**3GPP TSG-CT WG3 Meeting #128 *C3-232283r1***

**Bratislava, Slovakia, 22nd - 26th May, 2023**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.521** | **CR** | **0185** | **rev** | **1** | **Current version:** | **18.1.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | updating the S-NSSAI of the session binding information |
|  |  |
| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | eNS\_Ph3 |  | ***Date:*** | 2023-5-15 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |  Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories 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:*** | According to the approved S2-2306044 (CR 1023 to TS 23.503), the PCF may update the binding information in the BSF when the existing PDU Session is transferred from S-NSSAI to Alternative S-NSSAI.This requirement should be implemented in 29.521. |
|  |  |
| ***Summary of change:*** | "snssai" attribute is added to PcfBindingPatch data type."SliceReplacement" feature is introduced to control the new attribute. |
|  |  |
| ***Consequences if not approved:*** | Not fulfilled stage 2 requirement. |
|  |  |
| ***Clauses affected:*** | 4.2.5.2, 5.6.2.3, 5.8, A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS23.503 CR#1023 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces backward compatible new features to the OpenAPI file for Nbsf\_Management API. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

#### 4.2.5.2 Update an existing PCF for a PDU Session binding information



Figure 4.2.5.2-1: NF service consumer update an existing PCF for a PDU Session binding information

If the feature "BindingUpdate" is supported, the NF service consumer shall invoke the Nbsf\_Management\_Update service operation to update PCF for a PDU the session binding information for a UE in the BSF. The NF service consumer shall send an HTTP PATCH request with "{apiRoot}/nbsf-management/<apiVersion>/pcfBindings/{bindingId}" as Resource URI, where "{bindingId}" is the "Individual PCF for a PDU Session Binding" resource identifier that is to be updated, as shown in figure 4.2.5.2-1, step 1. The "PcfBindingPatch" data structure provided in the request body shall contain the information to be updated as follows.

The "PcfBindingPatch" data structure:

- for the IP address information of the served UE:

a) shall contain the "ipv4Addr" attribute if the IPv4 address is modified, or if the "ExtendedSamePcf" feature is supported, if the IPv4 address was not previously provided, and may contain the "ipDomain" attribute if the IPv4 address domain is modified or if the "ExtendedSamePcf" feature is supported, if the IPv4 address domain was not previously provided and applies. To remove the IPv4 address the "ipv4Addr" attribute shall be set to "null" and if applicable, the "ipDomain" attribute shall be set to "null"; and/or

b) shall contain the "ipv6Prefix" attribute if the IPv6 address information is modified, or if the "ExtendedSamePcf" feature is supported, if the IPv6 address information was not previously provided. The "ipv6Prefix" attribute shall be set to "null" if the IPv6 address information is removed; and/or

c) if the "MultiUeAddr" feature is supported, shall contain:

1) the "addIpv6Prefixes" attribute containing the new complete list of additional IPv6 Address Prefixes if the additional IPv6 address information is modified, or if the "ExtendedSamePcf" feature is supported, the current list of IPv6 address prefixes if it was not previously provided; or

2) the "addIpv6Prefixes" attribute set to "null" if all additional IPv6 Address Prefixes are removed; or

- for the MAC address information of the served UE:

a) shall contain the "macAddr48" attribute if the MAC address is modified, or if the "ExtendedSamePcf" feature is supported, if the MAC address was not previously provided. The "macAddr48" attribute shall be set to "null" if the MAC address is removed; and/or

b) if the "MultiUeAddr" feature is supported, shall contain:

1) the "addMacAddrs" attribute containing the new complete list of additional MAC addresses if the additional MAC address information is modified, or if the "ExtendedSamePcf" feature is supported, the current list of MAC address(es) if it was not previously provided; or

2) the "addMacAddrs" attribute set to "null" if all additional MAC addresses are removed; or

- for the PCF instance and the associated PCF address information of the PCF holding the SM policy association, should contain if a new PCF instance is selected:

a) the PCF instance ID encoded as "pcfId" attribute;

b) if the PCF supports the Npcf\_PolicyAuthorization service:

1) the FQDN of the PCF encoded as "pcfFqdn" attribute; and/or

2) a description of IP endpoints at the PCF hosting the Npcf\_PolicyAuthorization service encoded as "pcfIpEndPoints" attribute; and/or

c) if the PCF supports the Rx interface:

1) the Diameter host id of the PCF encoded as "pcfDiamHost"; and

2) the Diameter realm of the PCF and "pcfDiamRealm" attributes; and/or

- for the S-NSSAI of the PDU session, if the S-NSSAI has been replaced:

a) shall contain the "snssai" attribute containing the alternate S-NSSAI used to replace the existing S-NSSAI if the "FFS" feature is supported.

Editor’s Note: Name of the feature for the support of S-NSSAI replacement is FFS.

If the BSF cannot successfully fulfil the received HTTP PATCH request due to the internal BSF error or due to the error in the HTTP PATCH request, the BSF shall send the HTTP error response as specified in clause 5.7.

Otherwise, upon the reception of the HTTP PATCH request with: "{apiRoot}/nbsf-management/<apiVersion>/pcfBindings/{bindingId}" as Resource URI and the "PcfBindingPatch" data structure as request body, the BSF shall update the binding information.

If the BSF successfully updated an "Individual PCF for a PDU Session Binding" resource, the BSF shall respond with "200 OK" status code with the message body containing the resource representation with the updated PCF for a PDU session binding information in the "PcfBinding" data structure, as shown in figure 4.2.5.2-1, step 2.

If errors occur when processing the HTTP PATCH request, the BSF shall send an HTTP error response as specified in clause 5.7.

If the feature "ES3XX" is supported, and the BSF determines the received HTTP PATCH request needs to be redirected, the BSF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [6].

