**3GPP TSG-CT WG3 Meeting #****125 C3-225251\_r1**

**Toulouse, France, 14th - 18th, November, 2022**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.521** | **CR** | **0168** | **rev** | **-** | **Current version:** | **17.6.0** |  |
|  |
| *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:***  | Indication of API version and BsfEvent enumeration |
|  |  |
| ***Source to WG:*** | Ericsson, Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | SBIProtoc18 |  | ***Date:*** | 2022-11-01 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | When functionality related to the MBS Session binding information was added then instead of the "<apiVersion>" placeholder (as it is done in the rest of the specification in accordance with TS 29.501) "v1" is used in some parts of specification.This misalignment with other parts of the specification and TS 29.501 should be corrected.Furthermore, TS 29.501 specifies in clause 5.3.12 for the enumeration definition in the OpenAPI file that the schema:- shall contain the "anyOf" keyword listing as alternatives:1. the "type: string" keyword and the "enum" keyword with a list of all defined values for the enumeration; and2. the "type: string" keyword and the "description" keyword with a description stating that the string is only provided for forward compatibility with future extensions and is not used to encode contents defined in the present version of the specification. Future extensions may need to be defined in conjunction with the supported feature mechanism as specified in clause 6.6.2 of 3GPP TS 29.500 [2], and- may contain a description listing the defined values of the enumeration together with explanations of those values.However, the OpenAPI file of the Nbsf\_Management API is not aligned with the above requirement from TS 29.501 i.e. in definition of BsfEvent enumeration there is no corresponding description of the string data type provided for forward compatibility with future extensions. |
|  |  |
| ***Summary of change:*** | Clause 4.2.2.4: "v1" replaced with "<apiVersion>".Clause 5.3.1: in figure 5.3.1-1 "v1" replaced with "<apiVersion>".Clause 5.3.3.2: added that the <apiVersion> shall be set as described in clause 5.1.Clauses 5.3.9.2 and 5.3.9.3.1: "v1" replaced with "<apiVersion>" and added that the <apiVersion> shall be set as described in clause 5.1.Clause A.2:* Description of Location header field in 201 response on POST request used to create Individual PCF for an MBS Session Binding resource: "v1" replaced with "<apiVersion>".
* Definition of BsfEvent enumeration: added missing description of the string data type provided for forward compatibility with future extensions.
 |
|  |  |
| ***Consequences if not approved:*** | The OpenAPI file of the Nbsf\_Management API will remain not fully compliant with the OpenAPI requirements specified in TS 29.501 and misalignment related to the usage of "<apiVersion>" placeholder will remain within specification and with TS 29.501. |
|  |  |
| ***Clauses affected:*** | 4.2.2.4, 5.3.1, 5.3.3.2, 5.3.9.2, 5.3.9.3.1, 5.3.10.2, A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces backward compatible correction to the OpenAPI file of the Nbsf\_Management API. |
|  |  |
| ***This CR's revision history:*** |  |

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

#### 4.2.2.4 Register a new PCF for an MBS Session binding information



Figure 4.2.2.4-1: PCF for an MBS Session Binding information Registration procedure

1. The NF service consumer (e.g. PCF handling the MBS Session) shall invoke the Nbsf\_Management\_Register service operation to register a new PCF for an MBS Session binding at the BSF. The NF service consumer shall send for this purpose an HTTP POST request targeting the "PCF for an MBS Session Bindings" resource URI, i.e. "{apiRoot}/nbsf-management/<apiVersion>/pcf-mbs-bindings", with the request body containing the PcfMbsBinding data structure that shall include:

- the identifier of the MBS Session to which the MBS Session binding is related, within the "mbsSessionId" attribute;

- the FQDN of the PCF handling the MBS Session, if available, within the "pcfFqdn" attribute; and

- the IP end points of the PCF handling the MBS Session, if available, within the "pcfIpEndPoints" attribute;

and may include:

- the identifier of the PCF instance handling the concerned MBS Session, within the "pcfId" attribute;

- the identifier of the PCF set to which the PCF instance handling the concerned MBS Session belongs, within the "pcfSetId" attribute;

- the level of binding of the PCF handling the concerned MBS Session, within the "bindLevel" attribute;

- the recovery timestamp of the NF service consumer (e.g. PCF handling the MBS Session), within the "recoveryTime" attribute; and

- the list of supported features, within the "suppFeat" attribute.

