**3GPP TSG-CT3 Meeting #132e C3-240121**

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

**Source: Huawei, China Mobile**

**Title: Pseudo-CR on defining the service description clauses of the NSCE\_FaultDiagnosis API**

**Spec: 3GPP TS 29.435 V 0.1.1**

**Agenda item: 18.49**

**Document for: Agreement**

**1. Introduction**

As specified in clause 9.15 of TS 23.435, 5GS is required to provide suitable APIs to allow a trusted third-party to monitor the network slice used for the third-party according to operator policies, the NSCE\_FaultDiagnosis API Service API is being defined and has reached a level that enables the corresponding stage 3 work to start.

**2. Reason for Change**

Start the definition of the service description clauses of the new NSCE\_FaultDiagnosis API in the 3GPP TS 29.435.

**3. Conclusions**

N/A

**4. Proposal**

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

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

## 5.15 NSCE\_FaultDiagnosis

### 5.15.1 Service Description

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

- create/update/delete a Network Slice Fault Diagnosis Subscription;

- receive Network Slice Fault Diagnosis Notifications; and

### 5.15.2 Service Operations

#### 5.15.2.1 Introduction

The service operations defined for the NSCE\_FaultDiagnosis service are shown in table 5.15.2.1-1.

Table 5.15.2.1-1: NSCE\_FaultDiagnosis Service Operations

|  |  |  |
| --- | --- | --- |
| Service Operation Name | Description | Initiated by |
| NSCE\_FaultDiagnosis\_Subscribe | This service operation enables a service consumer to create/update/delete a Network Slice Fault Diagnosis Subscription. | e.g., VAL Server |
| NSCE\_FaultDiagnosis\_Notify | This service operation enables a service consumer to receive Network Slice Fault Diagnosis Notifications. | NSCE Server |

#### 5.15.2.2 NSCE\_FaultDiagnosis\_Subscribe

##### 5.15.2.2.1 General

This service operation is used by a service consumer to request the creation/update/deletion of a Network Slice Fault Diagnosis Subscription at the NSCE Server.

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

- Network Slice Fault Diagnosis Subscription Creation;

- Network Slice Fault Diagnosis Subscription Update;

- Network Slice Fault Diagnosis Subscription Deletion.

##### 5.15.2.2.2 Network Slice Fault Diagnosis Subscription Creation

Figure 5.15.2.2.2-1 depicts a scenario where a a service consumer sends a request to the NSCE Server to request the creation of a Network Slice Fault Diagnosis Subscription (see also clause 9.15 of 3GPP°TS°23.435°[14]).



Figure 5.15.2.2.2-1: Procedure for Network Slice Fault Diagnosis Subscription Creation

1. In order to subscribe to network slice fault diagnosis reporting, a service consumer shall send an HTTP POST request to the NSCE Server targeting the URI of the "Network Slice Fault Diagnosis Subscriptions" collection resource, with the request body including the FaultDiagSubsc data structure.

2a. Upon success, the NSCE Server shall respond with an HTTP "201 Created" status code with the response body containing a representation of the created "Individual Network Slice Fault Diagnosis Subscription" resource within the FaultDiagSubsc 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 6.14.7.

##### 5.15.2.2.3 Network Slice Fault Diagnosis Subscription Update

Figure 5.15.2.2.3-1 depicts a scenario where a service consumer sends a request to the NSCE Server to request the update of an existing Network Slice Fault Diagnosis Subscription (see also clause 9.15 of 3GPP°TS°23.435°[14]).



Figure 5.15.2.2.3-1: Procedure for Network Slice Fault Diagnosis Subscription Update

1. In order to update an existing network slice fault diagnosis subscription, the service consumer shall send an HTTP PUT/PATCH request to the NSCE Server, targeting the URI of the corresponding "Individual Network Slice Fault Diagnosis Subscription" resource, with the request body including either:

- the updated representation of the resource within the FaultDiagSubsc data structure, in case the HTTP PUT method is used; or

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

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

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

- an HTTP "200 OK" status code with the response body containing a representation of the updated "Individual Network Slice Fault Diagnosis Subscription" resource within the FaultDiagSubsc data structure; or

- an HTTP "204 No Content" status code.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP PUT response body, as specified in clause 6.14.7.

##### 5.15.2.2.4 Network Slice Fault Diagnosis Subscription Deletion

Figure 5.15.2.2.4-1 depicts a scenario where a service consumer sends a request to the NSCE Server to delete an existing Network Slice Fault Diagnosis Subscription (see also clause 9.15 of 3GPP°TS°23.435°[14]).



Figure 5.15.2.2.4-1: Procedure for Network Slice Fault Diagnosis Subscription Deletion

1. In order to request the deletion of an existing network slice fault diagnosis subscription, the service consumer shall send an HTTP DELETE request to the NSCE Server targeting the corresponding "Individual Network Slice Fault Diagnosis Subscription" resource.

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 6.14.7.

#### 5.15.2.3 NSCE\_FaultDiagnosis\_Notify

##### 5.15.2.3.1 General

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

- Network Slice Fault Diagnosis event(s).

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

- Network Slice Fault Diagnosis Notification.

##### 5.15.2.3.2 Network Slice Fault Diagnosis Notification

Figure 5.15.2.3.2-1 depicts a scenario where the NSCE Server sends a request to notify a previously subscribed service consumer on Network Slice Fault Diagnosis event(s) (see also clause 9.15 of 3GPP°TS°23.435°[14]).



Figure 5.15.2.3.2-1: Procedure for Network Slice Fault Diagnosis Notification

1. In order to notify a previously subscribed service consumer on network slice fault diagnosis 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/update of the corresponding Network Slice Fault Diagnosis Subscription using the procedures defined in clause 5.15.2.2, and the request body including the FaultDiagNotif 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 reception 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 6.14.7.

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