**3GPP TSG-CT WG3 Meeting #135 *C3-243xxx***

**Hyderabad, India, 27 - 31 May, 2024 Revision of C3-243055, C3-242379**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **22** | **CR** |  | **rev** | **2** | **Current version:** |  |  |
|  |
| *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:***  | Update to add security parameter to ECS address IE |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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 stage 2, SA3 have defined security paramters and security credentials to be included in ECS configuration information, to indicate the authentication method supported by ECS for authentication and authorization between EEC and ECS (clause 6.2 in TS 33.558 and clause 8.3.2.1 in TS 23.558).TS 33.558 clause 6.2:*UE may receive the supported authentication method of the ECS optionally as part of the ECS configuration information. Details of the ECS configuration information are specified in TS 23.558 [5]. If the UE has the information about the authentication method supported by the ECS, then the EEC/UE may use this information for the authentication method negotiation.*TS 23.558 clause 8.3.2.1:…. ECS configuration information can be…- provisioned by MNO through 5GC procedure if the UE has the capability to deliver the ECS configuration information to the EEC on the UE (see 3GPP TS 23.548 [20], clause 6.5.2); Table 8.3.2.1-1 describes the information elements of ECS configuration information for an ECS.

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| ECS address  | M | Endpoint information of ECS (e.g. URI, FQDN, IP address) |
| ECSP Identifier (NOTE 1) | O | The identifier of the ECSP (e.g., the MNO or a 3rd party service provider) that provides the ECS.  |
| Spatial Validity Conditions | O | Spatial validity condition, as described in 3GPP TS 23.548 [20] |
| Security Parameters | O | The security parameters (as specified in 3GPP TS 33.558 [23], clause 6.2) are used by EEC to communicate with the ECS. |
| List of supported PLMN(s) | O | The List of PLMNs and associated ECSPs for which EDN configuration information can be provided by the ECS. |
| > PLMN ID | O | The identifier of a PLMN for which EDN configuration information can be provided by the ECS. |
| > List of supported ECSP(s) (NOTE 2) | O | The identifier of the ECSP(s) associated with the PLMN and whose information is available at the ECS  |
| >> ECSP ID | M | Identifier of an ECSP |
| NOTE 1: This IE shall be included when the ECS configuration information is provisioned by the MNO through the 5GC procedure.NOTE 2: This IE may not be included if the ECSP does not want to expose its EES deployment information or business relationship-related information. |

In TS 29.522, the corresponding ECS address Config IEs needs to be updated to reflect the supported authentication method from ECS to EEC as part of secuirty parameters. |
|  |  |
| ***Summary of change:*** | Extend ECSAddrParams, EcsAddressProvision to include supported authentication methods. |
|  |  |
| ***Consequences if not approved:*** | Stage-2 requirements not met. |
|  |  |
| ***Clauses affected:*** | 4.4.25, 5.7.2.2, 5.7.2.3.13, 5.7.3, 5.16.2.2, 5.16.2.3.2, 5.16.3, A.5, A.14 |
|  |  |
|  | **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 backwards compatible new features to 5GLANParameterProvision, EcsAddressProvision. |
|  |  |
| ***This CR's revision history:*** | Rev1: No changeRev2: Removed changes to ECSAddress API, introduced Feature Netogiation |

\*\*\* Start of Changes \*\*\*

### 4.4.25 Procedures for ECS address Provisioning

The procedures are used by the AF to provision ECS address(es) to the NEF. The procedures are applicable for an individual UE, any UE or a group of UEs.

In order to create an Individual ECS Address Provision Configuration resource, the AF shall initiate an HTTP POST request to the NEF for the "ECS Address Provision Configurations" resource. The body of the HTTP POST message shall include within the EcsAddressProvision data structure the ECS address(es) via the "ecsServerAddr" attribute, may include the spatial validity condition via the "spatialValidityCond" attribute, the target UE information via the "tgtUe" attirbute, if the "HR-SBO" feature is supported, the PLMN ID in which the provided information applies via the "plmnId" attribute and if the "ECSAuthMethods" feature is supported, may include the supported authentication methods via the "ecsAuthMethods" attribute. Upon receipt of the corresponding HTTP POST message, if the AF is authorized by the NEF to provision the ECS address(es), the NEF shall interact with the UDM to create a resource at the UDM by using Nudm\_ParameterProvision service as defined in 3GPP TS 29.503 [17]. If the request is accepted by the UDM and the UDM informs the NEF with a successful response, the NEF shall create a new resource and assign an identifier for the "Individual ECS Address Provision Configuration" resource. Then the NEF shall send a HTTP "201 Created" response with EcsAddressProvision data structure as response body and a Location header field containing the URI of the created individual resource.

