**3GPP TSG-CT WG3 Meeting #118e C3-215455**

**E-Meeting, 11th – 15th October 2021 (Revision of C3-215148)**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **29.522** | **CR** | **0421** | **rev** | **1** | **Current version:** | **17.3.0** |  |
|  |
| *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:***  | Support Nnef\_ServiceParameter\_Notify operation |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | eEDGE\_5GC |  | ***Date:*** | 2021-09-26 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |  Rel-17 |
|  | *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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | TS 23.502 clause 5.2.6.11.6 adding new service operation Nnef\_ServiceParameter\_Notify for NEF to support Service Parameters Authorization Update notification to AF, and/or event notification of AF subscribed the outcome related to invocation of AF provisioned service parameters.Hence need to implement in this specification. |
|  |  |
| ***Summary of change:*** | Adding Nnef\_ServiceParameter\_Notify operation definition, data structure and API definition in the ServiceParameter API. |
|  |  |
| ***Consequences if not approved:*** | Misalignment with stage 2. NEF cannot support notification to AF on Service Parameter Authorization Update and/or the outcome of related to the invocation of AF provisioned service parameters. |
|  |  |
| ***Clauses affected:*** | 5.11.m(new), 5.11.2.3.m(new), 5.11.2.3.n(new), 5.11.2.4.x(new), 5.11.2.4.y(new), A.9 |
|  |  |
|  | **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 feature into the OpenAPI file applicable to ServiceParameter API. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

### 5.11.m(new) Notifications

#### 5.11.m.1 Introduction

Upon NEF notify a Service Parameter Authorization Update (e.g. to revoke an authorization) to AF, or forward a notification event related to invocation of service parameter provisioning, e.g. the notification of outcome of UE Policies Delivery to AF, the NEF shall send an HTTP POST message including the notified event to the AF. The NEF and the AF shall support the notification mechanism as described in subclause 5.2.5 of 3GPP TS 29.122 [4].

Table 5.11.m.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| AF Notifications | {notificationDestination} | POST | The notification of service parameter authorization updates and/or notification event related to the result of invocation of service parameter provisioning. |

#### 5.11.m.2 AF Notifications

##### 5.11.m.2.1 Description

The AF Notifications are used by the NEF to send the Service Parameter Authorization Update (e.g. to revoke an authorization) to the AF, and/or to send AF subscribed event notification of the outcome related to the invocation of service parameter provisioning to the AF.

##### 5.11.m.2.2 Target URI

The Callback URI **"{notificationDestination}"** shall be used with the callback URI variables defined in table 5.11.m.2.2-1.

Table 5.11.m.2.2-1: Callback URI variables

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| notificationDestination | Link | Callback reference provided by the AF during creation of the subscription within the ServiceParameterData data type as defined in Table 5.11.2.3.2-1. |

#### 5.11.m.3 Operation Definition

##### 5.11.m.3.1 Notification via HTTP POST

This method shall support the request data structures specified in table 5.11.m.3.1-1 and the response data structure with response codes specified in table 5.11.m.3.1-2.

Table 5.11.m.3.1-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| array(AfNotification) | M | 1..N  | Notifications upon AF Service Parameter Authorization Update, and/or AF subscribed event notification of the outcome related to the invocation of service parameter provisioning. |

Table 5.11.m.3.1-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| N/A |  |   | 204 No Content | The event notification is received successfully. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection, during event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative AF where the notification should be sent.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection, during event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative AF where the notification should be sent.Redirection handling is described in subclause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. |

Table 5.11.m.3.1-3: Headers supported by the 307 Response Code on this resource

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

Table 5.11.m.3.1-4: Headers supported by the 308 Response Code on this resource

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

##### 5.11.m.3.2 Notification via Websocket

If supported by both AF and NEF and successfully negotiated, the AF subscribed outcome event notification related to the invocation of service parameter provisioning may alternatively be delivered through the Websocket mechanism as defined in subclause 5.2.5.4 of 3GPP TS 29.122 [4].

