**3GPP TSG-CT3 Meeting #112e C3-205055\_r1**

**E-Meeting, 04th – 13th November 2020**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.522** | **CR** | **0219** | **rev** | **1** | **Current version:** | **16.5.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Essential corrections and alignments | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc16 | | | | |  | ***Date:*** | | | 2020-10-?? |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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 can be 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:*** | | The following corrections and alignments are necessary:   * The "Resource URI" column of Tables 5.x.1.1-1 of some APIs defined in this specification should contain a relative URI below root instead of a full resource URI, as per the statements in the associated clauses 5.x.3.1: "All resource URIs in the subclauses below are defined relative to the above root URI", i.e. "{apiRoot}/<apiName>/<apiVersion>/". * An incorrect reference to TS 29.122 in clause 5.2 needs to be corrected. * Some necessary editorial corrections across the specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Update the "Resource URI" column of Tables 5.x.3.1-1 by replacing the full resource URI with the associated relative URI below root, i.e. by removing the part "{apiRoot}/<apiName>/<apiVersion>". * In clause 5.2, correct to right clause number of TS 29.122 in the last reference to this specification. * Some additional editorial corrections and improvements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Necessary corrections are not applied. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2, 4.3.1, 5.2, 5.4.1.1, 5.6.1.1, 5.7.1.1, 5.8.1.1, 5.9.1.1, 5.10.1.1, 5.11.1.1, 5.12.1.1, 5.13.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 does not impact OpenAPI specification files. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev 1: ddd | | | | | | | | |

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

## 4.2 Reference model

The NEF Northbound interface resides between the NEF and the AF as depicted in figure 4.2.1. The overall NEF architecture is depicted in 3GPP TS 23.502 [2]. An AF can get services from multiple NEFs, and an NEF can provide services to multiple AFs.

NOTE: The AF can be provided by a third party.



Figure 4.2-1: Reference Architecture for the Nnef Service; SBI representation



Figure 4.2-2: Reference Architecture for the Nnef Service; reference point representation

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

4.3.1 NEF

The Network Exposure Function (NEF) is a functional element that supports the following functionalities:

- The NEF shall securely expose network capabilities and events provided by 3GPP NFs to AF.

- The NEF shall provide means for the AF to securely provide information to 3GPP network and may authenticate, authorize and assist in throttling the AF.

- The NEF shall be able to translate the information received from the AF to the one sent to internal 3GPP NFs, and vice versa.

- The NEF shall support to expose information (collected from other 3GPP NFs) to the AF.

- The NEF may support a PFD Function which allows the AF to provision PFD(s) and may store and retrieve PFD(s) in the UDR. The NEF further provisions PFD(s) to the SMF.

A specific NEF instance may support one or more of the functionalities described above and consequently an individual NEF may support a subset of the APIs specified for capability exposure.

NOTE: The NEF can access the UDR located in the same PLMN as the NEF.

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

5.2 Information applicable to several APIs

The usage of HTTP, content type and URI structure definition, as specified in subclauses 5.2.2, 5.2.3 and 5.2.4 of 3GPP TS 29.122 [4] respectively, shall be applicable for NEF Northbound APIs.

The notification, error handling, feature negotiation, HTTP custom headers as specified in subclauses 5.2.5, 5.2.6, 5.2.7, 5.2.8 of 3GPP TS 29.122 [4] respectively, shall be applicable for NEF Northbound APIs except that the SCEF is replaced by the NEF and the SCS/AS is replaced by the AF.

The conventions for Open API specification files as specified in subclause 5.2.9 of 3GPP TS 29.122 [4] shall be applicable for NEF Northbound APIs.

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

5.4.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-traffic-influence/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-traffic-influence" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.4.1.1-1 and the resources and HTTP methods used for the TrafficInfluence API.

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**Figure 5.4.1.1-1: Resource URI structure of the TrafficInfluence API**

Table 5.4.1.1-1 provides an overview of the resources and HTTP methods applicable for the TrafficInfluence API.