In order to update an existing Individual ECS Address Provision Configuration, the AF shall send an HTTP PUT message to the resource "Individual ECS Address Provision Configuration" requesting the NEF to change all properties in the existing resource. The body of the HTTP PUT request message shall include the EcsAddressProvision data type. Upon receipt of the corresponding HTTP PUT message, if the AF is authorized by the NEF to provision the ECS address(es), the NEF shall interact with the UDM to modify an existing resource at the UDM by using Nudm\_ParameterProvision service as defined in 3GPP TS 29.503 [17]. If the modification request is accepted by the UDM and the UDM informs the NEF with a successful response, the NEF shall update the existing resource for the "Individual ECS Address Provision Configuration" resource. Then the NEF shall send a HTTP response including "200 OK" status code with EcsAddressProvision data structure or "204 No Content" status code.

To delete an existing Individual ECS Address Provision Configuration, the AF shall initiate an HTTP DELETE request to the NEF for the "Individual ECS Address Provision Configuration" resource. Upon receipt of the corresponding HTTP DELETE message, if the AF is authorized, the NEF shall interact with the UDM to delete the existing resource at the UDM by using Nudm\_ParameterProvision service as defined in 3GPP TS 29.503 [17]. If the request is accepted by the UDM, the NEF shall delete the existing resource for the "Individual ECS Address Provision Configuration" resource. Then the NEF shall send a HTTP "204 No Content" response.

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

#### 5.7.2.2 Reused data types

The data types reused by the 5GLANParameterProvision API from other specifications are listed in table 5.7.2.2-1.

Table 5.7.2.2-1: Re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| AfReqDefaultQoS | Clause 5.33.5.2.5 | Represents the AF requested default QoS. |
| AppliedParameterConfiguration | 3GPP TS 29.122 [4] | Represents the parameter configuration applied in the network. |
| ApplicationId | 3GPP TS 29.571 [8] | Represents the identifier of an application. |
| AcsInfo | 3GPP TS 29.571 [8] | Contains the ACS information. |
| BitRate | 3GPP TS 29.571 [8] | Represents a bit rate. |
| CpParameterSet | 3GPP TS 29.122 [4] | Represents an offered Communication Pattern parameter set. |
| CpReport | 3GPP TS 29.122 [4] | Represents a CP report. |
| ConfigResult | 3GPP TS 29.122 [4] | Represents one configuration processing result for a group's members. |
| DateTime | 3GPP TS 29.122 [4] | Represents a data and a time. |
| Dnn | 3GPP TS 29.571 [8] | Identifies a DNN. |
| DurationSec | 3GPP TS 29.122 [4] | Indicates a time duration. |
| EcsServerAddr | 3GPP TS 29.571 [8] | Represents the Edge Configuration Server (ECS) address configuration information. |
| ExternalGroupId | 3GPP TS 29.122 [4] | External Group Identifier for a user group. |
| Gpsi | 3GPP TS 29.571 [8] | Identifies a GPSI. |
| Ipv4Addr | 3GPP TS 29.571 [8] | Identifies an IPv4 address. |
| Ipv6Addr | 3GPP TS 29.571 [8] | Identifies an IPv6 address. |
| LadnServArea | Clause 5.33.5.2.6 | Represents an LADN Service Area. |
| Link | 3GPP TS 29.122 [4] | Represents a referenced resource. |
| Lpi | 3GPP TS 29.503 [17] | Represents the Location Privacy Indication information. |
| MtcProviderInformation | 3GPP TS 29.571 [8] | Indicates MTC provider information for 5G VN Group Configuration authorization. |
| OsId | 3GPP TS 29.519 [23] | Operating System. |
| PduSessionType | 3GPP TS 29.571 [8] | PDU session type. |
| Snssai | 3GPP TS 29.571 [8] | Identifies the S-NSSAI. |
| SpatialValidityCond | 3GPP TS 29.571 [8] | Represents the Spatial Validity Condition. |
| SupportedFeatures | 3GPP TS 29.571 [8] | Used to negotiate the applicability of the optional features. |
| WebsockNotifConfig | 3GPP TS 29.122 [4] | Contains the configuration parameters to set up notification delivery over Websocket protocol. |
| EcsAuthMethod | 3GPP TS 29.503 [17] | Represents the ECS Authentication Methods. |

