the Subscriber shall respond with an HTTP "204 No Content" status code to acknowledge the reception of the notification.

If errors occur when processing the request, the Subscriber shall respond to the CCF with an appropriate error status code as defined in clause 8.3.5.

\* \* \* \* Next changes \* \* \* \*

##### 5.4.2.5.1 General

This service operation is used by a Subscriber to update an existing subscription to CAPIF events.

\* \* \* \* Next changes \* \* \* \*

##### 5.4.2.5.2 Update Subscription to CAPIF events using Update\_Event\_Subscription service operation

To update an existing subscription to CAPIF events, the Subscriber shall send an HTTP PUT/PATCH request message to the CCF targeting the corresponding "Individual CAPIF Events Subscription" resource. The body of the HTTP PUT request message shall include the EventSubscription data structure specified in clause 8.3.4.2.2. The body of the HTTP PATCH request message shall include the EventSubscriptionPatch data structure specified in clause 8.3.4.2.8.

Upon reception of the HTTP PUT or PATCH message as described above, the CCF shall:

1. verify the identity of the Subscriber and check if the Subscriber is authorized to update/modify the subscription;

2. if the Subscriber is authorized to subscribe to the CAPIF events, the CCF shall:

a. update the resource; and

b. respond to the CCF with either an HTTP "200 OK" status code with the response body containing the updated representation of the resource within the EventSubscription data structure, or an HTTP "204 No Content" status code.

and

3. if errors occur when processing the request, the CCF shall respond to the Subscriber with an appropriate error status code as defined in clause 8.3.5.

\* \* \* \* Next changes \* \* \* \*

### 8.3.2 Resources

\* \* \* \* Next changes \* \* \* \*

#### 8.3.2.1 Overview

This clause describes the structure for the Resource URIs and the resources and methods used for the service.

Figure 8.3.2.1-1 depicts the resource URIs structure for the CAPIF\_Events\_API.



Figure 8.3.2.1-1: Resource URI structure of the CAPIF\_Events\_API

Table 8.3.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 8.3.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| CAPIF Events Subscriptions | /{subscriberId}/subscriptions | POST | Create a new CAPIF Events Subscription |
| Individual CAPIF Events Subscription | /{subscriberId}/subscriptions/{subscriptionId} | PUT | Update an existing "Individual CAPIF Events Subscription" resource. |
| PATCH | Modify an existing "Individual CAPIF Events Subscription" resource. |
| DELETE | Delete an existing "Individual CAPIF Events Subscription". |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.2.2.1 Description

The "CAPIF Events Subscriptions" resource represents all the active CAPIF Events Subscriptions managed by the CCF for a Subscriber.

\* \* \* \* Next changes \* \* \* \*

##### 8.3.2.2.2 Resource Definition

Resource URI: **{apiRoot}/capif-events/<apiVersion>/{subscriberId}/subscriptions**

This resource shall support the resource URI variables defined in table 8.3.2.2.2-1.

Table 8.3.2.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 7.5. |
| subscriberId | string | Represents the identifier of the Subscriber. |

\* \* \* \* Next changes \* \* \* \*

###### 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 |
| EventSubscription | M | 1 | Create a new "Individual CAPIF Events Subscription" resource. |

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 |
| EventSubscription | M | 1 | 201 Created | Successful case. The CAPIF Events Subscription is successfully created successfully and a representation of the created "Individual CAPIF Events Subscription" resource shall be returned.The URI of the created resource shall be returned in the "Location" HTTP header |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [14] shall also apply. |

Table 8.3.2.2.3.1-4: 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}/capif-events/<apiVersion>/{subscriberId}/subscriptions/{subscriptionId} |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.2.2.4 Resource Custom Operations

There are no resource Custom Operations defined for this resource in this release of the specification.

\* \* \* \* Next changes \* \* \* \*

##### 8.3.2.3.1 Description

The "Individual CAPIF Events Subscription" resource represents a CAPIF events subscription managed by the NEF for a Subscriber.

\* \* \* \* Next changes \* \* \* \*

##### 8.3.2.3.2 Resource Definition

Resource URI: **{apiRoot}/capif-events/<apiVersion>/{subscriberId}/subscriptions/{subscriptionId}**

This resource shall support the resource URI variables defined in table 8.3.2.3.2-1.