Table 5.11.m.3.2-1: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative URI representing the end point of an alternative AF towards which the notification should be redirected. |

Table 5.11.m.3.2-2: Headers supported by the 308 Response Code on this resource

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

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

##### 5.11.2.3.m(new) Type: AfNotification

Table 5.11.2.3.m-1: Definition of type AfNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| reportEvent | Event | C | 0..1 | Identifes the reported event notification. May be present if the subNotifEvent attribute is included in the AF subscription transaction. (NOTE 1) |  |
| afTransId | string | M | 1 | AF transaction identifier. |  |
| authResult | AuthorizationResult | C | 0..1 | Indicates the service parameters authorization update result. (e.g. to revoke an authorization). (NOTE 1) |  |
| gpsi | Gpsi | C | 0..1 | Identifies the GPSI of the reported UE. Shall be present with the same value if the gpsi attribute is included in the AF subscription transaction. |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN. |  |
| snssai | Snssai | O | 0..1 | Identifies an S-NSSAI. |  |
| eventInfo | EventInfo | O | 0..1 | Indicates the event information. |  |
| NOTE 1: Any of "reportEvent" attribute or "authResult" attribute shall be included. |

Editor’s Note: It is FFS whether to add "exterGroupId" attribute and "anyUeInd" attribute according to TS 23.502, clause 5.2.6.11.6.

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

##### 5.11.2.3.n(new) Type: EventInfo

Table 5.11.2.3.n-1: Definition of type AfEventInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| failureCause | Failure | O | 0..1 | Identify the failure reason for an unsuccessful result. May present if the reportEvent attribute value is "UNSUCCESS\_UE\_POL\_DEL\_SP". |  |

Editor's Note: It is FFS whether and how to further extend the event information.

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

##### 5.11.2.4.x(new) Enumeration: AuthorizationResult

Table 5.11.2.4.x-1: Enumeration AuthorizationResult

The enumeration AuthorizationResult represents the NEF notify the AF about the service parameters authorization updates result, e.g. to revoke an authorization.

|  |  |
| --- | --- |
| Enumeration value | Description |
| AUTH\_REVOKED | Indicated the service parameters authorization is revoked. |

Editor's Note: It is FFS whether and how to further extend the authorization result.

\*\*\* 5th Change \*\*\*

##### 5.11.2.4.y(new) Enumeration: Failure

Table 5.11.2.4.y-1: Enumeration Failure

The enumeration FailureCause represents the failure reason for the unsuccessful result.

|  |  |
| --- | --- |
| Enumeration value | Description |
| UNSPECIFIED | Indicates the PCF received the UE sent UE policy delivery service cause #111 (Protocol error, unspecified). |
| UE\_NOT\_REACHABLE | Indicates the PCF received the notification from the AMF that the UE is not reachable. |
| UNKNOWN | Indicates unknown reasons upon no response from the UE, e.g. UPDS message type is not defined or not implemented by the UE, or not compatible with the UPDS state, in which the UE shall ignore the UPDS message. |

Editor's Note: It is FFS on how to define the failure cause.

\*\*\* 6th Change \*\*\*

# A.9 ServiceParameter API

openapi: 3.0.0

info:

 title: 3gpp-service-parameter

 version: 1.1.0-alpha.1

 description: |

 API for AF service paramter

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externalDocs:

 description: 3GPP TS 29.522 V17.2.0; 5G System; Network Exposure Function Northbound APIs.

 url: 'http://www.3gpp.org/ftp/Specs/archive/29\_series/29.522/'

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-service-parameter/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in subclause 5.2.4 of 3GPP TS 29.122.

paths:

 /{afId}/subscriptions:

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 get:

 summary: read all of the active subscriptions for the AF

 tags:

 - Service Parameter Subscriptions

 responses:

