3GPP TSG CT WG3 Meeting #135 C3-243575

Hyderabad India, 27th – 31st May 2024 was C3-243136

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| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.435** | **CR** | **0037** | **rev** | **1** | **Current version:** | **18.0.0** |  |
|  |
| *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:***  | Corrections of Overview and Reference |
|  |  |
| ***Source to WG:*** | China Mobile Com. Corporation |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | NSCALE |  | ***Date:*** | 2024-05-14 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | Overview and Reference need some additions and corrections.This CR also defines the NSCE\_SliceApiManagement API. |
|  |  |
| ***Summary of change:*** | Corrections and additions of Overview and Reference.  |
|  |  |
| *Consequences if not approved:* | Overview and Reference will have editorial errors and missing content.  |
|  |  |
| ***Clauses affected:*** | 2, 4, 5.2, 6.1, A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ... |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces a new OpenAPI description for the NSCE\_SliceApiManagement API. |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\* FIRST CHANGE \*\*\*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 29.122: "T8 reference point for Northbound Application Programming Interfaces (APIs)".

[3] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[4] OpenAPI: "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.

[5] 3GPP TR 21.900: "Technical Specification Group working methods".

[6] 3GPP TS 23.222: "Common API Framework for 3GPP Northbound APIs; Stage 2".

[7] 3GPP TS 29.222: "Common API Framework for 3GPP Northbound APIs; Stage 3".

[8] 3GPP TS 33.122: "Security aspects of Common API Framework (CAPIF) for 3GPP northbound APIs".

[9] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[10] IETF RFC 9113: "HTTP/2".

[11] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[12] IETF RFC 9457: "Problem Details for HTTP APIs".

[13] 3GPP TS 23.434: "Service Enabler Architecture Layer for Verticals (SEAL); Functional architecture and information flows".

[14] 3GPP TS 23.435: "Procedures for Network Slice Capability Exposure for Application Layer Enablement Service".

[15] 3GPP TS 29.549: "Service Enabler Architecture Layer for Verticals (SEAL); Application Programming Interface (API) specification".

[16] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[17] 3GPP TS 29.522: "5G System; Network Exposure Function Northbound APIs; Stage 3".

[18] 3GPP TS 29.572: "5G System; Location Management Services; Stage 3".

[19] 3GPP TS 28.541: "Management and orchestration; 5G Network Resource Model (NRM); Stage 2 and stage 3".

[20] 3GPP TS 29.531: "5G System; Network Slice Selection Services; Stage 3".

[21] 3GPP TS 33.501: "Security architecture and procedures for 5G System".

[22] 3GPP TS 28.104: "Management and orchestration; Management Data Analytics (MDA)".

[23] 3GPP TS 28.552: "Management and orchestration; 5G performance measurements".

[24] 3GPP TS 28.554: "Management and orchestration; 5G end to end Key Performance Indicators (KPI)".

[25] 3GPP TS 29.558: " Enabling Edge Applications; Application Programming Interface (API) specification; Stage 3".

[26] 3GPP TS 29.520: "5G System; Network Data Analytics Services; Stage 3".

\*\*\*\*\* NEXT CHANGE \*\*\*\*\*

# 4 Overview

The Network Slice Capability Exposure (NSCE) Server forms part of the SEAL Enabler Layer defined in 3GPP TS 23.434 [13] and aims to ensure the efficient use and deployment of network slice capability exposure capabilities to vertical applications. The NSCE Server services expose network slicing capabilities based on the 5GS management system services (e.g., MnS services) and the 5GS network services (e.g., NEF APIs, NWDAF APIs, NSACF APIs). The NCSE Server supports for this purpose, among other functionalities defined in 3GPP TS 23.435 [14], the following functionalities:

* network slice API configuration and translation management;
* network slice lifecycle management;
* network slice policy management;
* network slice optimization management;
* network slice management service discovery management;
* network slice related performance and analytics monitoring management;
* network slice information collection management;
* network slice predictive modification management;
* multiple network slice coordinated resource optimization management;
* network slice adaptation management;
* network slice related communication services management;
* network slice modification in Inter-PLMN continuity management;
* network slice diagnostics management;
* network slice fault management;
* network slice requirements verification and alignment management;
* network slice information retrieval and delivery management; and
* network slice allocation management.

