**3GPP TSG-CT3 Meeting #134C3-242xxx**

**Changsha, China, 15th – 19st April 2024 was C3-242346**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.522** | **CR** | **1252** | **rev** | **1** | **Current version:** | **18.5.0** |  |
|  |
| *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)*.* |
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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Various eNS\_Ph3 related corrections |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | eNS\_Ph3 |  | ***Date:*** | 2024-04-18 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | The following issues have been identified:* The provisions related to eNS\_Ph3 need further corrections and clarifications/rewording/alignments as they may be a bit confusing or are incorrect.
 |
|  |  |
| ***Summary of change:*** | This CR proposes to:* Address the above mentioned issues.
* Apply additional editorial corrections and alignments with the NBI TS Skeleton.
 |
|  |  |
| ***Consequences if not approved:*** | * The provisions related to the eNS\_Ph3 functionality continue to contain errors and are not defined in a consistent way across the specification.
 |
|  |  |
| ***Clauses affected:*** | 4.4.38.1, 4.4.38.2, 5.34.1, 5.34.2.1, 5.34.2.2.3.1, 5.34.2.2.3.2, 5.34.2.3.3.1, 5.34.2.3.3.2, 5.34.2.3.3.3, 5.34.2.3.3.4, 5.34.5.1, 5.34.5.2.2, 5.34.5.2.3, 5.34.7.1, 5.34.7.3, A.32 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ... |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ... |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ... |
|  |  |
| ***Other comments:*** | This CR introduces backwards compatible corrections to the OpenAPI description of the SliceParamProvision API defined in this specification. |
|  |  |
| ***This CR's revision history:*** |  |

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

#### 4.4.38.1 General

The procedures described in the clauses below are used by an AF to interact with the 5GC for Network Slice Parameters Provisioning, in order to carry out one or more of the following procedures:

- Network Slice Usage Control parameters provisioning procedures (see clause 4.15.6.3g of 3GPP TS 23.502 [2]).

In order to request the creation of a Network Slice Parameters Provisioning:

- the AF shall trigger the Nnef\_SliceParamProvision API by sending an HTTP POST request to the NEF targeting the "Slice Parameters Provisionings" collection resource, with the request body including the SlicePpData data structure that shall include:

- within the "afId" attribute, the identifier of the AF that is sending the request; and

- within the "suppFeat" attribute, the features supported by the AF, if applicable (i.e., feature negociation needs to take place);

- the NEF shall then check whether the AF is authorized to perform this operation or not;

- if the AF is authorized, the NEF shall trigger the Nudm\_ParameterProvision service API of the UDM to request the provisioning of the received Network Slice Parameters Provisioning data as specified in 3GPP TS 29.503 [17]; and

- upon reception of a successful response from the UDM as defined in 3GPP TS 29.503 [17] and successful processing of the request, the NEF shall respond to the AF with an HTTP "201 Created" status code including an HTTP "Location" header field containing the URI of the created resource, and the response body including a representation of the created "Individual Slice Parameters Provisioning" resource within the SlicePpData data structure.

In order to request the update of an existing "Individual Slice Parameters Provisioning" resource:

- the AF shall trigger the Nnef\_SliceParamProvision API by sending to the NEF either:

- an HTTP PUT request targeting the "Individual Slice Parameters Provisioning" resource with the request body including the updated representation of the resource within the SlicePpData data structure; or

- an HTTP PATCH request targeting the "Individual Slice Parameters Provisioning" resource with the request body including the requested modifications to the resource within the SlicePpDataPatch data structure;

- after authorizing the request, the NEF shall interact with the UDM via the the Nudm\_ParameterProvision service API to request the provisioning of the received updated Network Slice parameters provisioning data; and

- upon reception of a successful response from the UDM as defined in 3GPP TS 29.503 [17] and successful processing of the request, the NEF shall respond to the AF with either:

- an HTTP "200 OK" status code with the response body containing a representation of the updated "Individual Slice Parameters Provisioning" resource within the SlicePpData data structure; or

- an HTTP "204 No Content" status code.