If the NF service consumer (e.g. PCF handling the MBS Session) provides the PCF instance ID within the "pcfId" attribute, and optionally the recovery timestamp within "recoveryTime" attribute, the BSF may use this information to carry out the clean-up procedures defined in clause 6.4 of 3GPP TS 23.527 [17], if necessary.

2. Upon successful processing of the received HTTP POST request, the BSF shall create a new "Individual PCF for an MBS Session Binding" resource to store the requested PCF for an MBS Session binding. The BSF shall then respond to the NF service consumer with an HTTP "201 Created" status code including an HTTP Location header field containing the URI of the created "Individual PCF for an MBS Session Binding" resource, and the response body containing a representation of the created resource within the PcfMbsBinding data structure.

If errors occur when processing the HTTP GET request, the BSF shall apply the error handling procedures specified in clause 5.7.

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

### 5.3.1 Resource Structure

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

The structure of the Resource URI of the Nbsf\_Management service is shown in figure 5.3.1-1.

 

Figure 5.3.1-1: Resource URI structure of the Nbsf\_Management API

Table 5.3.1-1 provides an overview of the resources and applicable HTTP methods.

Table 5.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| PCF for a PDU Session Bindings | /pcfBindings(NOTE) | POST | Register a new PCF for a PDU Session binding information of a given UE address in the BSF. |
| GET | Retrieve the PCF for a PDU Session binding information i.e. PCF address information of a given tuple (UE address, SUPI; GPSI, DNN, S-NSSAI). |
| Individual PCF for a PDU Session Binding  | /pcfBindings/{bindingId}(NOTE) | DELETE | Deregister an existing PCF for a PDU Session binding information from the BSF.  |
| PATCH | Update an existing PCF for a PDU Session binding information in the BSF. |
| PCF for a UE Bindings | /pcf-ue-bindings | POST | Register a new PCF for a UE binding information of a given UE identity in the BSF. |
| GET | Retrieve the PCF for a UE binding information i.e. PCF address information of a UE. |
| Individual PCF for a UE Binding | pcf-ue-bindings/{bindingId} | DELETE | Deregister an existing PCF for a UE binding information from the BSF. |
| PATCH | Update an existing PCF for a UE binding information in the BSF. |
| PCF for an MBS Session Bindings | /pcf-mbs-bindings | POST | Register a new PCF for an MBS Session Binding. |
| GET | Retrieve PCF for an MBS Session Binding information. |
| Individual PCF for an MBS Session Binding | /pcf-mbs-bindings/{bindingId} | PATCH | Modify an existing PCF for an MBS Session Binding. |
| DELETE | Deregister an existing PCF for an MBS Session Binding. |
| Binding Subscriptions | /subscriptions | POST | Create a new Individual Binding Subscription resource. |
| Individual Binding Subscription | /subscriptions/{subId} | PUT | Modify an existing Individual Binding Subscription resource. |
| DELETE | Delete an Individual Binding Subscription resource and cancel the related subscription. |
| NOTE: The path segment does not follow the related naming convention defined in 3GPP TS 29.501 [7]. The path segment is kept though as defined in the current specification for backward compatibility considerations. |

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

#### 5.3.3.2 Resource definition

Resource URI: **{apiRoot}/nbsf-management/<apiVersion>/pcfBindings/{bindingId}**

The <apiVersion> shall be set as described in clause 5.1.

This resource shall support the resource URI variables defined in table 5.3.3.2-1.

Table 5.3.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 5.1 |
| bindingId | string | Represents the individual PCF for a PDU Session Binding.To enable that the value is used as part of a URI, the string shall only contain characters allowed according to the "lower-with-hyphen" naming convention defined in 3GPP TS 29.501 [7]. |

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

#### 5.3.9.2 Resource definition

Resource URI: {apiRoot}/nbsf-management/<apiVersion>/pcf-mbs-bindings

The <apiVersion> shall be set as described in clause 5.1.

This resource shall support the resource URI variables defined in table 5.3.9.2-1.

Table 5.3.9.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See subclause 5.1 |

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

##### 5.3.9.3.1 POST

This method shall support the URI query parameters specified in table 5.3.9.3.1-1.