Figure 4-1 shows the reference model of the NSCE Enabler Layer, with a focus on the NSCE Server:



Figure 4-1: NSCE Enabler Layer functional model

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## 5.2 NSCE\_SliceApiManagement

### 5.2.1 Service Description

The NSCE\_SliceApiManagement service exposed by the NSCE Server enables a service consumer to:

- create/delete a Slice API Configuration;

- request the update of an existing slice API configuration;

- receive Slice API Configuration notifications; and

- request slice API invocation.

### 5.2.2 Service Operations

#### 5.2.2.1 Introduction

The service operations defined for the NSCE\_SliceApiManagement service are shown in table 5.2.2.1-1.

Table 5.2.2.1-1: NSCE\_SliceApiManagement Service Operations

|  |  |  |
| --- | --- | --- |
| Service Operation Name | Description | Initiated by |
| NSCE\_SliceApiManagement\_Configure | This service operation enables a service consumer to create/delete a Slice API Configuration. | e.g., VAL Server |
| NSCE\_SliceApiManagement\_Update | This service operation enables a service consumer to request the update of an existing slice API configuration. | e.g., VAL Server |
| NSCE\_SliceApiManagement\_Notify | This service operation enables a service consumer to receive Slice API Configuration notifications. | NSCE Server |
| NSCE\_SliceApiManagement\_Invoke | This service operation enables a service consumer to request slice API invocation. | e.g., VAL Server |

#### 5.2.2.2 NSCE\_SliceApiManagement\_Configure

##### 5.2.2.2.1 General

This service operation is used by a service consumer to request the creation/deletion of a Slice API Configuration at the NSCE Server.

The following procedures are supported by the "NSCE\_SliceApiManagement\_Configure" service operation:

- Slice API Configuration Creation.

- Slice API Configuration Deletion.

##### 5.2.2.2.2 Slice API Configuration Creation

Figure 5.2.2.2.2-1 depicts a scenario where a service consumer sends a request to the NSCE Server to request the creation of a Slice API Configuration (see also clause 9.3 of 3GPP°TS°23.435°[14]).

 Figure 5.2.2.2.2-1: Procedure for Slice API Configuration Creation

1. In order to create a new Slice API Configuration, the service consumer shall send an HTTP POST request to the NSCE Server targeting the URI of the "Slice API Configurations" collection resource, with the request body including the SliceAPIConfig data structure.

2a. Upon success, the NSCE Server shall respond with an HTTP "201 Created" status code, with the response body containing the representation of the created "Individual Slice API Configuration" resource within the SliceAPIConfig data structure, and an HTTP "Location" header field containing the URI of the created resource.

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 POST response body, as specified in clause 6.1.7.

##### 5.2.2.2.3 Slice API Configuration Deletion

Figure 5.2.2.2.3-1 depicts a scenario where a service consumer sends a request to the NSCE Server to request the deletion of an existing Slice API Configuration (see also clause 9.3 of 3GPP°TS°23.435°[14]).



Figure 5.2.2.2.3-1: Procedure for Slice API Configuration Deletion

1. In order to request the deletion of an existing Slice API Configuration, the service consumer shall send an HTTP DELETE request to the NSCE Server targeting the corresponding "Individual Slice API Configuration" resource.

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 respond with 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 DELETE response body, as specified in clause 6.1.7.

#### 5.2.2.3 NSCE\_SliceApiManagement\_Update

##### 5.2.2.3.1 General

This service operation is used by a service consumer to request the update of an existing slice API configuration at the NSCE Server.

The following procedures are supported by the "NSCE\_SliceApiManagement\_Update" service operation:

- Slice API Configuration Update.

##### 5.2.2.3.2 Slice API Configuration Update

Figure 5.2.2.3.2-1 depicts a scenario where a service consumer sends a request to the NSCE Server to request the update of an existing slice API configuration (see also clause 9.3 of 3GPP°TS°23.435°[14]).



Figure 5.2.2.3.2-1: Procedure for Slice API Configuration Update

1. In order to request the update of an existing slice API configuration, the service consumer shall send an HTTP POST request to the NSCE Server targeting the URI of the corresponding resource custom operation (i.e., "Update"), with the request body including the UpdateReq data structure.

2a. Upon success, the NSCE Server shall respond with an HTTP "200 OK" status code with the response body containing the updated slice API configuration information within the UpdateResp data structure.