Table 8.3.2.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 8.3.1. |
| subscriberId | string | Represents the identifier of the Subscriber. |
| subscriptionId | string | Represents the identifier of the "Individual CAPIF Events Subscription" resource. |

\* \* \* \* Next changes \* \* \* \*

###### 8.3.2.3.3.1 DELETE

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 DELETE method on this resource

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

This method shall support the request data structures specified in table 8.3.2.3.3.1-2 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 DELETE Request Body on this resource

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

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful case. The "Individual CAPIF Events Subscription" resource is successfully deleted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative CCF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection, during resource termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative CCF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| NOTE: The mandatory HTTP error status codes for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [14] shall also apply. |

Table 8.3.2.3.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative CCF. |

Table 8.3.2.3.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative CCF. |

\* \* \* \* Next changes \* \* \* \*

###### 8.3.2.3.3.2 PUT

This method shall support the request data structures specified in table 8.3.2.3.3.2-1 and the response data structures and response codes specified in table 8.3.2.3.3.2-2.

Table 8.3.2.3.3.2-1: Data structures supported by the PUTRequest Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| EventSubscription | M | 1 | Contains the updated representation of the existing "Individual CAPIF Events Subscription" resource. |

Table 8.3.2.3.3.2-2: Data structures supported by thePUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| EventSubscription | M | 1 | 200 OK | Successful case. The event subscription is successfully updated, and a representation of the updated "Individual CAPIF Events Subscription" resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The event subscription is successfully updated and no content is returned in the reponse body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative CCF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative CCF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [14] shall also apply. |

Table 8.3.2.3.3.2-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative CCF. |

Table 8.3.2.3.3.2-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative CCF. |

\* \* \* \* Next changes \* \* \* \*

###### 8.3.2.3.3.3 PATCH

This method shall support the request data structures specified in table 8.3.2.3.3.3-1 and the response data structures and response codes specified in table 8.3.2.3.3.3-2.

Table 8.3.2.3.3.3-1: Data structures supported by the PATCHRequest Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| EventSubscriptionPatch | M | 1 | Contains the parameters to request the modification of the "Individual CAPIF Events Subscription" resource. |

Table 8.3.2.3.3.3-2: Data structures supported by thePATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| EventSubscription | M | 1 | 200 OK | Successful case. The event subscription is successfully modified and a representation of the updated "Individual CAPIF Events Subscription" resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The event subscription is successfully modified and no content was returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative CCF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative CCF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [14] shall also apply. |

Table 8.3.2.3.3.3-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative CCF. |

Table 8.3.2.3.3.3-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative CCF. |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.2.3.4 Resource Custom Operations

There are no resource Custom Operations defined for this resource in this release of the specification.

\* \* \* \* Next changes \* \* \* \*

#### 8.3.3.1 General

Notifications shall comply to clause 7.6.

Table 8.3.3.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| Event notification | {notificationDestination} | POST | Notifies the Subscriber of CAPIF event(s). |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.3.2.1 Description

The Event Notification is used by the CCF to notify a Subscriber of CAPIF event(s).

\* \* \* \* Next changes \* \* \* \*

##### 8.3.3.2.2 Notification definition

###### 8.3.3.2.2.1 Target URI

The Callback URI: **{notificationDestination}** shall be used with the callback URI variables defined in table 6.4.5.2.2-1.

Table 6.4.5.2.2-1: Callback URI variables

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| notificationDestination | Uri | Represents the callback URI encoded as a string formatted as a URI. |

###### 8.3.3.2.2.2 Standard Methods

8.3.3.2.2.2.1 POST

This method shall support the URI query parameters specified in table 8.3.3.2.2.2.1-1.

Table 8.3.3.2.2.2.1-1: 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 8.3.3.2.2.2.1-2 and the response data structures and response codes specified in table 8.3.3.2.2.2.1-3.

Table 8.3.3.2.2.2.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| EventNotification | M | 1 | Contains the Event Notification. |

Table 8.3.3.2.2.2.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Event Notification is successfully received and acknowledged. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI representing the end point of an alternative notification destination towards which the notification should be sent.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI representing the end point of an alternative notification destination towards which the notification should be sent.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [14]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [14] shall also apply. |

Table 8.3.3.2.2.2.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

Table 8.3.3.2.2.2.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

\* \* \* \* Next changes \* \* \* \*

#### 8.3.4.1 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 8.3.4.1-1 specifies the data types defined specifically for the CAPIF\_Events\_API service.

