**3GPP TSG-CT WG3 Meeting #134 *C3-242287***

**Changsha, China, 15 - 19 April, 2024 *(Revision of C3-242xxx)***

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** | **-** | **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)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | Support of Fault diagnosis information |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | In TS 23.435, SA6 indicates that the fault diagnosis information may be provided during the subscription as follow:**Table 9.15.3.2-1: Fault diagnosis subscription**

|  |  |  |
| --- | --- | --- |
| **Information element** | **Status** | **Description** |
| VAL server ID | M | The identifier of the VAL server |
| VAL service ID | M | The identifier of the VAL service for which the request applies  |
| VAL UE ID list | O | The list of VAL UE IDs for which the request applies |
| Fault diagnosis information | O | Indicate what kind of fault is need for the subscription, e.g., time, specific problem, etc. |
| Network slice related Identifier(s) | O | Identifier(s) of the network slice to be monitored |

Henec, the NSCE\_FaultDiagnosis API defined in TS 29.435 should be updated to align with Stage 2 requirements. |
|  |  |
| ***Summary of change:*** | 1. Update the NSCE\_FaultDiagnosis API to support of fault diagnosis information provision.
2. Corrections on some editorial issues.
 |
|  |  |
| ***Consequences if not approved:*** | Not fullfill Stage 2 requirements. |
|  |  |
| ***Clauses affected:*** | 5.13.2.2.2, 6.13.4.1, 6.14.6.1, 6.14.6.2.2, 6.14.6.2.3, 6.14.6.2.7, A.13, A.15 |
|  |  |
|  | **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 NSCE\_InterPLMNContinuity API and NSCE\_FaultDiagnosis API. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 5.13.2.2.2 Inter-PLMN Application Service Continuity Request

Figure 5.13.2.2.2-1 depicts a scenario where a service consumer sends a request to the NSCE Server to request inter-PLMN application service continuity (see also clause 9.13 of 3GPP°TS°23.435°[14]).



Figure 5.13.2.2.2-1: Procedure for Inter-PLMN Application Service Continuity Request

1. In order to request inter-PLMN application service continuity, the service consumer shall send an HTTP POST request to the NSCE Server targeting the URI of the corresponding custom operation (i.e., "Request"), with the request body including the InterPlmnServContReq data structure.

2a. Upon success, the NSCE Server shall respond with an HTTP "204 No Content" status code to indicate that the inter-PLMN application service continuity request is successfully received, accepted and processed.

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 6.12.7.

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

#### 6.13.4.1 Overview

The structure of the custom operation URIs of the NSCE\_NSDiagnostics API is shown in Figure 6.13.4.1-1.



Figure 6.13.4.1-1: Custom operation URI structure of the NSCE\_NSDiagnostics API

Table 6.13.4.1-1 provides an overview of the custom operation and applicable HTTP methods defined for the NSCE\_NSDiagnostics API.

Table 6.13.4.1-1: Custom operations without associated resources

|  |  |  |  |
| --- | --- | --- | --- |
| Operation name | Custom operation URI | Mapped HTTP method | Description |
| Request | /request | POST | Enables a service consumer to request network slice diagnostics information. |

The custom operations shall support the URI variables defined in table 6.13.4.1-2.

Table 6.13.4.1-2: URI variables for this custom operation

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.13.1. |

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

6.14.6.1 General

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

Table 6.14.6.1-1 specifies the data types defined for the NSCE\_FaultDiagnosis API.