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 POST response body, as specified in clause 6.1.7.

#### 5.2.2.4 NSCE\_SliceApiManagement\_Notify

##### 5.2.2.4.1 General

This service operation is used by the NSCE Server to notify a previously subscribed service consumer on:

- Slice API Configuration event(s).

The following procedures are supported by the "NSCE\_SliceApiManagement\_Notify" service operation:

- Slice API Configuration Notification.

##### 5.2.2.4.2 Slice API Configuration Notification

Figure 5.2.2.4.2-1 depicts a scenario where the NSCE Server sends a request to notify a previously subscribed service consumer on Slice API Configuration event(s) (see also clause 9.3 of 3GPP°TS°23.435°[14]).



Figure 5.2.2.4.2-1: Slice API Configuration Notification

1. In order to notify a previously subscribed service consumer on Slice API Configuration event(s), the NSCE Server shall send an HTTP POST request to the service consumer with the request URI set to "{notifUri}", where the "notifUri" variable is set to the value received from the service consumer during the creation of the corresponding Slice API Configuration using the procedures defined in clause 5.2.2.2.2, and the request body including the SliceAPIConfigNotif data structure.

2a. Upon success, the service consumer shall respond to the NSCE Server with an HTTP "204 No Content" status code to acknowledge the successful reception and processing of the notification.

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 POST response body, as specified in clause 6.1.7.

#### 5.2.2.5 NSCE\_SliceApiManagement\_Invoke

##### 5.2.2.5.1 General

This service operation is used by a service consumer to request slice API invocation to the NSCE Server.

The following procedures are supported by the "NSCE\_SliceApiManagement\_Invoke" service operation:

- Slice API Invocation Request.

##### 5.2.2.5.2 Slice API Invocation Request

Figure 5.2.2.5.2-1 depicts a scenario where a service consumer sends a request to the NSCE Server to request slice API invocation (see also clause 9.3 of 3GPP°TS°23.435°[14]).



Figure 5.2.2.5.2-1: Procedure for Slice API Invocation Request

1. In order to request slice API invocation, the service consumer shall send an HTTP POST request to the NSCE Server targeting the URI of the corresponding custom operation (i.e., "Invoke"), with the request body including the InvokeReq data structure.

2a. Upon success, the NSCE Server shall respond with 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 POST response body, as specified in clause 6.1.7.

\*\*\*\*\* NEXT CHANGE \*\*\*\*\*

## 5.18 Void

\*\*\*\*\* NEXT CHANGE \*\*\*\*\*

## 6.1 NSCE\_SliceApiManagement API

### 6.1.1 Introduction

The NSCE\_SliceApiManagement service shall use the NSCE\_SliceApiManagement API.

The API URI of the NSCE\_SliceApiManagement Service API shall be:

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

The request URIs used in HTTP requests shall have the Resource URI structure defined in clause 6.5 of 3GPP TS 29.549 [15], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in clause 6.5 of 3GPP TS 29.549 [15].

- The <apiName>shall be "nsce-sam".

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 6.5 of 3GPP TS 29.549 [15].

NOTE: When 3GPP TS 29.122 [2] is referenced for the common protocol and interface aspects for API definition in the clauses under clause 6.1, the NSCE Server takes the role of the SCEF and the service consumer takes the role of the SCS/AS.

### 6.1.2 Usage of HTTP

The provisions of clause 6.3 of 3GPP TS 29.549 [15] shall apply for the NSCE\_SliceApiManagement API.

### 6.1.3 Resources

#### 6.1.3.1 Overview

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

Figure 6.1.3.1-1 depicts the resource URIs structure for the NSCE\_SliceApiManagement API.



Figure 6.1.3.1-1: Resource URIs structure of the NSCE\_SliceApiManagement API

Table 6.1.3.1-1 provides an overview of the resources and applicable HTTP methods for the NSCE\_SliceApiManagement API.

Table 6.1.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| Slice API Configurations | /configurations | POST | Request the creation of a Slice API Configuration. |
| Individual Slice API Configuration | /configurations/{configId} | GET | Retrieve an existing "Individual Slice API Configuration" resource. |
| DELETE | Request the deletion of an existing "Individual Slice API Configuration" resource. |
| Update | Request the update of an existing slice API configuration. |

#### 6.1.3.2 Resource: Slice API Configurations

##### 6.1.3.2.1 Description

This resource represents the collection of Slice API Configurations managed by the NSCE Server.

