**3GPP TSG-CT3 Meeting #132e C3-240122**

**Electronic, 22 - 24 January, 2024**

**Source: Huawei**

**Title: Pseudo-CR on resolve the ENs in the NSCE\_NSOptimization API**

**Spec: 3GPP TS 29.435 V 0.1.1**

**Agenda item: 18.49**

**Document for: Agreement**

**1. Introduction**

There are several Editor's Notes in the definition of the NSCE\_NSOptimization API that need to be addressed.

**2. Reason for Change**

Address these Editor's Notes in the definition of the NSCE\_NSOptimization API, including mainly:

- The definition of retrieve Network slice optimization reports can be retrieved via GET and no need an additional definition of new service.

- The encoding of the netSlicId attribute can refer to clause 6.3.6.2.15.

- The definition of the OpenAPI file should be updated accordingly.

- The encoding of the nest attribute can refer to clause 6.16.6.2.4 and rename as sliceInfo.

- Add the definition of PATCH request.

**3. Conclusions**

N/A

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.435 V 0.1.1.

**\*\*\*\*\*\*\***

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

5.3.2.2.1 General

This service operation is used by a service consumer (e.g. VAL Server) to request the creation/update/deletion of a Network Slice Optimization Subscription at the NSCE Server.

The following procedures are supported by the "NSCE\_NSOptimization\_Subscribe" service operation:

- Network Slice Optimization Subscription Creation;

- Network Slice Optimization Subscription Update;

- Network Slice Optimization Subscription Deletion.

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

##### 5.3.2.2.3 Network Slice Optimization Subscription Update

Figure 5.3.2.2.3-1 depicts a scenario where a service consumer (e.g. VAL Server) sends a request to the NSCE Server to request the update of an existing Network Slice Optimization Subscription (as defined in clause 9.5 of 3GPP°TS°23.435°[14]).



Figure 5.3.2.2.3-1: Procedure for Network Slice Optimization Subscription Update

1. In order to update an existing network slice optimization subscription, the service consumer (e.g. VAL Server) shall send an HTTP PUT/PATCH request to the NSCE Server, targeting the URI of the corresponding "Individual Network Slice Optimization Subscriptions" resource, with the request body including either:

- the updated representation of the resource within the NetSliceOptSubsc data structure, in case the HTTP PUT method is used.

- the requested modifications to the resource within the NetSliceOptSubscPatch data structure, in case the HTTP PATCH method is used.

NOTE: An alternative service consumer (i.e. other than the one that requested the creation of the targeted resource) can initiate this request.

2a. Upon success, the NSCE Server shall update the targeted "Individual Network Slice Optimization Subscriptions" resource accordingly and respond with either:

- an HTTP "200 OK" status code with the response body containing a representation of the updated "Individual Network Slice Optimization Subscriptions" resource within the NetSliceOptSubsc data structure; or

- an HTTP "204 No Content" status code.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP PUT response body, as specified in clause 6.2.7.

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

#### 6.2.3.1 Overview

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

Figure 6.2.3.1-1 depicts the resource URIs structure for the NSCE\_NSOptimization API.



Figure 6.2.3.1-1: Resource URIs structure of the NSCE\_NSOptimization API

Table 6.2.3.1-1 provides an overview of the resources and applicable HTTP methods for the NSCE\_NSOptimization API.

Table 6.2.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| Network Slice Optimization Subscriptions | /subscriptions | POST | Request the creation of a Network Slice Optimization Subscription. |
| Individual Network Slice Optimization Subscription | /subscriptions/{subscriptionId} | GET | Retrieve an existing "Individual Network Slice Optimization Subscription". |
| PUT | Request to fully update of an existing "Individual Network Slice Optimization Subscription". |
| PATCH | Request to partially update of an existing "Individual Network Slice Optimization Subscription" resource. |
| DELETE | Request the deletion of an existing "Individual Network Slice Optimization Subscription". |

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

###### 6.4.3.3.3.3 PATCH

The HTTP PATCH method allows a service consumer to request the modification of an existing "Individual Network Slice Optimization Subscription" resource at the NSCE Server.

This method shall support the URI query parameters specified in table 6.4.3.3.3.3-1.

Table 6.4.3.3.3.3-1: URI query parameters supported by the PATCH method on this resource

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

This method shall support the request data structures specified in table 6.4.3.3.3.3-2 and the response data structures and response codes specified in table 6.4.3.3.3.3-3.