Table 5.3.9.3.1-1: 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 5.3.9.3.1-2 and the response data structures and response codes specified in table 5.3.9.3.1-3.

Table 5.3.9.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| PcfMbsBinding | M | 1 | Contains the parameters to request to register a new PCF for an MBS Session Binding. |

Table 5.3.9.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| PcfMbsBinding | M | 1 | 201 Created | Successful case. A new "Individual PCF for an MBS Session Binding" resource is created and the corresponding URI is returned in an HTTP Location header. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [6] shall also apply. |

Table 5.3.9.3.1-4: 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}/nbsf-management/<apiVersion>/pcf-mbs-bindings/{bindingId} |

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

#### 5.3.10.2 Resource definition

Resource URI: **{apiRoot}/nbsf-management/<apiVersion>/pcf-mbs-bindings/{bindingId}**

The <apiVersion> shall be set as described in clause 5.1.

This resource shall support the resource URI variables defined in table 5.3.10.2-1.

Table 5.3.10.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See subclause 5.1 |
| bindingId | string | Represents the identifier of the "Individual PCF for an MBS Session Binding" reosurce.To enable that the value is used as part of a URI, the string shall only contain characters allowed according to the "lower-with-hyphen" naming convention defined in 3GPP TS 29.501 [7]. |

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

# A.2 Nbsf\_Management API

openapi: 3.0.0

info:

 version: 1.3.0

 title: Nbsf\_Management

 description: |

 Binding Support Management Service API.

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externalDocs:

 description: 3GPP TS 29.521 V17.6.0; 5G System; Binding Support Management Service.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.521/'

servers:

 - url: '{apiRoot}/nbsf-management/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501.

security:

 - {}

 - oAuth2ClientCredentials:

 - nbsf-management

paths:

 /pcfBindings:

 post:

 summary: Create a new Individual PCF for a PDU Session binding information

 operationId: CreatePCFBinding

 tags:

 - PCF Bindings (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: The creation of an individual PCF for a PDU Session binding.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

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

 {apiRoot}/nbsf-management/<apiVersion>/pcfBindings/{bindingId}

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 description: >

 The existing PCF binding information stored in the BSF for the indicated combination is

 returned.

 content:

 application/problem+json:

 schema:

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

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 get:

 summary: Read PCF for a PDU Session Bindings information

 operationId: GetPCFBindings

 tags:

 - PCF Bindings (Collection)

 parameters:

 - name: ipv4Addr

 in: query

 description: The IPv4 Address of the served UE.

 required: false

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 - name: ipv6Prefix

 in: query

 description: >

 The IPv6 Address of the served UE. The NF service consumer shall append '/128' to the

 IPv6 address in the attribute value. E.g. '2001:db8:85a3::8a2e:370:7334/128'.

 required: false

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 - name: macAddr48

 in: query

 description: The MAC Address of the served UE.

 required: false

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 - name: dnn

 in: query

 description: DNN.

 required: false

 schema:

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

 - name: supi

 in: query

 description: Subscription Permanent Identifier.

 required: false

 schema:

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

 - name: gpsi

 in: query

 description: Generic Public Subscription Identifier

 required: false

 schema:

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

 - name: snssai

 in: query

 description: The identification of slice.

 required: false

 content:

 application/json:

 schema:

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

 - name: ipDomain

 in: query

 description: The IPv4 address domain identifier.

 required: false

 schema:

 type: string

 - name: supp-feat

 in: query

 description: To filter irrelevant responses related to unsupported features.

 schema:

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

 responses:

 '200':

 description: >

 The individual PCF for a PDU Session binding session binding information resource

 matching the query parameter(s) is returned.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 There is no PCF for a PDU Session binding information matching the query parameter(s).

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/406'

 '414':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/414'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /pcfBindings/{bindingId}:

 delete:

 summary: Delete an existing Individual PCF for a PDU Session Binding information

 operationId: DeleteIndPCFBinding

 tags:

 - Individual PCF Binding (Document)

 parameters:

 - name: bindingId

 in: path

 description: Represents the individual PCF for a PDU Session Binding.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 No Content. The Individual PCF for a PDU Session Binding information resource is

 deleted.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 patch:

 summary: Update an existing Individual PCF for a PDU Session Binding information

 operationId: UpdateIndPCFBinding

 tags:

 - Individual PCF for a PDU Session Binding (Document)

 parameters:

 - name: bindingId

 in: path

 description: Represents the individual PCF for a PDU Session Binding.