##### 6.1.3.2.2 Resource Definition

Resource URI: **{apiRoot}/nsce-sam/<apiVersion>/configurations**

This resource shall support the resource URI variables defined in table 6.1.3.2.2-1.

Table 6.1.3.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1. |

##### 6.1.3.2.3 Resource Standard Methods

###### 6.1.3.2.3.1 POST

The HTTP POST method allows a service consumer to request the creation of a Slice API Configuration at the NSCE Server.

This method shall support the URI query parameters specified in table 6.1.3.2.3.1-1.

Table 6.1.3.2.3.1-1: 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 6.1.3.2.3.1-2 and the response data structures and response codes specified in table 6.1.3.2.3.1-3.

Table 6.1.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SliceAPIConfig | M | 1 | Represents the parameters to request the creation of a Slice API Configuration. |

Table 6.1.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SliceAPIConfig | M | 1 | 201 Created | Successful case. The Slice API Configuration is successfully created and a representation of the created "Individual Slice API Configuration" resource shall be returned.An HTTP "Location" header that contains the URI of the created resource shall also be included. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.1.3.2.3.1-4: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure:{apiRoot}/nsce-sam/<apiVersion>/configurations/{configId} |

##### 6.1.3.2.4 Resource Custom Operations

There are no resource custom operations defined for this resource in this release of the specification.

#### 6.1.3.3 Resource: Individual Slice API Configuration

##### 6.1.3.3.1 Description

This resource represents a Slice API Configuration managed by the NSCE Server.

##### 6.1.3.3.2 Resource Definition

Resource URI: **{apiRoot}/nsce-sam/<apiVersion>/configurations/{configId}**

This resource shall support the resource URI variables defined in table 6.1.3.3.2-1.

Table 6.1.3.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1. |
| configId | string | Represents the identifier of the "Individual Slice API Configuration" resource. |

##### 6.1.3.3.3 Resource Standard Methods

###### 6.1.3.3.3.1 GET

The HTTP GET method allows a service consumer to retrieve an existing "Individual Slice API Configuration" resource at the NSCE Server.

This method shall support the URI query parameters specified in table 6.1.3.3.3.1-1.

Table 6.1.3.3.3.1-1: 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 6.1.3.3.3.1-2 and the response data structures and response codes specified in table 6.1.3.3.3.1-3.

Table 6.1.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.1.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| SliceAPIConfig | M | 1 | 200 OK | Successful case. The requested "Individual Slice API Configuration" resource shall be returned. |
| 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 GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.1.3.3.3.1-4: Headers supported by the 307 Response Code on this resource

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

Table 6.1.3.3.3.1-5: Headers supported by the 308 Response Code on this resource

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

###### 6.1.3.3.3.2 DELETE

The HTTP DELETE method allows a service consumer to request the deletion of an existing "Individual Slice API Configuration" resource at the NSCE Server.

This method shall support the URI query parameters specified in table 6.1.3.3.3.2-1.

Table 6.1.3.3.3.2-1: 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 6.1.3.3.3.2-2 and the response data structures and response codes specified in table 6.1.3.3.3.2-3.

Table 6.1.3.3.3.2-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.1.3.3.3.2-3: 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 API Configuration" resource is successfully deleted. |
| 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 DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.1.3.3.3.2-4: 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 NSCE Server. |

Table 6.1.3.3.3.2-5: 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 NSCE Server. |

##### 6.1.3.3.4 Resource Custom Operations

###### 6.1.3.3.4.1 Overview

Table 6.1.3.3.4.1-1 specifies the custom operations defined on this resource.

Table 6.1.3.3.4.1-1: Resource Custom Operations

|  |  |  |  |
| --- | --- | --- | --- |
| Operation name | Custom operaration URI | Mapped HTTP method | Description |
| Update | /configurations/{configId}/update | POST | Enables a service consumer to request the update of an existing slice API configuration. |

###### 6.1.3.3.4.2 Operation: Update

6.1.3.3.4.2.1 Description

This resource custom operation enables a service consumer to request the update of an existing slice API configuration at the NSCE Server.