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

##### 5.7.2.3.13 Type: ECSAddrParams

Table 5.7.2.3.13-1: Definition of type ECSAddrParams

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ecsServerAddr | EcsServerAddr | M | 1 | Represents the ECS address(es). |  |
| spatialValidityCond | SpatialValidityCond | O | 0..1 | Contains the spatial validity conditions. |  |
| ecsAuthMethods | array(EcsAuthMethod) | O | 1..N | Contains the supported ECS Authentication Method(s). | ECSAuthMethods |

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

### 5.7.3 Used Features

The table below defines the features applicable to the 5GLANParameterProvision API. Those features are negotiated as described in clause 5.2.7 of 3GPP TS 29.122 [4].

Table 5.7.3-1: Features used by 5GLANParameterProvision API

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | multipleSessionTypes | Indicates that multiple allowed PDU Session Types can be provided for a 5G VN group. |
| 2 | GMEC | This feature indicates the support of Generic Group Management, Exposure and Communication Enhancements.The following functionalities are supported:- Support the provisioning of the Maximum Group Data Rate related information for 5G VN groups.- Support the simultaneous provisioning of 5G VN group information and 5G VN group parameters.- Support the provisioning of the indication on whether the 5G VN group is associated with 5G VN group communications or not. |
| 3 | Notification\_test\_event | The testing of notification connection is supported as described in 3GPP TS 29.122 [4]. |
| 4 | Notification\_websocket | The delivery of notifications over Websocket is supported as described in 3GPP TS 29.122 [4].This feature requires that the Notification\_test\_event feature is also supported. |
| X | ECSAuthMethods | This feature indicates the ECS authentication methods for 5G VN group. |

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

#### 5.16.2.2 Reused data types

The data types reused by the EcsAddressProvision API from other specifications are listed in table 5.16.2.2-1.

Table 5.16.2.2-1: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| EcsServerAddr | 3GPP TS 29.571 [8] | Represents the Edge Configuration Server (ECS) address configuration information. |  |
| Link | 3GPP TS 29.122 [4] | Represents a referenced resource. |  |
| MtcProviderInformation | 3GPP TS 29.571 [8] | Represents the MTC Provider Information. | enNB1 |
| PlmnIdNid | 3GPP TS 29.571 [8] | Represents the PLMN identifier. | HR-SBO |
| SpatialValidityCond | 3GPP TS 29.571 [8] | Represents the Spatial Validity Condition. |  |
| SupportedFeatures | 3GPP TS 29.571 [8] | Used to negotiate the applicability of the optional features defined in table 5.16.3-1. |  |
| TargetUeId | 5.6.3.3.7 | Represents the target UE(s) information. |  |
| EcsAuthMethod | 3GPP TS 29.503 [17] | Represents the ECS Authentication Methods. | ECSAuthMethods |

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

##### 5.16.2.3.2 Type: EcsAddressProvision

Table 5.16.2.3.2-1: Definition of type EcsAddressProvision

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| self | Link | C | 0..1 | Identifies the individual configuration resource.Shall be present in the HTTP GET response when reading all the configurations for an AF. |  |
| ecsServerAddr | EcsServerAddr | M | 1 | Represents the ECS address(es). |  |
| mtcProviderId | MtcProviderInformation | O | 0..1 | Identifies the MTC Service Provider and/or MTC Application. | enNB1 |
| spatialValidityCond | SpatialValidityCond | O | 0..1 | Represents the spatial validity condition. |  |
| tgtUe | TargetUeId | O | 0..1 | Indicates the target UE information. |  |
| plmnId | PlmnIdNid | O | 0..1 | Identifier of the serving PLMN in which the provisioned information applies. | HR-SBO |
| suppFeat | SupportedFeatures | M | 1 | Indicates the negotiated supported features. |  |
| ecsAuthMethods | array(EcsAuthMethod) | O | 1..N | Indicates the Supported ECS Authentication Method(s). | ECSAuthMethods |

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

### 5.16.3 Used Features

The table below defines the features applicable to the EcsAddressProvision API. Those features are negotiated as described in clause 5.2.7 of 3GPP TS 29.122 [4].