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to update the existing PCF for a PDU Session binding.

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK (Successful update of the PCF for a PDU Session binding).

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /subscriptions:

 post:

 operationId: CreateIndividualSubcription

 summary: Create an individual subscription for event notifications from the BSF

 tags:

 - Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Created.

 headers:

 Location:

 description: >

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

 {apiRoot}/nsmf-management/<apiVersion>/subscriptions/{subId}

 required: true

 schema:

 type: string

 content:

 application/json:

 schema:

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

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 callbacks:

 myNotification:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content. Notification was successful.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /subscriptions/{subId}:

 put:

 operationId: ReplaceIndividualSubcription

 summary: Replace an individual subscription for event notifications from the BSF

 tags:

 - IndividualSubscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 parameters:

 - name: subId

 in: path

 description: Subscription correlation ID

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Resource was successfully modified and representation is returned.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content. Resource was successfully modified.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 delete:

 operationId: DeleteIndividualSubcription

 summary: Delete an individual subscription for event notifications from the BSF

 tags:

 - IndividualSubscription (Document)

 parameters:

 - name: subId

 in: path

 description: Subscription correlation ID

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was successfully deleted.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /pcf-ue-bindings:

 post:

 summary: Create a new Individual PCF for a UE binding information

 operationId: CreatePCFforUEBinding

 tags:

 - PCF for a UE Bindings (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: The creation of an individual PCF for a UE binding.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

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

 {apiRoot}/nbsf-management/<apiVersion>/pcf-ue-bindings/{bindingId}

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 get:

 summary: Read PCF for a UE Bindings information

 operationId: GetPCFForUeBindings

 tags:

 - PCF for a UE Bindings (Collection)

 parameters:

 - name: supi

 in: query

 description: Subscription Permanent Identifier.

 required: false

 schema:

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

 - name: gpsi

 in: query

 description: Generic Public Subscription Identifier

 required: false

 schema:

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

 - name: supp-feat

 in: query

 description: To filter irrelevant responses related to unsupported features.

 schema:

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

 responses:

 '200':

 description: >

 The individual PCF for a UE binding session binding information resource matching the

 query parameter(s) is returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/406'

 '414':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/414'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /pcf-ue-bindings/{bindingId}:

 delete:

 summary: Delete an existing Individual PCF for a UE Binding information

 operationId: DeleteIndPCFforUEBinding

 tags:

 - Individual PCF for a UE Binding (Document)

 parameters:

 - name: bindingId

 in: path

 description: Represents the individual PCF for a UE Binding.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 No Content. The Individual PCF for a UE binding information resource is deleted.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 patch:

 summary: Update an existing Individual PCF for a UE Binding information

 operationId: UpdateIndPCFforUEBinding

 tags:

 - Individual PCF for a UE Binding (Document)

 parameters:

 - name: bindingId

 in: path

 description: Represents the individual PCF for a UE Binding.

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to update the existing PCF for a UE binding.

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK. Successful update of the PCF for a PDU Session binding.

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /pcf-mbs-bindings:

 post:

 summary: Create a new Individual PCF for an MBS Session binding.

 operationId: CreatePCFMbsBinding

 tags:

 - PCF for an MBS Session Bindings (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. A new Individual PCF for an MBS Session Binding resource is created

 and the corresponding URI is returned in an HTTP Location header.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

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

 {apiRoot}/nbsf-management/<apiVersion>/pcf-mbs-bindings/{bindingId}

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 get:

 summary: Retrieve an existing PCF for an MBS Session binding.

 operationId: GetPCFMbsBinding

 tags:

 - PCF for an MBS Session Bindings (Collection)

 parameters:

 - name: mbs-session-id

 in: query

 description: >

 Contains the identifier of the MBS Session to which the requested MBS Session

 binding is related.

 required: true

 content:

 application/json:

 schema:

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

 - name: supp-feat

 in: query

 description: >

 Contains the list of features supported by the NF service consumer and used to

 filter irrelevant responses related to unsupported features.