6.1.3.3.4.2.2 Operation Definition

This operation shall support the request data structures specified in table 6.1.3.3.4.2.2-1 and the response data structure and response codes specified in table 6.1.3.3.4.2.2-2.

Table 6.1.3.3.4.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| UpdateReq | M | 1 | Contains the parameters to request the update of the slice API configuration. |

Table 6.1.3.3.4.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| UpdateResp | M | 1 | 200 OK | Successful case. The slice API configuration update request is successfully received and processed, and slice API configuration update related information shall be 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 custom operation 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 custom operation 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 POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.1.3.3.4.2.2-3: Headers supported by the 307 Response Code on this resource custom operation

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

Table 6.1.3.3.4.2.2-4: Headers supported by the 308 Response Code on this resource custom operation

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

### 6.1.4 Custom Operations without associated resources

#### 6.1.4.1 Overview

The structure of the custom operation URIs of the NSCE\_SliceApiManagement API is shown in Figure 6.1.4.1-1.



Figure 6.1.4.1-1: Custom operation URI structure of the NSCE\_SliceApiManagement API

Table 6.1.4.1-1 provides an overview of the custom operations and applicable HTTP methods defined for the NSCE\_SliceApiManagement API.

Table 6.1.4.1-1: Custom operations without associated resources

|  |  |  |  |
| --- | --- | --- | --- |
| Custom operation name | Custom operation URI | Mapped HTTP method | Description |
| Invoke | /invoke | POST | Enables a service consumer to request slice API invocation. |

The custom operations shall support the URI variables defined in table 6.1.4.1-2.

Table 6.1.4.1-2: URI variables for this custom operation

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1. |

#### 6.1.4.2 Operation: Invoke

##### 6.1.4.2.1 Description

The custom operation enables a service consumer to request slice API invocation to the NSCE Server.

##### 6.1.4.2.2 Operation Definition

This operation shall support the request data structures specified in table 6.1.4.2.2-1 and the response data structures and response codes specified in table 6.1.4.2.2-2.

Table 6.1.4.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| InvokeReq | M | 1 | Contains the parameters to request slice API invocation. |

Table 6.1.4.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Successful case. The slice API invocation request is successfully received and processed. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative target URI 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 target URI 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 POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.1.4.2.2-3: 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 located in an alternative NSCE Server. |

Table 6.1.4.2.2-4: 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 located in an alternative NSCE Server. |

### 6.1.5 Notifications

#### 6.1.5.1 General

Notifications shall comply to clause 6.1 of 3GPP TS 29.549 [15].

Table 6.1.5.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description(service operation) |
| Slice API Configuration Notification | {notifUri} | POST | Enables a NSCE Server to notify a previously subscribed service consumer on Slice API Configuration event(s). |

#### 6.1.5.2 Slice API Configuration Notification

##### 6.1.5.2.1 Description

The Slice API Configuration Notification is used by the NSCE Server to notify a previously subscribed service consumer on Slice API Configuration event(s).

##### 6.1.5.2.2 Target URI

The Callback URI **"{notifUri}"** shall be used with the callback URI variables defined in table 6.1.5.2.2-1.

Table 6.1.5.2.2-1: Callback URI variables

|  |  |
| --- | --- |
| Name | Definition |
| notifUri | Represents the callback URI encoded as a string formatted as a URI. |

##### 6.1.5.2.3 Standard Methods

6.1.5.2.3.1 POST

This method shall support the request data structures specified in table 6.1.5.2.3.1-1 and the response data structures and response codes specified in table 6.1.5.2.3.1-2.

Table 6.1.5.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| SliceAPIConfigNotif | M | 1 | Represents the Slice API Configuration Notification. |

Table 6.1.5.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The Slice API Configuration Notification is successfully received and processed. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.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 representing the end point of an alternative service consumer towards which the notification should be sent.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 POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. |

Table 6.1.5.2.3.1-3: Headers supported by the 307 Response Code on this resource

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

Table 6.1.5.2.3.1-4: Headers supported by the 308 Response Code on this resource

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

### 6.1.6 Data Model

#### 6.1.6.1 General

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

Table 6.1.6.1-1 specifies the data types defined for the NSCE\_SliceApiManagement API.

