**3GPP TSG- Meeting #**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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 |  |

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| ***Title:***  |  |
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| ***Source to WG:*** |  |
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| ***Work item code:*** |  |  | ***Date:*** |  |
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| ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | This paper provides the detailed functional model, as well as the SEAL API details for the introduced NSE functionality at SEAL spec (in clause 16 of TS23.434). |
|  |  |
| ***Summary of change:*** | In clause 16, we provided input to the 16.2 clause and sub-clauses which relate to the functional model for NSE. Also, 16.4 was provided (which relates to the SEAL API for NSE operation) |
|  |  |
| ***Consequences if not approved:*** | The details on functional model and API description for NSE feature will not be specified. |
|  |  |
| ***Clauses affected:*** |  |
|  |  |
|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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

# 16 Network slice enablement

## 16.1 General

Network slicing is a set of technologies to support network service differentiation and meet the diversified requirements from tenants like vertical industries as specified in clause 5.15 of 3GPP TS 23.501 [10]. Network slice is a logical network that provides specific network capabilities and network characteristics. The network slice enablement is a SEAL service that offers network slice enablement capabilities, such as support for vertical application to slice re-mapping, to one or more vertical applications.

## 16.2 Functional model

### 16.2.1 General

The functional model for the network slice enablement is based on the generic functional model specified in clause 6.2. It is organized into functional entities to describe a functional architecture which addresses the support for network slice enablement aspects for vertical applications. Since the slicing is a feature which considers the Uu interfaces, only the on-network functional model is specified in this clause.

### 16.2.2 Functional model description

Figure 16.2.2-1 illustrates the generic functional model for network slice enablement.



Figure 16.2.2-1: Functional model for network slice enablement

The network slice enablement client communicates with the network slice enablement server over the NSE-UU reference point. The network slice enablement client provides the support for network slice enablement functions to the VAL client(s) over NSE‑C reference point. The VAL server(s) communicates with the network slice enablement server over the NSE-S reference point. The network slice enablement server communicates with the 5G Core Network functions via NEF (N33) or via N5 reference point (for interactions with PCF).

### 16.2.3 Functional entities description

#### 16.2.3.1 General

The functional entities for network slice enablement SEAL service are described in the following subclauses.

#### 16.2.3.2 Network slice enabler server

The network slice enabler server functional entity provides the enablement of the network slicing aspects to support the VAL applications. Such enablement supports the mapping or migration of one or more vertical applications to one or more network slices (from a set of network slices, as provided by the 3GPP network system).

#### 16.2.3.3 Network slice enabler client

The network slice enabler client functional entity acts as the application client for the slice enablement. The network slice enabler client interacts with the network slice enabler server.

### 16.2.4 Reference points description

#### 16.2.4.1 General

The reference points for the functional model for network slice enablement are described in the following subclauses.

#### 16.2.4.2 NSE-UU

The interactions related to network slice enablement functions between the network slice enabler server and the network slice enabler client are supported by NSE-UU reference point. This reference point utilizes Uu reference point as described in 3GPP TS 23.501 [10].

#### 16.2.4.3 NSE-C

The interactions related to network slice enablement functions between the VAL client(s) and the network slice enabler client within a VAL UE are supported by the NSE-C reference point.

#### 16.2.4.4 NSE-S

The interactions related to network slice enablement functions between the VAL server(s) and the network slice enabler server are supported by the NSE-S reference point. This reference point is an instance of CAPIF-2 reference point as specified in 3GPP TS 23.222 [8].

#### 16.2.4.6 N5

The reference point N5 supports the interactions between the network slice enabler server and the PCF and is specified in 3GPP TS 23.501 [10].

#### 16.2.4.7 N33

The reference point N33 supports the interactions between the network slice enabler server and the NEF and is specified in 3GPP TS 23.501 [10].

\* \* \* \* \* \* \* SECOND CHANGE \* \* \* \* \* \* \*

## 16.4 SEAL APIs for network slice enablement

### 16.4.1 General

Table 16.4.1-1 illustrates the SEAL APIs for network slice enablement.

Table 16.4.1-1: List of SEAL APIs for network slice enablement

|  |  |  |  |
| --- | --- | --- | --- |
| API Name | API Operations | Known Consumer(s) | Communication Type |
| SS\_NetworkSliceAdaptation | Network\_slice\_adaptation | VAL server | Request /Response |

### 16.4.2 SS\_NetworkSliceAdaptation API

#### 16.4.2.1 General

**API description:** This API enables the VAL server to communicate with the network slice enabler server for network slice adaptation over NSE-S.

#### 16.4.2.2 Network\_Slice\_Adaptation

**API operation name:** Network\_Slice\_Adaptation

**Description:** Requesting for network slice adaptation.

**Known Consumers:** VAL server.

**Inputs:** See subclause 16.3.2.2.1

**Outputs:** See subclause 16.3.2.2.2

See subclause 16.3.2.3 for the details of usage of this API operation.