Table 8.3.4.1-1: CAPIF\_Events\_API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| AccessControlPolicyListExt | Clause 8.3.4.2.6 | Represents the extension for access control policies. |  |
| CAPIFEvent | Clause 8.3.4.3.3 | Represents the CAPIF event. |  |
| CAPIFEventDetail | Clause 8.3.4.2.5 | Represents the CAPIF event related details. | Enhanced\_event\_report |
| CAPIFEventFilter | Clause 8.3.4.2.4 | Represents the CAPIF event filter. | Enhanced\_event\_report |
| EventNotification | Clause 8.3.4.2.3 | Represents a CAPIF Events Notification. |  |
| EventSubscription | Clause 8.3.4.2.2 | Represents a CAPIF Events Subscription. |  |
| EventSubscriptionPatch | Clause 8.3.4.2.8 | Represents the requested modifications to a CAPIF Events Subscription. |  |
| TopologyHiding | Clause 8.3.4.2.7 | Represents the routing rules information of a service API. |  |

Table 8.3.4.1-2 specifies data types re-used by the CAPIF\_Events\_API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the CAPIF\_Events\_API.

Table 8.3.4.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AccessControlPolicyList | Clause 8.6.4.2.2 | Represents the access control policy list for a published service API. |  |
| InvocationLog | Clause 8.7.4.2.2 | Represents logs of service API invocations. |  |
| ReportingInformation | 3GPP TS 29.523 [26] | Used to indicate the reporting requirement, only the following information are applicable for CAPIF:- immRep- notifMethod- maxReportNbr- monDur- repPeriod | Enhanced\_event\_report |
| RoutingRule | Clause 8.10.4.2.3 | Represents API routing rule. |  |
| ServiceAPIDescription | Clause 8.2.4.2.2 | Represents the description of the service API |  |
| SupportedFeatures | 3GPP TS 29.571 [19] | Used to negotiate the applicability of optional features defined in table 8.3.6-1. |  |
| Uri | 3GPP TS 29.122 [14] | Represents a URI. |  |
|  |  |  |  |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.1 Introduction

This clause defines the structures to be used in resource representations.

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.2 Type: EventSubscription

Table 8.3.4.2.2-1: Definition of type EventSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| events | array(CAPIFEvent) | M | 1..N | Contains the list of subscribed event(s). |  |
| eventFilters | array(CAPIFEventFilter) | O | 1..N | Contains the list of subscribed event filter(s).The nth entry in the "eventFilters" attribute shall correspond to the nth entry in the "events" attribute. For an event not having any event filter, an empty event filter entry without any sub-attribute shall be provided. | Enhanced\_event\_report |
| eventReq | ReportingInformation | O | 0..1 | Represents the reporting requirements of the event subscription. | Enhanced\_event\_report |
| notificationDestination | Uri | M | 1 | Contains the URI to which the notifications should be delivered to. |  |
| requestTestNotification | boolean | O | 0..1 | Set to "true" by Subscriber to request the CCF to send a test notification as defined in clause 7.6. Set to "false" to not request the CCF to send a test notification. Default value is "false" if omitted. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Contains the configuration parameters to set up notification delivery over Websocket protocol as defined in clause 7.6. | Notification\_websocket |
| supportedFeatures | SupportedFeatures | C | 0..1 | Used to negotiate the supported optional features of the API as described in clause 7.8.This attribute shall be provided in the HTTP POST request and in the response of successful resource creation. |  |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.3 Type: EventNotification

Table 8.3.4.2.3-1: Definition of type EventNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| subscriptionId | string | M | 1 | Contains the identifier of the subscription to which the notification is related. |  |
| events | CAPIFEvent | M | 1 | Contains the CAPIF events report. |  |
| eventDetail | CAPIFEventDetail | C | 0..1 | Contains the detailed information for the reported event.(NOTE) | Enhanced\_event\_report |
| NOTE: Within the CAPIFEventDetail data type, the "serviceAPIDescriptions" attribute shall be provided only if the reported event is "SERVICE\_API\_UPDATE", the "apiIds" attribute shall be provided only if the reported event is either "SERVICE\_API\_AVAILABLE" or "SERVICE\_API\_UNAVAILABLE", the "apiInvokerIds" attribute shall be provided only if the reported event is either "API\_INVOKER\_ONBOARDED", "API\_INVOKER\_OFFBOARDED" or "API\_INVOKER\_UPDATED", the "accCtrlPolList" attribute shall be provided only if the reported event is "ACCESS\_CONTROL\_POLICY\_UPDATE", the "invocationLogs" attribute shall be provided only if the reported event is "SERVICE\_API\_INVOCATION\_SUCCESS" or "SERVICE\_API\_INVOCATION\_FAILURE", the "apiTopoHide" attribute shall be provided only if the reported event is "API\_TOPOLOGY\_HIDING\_CREATED" or "API\_TOPOLOGY\_HIDING\_REVOKED". For all these events, the "eventDetail" attribute shall be present when the "events" attribute is set to one of these events. |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.4 Type: CAPIFEventFilter