 '200':

 description: OK.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '307':

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

 '308':

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 post:

 summary: Creates a new subscription resource

 tags:

 - Service Parameter Subscriptions

 requestBody:

 description: Request to create a new subscription resource

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Created (Successful creation of subscription)

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 callbacks:

 notificationDestination:

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

 post:

 requestBody:

 description: Notifications upon AF Service Parameter Authorization Update, and/or AF subscribed event notification of the outcome related to the invocation of service parameters provisioning.

 required: true

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 responses:

 '204':

 description: Expected response to a successful callback processing without a body

 '307':

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

 '308':

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /{afId}/subscriptions/{subscriptionId}:

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 get:

 summary: read an active subscriptions for the SCS/AS and the subscription Id

 tags:

 - Individual Service Parameter Subscription

 responses:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 put:

 summary: Updates/replaces an existing subscription resource

 tags:

 - Individual Service Parameter Subscription

 requestBody:

 description: Parameters to update/replace the existing subscription

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful update of the subscription)

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 patch:

 summary: Updates/replaces an existing subscription resource

 tags:

 - Individual Service Parameter Subscription

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK. The subscription was modified successfully.

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 summary: Deletes an already existing subscription

 tags:

 - Individual Service Parameter Subscription

 responses:

 '204':

 description: No Content (Successful deletion of the existing subscription)

 '307':

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

 '308':

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

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 ServiceParameterData:

 description: Represents an individual Service Parameter subscription resource.

 type: object

 properties:

 afServiceId:

 type: string

 description: Identifies a service on behalf of which the AF is issuing the request.

 appId:

 type: string

 description: Identifies an application.

 dnn:

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

 snssai:

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

 externalGroupId:

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

 anyUeInd:

 type: boolean

 description: Identifies whether the AF request applies to any UE. This attribute shall set to "true" if applicable for any UE, otherwise, set to "false".

 gpsi:

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

 ueIpv4:

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

 ueIpv6:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 ueMac:

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

 self:

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

 paramOverPc5:

 $ref: '#/components/schemas/ParameterOverPc5'

 paramOverUu:

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

 paramForProSeDd:

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

 paramForProSeDc:

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

 paramForProSeU2N:

 $ref: '#/components/schemas/ParamForProSeU2N'

 paramForProSeUsageRep:

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

 paramForProSeServPathSel:

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

 urspInfluence:

 type: array

 items:

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

 minItems: 1

 description: Contains the service parameter used to influence the URSP.

 mtcProviderId:

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

 suppFeat:

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

 ServiceParameterDataPatch:

 description: Represents the parameters to request the modification of a service parameter subscription resource.

 type: object

 properties:

 paramOverPc5:

 $ref: '#/components/schemas/ParameterOverPc5Rm'

 paramOverUu:

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

 paramForProSeDd:

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

 paramForProSeDc:

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

 paramForProSeU2N:

 $ref: '#/components/schemas/ParamForProSeU2NRm'

 paramForProSeUsageRep:

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

 paramForProSeServPathSel:

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

 urspInfluence:

 type: array

 items:

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

 minItems: 1

 description: Contains the service parameter used to influence the URSP.

 ParameterOverPc5:

 description: Represents configuration parameters for V2X communications over PC5 reference point.

 type: string

 ParameterOverPc5Rm:

 description: Represents the same as the ParameterOverPc5 data type but with the nullable:true property.

 type: string

 nullable: true

 ParameterOverUu:

 description: Represents configuration parameters for V2X communications over Uu reference point.

 type: string

 ParameterOverUuRm:

 description: Represents the same as the ParameterOverUu data type but with the nullable:true property.

 type: string

 nullable: true

 ParamForProSeDd:

 description: Represents the service parameters for 5G ProSe direct discovery.