Table 6.1.6.1-1: NSCE\_SliceApiManagement API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| AppServReqs | 6.1.6.2.3 | Represents the application service requirements for a network slice. |  |
| InvokeReq | 6.1.6.2.7 | Represents a slice API invocation request. |  |
| SliceAPIConfigNotif | 6.1.6.2.8 | Represents a Slice API Configuration Notification. |  |
| SliceAPIInfo | 6.1.6.2.6 | Represents slice API information. |  |
| SliceAPIConfig | 6.1.6.2.2 | Represents a Slice API Configuration. |  |
| TriggerEvent | 6.1.6.3.3 | Represents the triggering event. |  |
| UpdateReq | 6.1.6.2.4 | Represents the parameters to request the update of a slice API configuration. |  |
| UpdateResp | 6.1.6.2.5 | Represents the response to a slice API configuration update request. |  |

Table 6.1.6.1-2 specifies data types re-used by the NSCE\_SliceApiManagement API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the NSCE\_SliceApiManagement API.

Table 6.1.6.1-2: NSCE\_SliceApiManagement API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AppReqs | Clause 6.12.6.2.3 | Represents the application QoS requirements. |  |
| NetSliceId | Clause 6.3.6.2.15 | Represents the identification information of a network slice. |  |
| ServArea | Clause 6.16.6.2.5 | Represents a network slice service area. |  |
| ServReq | Clause 6.11.6.2.4 | Represents a set of application service requirements. |  |
| SupportedFeatures | 3GPP TS 29.571 [16] | Represents the list of supported feature(s) and used to negotiate the applicability of the optional features. |  |
| TimeWindow | 3GPP TS 29.122 [2] | Represents a time window. |  |
| Uri | 3GPP TS 29.122 [2] | Represents a URI. |  |

#### 6.1.6.2 Structured data types

##### 6.1.6.2.1 Introduction

This clause defines the structures to be used in resource representations.

##### 6.1.6.2.2 Type: SliceAPIConfig

Table 6.1.6.2.2-1: Definition of type SliceAPIConfig

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| servReqs | array(AppServReqs) | M | 1..N | Contains one or several set(s) of per network slice related application service requirements. |  |
| notifUri | Uri | M | 1 | Contains the URI via which Slice API Configuration notifications shall be delivered. |  |
| timeValidity | TimeWindow | O | 0..1 | Contains the time validity of the slice API configuration. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported feature(s) among the ones defined in clause 6.1.8.This attribute shall be present only when feature negotiation needs to take place. |  |

##### 6.1.6.2.3 Type: AppServReqs

Table 6.1.6.2.3-1: Definition of type AppServReqs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| valServiceId | string | M | 1 | Represents the identifier of the VAL service to which the application service requirements are related. |  |
| netSliceId | NetSliceId | M | 1 | Contains the identifier of the network slice to which the application service requirements are related. |  |
| servKpis | AppReqs | O | 0..1 | Contains the QoS related application service requirements. |  |
| servReqs | array(ServReq) | O | 1..N | Contains the application layer Service Profile representing the network slice related application service requirements. |  |
| areaOfInterest | ServArea | O | 0..1 | Represents the service area within which the application service requirements shall apply. |  |

##### 6.1.6.2.4 Type: UpdateReq

Table 6.1.6.2.4-1: Definition of type UpdateReq

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| triggEvent | TriggerEvent | M | 1 | Contains the event triggering the need for slice API configuration update. |  |
| netSliceId | NetSliceId | O | 0..1 | Contains the identifier of the network slice for which the slice API configuration update is requested.When this attribute is absent, the slice API configuration update request applies to all the network slice(s) of the corresponding Network Slice API Configuration. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported feature(s) among the ones defined in clause 6.1.8.This attribute shall be present only when feature negotiation needs to take place. |  |

##### 6.1.6.2.5 Type: UpdateResp

Table 6.1.6.2.5-1: Definition of type UpdateResp

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| sliceAPIInfo | SliceAPIInfo | M | 1 | Contains the updated slice API information. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported feature(s) among the ones defined in clause 6.1.8.This attribute shall be present only when feature negotiation needs to take place. |  |

##### 6.1.6.2.6 Type: SliceAPIInfo

Table 6.1.6.2.6-1: Definition of type SliceAPIInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| apiInfo | string | C | 0..1 | Contains slice API information.(NOTE) |  |
| NOTE: At least one of these attributes shall be present. |