**Table 6.14.6.1-1: NSCE\_FaultDiagnosis API specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Section defined** | **Description** | **Applicability** |
| AlarmType | 6.14.6.3.3 | Represents the alarm type(s). |  |
| CorrelatedAlarm | 6.14.6.2.6 | Represents the correlated alarm information. |  |
| FaultDiagInformation | 6.14.6.2.7 | Represents the fault diagnosis information. |  |
| FaultDiagNotif | 6.14.6.2.4 | Represents a Network Slice Fault Diagnosis notification. |  |
| FaultDiagSubsc | 6.14.6.2.2 | Represents a Network Slice Fault Diagnosis subscription. |  |
| FaultDiagSubscPatch | 6.14.6.2.3 | Represents the requested modifications to a Network Slice Fault Diagnosis subscription. |  |
| FaultReportInfo | 6.14.6.2.5 | Represents the report of the fault diagnosis information. |  |
| Priority | 6.14.6.3.4 | Represents the prioritization of the fault associated with the correlated alarm. |  |

Table 6.14.6.1-2 specifies data types re-used by the NSCE\_FaultDiagnosis API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the NSCE\_FaultDiagnosis API.

**Table 6.14.6.1-2: NSCE\_FaultDiagnosis API re-used Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| NetSliceId | 6.3.6.2.15 | Represents the identification information of a network slice. |  |
| 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 with a start time and an end time. |  |
| Uri | 3GPP TS 29.122 [2] | Represents a URI. |  |

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

6.14.6.2.2 Type: FaultDiagSubsc

**Table 6.14.6.2.2-1: Definition of type FaultDiagSubsc**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| notifUri | Uri | M | 1 | Contains the URI via which notifications shall be delivered. |  |
| valServId | string | M | 1 | Contains the identifier of the VAL Service to which the fault diagnosis is related. |  |
| valUeIds | array(string) | O | 1..N | Contains the list of the identifier(s) of the VAL UE(s) to which the subscription is related. |  |
| faultDiagInfo | array(FaultDiagInformation) | O | 1..N | Contains the fault diagnosis information to which the subscription is related. |  |
| netSliceIds | array(NetSliceId) | O | 1..N | Contains the identifier(s) of the network slice(s) to be monitored. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported features among the ones defined in clause 6.14.8.This attribute shall be present only when feature negotiation needs to take place. |  |

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

6.14.6.2.3 Type: FaultDiagSubscPatch

**Table 6.14.6.2.3-1: Definition of type FaultDiagSubscPatch**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| notifUri | Uri | O | 0..1 | Contains the updated URI via which notifications shall be delivered. |  |
| faultDiagInfo | array(FaultDiagInformation) | O | 1..N | Contains the updated fault diagnosis information to which the subscription is related. |  |
| valUeIds | array(string) | O | 1..N | Contains the updated list of the identifier(s) of the VAL UE(s) to which the subscription is related. |  |
| netSliceIds | array(NetSliceId) | O | 1..N | Contains the updated identifier(s) of the network slice to be monitored. |  |

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

6.14.6.2.7 Type: FaultDiagInformation

**Table 6.14.6.2.7-1: Definition of type FaultDiagInformation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| monitorTime | TimeWindow | O | 0..1 | Contains the monitoring time window of the subscription. |  |
| alarmType | AlarmType | O | 0..1 | Contains the correlated alarm type to which the subscription is related. |  |

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

# A.13 NSCE\_InterPLMNContinuity API

openapi: 3.0.0

info:

 title: NSCE Server Inter-PLMN Service Continuity Service

 version: 1.0.0-alpha.3

 description: |

 NSCE Server Inter-PLMN Service Continuity Service.

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externalDocs:

 description: >

 3GPP TS 29.435 V18.0.0; Service Enabler Architecture Layer for Verticals (SEAL);

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

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

servers:

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

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /request:

 post:

 summary: Enables to request inter-PLMN application service continuity.

 operationId: InterPlmnServContReq

 tags:

 - Inter-PLMN Application Service Continuity Request

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The inter-PLMN application service continuity 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'

 callbacks:

 InterPlmnServContNotif:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The Inter-PLMN Service Continuity 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'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 InterPlmnServContReq:

 description: >

 Represents the parameters to request inter-PLMN application service continuity.

 type: object

 properties:

 valServId:

 type: string

 ueIds:

 type: array

 items:

 type: string

 minItems: 1

 servContReq:

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

 targetPlmnId:

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

 netSliceId:

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

 targetServArea:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 minItems: 1

 appQoSReqs:

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

 notifUri:

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

 suppFeat:

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

 required:

 - valServId

 - servContReq

 - targetPlmnId

 - netSliceId

 - notifUri

 AppReqs:

 description: >

 Represents application QoS requirements.

 type: object

 properties:

 reliability:

 format: float

 type: number

 minimum: 0

 maximum: 100

 delay:

 type: integer

 minimum: 1

 jitter:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 anyOf:

 - required: [reliability]

 - required: [delay]

 - required: [jitter]

 InterPlmnServContNotif:

 description: >

 Represents an Inter-PLMN Service Continuity Notification.

 type: object

 properties:

 valServId:

 type: string

 ueIds:

 type: array

 items:

 type: string

 minItems: 1

 servContReq:

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

 netSliceId:

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

 tgtNsceServId:

 type: string

 tgtNsceAddr:

 $ref: 'TS29558\_Eees\_EASRegistration.yaml#/components/schemas/EndPoint'

 targetServArea:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 minItems: 1

 required:

 - valServId

 - servContReq

 - netSliceId

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS

#

 ServContReq:

 anyOf:

 - type: string

 enum:

 - EXPECTED\_MIGRATION

 - PREDICTED\_MIGRATION

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents a service continuity requirement.

 Possible values are:

 - EXPECTED\_MIGRATION: Indicates that the service continuity requirement is the expected

 migration of the VAL application (or a list of VAL UE(s) of the VAL application) to a

 target area.

 - PREDICTED\_MIGRATION: Indicates that the service continuity requirement is the predicted

 migration of the VAL application (or a list of VAL UE(s) of the VAL application) to a

 target area.

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

A.15 NSCE\_FaultDiagnosis API

openapi: 3.0.0

info:

 title: NSCE Server Network Slice Fault Diagnosis Service

 version: 1.0.0-alpha.3

 description: |

 NSCE Server Network Slice Fault Diagnosis Service.

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externalDocs:

 description: >

 3GPP TS 29.435 V18.0.0; Service Enabler Architecture Layer for Verticals (SEAL);

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

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

servers:

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

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /subscriptions:

 post:

 summary: Request the creation of a Network Slice Fault Diagnosis Subscription.

 operationId: CreateFaultDiagSubsc

 tags:

 - Network Slice Fault Diagnosis Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. The Network Slice Fault Diagnosis Subscription is successfully created

 and a representation of the created Individual Network Slice Fault Diagnosis

 Subscription resource shall be returned.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the created Individual Network Slice Fault Diagnosis

 Subscription resource.

 required: true

 schema:

 type: string

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 FaultDiagNotif:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The Network Slice Fault Diagnosis Notification is successfully

 received and acknowledged.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 /subscriptions/{subscriptionId}:

 parameters:

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of the Individual Network Slice Fault Diagnosis

 Subscription resource.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve an existing Individual Network Slice Fault Diagnosis Subscription resource.

 operationId: GetIndFaultDiagSubsc

 tags:

 - Individual Network Slice Fault Diagnosis Subscription (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual Network Slice Fault Diagnosis Subscription resource shall

 be returned.

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 put:

 summary: Request the fully update of an existing Individual Network Slice Fault Diagnosis Subscription resource.

 operationId: UpdateIndFaultDiagSubsc

 tags:

 - Individual Network Slice Fault Diagnosis Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Network Slice Fault Diagnosis Subscription resource is

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

 in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Network Slice Fault Diagnosis Subscription resource is

 successfully updated and no content is returned in the response body.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 patch:

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

 operationId: ModifyIndFaultDiagSubsc

 tags:

 - Individual Network Slice Fault Diagnosis Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual Network Slice Fault Diagnosis Subscription resource is

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

 in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual Network Slice Fault Diagnosis Subscription resource is

 successfully modified and no content is returned in the response body.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 delete:

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

 operationId: DeleteIndFaultDiagSubsc

 tags:

 - Individual Network Slice Fault Diagnosis Subscription (Document)

 responses:

 '204':

 description: >

 No Content. The Individual Network Slice Fault Diagnosis Subscription resource is

 successfully deleted.