 type: string

 ParamForProSeDdRm:

 description: This data type is defined in the same way as the ParamForProSeDd data type, but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 ParamForProSeDc:

 description: Represents the service parameters for 5G ProSe direct communications.

 type: string

 ParamForProSeDcRm:

 description: This data type is defined in the same way as the ParamForProSeDc data type, but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 ParamForProSeU2N:

 description: Represents the service parameters for 5G ProSe UE-to-network relay.

 type: string

 ParamForProSeU2NRm:

 description: This data type is defined in the same way as the ParamForProSeU2N data type, but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 ParamForProSeUsageRep:

 description: Represents the service parameters for 5G ProSe usage reporting configuration and rules.

 type: string

 ParamForProSeUsageRepRm:

 description: This data type is defined in the same way as the ParamForProSeUsageRep data type, but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 ParamForProSeServPathSel:

 description: Represents the service parameters for 5G ProSe service path selection.

 type: string

 ParamForProSeServPathSelRm:

 description: This data type is defined in the same way as the ParamForProSeServPathSel data type, but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 UrspRuleRequest:

 description: Contains parameters that can be used to influence the URSP.

 type: object

 properties:

 trafficDesc:

 $ref: 'TS29122\_ResourceManagementOfBdt.yaml#/components/schemas/TrafficDescriptor'

 routeSelParamSets:

 type: array

 items:

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

 minItems: 1

 description: Sets of parameters that may be used to influence the Route Selection Descriptors of the URSP.

 RouteSelectionParameterSet:

 description: Contains parameters that can be used to influence the Route Selection Descriptors of the URSP.

 type: object

 properties:

 dnn:

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

 snssai:

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

 precedence:

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

 spatialValidity:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates where the route selection parameters apply. It may correspond to a geographical area, for example using a geographic zone identifier that is known to the AF and is configured by the operator to correspond to a list of Cell Ids or TAIs.

 AfNotification:

 description: Notifications upon AF Service Parameter Authorization Update e.g. to revoke the authorization, and/or AF subscribed event notification of the outcome related to the invocation of service parameter provisioning.

 type: object

 properties:

 reportEvent:

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

 afTransId:

 type: string

 description: AF transaction identifier.

 authResult:

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

 gpsi:

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

 externalGroupId:

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

 anyUeInd:

 type: boolean

 description: Identifies whether the AF request applies to any UE. This attribute shall set to "true" if applicable for any UE, otherwise, set to "false".

 dnn:

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

 snssai:

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

 eventInfo:

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

 required:

 - afTransId

 oneOf:

 - required: [gpsi]

 - required: [externalGroupId]

 - required: [anyUeInd]

 anyOf:

 - required: [reportEvent]

 - required: [authResult]

 AuthorizationResult:

 anyOf:

 - type: string

 enum:

 - AUTH\_REVOKED

 - type: string

 description: >

 This string indicates NEF notify the AF about the service parameters authorization updates result.

 description: >

 Possible values are

 - AUTH\_REVOKED: Indicated the service parameters authorization is revoked.

 EventInfo:

 description: Indicates the event information.

 type: object

 properties:

 failureCause:

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

 Failure:

 oneOf:

 - type: string

 enum:

 - UNSPECIFIED

 - UE\_NOT\_REACHABLE

 - UNKNOWN

 - type: string

 description: >

 This string represents the failure reason for the unsuccessful result. May present if the reported afSubEvent attribute is "UNSUCCESS\_UE\_POL\_DEL\_SP".

 description: >

 Possible values are

 - UNSPECIFIED: Indicates the PCF received the UE sent UE policy delivery service cause #111 (Protocol error, unspecified).

 - UE\_NOT\_REACHABLE: Indicates the PCF received the notification from the AMF that the UE is not reachable.

 - UNKNOWN: Indicates unknown reasons upon no response from the UE, e.g. UPDS message type is not defined or not implemented by the UE, or not compatible with the UPDS state, in which the UE shall ignore the UPDS message.

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