Table 8.3.4.2.4-1: Definition of type CAPIFEventFilter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| apiIds | array(string) | O | 1..N | Contains the identifier(s) of the targeted API(s). |  |
| apiInvokerIds | array(string) | O | 1..N | Contains the identifier(s) of the targeted API Invoker(s). |  |
| aefIds | array(string) | O | 1..N | Contains the identifier of the targeted AEF. |  |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.5 Type: CAPIFEventDetail

Table 8.3.4.2.5-1: Definition of type CAPIFEventDetail

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| serviceAPIDescriptions | array(ServiceAPIDescription) | O | 1..N | Contains the description of the service API as published by the APF. |  |
| apiIds | array(string) | O | 1..N | Contains the identifier(s) of the API(s). |  |
| apiInvokerIds | array(string) | O | 1..N | Contains the identifier(s) of the API Invoker(s) that are onboarded/offboarded. |  |
| accCtrlPolList | AccessControlPolicyListExt | O | 0..1 | Contains the access control policy updated list. |  |
| invocationLogs | array(InvocationLog) | O | 1..N | Contains the invocation logs. |  |
| apiTopoHide | TopologyHiding | O | 0..1 | Contains the topology hiding information for a service API. |  |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.6 Type: AccessControlPolicyListExt

Table 8.3.4.2.6-1: Definition of type AccessControlPolicyListExt

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| apiId | string | M | 1 | Contains the identifier of the service API. |  |
| NOTE: This data type also contains all the properties defined for AccessControlPolicyList data type. |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.7 Type: TopologyHiding

Table 8.3.4.2.7-1: Definition of type TopologyHiding

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| apiId | string | M | 1 | Contains the identifier of the service API. |  |
| routingRules | array(RoutingRule) | M | 1..N | Contains the routing rules. |  |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.2.8 Type: EventSubscriptionPatch

Table 8.3.4.2.8-1: Definition of type EventSubscriptionPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| events | array(CAPIFEvent) | O | 1..N | Contains the subscribed events. |  |
| eventFilters | array(CAPIFEventFilter) | O | 1..N | Contains the Subscribed event filters.The nth entry in the "eventFilters" attribute shall correspond to the nth entry in the "events" attribute. For an event not having any event filter, an empty event filter entry without any sub-attribute shall be provided. |  |
| eventReq | ReportingInformation | O | 0..1 | Represents the reporting requirements of the event subscription. |  |
| notificationDestination | Uri | O | 0..1 | Contains the URI to which the notifications should be delivered. |  |
|  |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.3.2 Simple data types

The simple data types defined in table 8.3.4.3.2-1 shall be supported.

Table 8.3.4.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
|  |  |  |  |

\* \* \* \* Next changes \* \* \* \*

##### 8.3.4.3.3 Enumeration: CAPIFEvent

The enumeration CAPIFEvent represents a CAPIF event. It shall comply with the provisions defined in table 8.3.4.3.3-1.