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

#### 5.6.2.3 Type PcfBindingPatch

Table 5.6.2.3-1: Definition of type PcfBindingPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ipv4Addr | Ipv4AddrRm | O | 0..1 | The IPv4 Address of the served UE. (NOTE 2) |  |
| ipDomain | string | O | 0..1 | IPv4 address domain identifier. (NOTE 1) |  |
| ipv6Prefix | Ipv6PrefixRm | O | 0..1 | The IPv6 Address Prefix of the served UE. (NOTE 2) (NOTE 3) |  |
| addIpv6Prefixes | array(Ipv6Prefix) | O | 1..N | The additional IPv6 Address Prefixes of the served UE. (NOTE 2) (NOTE 3) | MultiUeAddr |
| macAddr48 | MacAddr48Rm | O | 0..1 | The MAC Address of the served UE. |  |
| addMacAddrs | array(MacAddr48) | O | 1..N | The additional MAC Addresses of the served UE. | MultiUeAddr |
| pcfId | NfInstanceId | O | 0..1 | PCF instance identifier |  |
| pcfFqdn | Fqdn | O | 0..1 | FQDN of the PCF hosting the Npcf\_PolicyAuthorization service. |  |
| pcfIpEndPoints | array(IpEndPoint) | O | 1..N | IP end points of the PCF hosting the Npcf\_PolicyAuthorization service. |  |
| pcfDiamHost | DiameterIdentity | O | 0..1 | The diameter host for an individual PCF. |  |
| pcfDiamRealm | DiameterIdentity | O | 0..1 | The diameter realm for an individual PCF. |  |
| snssai | Snssai | O | 0..1 | The updated S-NSSAI. | FFS |
| NOTE 1: If applicable, the consumer (e.g. PCF) shall also request to remove the ipDomain attribute if the ipv4Addr attribute is requested to be removed.NOTE 2: 5G-RG and FN-RG replaces UE for wireline access support. See 3GPP TS 23.316 [19].NOTE 3: IPv6 prefix(es) shorter than /64, according to 3GPP TS 23.501 [2], clause 5.8.2.2 and 3GPP TS 23.316 [19], clause 8.3.1, or full IPv6 address(es) with a /128 prefix, according to 3GPP TS 23.316 [19], clause 8.3.1, can be encoded as the "ipv6Prefix" and "addIpv6Prefixes" attributes. |

Editor’s Note: Name of the feature for the support of S-NSSAI replacement is FFS.

\*\*\* 3rd Change \*\*\*

## 5.8 Feature negotiation

The optional features in table 5.8-1 are defined for the Nbsf\_Management Service API. They shall be negotiated using the extensibility mechanism defined in clause 6.6 of 3GPP TS 29.500 [6].

Table 5.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | MultiUeAddr | This feature indicates the support of multiple UE addresses (IPv6 prefixes or MAC addresses) in the same binding information. |
| 2 | BindingUpdate | The consumer can use this feature for updating the session binding information. |
| 3 | SamePcf | This feature indicates the support of same PCF selection for the indicated combination.(NOTE) |
| 4 | ES3XX | Extended Support for 3xx redirections. This feature indicates the support of redirection for any service operation, according to Stateless NF procedures as specified in clauses 6.5.3.2 and 6.5.3.3 of 3GPP TS 29.500 [6] and according to HTTP redirection principles for indirect communication, as specified in clause 6.10.9 of 3GPP TS 29.500 [6].  |
| 5 | ExtendedSamePcf | This feature extends the support of same PCF selection for the indicated combination. This feature requires the support of SamePcf feature.(NOTE) |
| 6 | AddSnssaiDnnPair | This feature indicates the support of additional S-NSSAI and DNN pair(s) for which the binding event report(s) apply. |
| x | FFS | This feature indicates the support of S-NSSAI replacement. |
| NOTE: The "SamePcf" feature is applicable to the deployments where the N5 and/or Rx interface apply and the UE address is available in the PCF at the creation of the SM Policy Association. The "ExtendedSamePcf" feature is applicable for any PCF deployment, regardless of UE address availability at the creation of SM Policy association and/or N5 and/or Rx applicability. |

Editor’s Note: Name of the feature for the support of S-NSSAI replacement is FFS.

\*\*\* 4th Change \*\*\*

# A.2 Nbsf\_Management API

openapi: 3.0.0

info:

 version: 1.4.0-alpha.2

 title: Nbsf\_Management

 description: |

 Binding Support Management Service API.

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externalDocs:

 description: 3GPP TS 29.521 V18.1.0; 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>/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':

 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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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/v1/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':

 description: >

 The existing PCF binding information stored in the BSF for the MBS session is

 returned.

 content:

 application/problem+json:

 schema:

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

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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(s) matching the provided

 query parameter(s) are returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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/PcfMbsBinding'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 snssai:

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

 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'

 MbsExtProblemDetails:

 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 MBS session.

 allOf:

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

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

 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.

 MbsBindingResp:

 description: Contains the binding information for a PCF for an MBS Session.

 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 handling the MBS Session.

 anyOf:

 - required: [pcfFqdn]

 - required: [pcfIpEndPoints]

 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'

 addSnssaiDnnPairs:

 type: array

 items:

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

 minItems: 1

 description: >

 Represents the additional S-NSSAI and DNN pair(s) for which the binding event report(s)

 shall apply.

 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

 anyOf:

 - required: [pcfFqdn]

 - required: [pcfIpEndPoints]

 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: |

 Represents the binding level.

 Possible values are:

 - NF\_SET: Indicates the NF set level of binding.

 - NF\_INSTANCE: Indicates the NF instance level of binding.

 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 \*\*\*