##### 6.1.6.2.7 Type: InvokeReq

Table 6.1.6.2.7-1: Definition of type InvokeReq

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| sliceApiIdInfo | string | M | 1 | Contains the identification information of the targeted slice API. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported feature(s) among the ones defined in clause 6.1.8.This attribute shall be present only when feature negotiation needs to take place. |  |

##### 6.1.6.2.8 Type: SliceAPIConfigNotif

Table 6.1.6.2.8-1: Definition of type SliceAPIConfigNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| sliceAPIInfo | SliceAPIInfo | M | 1 | Contains the configured slice API information. |  |

#### 6.1.6.3 Simple data types and enumerations

##### 6.1.6.3.1 Introduction

This clause defines simple data types and enumerations that can be referenced from data structures defined in the previous clauses.

##### 6.1.6.3.2 Simple data types

The simple data types defined in table 6.1.6.3.2-1 shall be supported.

Table 6.1.6.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
|  |  |  |  |

##### 6.1.6.3.3 Enumeration: TriggerEvent

The enumeration TriggerEvent represents the triggering event for slice API configuration update. It shall comply with the provisions defined in table 6.1.6.3.3-1.

Table 6.1.6.3.3-1: Enumeration TriggerEvent

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| UE\_MOBILITY | Indicates that the triggering event for slice API configuration update is UE mobility to a different service area. |  |
| MIGRATION | Indicates that the triggering event for slice API configuration update is application server migration to a different edge/cloud platform. |  |
| SERV\_API\_UNAVAILABILITY | Indicates that the triggering event for slice API configuration update is service API unavailability. |  |
| APP\_QOS\_REQ\_CHANGE | Indicates that the triggering event for slice API configuration update is application QoS requirements change. |  |

#### 6.1.6.4 Data types describing alternative data types or combinations of data types

There are no data types describing alternative data types or combinations of data types defined for this API in this release of the specification.

#### 6.1.6.5 Binary data

##### 6.1.6.5.1 Binary Data Types

Table 6.1.6.5.1-1: Binary Data Types

|  |  |  |
| --- | --- | --- |
| Name | Clause defined | Content type |
|  |  |  |

### 6.1.7 Error Handling

#### 6.1.7.1 General

For the NSCE\_SliceApiManagement API, error handling shall be supported as specified in clause 6.7 of 3GPP TS 29.549 [15].

In addition, the requirements in the following clauses are applicable for the NSCE\_SliceApiManagement API.

#### 6.1.7.2 Protocol Errors

No specific protocol errors for the NSCE\_SliceApiManagement API are specified.

#### 6.1.7.3 Application Errors

The application errors defined for the NSCE\_SliceApiManagement API are listed in Table 6.1.7.3-1.

Table 6.1.7.3-1: Application errors

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

### 6.1.8 Feature negotiation

The optional features listed in table 6.1.8-1 are defined for the NSCE\_SliceApiManagement API. They shall be negotiated using the extensibility mechanism defined in clause 6.8 of 3GPP TS 29.549 [15].

Table 6.1.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
|  |  |  |

### 6.1.9 Security

The provisions of clause 9 of 3GPP TS 29.549 [15] shall apply for the NSCE\_SliceApiManagement API.

\*\*\*\*\* NEXT CHANGE \*\*\*\*\*

# A.2 NSCE\_SliceApiManagement API

openapi: 3.0.0

info:

 title: NSCE\_Server Slice API Management Service

 version: 1.0.0

 description: |

 NSCE Server Slice API Management Service.

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externalDocs:

 description: >

 3GPP TS 29.435 V18.1.0; Service Enabler Architecture Layer for Verticals (SEAL);

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

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

servers:

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

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /configurations:

 post:

 summary: Request the creation of a new Slice API Configuration.

 operationId: CreateSliceAPIConfig

 tags:

 - Slice API Configurations (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. The slice API Configuration is successfully created and a representation of

 the created Individual Slice API Configuration shall be returned in the response body.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the created Individual Slice API Configuration 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:

 SliceAPIConfigNotif:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The Slice API Configuration Notification is successfully received

 and processed.