Table 8.3.4.3.3-1: Enumeration CAPIFEvent

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| SERVICE\_API\_AVAILABLE | Events related to the availability of service APIs after the service APIs are published. |  |
| SERVICE\_API\_UNAVAILABLE | Events related to the unavailability of service APIs after the service APIs are unpublished. |  |
| SERVICE\_API\_UPDATE | Events related to changes in service API information. |  |
| API\_INVOKER\_ONBOARDED | Events related to API Invoker onboarded to CAPIF. |  |
| API\_INVOKER\_OFFBOARDED | Events related to API Invoker offboarded from CAPIF. |  |
| SERVICE\_API\_INVOCATION\_SUCCESS | Events related to the successful invocation of service APIs. |  |
| SERVICE\_API\_INVOCATION\_FAILURE | Events related to the failed invocation of service APIs. |  |
| ACCESS\_CONTROL\_POLICY\_UPDATE | Events related to the update for the access control policy related to the service APIs. |  |
| ACCESS\_CONTROL\_POLICY\_UNAVAILABLE | Events related to the unavailability of the access control policy related to the service APIs. |  |
| API\_INVOKER\_AUTHORIZATION\_REVOKED | Events related to the revocation of the authorization of API Invokers to access the service APIs. |  |
| API\_INVOKER\_UPDATED | Events related to API Invoker profile updated to CAPIF. |  |
| API\_TOPOLOGY\_HIDING\_CREATED | Events related to the creation or update of the API topology hiding information of the service API after the service APIs are published. |  |
| API\_TOPOLOGY\_HIDING\_REVOKED | Events related to the revocation of the API topology information of the service API after the service APIs are unpublished. |  |
|  |

\* \* \* \* Next changes \* \* \* \*

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

\* \* \* \* Next changes \* \* \* \*

### 8.3.6 Feature negotiation

The optional features in table 8.3.6-1 are defined for the CAPIF\_Events\_API. They shall be negotiated using the extensibility mechanism defined in clause 7.8.

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. |
| 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 changes \* \* \* \*

# A.4 CAPIF\_Events\_API

openapi: 3.0.0

info:

 title: CAPIF\_Events\_API

 description: |

 API for event subscription management.

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 All rights reserved.

 version: "1.4.0-alpha.1"

externalDocs:

 description: 3GPP TS 29.222 V19.1.0 Common API Framework for 3GPP Northbound APIs

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

servers:

 - url: '{apiRoot}/capif-events/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{subscriberId}/subscriptions:

 parameters:

 - name: subscriberId

 in: path

 description: Represents the identifier of the Subscriber.

 required: true

 schema:

 type: string

 post:

 summary: Create a new CAPIFs Event Subscription.

 operationId: CreateEventSubsc

 tags:

 - CAPIFs Events Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Created (Successful creation of subscription).

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the newly created resource, according to the structure.

 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'

 callbacks:

 notificationDestination:

 '{$request.body#/notificationDestination}':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content (successful notification).

 '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'

 /{subscriberId}/subscriptions/{subscriptionId}:

 parameters:

 - name: subscriberId

 in: path

 description: Represents the identifier of the Subscriber.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Represents the identifier of the Individual CAPIF Events Subscription.

 required: true

 schema:

 type: string

 delete:

 summary: Delete an existing Individual CAPIF Events Subscription resource.

 operationId: DeleteIndEventSubsc

 tags:

 - Individual CAPIFs Events Subscription (Document)

 responses:

 '204':

 description: >

 No Content. The Individual CAPIF Events Subscription resource is successfully 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'

 put:

 summary: Update an existing Individual CAPIF Events Subscription resource.

 operationId: UpdateIndEventSubsc

 tags:

 - Individual CAPIFs Events Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful update of the subscription).

 content:

 application/json:

 schema:

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

 '204':

 description: No Content. (Successful update of the subscription).

 '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:

 summary: Modify an existing Individual CAPIF Events Subscription resource.

 operationId: ModifyIndEventSubsc

 tags:

 - Individual CAPIFs Events Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK (Successful modification of the subscription).

 content:

 application/json:

 schema:

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

 '204':

 description: No Content (Successful modification of the subscription).

 '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'

components:

 schemas:

 EventSubscription:

 type: object

 description: Represents a CAPIF Events Subscription.

 properties:

 events:

 type: array

 items:

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

 minItems: 1

 description: Subscribed events.

 eventFilters:

 type: array

 items:

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

 minItems: 1

 description: Subscribed event filters.

 eventReq:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 notificationDestination:

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

 requestTestNotification:

 type: boolean

 description: >

 Set to true by Subscriber to request the CAPIF core function to send a

 test notification as defined in in clause 7.6. Set to false or omitted otherwise.

 websockNotifConfig:

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

 supportedFeatures:

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

 required:

 - events

 - notificationDestination

 EventNotification:

 type: object

 description: Represents a CAPIF Events Notification.

 properties:

 subscriptionId:

 type: string

 description: >

 Identifier of the subscription resource to which the notification

 is related.

 events:

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

 eventDetail:

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

 required:

 - subscriptionId

 - events

 CAPIFEventFilter:

 type: object

 description: Represents a CAPIF event filter.

 properties:

 apiIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Identifier of the service API.

 apiInvokerIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Identity of the API invoker.

 aefIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Identifier of the API exposing function.