Table 6.4.3.3.3.3-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NetSliceOptSubscPatch | M | 1 | Represents the parameters to request the modification of the "Individual Network Slice Optimization Subscription" resource. |

Table 6.4.3.3.3.3-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| NetSliceOptSubsc | M | 1 | 200 OK | Successful case. The "Individual Network Slice Optimization Subscription" resource is successfully modified and a representation of the updated resource shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The "Individual Network Slice Optimization Subscription" resource is successfully updated and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative NSCE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative URI of the resource located in an alternative NSCE Server.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.4.3.3.3.3-4: Headers supported by the 307 Response Code on this resource

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

Table 6.4.3.3.3.3-5: Headers supported by the 308 Response Code on this resource

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

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

6.2.6.1 General

This clause specifies the application data model supported by the API.

Table 6.2.6.1-1 specifies the data types defined for the NSCE\_NSOptimization API.

**Table 6.2.6.1-1: NSCE\_NSOptimization API specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Section defined** | **Description** | **Applicability** |
|  |  |  |  |
| NetSliceOptNotif | 6.2.6.2.4 | Represents a Network Slice Optimization notification. |  |
| NetSliceOptSubsc | 6.2.6.2.2 | Represents a Network Slice Optimization subscription. |  |
| NetSliceOptSubsc | 6.4.6.2.3 | Represents the requested modifications to a Network Slice Optimization subscription. |  |

Table 6.2.6.1-2 specifies data types re-used by the NSCE\_NSOptimization API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the NSCE\_NSOptimization API.

**Table 6.2.6.1-2: NSCE\_NSOptimization API re-used Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| DateTime | 3GPP TS 29.122 [2] | Represents a date and a time. |  |
| DateTimeRm | 3GPP TS 29.122 [2] | Represents the same as the DateTime data type, but with the "nullable: true" property. |  |
| Dnn | 3GPP TS 29.571 [y] | Identifies a DNN. |  |
| DurationSec | 3GPP TS 29.571 [y] | Identifies a period of time in units of seconds. |  |
| NSInfoSet | 6.16.6.2.4 | Represents a Network Slice Information Set. |  |
| NetSliceId | 6.3.6.2.15 | Represents the identification information of a network slice. |  |
| Snssai | 3GPP TS 29.571 [y] | Represents an S-NSSAI. |  |
| SupportedFeatures | 3GPP TS 29.571 [y] | Used to negotiate the applicability of the optional features. |  |
| Uri | 3GPP TS 29.122 [2] | Represents a URI. |  |

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

6.2.6.2.2 Type: NetSliceOptSubsc

**Table 6.2.6.2.2-1: Definition of type NetSliceOptSubsc**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| notifUri | Uri | M | 1 | Contains the URI via which notifications shall be provided. |  |
| netSliceId | NetSliceId | O | 0..1 | Contains the identifier for the network slice.(NOTE) |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only.(NOTE) |  |
| policyId | string | O | 0..1 | Identifies the VAL server policy.(NOTE) |  |
| expTime | DateTime | O | 0..1 | Indicates the time at which the network slice optimization subscription shall expire.This attribute may only be present in Network Slice Optimization subscription creation/update responses.If this attribute is absent, this means that the Network Slice Optimization subscription shall not expire, until explicitly deleted by the service consumer (e.g. VAL Server).(NOTE) |  |
| secPolicId | string | O | 0..1 | Contains the identifier of the secondary policy for the network slice optimization in the case of a failed network slice optimization.(NOTE) |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported features among the ones defined in clause 6.2.8.This attribute shall be provided if feature negotiation shall take place. |  |
| NOTE: At least one of the attributes shall be provided. |

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

6.4.6.2.3 Type: NetSliceOptSubscPatch

**Table 6.4.6.2.3-1: Definition of type NetSliceOptSubscPatch**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| notifUri | Uri | M | 1 | Contains the URI via which notifications shall be provided. |  |
| netSliceId | NetSliceId | O | 0..1 | Contains the identifier for the network slice.(NOTE) |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only.(NOTE) |  |
| policyId | string | O | 0..1 | Identifies the VAL server policy.(NOTE) |  |
| expTime | DateTimeRm | O | 0..1 | Indicates the time at which the network slice optimization subscription shall expire.This attribute may only be present in Network Slice Optimization subscription creation/update responses.If this attribute is absent, this means that the Network Slice Optimization subscription shall not expire, until explicitly deleted by the service consumer (e.g. VAL Server).(NOTE) |  |
| secPolicId | string | O | 0..1 | Contains the identifier of the secondary policy for the network slice optimization in the case of a failed network slice optimization.(NOTE) |  |
| NOTE: At least one of the attributes shall be provided. |

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

##### 6.2.6.2.4 Type: NetSliceOptNotif

Table 6.2.6.2.4-1: Definition of type NetSliceOptNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| subscriptionId | string | M | 1 | Identifies the Network slice optimization subscribe event. |  |
| sliceInfo | NSInfoSet | M | 1 | Contains the network slice information.(NOTE) |  |
| optTime | DurationSec | O | 0..1 | Indicates time spent for slice optimization by the NSCE Server. |  |
| enforPolId | string | O | 0..1 | Indicates the policy used for slice optimization in the case of the failed network slice optimization. |  |
| NOTE: At least the "snssai" attribute within the NSInfoSet shall be provided. |

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

#####

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

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

A.5 NSCE\_NSOptimization API

openapi: 3.0.0

info:

 title: NSCE Server Network Slice Optimization Service

 version: 1.0.0-alpha.1

 description: |

 NSCE Server Network Slice Optimization Service.