**Table 5.4.1.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Traffic Influence Subscription | /{afId}/subscriptions | GET | Read all subscriptions for a given AF |
| POST | Create a new subscription to traffic influence |
| Individual Traffic Influence Subscription | /{afId}/subscriptions/{subscriptionId} | GET | Read a subscription to traffic influence |
| PUT | Modify all of the properties of an existing subscription to traffic influence |
| PATCH | Modify part of the properties of an existing subscription to traffic influence |
| DELETE | Delete a subscription to traffic influence |

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

5.6.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-analyticsexposure/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-analyticsexposure" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.6.1.1-1 and the resources and HTTP methods used for the AnalyticsExposure API.

****

**Figure 5.6.1.1-1: Resource URI structure of the AnalyticsExposure API**

Table 5.6.1.1-1 provides an overview of the resources and HTTP methods applicable for the AnalyticsExposure API.

**Table 5.6.1.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Analytics Exposure Subscriptions | /{afId}/subscriptions | GET | Read all subscriptions for a given AF |
| POST | Create a new subscription to analytics exposure |
| Individual Analytics Exposure Subscription | /{afId}/subscriptions /{subscriptionId} | GET | Read a subscription to analytics exposure |
| PUT | Modify all of the properties of an existing subscription to analytics exposure |
| DELETE | Delete a subscription to analytics exposure |

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

5.7.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-5glan-pp/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-5glan-pp" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.7.1.1-1 and the resources and HTTP methods used for the 5GLANParameterProvision API.

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**Figure 5.7.1.1-1: Resource URI structure of the 5GLANParameterProvision API**

Table 5.7.1.1-1 provides an overview of the resources and HTTP methods applicable for the 5GLANParameterProvision API.

**Table 5.7.1.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| 5GLAN Parameters Provision Subscriptions | /{afId}/subscriptions | GET | Read all subscriptions for a given AF |
| POST | Create a new subscription to provision parameters |
| Individual 5GLAN Parameters Provision Subscription | /{afId}/subscriptions/{subscriptionId} | GET | Read an existing subscriptionidentified by {subscriptionId} |
| PUT | Modify all of the properties of an existing subscription identified by {subscriptionId} |
| PATCH | Modify some properties of an existing subscription identified by {subscriptionId} |
| DELETE | Delete a subscription identified by {subscriptionId} |

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

5.8.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-applying-bdt-policy/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-applying-bdt-policy" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.8.1.1-1 and the resources and HTTP methods used for the ApplyingBdtPolicy API.

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**Figure 5.8.1.1-1: Resource URI structure of the ApplyingBdtPolicy API**

Table 5.8.1.1-1 provides an overview of the resources and HTTP methods applicable for the ApplyBdtPolicy API.

**Table 5.8.1.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| Applied BDT Policy Subscription | /{afId}/subscriptions | GET | Read all applied BDT policy subscriptions for a given AF. |
| POST | Create a new applied policy subscription. |
| Individual Applied BDT Policy Subscription | /{afId}/subscriptions/{subscriptionId} | GET | Read an applied BDT policy subscription. |
| PATCH | Modify BDT Reference ID of an existing subscription to a BDT policy. |
| DELETE | Delete an applied BDT policy subscription |

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

5.9.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-iptvconfiguration/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-iptvconfiguration" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.9.1.1-1 and the resources and HTTP methods used for the IPTVConfiguration API.

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**Figure 5.9.1.1-1: Resource URI structure of the IPTVConfiguration API**

Table 5.9.1.1-1 provides an overview of the resources and HTTP methods applicable for the IPTVConfiguration API.