 CAPIFEventDetail:

 type: object

 description: Represents the CAPIF event related details.

 properties:

 serviceAPIDescriptions:

 type: array

 items:

 $ref: 'TS29222\_CAPIF\_Publish\_Service\_API.yaml#/components/schemas/ServiceAPIDescription'

 minItems: 1

 description: Description of the service API as published by the APF.

 apiIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Identifier of the service API.

 apiInvokerIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Identity of the API invoker.

 accCtrlPolList:

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

 invocationLogs:

 type: array

 items:

 $ref: 'TS29222\_CAPIF\_Logging\_API\_Invocation\_API.yaml#/components/schemas/InvocationLog'

 minItems: 1

 description: Invocation logs.

 apiTopoHide:

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

 AccessControlPolicyListExt:

 description: Represents the extension for access control policies.

 allOf:

 - $ref: 'TS29222\_CAPIF\_Access\_Control\_Policy\_API.yaml#/components/schemas/AccessControlPolicyList'

 - type: object

 properties:

 apiId:

 type: string

 required:

 - apiId

 TopologyHiding:

 type: object

 description: Represents the routing rules information of a service API.

 properties:

 apiId:

 type: string

 routingRules:

 type: array

 items:

 $ref: 'TS29222\_CAPIF\_Routing\_Info\_API.yaml#/components/schemas/RoutingRule'

 minItems: 1

 required:

 - apiId

 - routingRules

 EventSubscriptionPatch:

 type: object

 description: >

 Represents the parameters to request the modification of a CAPIF Events Subscription

 resource.

 properties:

 events:

 type: array

 items:

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

 minItems: 1

 description: Subscribed events.

 eventFilters:

 type: array

 items:

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

 minItems: 1

 description: Subscribed event filters.

 eventReq:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 notificationDestination:

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

 CAPIFEvent:

 anyOf:

 - type: string

 enum:

 - SERVICE\_API\_AVAILABLE

 - SERVICE\_API\_UNAVAILABLE

 - SERVICE\_API\_UPDATE

 - API\_INVOKER\_ONBOARDED

 - API\_INVOKER\_OFFBOARDED

 - SERVICE\_API\_INVOCATION\_SUCCESS

 - SERVICE\_API\_INVOCATION\_FAILURE

 - ACCESS\_CONTROL\_POLICY\_UPDATE

 - ACCESS\_CONTROL\_POLICY\_UNAVAILABLE

 - API\_INVOKER\_AUTHORIZATION\_REVOKED

 - API\_INVOKER\_UPDATED

 - API\_TOPOLOGY\_HIDING\_CREATED

 - API\_TOPOLOGY\_HIDING\_REVOKED

 - 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: |

 Describes the CAPIF event.

 Possible values are:

 - SERVICE\_API\_AVAILABLE:

 Events related to the availability of service APIs after the service APIs are

 published.

 - SERVICE\_API\_UNAVAILABLE:

 Events related to the unavailability of service APIs after the service APIs are

 unpublished.

 - SERVICE\_API\_UPDATE: Events related to change in service API information.

 - API\_INVOKER\_ONBOARDED: Events related to API invoker onboarded to CAPIF.

 - API\_INVOKER\_OFFBOARDED: Events related to API invoker offboarded from CAPIF.

 - SERVICE\_API\_INVOCATION\_SUCCESS:

 Events related to the successful invocation of service APIs.

 - SERVICE\_API\_INVOCATION\_FAILURE: Events related to the failed invocation of service APIs.

 - ACCESS\_CONTROL\_POLICY\_UPDATE:

 Events related to the update for the access control policy related to the service APIs.

 - ACCESS\_CONTROL\_POLICY\_UNAVAILABLE:

 Events related to the unavailability of the access control policy related to

 the service APIs.

 - API\_INVOKER\_AUTHORIZATION\_REVOKED: Events related to the revocation of the authorization

 of API invokers to access the service APIs.

 - API\_INVOKER\_UPDATED: Events related to API invoker profile updated to CAPIF.

 - API\_TOPOLOGY\_HIDING\_CREATED:

 Events related to the creation or update of the API topology hiding

 information of the service APIs after the service APIs are published.

 - API\_TOPOLOGY\_HIDING\_REVOKED:

 Events related to the revocation of the API topology hiding information of

 the service APIs after the service APIs are unpublished.

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