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual PCF for an MBS Session Binding resource matching the provided

 query parameter(s) is returned.

 content:

 application/json:

 schema:

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

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/406'

 '414':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/414'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /pcf-mbs-bindings/{bindingId}:

 parameters:

 - name: bindingId

 in: path

 description: >

 Represents the identifier of the Individual PCF for an MBS Session Binding resource.

 required: true

 schema:

 type: string

 patch:

 summary: Request the modification of an existing Individual PCF for an MBS Session Binding resource.

 operationId: ModifyIndPCFMbsBinding

 tags:

 - Individual PCF for an MBS Session Binding (Document)

 requestBody:

 description: Parameters to request the modification of the PCF for an MBS Session Binding.

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual PCF for an MBS Session Binding resource is successfully modified and

 a representation of the updated resource is returned in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual PCF for an MBS Session Binding resource is successfully

 modified and no content is returned in the response body.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Request the deletion of an existing Individual PCF for an MBS Session Binding.

 operationId: DeleteIndPCFMbsBinding

 tags:

 - Individual PCF for an MBS Session Binding (Document)

 responses:

 '204':

 description: >

 No Content. The Individual PCF for an MBS Session Binding resource is successfully

 Deleted.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 nbsf-management: Access to the Nbsf\_Management API

 schemas:

 PcfBinding:

 description: Identifies an Individual PCF for a PDU Session binding.

 type: object

 properties:

 supi:

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

 gpsi:

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

 ipv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ipv6Prefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 addIpv6Prefixes:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 minItems: 1

 description: The additional IPv6 Address Prefixes of the served UE.

 ipDomain:

 type: string

 macAddr48:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 addMacAddrs:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 minItems: 1

 description: The additional MAC Addresses of the served UE.

 dnn:

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

 pcfFqdn:

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

 pcfIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_PolicyAuthorization service

 pcfDiamHost:

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

 pcfDiamRealm:

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

 pcfSmFqdn:

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

 pcfSmIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_SMPolicyControl service.

 snssai:

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

 suppFeat:

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

 pcfId:

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

 pcfSetId:

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

 recoveryTime:

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

 paraCom:

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

 bindLevel:

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

 ipv4FrameRouteList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4AddrMask'

 minItems: 1

 ipv6FrameRouteList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 minItems: 1

 required:

 - dnn

 - snssai

 PcfBindingPatch:

 description: Identifies an Individual PCF binding used in an HTTP Patch method.

 type: object

 properties:

 ipv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4AddrRm'

 ipDomain:

 type: string

 nullable: true

 ipv6Prefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6PrefixRm'

 addIpv6Prefixes:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 minItems: 1

 description: The additional IPv6 Address Prefixes of the served UE.

 nullable: true

 macAddr48:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48Rm'

 addMacAddrs:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 minItems: 1

 description: The additional MAC Addresses of the served UE.

 nullable: true

 pcfId:

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

 pcfFqdn:

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

 pcfIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_PolicyAuthorization service.

 pcfDiamHost:

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

 pcfDiamRealm:

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

 ParameterCombination:

 description: >

 Represents the combination used by the BSF to check whether there is an existing PCF binding

 information.

 type: object

 properties:

 supi:

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

 dnn:

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

 snssai:

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

 ExtProblemDetails:

 description: >

 Contains the FQDN or IP endpoints of the existing PCF and the cause value if there is an

 existing PCF binding information for the indicated combination.

 allOf:

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

 - $ref: '#/components/schemas/BindingResp'

 BindingResp:

 description: Contains the binding information for a PCF for a PDU Session.

 type: object

 properties:

 pcfSmFqdn:

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

 pcfSmIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_SMPolicyControl service.