**Table 5.9.1.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| IPTV Configurations | /{afId}/configurations | GET | Read all configurations for a given AF |
| POST | Create a new IPTV configuration |
| Individual IPTV Configuration | /{afId}/configurations/{configurationId} | GET | Read an existing configurationidentified by {configurationId} |
| PUT | Modify all of the properties of an existing configuration identified by **{**configurationId**}** |
| PATCH | Modify some of the properties of an existing configuration identified by {configurationId} |
| DELETE | Delete a configuration identified by **{**configurationId**}** |

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

5.10.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-lpi-pp/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-lpi-pp" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.10.1.1-1 and the resources and HTTP methods used for the LpiParameterProvision API.

****

**Figure 5.10.1.1-1: Resource URI structure of the LpiParameterProvision API**

Table 5.10.1.1-1 provides an overview of the resources and HTTP methods applicable for the LpiParameterProvision API.

**Table 5.10.1.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| LPI Parameters Provisionings | /{afId}/provisionedLpis | GET | Read all LPI Parameters Provisioning resources for a given AF |
| POST | Create a new Individual LPI Parameters Provisioning resource |
| Individual LPI Parameters Provisioning | /{afId}/provisionedLpis/{provisionedLpiId} | GET | Read an existing Individual LPI Parameters Provisioning resource identified by {provisionedLpiId} |
| PUT | Modify all of the properties of an existing Individual LPI Parameters Provisioning resource identified by {provisionedLpiId} |
| DELETE | Delete an existing Individual LPI Parameters Provisioning resource identified by {provisionedLpiId} |

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

#### 5.11.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-service-parameter/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-service-parameter" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.11.1.1-1 and the resources and HTTP methods used for the ServiceParameter API.



Figure 5.9.1.1-1: Resource URI structure of the ServiceParameter API

Table 5.11.1.1-1 provides an overview of the resources and HTTP methods applicable for the ServiceParameter API.

Table 5.9.1.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method | Description |
| Service Parameter Subscripions | /{afId}/subscriptions | GET | Read all subscriptions for a given AF. |
| POST | Create a new service parameter subscription. |
| Individual Service Parameter Subscripion | /{afId}/subscriptions/{subscriptionId} | GET | Read an existing subscription identified by {subscriptionId} |
| PUT | Modify all of the properties of an existing subscription. identified by {subscriptionId} |
| PATCH | Modify some of the properties of an existing subscription identified by {subscriptionId} |
| DELETE | Delete a subscription identified by {subscriptionId} |

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

5.12.1.1 Overview

All resource URIs of this API should have the following root:

**{apiRoot}/3gpp-acs-pp/v1/**

"apiRoot" is set as described in subclause 5.2.4 in 3GPP TS 29.122 [4]. "apiName" shall be set to "3gpp-acs-pp" and "apiVersion" shall be set to "v1" for the current version defined in the present document. All resource URIs in the subclauses below are defined relative to the above root URI.

This subclause describes the structure for the Resource URIs as shown in figure 5.12.1.1-1 and the resources and HTTP methods used for the ACSParameterProvision API.

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**Figure 5.12.1.1-1: Resource URI structure of the ACSParameterProvision API**

Table 5.12.1.1-1 provides an overview of the resources and HTTP methods applicable for the ACSParameterProvision API.

**Table 5.12.1.1-1: Resources and methods overview**

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| ACS Configuration Subscripions | /{afId}/subscriptions | GET | Read all subscriptions for a given AF. |
| POST | Create a new ACS configuration subscription. |
| Individual ACS Configuration Subscripion | /{afId}/subscriptions/{subscriptionId} | GET | Read an existing subscription identified by {subscriptionId} |
| PUT | Modify all of the properties of an existing subscription. identified by {subscriptionId} |
| DELETE | Delete a subscription identified by {subscriptionId} |

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

5.13.2.2 Event Notification

Callback URI: **{notificationDestination}** shall be used with the callback URI variables defined in table 5.13.2.2-1.

**Table 5.13.2.2-1: Callback URI variables**

|  |  |
| --- | --- |
| **Name** | **Definition** |
| notificationDestination | A URI indicating the notification destination where N33 notification requests shall be delivered to.  This URI shall be preconfigured in the NEF. |

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