In order to request the deletion of an existing "Individual Slice Parameters Provisioning" resource:

- the AF shall trigger the Nnef\_SliceParamProvision API by sending an HTTP DELETE request targeting the "Individual Slice Parameters Provisioning" resource to the NEF; and

- upon success, the NEF shall respond to the AF with an HTTP "204 No Content" status code.

On failure or if the NEF receives an error response from the UDM, the NEF shall take proper error handling actions, as specified in clause 5.34.7, and respond to the AF with an appropriate error status code.

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

#### 4.4.38.2 Procedures for Network Slice Usage Control Parameters Provisioning

This procedure is used by an AF to request Network Slice Usage Control parameters provisioning by reusing the procedures defined in clause 4.4.38.1 with the following differences:

- during the creation of the Network Slice Parameters Provisioning or update of the Network Slice Parameters Provisioning using HTTP PUT, the SlicePpData data structure shall include:

- within the "sliceUsgCtrlData" attribute, the Network Slice Usage Control parameters data that is to be provisioned;

and

- during the modification of the Network Slice Parameters Provisioning using HTTP PATCH, the SlicePpDataPatch data structure shall include:

- within the "sliceUsgCtrlData" attribute, the requested modifications to the Network Slice Usage Control parameters data.

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

### 5.34.1 Introduction

The Nnef\_ParameterProvision service shall use the SliceParamProvision API for:

- Network Slice Parameters provisioning.

The API URI of the SliceParamProvision API shall be:

**{apiRoot}/<apiName>/<apiVersion>**

The request URIs used in HTTP requests shall have the Resource URI structure defined in clause 5.2.4 of 3GPP TS 29.122 [4], i.e.:

**{apiRoot}/<apiName>/<apiVersion>/<apiSpecificSuffixes>**

with the following components:

- "apiRoot" is set as defined in clause 5.2.4 of 3GPP TS 29.122 [4].

- "apiName" shall be set to "3gpp-slice-pp".

- "apiVersion" shall be set to "v1" for the current version defined in the present document.

- The <apiSpecificSuffixes> shall be set as described in clause 5.2.4 of 3GPP TS 29.122 [4].

All resource URIs in the clauses below are defined relative to the above API URI.

NOTE: When 3GPP TS 29.122 [4] is referenced for the common protocol and interface aspects for API definition in the clauses under clause 5.34, the NEF takes the role of the SCEF and the service consumer (i.e., AF) takes the role of the SCS/AS.

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

#### 5.34.2.1 Overview

This clause describes the structure for the Resource URIs as shown in figure 5.34.2.1-1 and the resources and HTTP methods used for the SliceParamProvision API.



Figure 5.34.2.1-1: Resource URI structure of the SliceParamProvision API

Table 5.34.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 5.34.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI (relative path under API URI) | HTTP method or custom operation | Description(service operation) |
| Slice Parameters Provisionings | /pp | GET | Retrieve all the active Slice Parameters Provisionings managed by the NEF. |
| POST | Request the creation of a new Slice Parameters Provisioning at the NEF. |
| Individual Slice Parameters Provisioning | /pp/{ppId} | GET | Retrieve an existing "Individual Slice Parameters Provisioning" resource managed by the NEF. |
| PUT | Update an existing "Individual Slice Parameters Provisioning" resource managed by the NEF. |
| PATCH | Modify an existing "Individual Slice Parameters Provisioning" resource managed by the NEF. |
| DELETE | Delete an existing "Individual Slice Parameters Provisioning" resource managed by the NEF. |

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

###### 5.34.2.2.3.1 GET

This method enables an AF to request to retrieve all the active Slice Parameters Provisionings managed by the NEF.

This method shall support the URI query parameters specified in table 5.34.2.2.3.1-1.

Table 5.34.2.2.3.1-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 5.34.2.2.3.1-2 and the response data structures and response codes specified in table 5.34.2.2.3.1-3.