 '307':

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

 '308':

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 FaultDiagSubsc:

 type: object

 description: Represents a Network Slice Fault Diagnosis subscription.

 properties:

 notifUri:

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

 valServId:

 type: string

 description: >

 Contains the identifier of the VAL Service to which the fault diagnosis is related.

 valUeIds:

 type: array

 items:

 type: string

 description: >

 Contains the list of the identifier(s) of the VAL UE(s) to which the subscription

 is related.

 minItems: 1

 faultDiagInfo:

 type: array

 items:

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

 description: Contains the fault diagnosis information.

 minItems: 1

 netSliceIds:

 type: array

 items:

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

 description: Contains the identifier(s) of the network slice to be monitored.

 minItems: 1

 suppFeat:

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

 required:

 - notifUri

 - valServId

 FaultDiagSubscPatch:

 type: object

 description: >

 Represents the requested modifications to a Network Slice Fault Diagnosis subscription.

 properties:

 notifUri:

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

 faultDiagInfo:

 type: array

 items:

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

 description: Contains the updated fault diagnosis information.

 minItems: 1

 valUeIds:

 type: array

 items:

 type: string

 description: >

 Contains the list of the identifier(s) of the VAL UE(s) to which the subscription

 is related.

 minItems: 1

 netSliceIds:

 type: array

 items:

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

 description: Contains the updated identifier(s) of the network slice to be monitored.

 minItems: 1

 FaultDiagNotif:

 type: object

 description: Represents a Network Slice Fault Diagnosis notification.

 properties:

 subscriptionId:

 type: string

 description: >

 Contains the identifier of the subscription to which the Network Slice Fault

 Diagnosis Notification is related.

 faultRep:

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

 required:

 - subscriptionId

 - faultRep

 FaultReportInfo:

 type: object

 description: Represents the report of the fault diagnosis.

 properties:

 corelAlarm:

 type: array

 items:

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

 description: >

 Contains the list of the correlated alarms.

 minItems: 1

 required:

 - corelAlarm

 CorrelatedAlarm:

 type: object

 description: Represents the correlated alarm information.

 properties:

 alarmType:

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

 priority:

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

 rootCause:

 type: boolean

 description: Indicates whether the event is the root cause of the events.

 required:

 - alarmType

 FaultDiagInformation:

 type: object

 description: Represents the fault diagnosis information.

 properties:

 monitorTime:

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

 alarmType:

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

#

# ENUMERATIONS

#

 AlarmType:

 anyOf:

 - type: string

 enum:

 - COMMUNICATIONS\_ALARM

 - PROCESSING\_ERROR\_ALARM

 - ENVIRONMENTAL\_ALARM

 - QUALITY\_OF\_SERVICE\_ALARM

 - EQUIPMENT\_ALARM

 - INTEGRITY\_VIOLATION

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the alarm type(s).

 Possible values are:

 - COMMUNICATIONS\_ALARM: An alarm associated with the procedures and/or processes required

 to convey information from one point to another.

 - PROCESSING\_ERROR\_ALARM: An alarm associated with a software or processing fault.

 - ENVIRONMENTAL\_ALARM: An alarm associated with a condition relating to an enclosure in

 which the equipment resides.

 - QUALITY\_OF\_SERVICE\_ALARM: An alarm associated with a degradation in the quality of a

 service.

 - EQUIPMENT\_ALARM: An alarm associated with an equipment fault.

 - INTEGRITY\_VIOLATION: An indication that information may have been illegally modified,

 inserted or deleted.

 Priority:

 anyOf:

 - type: string

 enum:

 - CRITICAL

 - MAJOR

 - MINOR

 - IGNORE

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the prioritization of the fault associated with the correlated alarm.

 Possible values are:

 - CRITICAL: Indicates the prioritization of the fault is critical.

 - MAJOR: Indicates the prioritization of the fault is major.

 - MINOR: Indicates the prioritization of the fault is minor.

 - IGNORE: Indicates the prioritization of the fault is ignore.

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