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externalDocs:

 description: >

 3GPP TS 29.435 V0.1.1; Service Enabler Architecture Layer for Verticals (SEAL);

 Network Slice Capability Exposure (NSCE) Server Service(s); Stage 3.

 url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.435/

servers:

 - url: '{apiRoot}/nsce-nso/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549.

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /subscriptions:

 post:

 summary: Request the creation of a Network Slice Optimization Subscription.

 operationId: CreateNetSliceOptSubsc

 tags:

 - Network Slice Optimization Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. The Network Slice Optimization Subscription is successfully created and

 a representation of the created Individual Network Slice Optimization

 Subscription resource shall be returned.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the created Individual Network Slice Optimization

 Subscription 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:

 NetSliceOptNotif:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The Network Slice Optimization Notification is successfully

 received and acknowledged.

 '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'

 /subscriptions/{subscriptionId}:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of the Individual Network Slice Optimization

 Subscription resource.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve an existing Individual Network Slice Optimization Subscription resource.

 operationId: GetIndNetSliceOptSubsc

 tags:

 - Individual Network Slice Optimization Subscription (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual Network Slice Optimization Subscription resource shall

 be returned.

 content:

 application/json:

 schema:

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

 '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: Request the fully update of an existing Individual Network Slice Optimization Subscription resource.

 operationId: UpdateIndNetSliceOptSubsc

 tags:

 - Individual Network Slice Optimization Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Network Slice Optimization Subscription resource is

 successfully updated and a representation of the updated resource shall be returned

 in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Network Slice Optimization Subscription resource is

 successfully updated and no content is returned in the response 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'

 '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'

 patch:

 summary: Request the partially update of an existing Individual Network Slice Optimization Subscription resource.

 operationId: ModifyIndNetSliceOptSubsc

 tags:

 - Individual Network Slice Optimization Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Network Slice Optimization Subscription resource is

 successfully modified and a representation of the updated resource shall be returned

 in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Network Slice Optimization Subscription resource is

 successfully modified and no content is returned in the response 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'

 '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'

 delete:

 summary: Request the deletion of an existing Individual Network Slice Optimization Subscription resource.

 operationId: DeleteIndNetSliceOptSubsc

 tags:

 - Individual Network Slice Optimization Subscription (Document)

 responses:

 '204':

 description: >

 No Content. The Individual Network Slice Optimization Subscription resource is

 successfully deleted.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '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'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 NetSliceOptSubsc:

 type: object

 description: Represents a Network Slice Optimization subscription.

 properties:

 notifUri:

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

 netSliceId:

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

 dnn:

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

 policyId:

 type: string

 description: Identifies the VAL server policy.

 expTime:

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

 secPolicId:

 type: string

 description: Identifies the the secondary policy for the network slice optimization.

 suppFeat:

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

 required:

 - notifUri

 oneOf:

 - required: [netSliceId]

 - required: [dnn]

 - required: [policyId]

 - required: [expTime]

 - required: [secPolicId]

 NetSliceOptSubscPatch:

 type: object

 description: >

 Represents the requested modifications to a Network Slice Optimization subscription.

 properties:

 notifUri:

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

 netSliceId:

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

 dnn:

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

 policyId:

 type: string

 description: Identifies the VAL server policy.

 expTime:

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

 secPolicId:

 type: string

 description: Identifies the the secondary policy for the network slice optimization.

 required:

 - notifUri

 anyOf:

 - required: [netSliceId]

 - required: [dnn]

 - required: [policyId]

 - required: [expTime]

 - required: [secPolicId]

 NetSliceOptNotif:

 type: object

 description: Represents a Network Slice Optimization notification.

 properties:

 subscriptionId:

 type: string

 description: Identifies the Network slice optimization subscribe event.

 sliceInfo:

 $ref: 'TS29435\_NSCE\_NSInfoDelivery.yaml#/components/schemas/NSInfoSet'

 optTime:

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

 enforPolId:

 type: string

 description: Indicates the policy used for slice optimization.

 required:

 - subscriptionId

 - netSliceInfo

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