Table 5.34.2.2.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 5.34.2.2.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| array(SlicePpData) | M | 0..N | 200 OK | Successful case. All the "Individual Slice Parameters Provisioning" resource(s) managed by the NEF are returned.If there are no active "Individual Slice Parameters Provisioning" resources at the NEF, an empty array is returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the HTTP GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

Table 5.34.2.2.3.1-4: Headers supported by the 307 Response Code on this resource

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

Table 5.34.2.2.3.1-5: Headers supported by the 308 Response Code on this resource

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

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

###### 5.34.2.2.3.2 POST

This method enables an AF to request the creation of a new Slice Parameters Provisioning at the NEF.

This method shall support the URI query parameters specified in table 5.34.2.2.3.2-1.

Table 5.34.2.2.3.2-1: URI query parameters supported by the POST method on this resource

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

This method shall support the request data structures specified in table 5.34.2.2.3.2-2 and the response data structures and response codes specified in table 5.34.2.2.3.2-3.

Table 5.34.2.2.3.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SlicePpData | M | 1 | Contains the representation of the Slice Parameters Provisioning to be created at the NEF. |

Table 5.34.2.2.3.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SlicePpData | M | 1 | 201 Created | Successful case. A representation of the created "Individual Slice Parameters Provisioning" resource is returned in the response body.The URI of the created resource shall be returned in an HTTP "Location" header. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

Table 5.34.2.2.3.2-4: Headers supported by the 201 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure:{apiRoot}/3gpp-slice-pp/<apiVersion>/pp/{ppId} |

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

###### 5.34.2.3.3.1 GET

This method enables an AF to request to retrieve an existing "Individual Slice Parameters Provisioning" resource at the NEF.

This method shall support the URI query parameters specified in table 5.34.2.3.3.1-1.

Table 5.34.2.3.3.1-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 5.34.2.3.3.1-2 and the response data structures and response codes specified in table 5.34.2.3.3.1-3.

Table 5.34.2.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 5.34.2.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SlicePpData | M | 1 | 200 OK | Successful case. The requested "Individual Slice Parameters Provisioning" resource is successfully returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the HTTP GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

Table 5.34.2.3.3.1-4: Headers supported by the 307 Response Code on this resource

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

Table 5.34.2.3.3.1-5: Headers supported by the 308 Response Code on this resource

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

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

###### 5.34.2.3.3.2 PUT

This method enables an AF to request the update of an existing "Individual Slice Parameters Provisioning" resource at the NEF.

This method shall support the URI query parameters specified in table 5.34.2.3.3.2-1.

Table 5.34.2.3.3.2-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 5.34.2.3.3.2-2 and the response data structures and response codes specified in table 5.34.2.3.3.2-3.

Table 5.34.2.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SlicePpData | M | 1 | Represents the updated "Individual Slice Parameters Provisioning" resource representation. |

Table 5.34.2.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SlicePpData | M | 1 | 200 OK | Successful response. The "Individual Slice Parameters Provisioning" resource is successfully updated and a representation of the updated resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful response. The "Individual Slice Parameters Provisioning" 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 target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PUT method listed in Table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

Table 5.34.2.3.3.2-4: 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 NEF. |

Table 5.34.2.3.3.2-5: 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 NEF. |

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

###### 5.34.2.3.3.3 PATCH

This method enables an AF to request the modification of an existing "Individual Slice Parameters Provisioning" resource at the NEF.

This method shall support the URI query parameters specified in table 5.34.2.3.3.3-1.

Table 5.34.2.3.3.3-1: 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 5.34.2.3.3.3-2 and the response data structures and response codes specified in table 5.34.2.3.3.3-3.