 BsfSubscription:

 description: Contains the event subscription data.

 type: object

 properties:

 events:

 type: array

 items:

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

 minItems: 1

 description: Contain te subscribed events.

 notifUri:

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

 notifCorreId:

 type: string

 description: Notification Correlation ID assigned by the NF service consumer.

 supi:

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

 gpsi:

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

 snssaiDnnPairs:

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

 suppFeat:

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

 required:

 - events

 - notifUri

 - notifCorreId

 - supi

 BsfNotification:

 description: Contains the event notifications.

 type: object

 properties:

 notifCorreId:

 type: string

 description: Notification Correlation ID assigned by the NF service consumer.

 pcfId:

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

 pcfSetId:

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

 bindLevel:

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

 eventNotifs:

 type: array

 items:

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

 minItems: 1

 description: Notifications about Individual Events.

 required:

 - notifCorreId

 - eventNotifs

 BsfEventNotification:

 description: Contains an event notification.

 type: object

 properties:

 event:

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

 pcfForUeInfo:

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

 pcfForPduSessInfos:

 type: array

 items:

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

 minItems: 1

 description: The information of the PCF for a PDU session.

 matchSnssaiDnns:

 type: array

 items:

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

 minItems: 1

 description: Matching S-NSSAI and DNN pairs.

 required:

 - event

 PcfForUeInfo:

 description: Contains the information of the PCF for a UE.

 type: object

 properties:

 pcfFqdn:

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

 pcfIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_AmPolicyAuthorization service.

 pcfId:

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

 pcfSetId:

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

 bindLevel:

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

 PcfForPduSessionInfo:

 description: Contains the informaiton of the PCF for a PDU session.

 type: object

 properties:

 dnn:

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

 snssai:

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

 pcfFqdn:

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

 pcfIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_AmPolicyAuthorization service.

 ipv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4AddrRm'

 ipDomain:

 type: string

 ipv6Prefixes:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 minItems: 1

 description: The IPv6 Address Prefixes of the served UE.

 macAddrs:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 minItems: 1

 description: The MAC Addresses of the served UE.

 pcfId:

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

 pcfSetId:

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

 bindLevel:

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

 required:

 - snssai

 - dnn

 PcfForUeBinding:

 description: Identifies an Individual PCF for a UE binding.

 type: object

 properties:

 supi:

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

 gpsi:

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

 pcfForUeFqdn:

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

 pcfForUeIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_AmPolicyAuthorization service.

 pcfId:

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

 pcfSetId:

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

 bindLevel:

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

 suppFeat:

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

 required:

 - supi

 anyOf:

 - required: [pcfForUeFqdn]

 - required: [pcfForUeIpEndPoints]

 PcfForUeBindingPatch:

 description: Identifies the updates of an Individual PCF for a UE binding.

 type: object

 properties:

 pcfForUeFqdn:

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

 pcfForUeIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 description: IP end points of the PCF hosting the Npcf\_AmPolicyAuthorization service.

 pcfId:

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

 SnssaiDnnPair:

 description: Contains a S-NSSAI and DNN combination.

 type: object

 required:

 - snssai

 - dnn

 properties:

 dnn:

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

 snssai:

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

 PcfMbsBinding:

 description: Represents an Individual PCF for an MBS Session binding.

 type: object

 properties:

 mbsSessionId:

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

 pcfFqdn:

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

 pcfIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 pcfId:

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

 pcfSetId:

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

 bindLevel:

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

 recoveryTime:

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

 suppFeat:

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

 required:

 - mbsSessionId

 PcfMbsBindingPatch:

 description: >

 Represents the requested modification to an Individual PCF for an MBS Session binding.

 type: object

 properties:

 pcfFqdn:

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

 pcfIpEndPoints:

 type: array

 items:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/IpEndPoint'

 minItems: 1

 pcfId:

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

 BindingLevel:

 anyOf:

 - type: string

 enum:

 - NF\_SET

 - NF\_INSTANCE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Possible values are:

 - "NF\_SET"

 - "NF\_INSTANCE"

 BsfEvent:

 description: Represents an event to be notified by the BSF.

 anyOf:

 - type: string

 enum:

 - PCF\_PDU\_SESSION\_BINDING\_REGISTRATION

 - PCF\_PDU\_SESSION\_BINDING\_DEREGISTRATION

 - PCF\_UE\_BINDING\_REGISTRATION

 - PCF\_UE\_BINDING\_DEREGISTRATION

 - SNSSAI\_DNN\_BINDING\_REGISTRATION

 - SNSSAI\_DNN\_BINDING\_DEREGISTRATION

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 BsfSubscriptionResp:

 description: >

 It represents a response to a modification or creation request of an Individual Binding

 Subscription resource. It may contain the notification of the already met events.

 anyOf:

 - $ref: '#/components/schemas/BsfSubscription'

 - $ref: '#/components/schemas/BsfNotification'

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