 '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'

 /configurations/{configId}:

 parameters:

 - name: configId

 in: path

 description: >

 Represents the identifier of the Individual Slice API Configuration.

 required: true

 schema:

 type: string

 get:

 summary: Request to retrieve an existing Individual Slice API Configuration.

 operationId: GetIndSliceAPIConfig

 tags:

 - Individual Slice API Configuration (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual Slice API Configuration resource shall be returned in the

 response body.

 content:

 application/json:

 schema:

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

 '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 to delete an existing Individual Slice API Configuration.

 operationId: DeleteIndSliceAPIConfig

 tags:

 - Individual Slice API Configuration (Document)

 responses:

 '204':

 description: >

 No Content. The Individual Slice API Configuration 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'

 /configurations/{configId}/update:

 parameters:

 - name: configId

 in: path

 description: >

 Represents the identifier of the Individual Slice API Configuration.

 required: true

 schema:

 type: string

 post:

 summary: Request the update of an existing slice API configuration.

 operationId: Update

 tags:

 - Slice API Configuration Update

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The slice API configuration update request is successfully received and processed,

 and slice API configuration update related information shall be returned in the response

 body.

 content:

 application/json:

 schema:

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

 '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'

 /invoke:

 post:

 summary: Request slice API invocation.

 operationId: Invoke

 tags:

 - Slice API Invocation Request

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The slice API invocation request is successfully received and processed.

 '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'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 SliceAPIConfig:

 description: >

 Represents the slice API Configuration.

 type: object

 properties:

 servReqs:

 type: array

 items:

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

 minItems: 1

 notifUri:

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

 timeValidity:

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

 suppFeat:

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

 required:

 - servReqs

 - notifUri

 AppServReqs:

 description: >

 Represents the application service requirements for a network slice.

 type: object

 properties:

 valServiceId:

 type: string

 netSliceId:

 $ref: 'TS29435\_NSCE\_PolicyManagement.yaml#/components/schemas/NetSliceId'

 servKpis:

 $ref: 'TS29435\_NSCE\_InterPLMNContinuity.yaml#/components/schemas/AppReqs'

 servReqs:

 type: array

 items:

 $ref: 'TS29435\_NSCE\_SliceCommService.yaml#/components/schemas/ServReq'

 minItems: 1

 areaOfInterest:

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

 required:

 - valServiceId

 - netSliceId

 UpdateReq:

 description: >

 Represents the parameters to request the update of a slice API configuration.

 type: object

 properties:

 triggEvent:

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

 netSliceId:

 $ref: 'TS29435\_NSCE\_PolicyManagement.yaml#/components/schemas/NetSliceId'

 suppFeat:

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

 required:

 - triggEvent

 UpdateResp:

 description: >

 Represents the response to the slice API configuration update resquest.

 type: object

 properties:

 sliceAPIInfo:

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

 suppFeat:

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

 required:

 - sliceAPIInfo

 SliceAPIInfo:

 description: >

 Represents slice API information.

 type: object

 properties:

 apiInfo:

 type: string

 anyOf:

 - required: [apiInfo]

 InvokeReq:

 description: >

 Represents a slice API invocation request.

 type: object

 properties:

 sliceApiIdInfo:

 type: string

 suppFeat:

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

 required:

 - sliceApiIdInfo

 SliceAPIConfigNotif:

 description: >

 Represents a Slice API Configuration Notification.

 type: object

 properties:

 sliceAPIInfo:

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

 required:

 - sliceAPIInfo

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS

#

 TriggerEvent:

 anyOf:

 - type: string

 enum:

 - UE\_MOBILITY

 - MIGRATION

 - SERV\_API\_UNAVAILABILITY

 - APP\_QOS\_REQ\_CHANGE

 - type: string

 description: >

 This string provides the triggering event for slice API configuration update.

 description: |

 Represents a trigger event.

 Possible values are:

 - UE\_MOBILITY: Indicates that the triggering event for slice API configuration update is

 UE mobility to a different service area.

 - MIGRATION: Indicates that the triggering event for slice API configuration update is

 application server migration to a different edge/cloud platform.

 - SERV\_API\_UNAVAILABILITY: Indicateds that the triggering event for slice API configuration

 update is service API unavailability.

 - APP\_QOS\_REQ\_CHANGE: Indicates that the triggering event for slice API configuration update

 is application QoS requirements change.

 \*\*\*\*\* END OF CHANGES \*\*\*