Table 5.34.2.3.3.3-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SlicePpDataPatch | M | 1 | Represents the requested modifications to the "Individual Slice Parameters Provisioning" resource. |

Table 5.34.2.3.3.3-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SlicePpData | M | 1 | 200 OK | Successful response. The "Individual Slice Parameters Provisioning" resource is successfully modified and a representation of the updated resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful response. The "Individual Slice Parameters Provisioning" resource is successfully modified 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 target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PATCH method listed in Table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

Table 5.34.2.3.3.3-4: 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 NEF. |

Table 5.34.2.3.3.3-5: 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 NEF. |

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

###### 5.34.2.3.3.4 DELETE

This method enables an AF to request the deletion of an existing "Individual Slice Parameters Provisioning" resource at the NEF.

This method shall support the URI query parameters specified in table 5.34.2.3.3.4-1.

Table 5.34.2.3.3.4-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 5.34.2.3.3.4-2 and the response data structures and response codes specified in table 5.34.2.3.3.4-3.

Table 5.34.2.3.3.4-2: Data structures supported by the DELETE Request Body on this resource

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

Table 5.34.2.3.3.4-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful case. The "Individual Slice Parameters Provisioning" resource is successfully deleted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. |

Table 5.34.2.3.3.4-4: Headers supported by the 307 Response Code on this resource

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

Table 5.34.2.3.3.4-5: Headers supported by the 308 Response Code on this resource

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

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

#### 5.34.5.1 General

This clause specifies the application data model supported by the SliceParamProvision API. Table 5.34.5.1-1 specifies the data types defined for the SliceParamProvision API.

Table 5.34.5.1-1: SliceParamProvision API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| SlicePpData | 5.34.5.2.1 | Represents Slice Parameters Provisioning data. |  |
| SlicePpDataPatch | 5.34.5.2.2 | Represents the requested modification to existing Slice Parameters Provisioning data. |  |

Table 5.34.5.1-2 specifies data types re-used by the SliceParamProvision API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the SliceParamProvision API.

Table 5.34.5.1-2: SliceParamProvision API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| MtcProviderInformation | 3GPP TS 29.571 [8] | Represents the MTC provider information. |  |
| SliceUsageControlInfo | 3GPP TS 29.571 [8] | Represents the Network Slice Usage Control information. |  |
| SupportedFeatures | 3GPP TS 29.571 [8] | Represents the list of supported feature(s) and is used to negotiate the applicability of the optional features. |  |

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

##### 5.34.5.2.2 Type: SlicePpData

Table 5.34.5.2.2-1: Definition of type SlicePpData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| afId | string | M | 1 | Represents the identifier of the AF that is sending the request. |  |
| mtcProviderId | MtcProviderInformation | O | 0..1 | Contains the identifier of the MTC Service Provider and/or MTC Application. |  |
| sliceUsgCtrlData | map(SliceUsageControlInfo) | C | 1..N | Represents the Network Slice Usage Control information to be provisioned.The key of the map shall be the AF-dedicated S-NSSAI (that is provided within the "snssai" attribute of the corresponding map value encoded via the SliceUsageControlInfo data structure) to which the provisioned Network Slice Usage Control information is related.This attribute shall be present only when the AF requests to provision Network Slice Usage Control information. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Represents the list of supported features among the ones defined in clause 5.34.6.This attribute shall be present only when feature negotiation needs to take place. |  |

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

##### 5.34.5.2.3 Type: SlicePpDataPatch

Table 5.34.5.2.3-1: Definition of type SlicePpDataPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| sliceUsgCtrlData | map(SliceUsageControlInfo) | O | 1..N | Represents the Network Slice Usage Control information to be provisioned.The key of the map shall be the AF-dedicated S-NSSAI (that is provided within the "snssai" attribute of the corresponding map value encoded via the SliceUsageControlInfo data structure) to which the provisioned Network Slice Usage Control information is related. |  |

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

#### 5.34.7.1 General

For the SliceParamProvision API, HTTP error responses shall be supported as specified in clause 5.2.6 of 3GPP TS 29.122 [4]. Protocol errors and application errors specified in clause 5.2.6 of 3GPP TS 29.122 [4] shall be supported for the HTTP status codes specified in table 5.2.6-1 of 3GPP TS 29.122 [4].

In addition, the requirements in the following clauses are applicable for the SliceParamProvision API.

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

#### 5.34.7.3 Application Errors

The application errors defined for the SliceParamProvision API are listed in table 5.34.7.3-1.

Table 5.34.7.3-1: Application errors

|  |  |  |  |
| --- | --- | --- | --- |
| **Application Error** | **HTTP status code** | **Description** | **Applicability** |
|  |  |  |  |

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

# A.32 SliceParamProvision API

openapi: 3.0.0

info:

 title: 3gpp-slice-pp

 version: 1.0.0-alpha.3

 description: |

 API for Network Slice Parameters Provisioning.

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externalDocs:

 description: >

 3GPP TS 29.522 V18.5.0; 5G System; Network Exposure Function Northbound APIs.

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-slice-pp/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /pp:

 get:

 summary: Request to retrieve all the active Slice Parameters Provisionings at the NEF.

 operationId: GetSliceParamProvisionings

 tags:

 - Slice Parameters Provisionings (Collection)

 responses:

 '200':

 description: >

 OK. All the active Slice Parameters Provisioning resources managed by the

 NEF are returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 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: Request the creation of a new Slice Parameters Provisioning.

 tags:

 - Slice Parameters Provisionings (Collection)

 operationId: CreateSliceParamProvisioning

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. Successful creation of a new Individual Slice Parameters Provisioning

 resource.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

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

 {apiRoot}/3gpp-slice-pp/v1/pp/{ppId}

 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'

 /pp/{ppId}:

 parameters:

 - name: ppId

 in: path

 description: >

 Represents the identifier of the Individual Slice Parameters Provisioning resource.

 required: true

 schema:

 type: string

 get:

 summary: Request to retrieve an existing Individual Slice Parameters Provisioning resource.

 operationId: GetIndSliceParamProvisioning

 tags:

 - Individual Slice Parameters Provisioning (Document)

 responses:

 '200':

 description: >

 OK. The requested "Individual Slice Parameters Provisioning" resource is successfully

 returned in the response body.

 content:

 application/json:

 schema:

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

 '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 to update an existing Individual Slice Parameters Provisioning resource.

 operationId: UpdateIndSliceParamProvisioning

 tags:

 - Individual Slice Parameters Provisioning (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Slice Parameters Provisioning resource is successfully updated

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

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Slice Parameters Provisioning 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'

 '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: Request the modification of an existing Individual Slice Parameters Provisioning resource.

 operationId: ModifyIndSliceParamProvisioning

 tags:

 - Individual Slice Parameters Provisioning (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Slice Parameters Provisioning resource is successfully modified

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

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Slice Parameters Provisioning 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'

 '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: Request the deletion of an existing Individual Slice Parameters Provisioning resource.

 operationId: DeleteIndSliceParamProvisioning

 tags:

 - Individual Slice Parameters Provisioning (Document)

 responses:

 '204':

 description: >

 No Content. The Individual Slice Parameters Provisioning resource is successfully

 deleted.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 SlicePpData:

 description: Represents the Slice Parameters Provisioning data.

 type: object

 properties:

 afId:

 type: string

 mtcProviderId:

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

 sliceUsgCtrlData:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains the Network Slice Usage Control information to be provisioned.

 The key of the map shall be the AF dedicated S-NSSAI (that is provided within the snssai

 attribute of the corresponding map value encoded via the SliceUsageControlInfo data

 structure) to which the Network Slice Usage Control information is related.

 suppFeat:

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

 required:

 - afId

 SlicePpDataPatch:

 description: >

 Represents the requested modifications to an existing Slice Parameters Provisioning

 data.

 type: object

 properties:

 sliceUsgCtrlData:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains the Network Slice Usage Control information to be provisioned.

 The key of the map shall be the AF dedicated S-NSSAI (that is provided within the snssai

 attribute of the corresponding map value encoded via the SliceUsageControlInfo data

 structure) to which the Network Slice Usage Control information is related.

#

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS

#

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