Table 5.16.3-1: Features used by EcsAddressProvision API

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | HR-SBO | This feature indicates the support of provisioning ECS Address Configuration Information for when the serving PLMN is different from the PLMN of the NEF. |
| 2 | enNB1 | This feature indicates the support of Rel-18 enhancements to this northbound API. |
| Y | ECSAuthMethods | This feature indicates the ECS authentication methods provided to the NEF. |

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

# A.5 5GLANParameterProvision API

openapi: 3.0.0

info:

 title: 3gpp-5glan-pp

 version: 1.2.0-alpha.4

 description: |

 API for 5G LAN Parameter Provision.

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externalDocs:

 description: >

 3GPP TS 29.522 V18.3.0; 5G System; Network Exposure Function Northbound APIs.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.522/'

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-5glan-pp/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 5.2.4 of 3GPP TS 29.122.

paths:

 /{afId}/subscriptions:

 get:

 summary: read all of the active subscriptions for the AF

 operationId: RealAllSubscriptions

 tags:

 - 5GLAN Parameters Provision Subscriptions

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (Successful get all of the active subscriptions for the AF)

 content:

 application/json:

 schema:

 type: array

 items:

 $ref: '#/components/schemas/5GLanParametersProvision'

 minItems: 0

 '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'

 post:

 summary: Creates a new subscription resource

 operationId: CreateAnSubscription

 tags:

 - 5GLAN Parameters Provision Subscriptions

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 requestBody:

 description: new subscription creation

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 responses:

 '201':

 description: Created (Successful creation)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 headers:

 Location:

 description: Contains the URI of the newly created 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:

 5GLANParamProvNotif:

 '{request.body#/notifUri}':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParamProvNotif'

 responses:

 '204':

 description: No Content. Successful reception of the notification.

 '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'

 /{afId}/subscriptions/{subscriptionId}:

 get:

 summary: read an active subscription for the AF and the subscription Id

 operationId: ReadAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision Subscription

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 '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: Fully updates/replaces an existing subscription resource

 operationId: FullyUpdateAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision Subscription

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to update/replace the existing subscription

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 responses:

 '200':

 description: OK (Successful deletion of the existing subscription)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 '204':

 description: >

 Successful case. The resource has been successfully updated and no additional

 content is to be sent in the response message.

 '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'

 patch:

 summary: Partial updates an existing subscription resource

 operationId: PartialUpdateAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision Subscription

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvisionPatch'

 responses:

 '200':

 description: OK. The subscription was modified successfully.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 '204':

 description: >

 Successful case. The resource has been successfully updated and no additional

 content is to be sent in the response message.

 '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'

 delete:

 summary: Deletes an already existing subscription

 operationId: DeleteAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision Subscription

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content (Successful deletion of the existing subscription)

 '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'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 5GLanParametersProvision:

 description: Represents an individual 5G LAN parameters provision subscription resource.

 type: object

 properties:

 self:

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

 5gLanParams:

 $ref: '#/components/schemas/5GLanParameters'

 suppFeat:

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

 required:

 - 5gLanParams

 - suppFeat

 5GLanParametersProvisionPatch:

 description: >

 Represents the 5G LAN parameters to request the modification of a subscription

 to provision parameters.

 type: object

 properties:

 5gLanParamsPatch:

 $ref: '#/components/schemas/5GLanParametersPatch'

 5GLanParameters:

 description: Represents 5G LAN service related parameters that need to be provisioned.

 type: object

 properties:

 exterGroupId:

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

 gpsis:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains the list of 5G VN Group members, each member is identified by GPSI.

 Any string value can be used as a key of the map.

 dnn:

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

 aaaIpv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 aaaIpv6Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 aaaUsgs:

 type: array

 items:

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

 minItems: 1

 description: >

 This attribute shall contain at most 2 array elements. It is however kept

 defined as it is (i.e. with a cardinality of "1..N") for backward

 compatibility considerations.

 mtcProviderId:

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

 snssai:

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

 sessionType:

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

 sessionTypes:

 type: array

 items:

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

 minItems: 1

 description: Further allowed PDU Session types.

 appDesps:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Describes the operation systems and the corresponding applications for each

 operation systems. The key of map is osId.

 vnGroupCommInd:

 type: boolean

 description: >

 Indicates whether the 5G VN group is associated with 5G VN group communication when

 When set to "true", it indicates that the 5G VN group is associated with 5G VN group

 communication. When set to "false", it indicates that the 5G VN group is not

 associated with 5G VN group communication. The default value when omitted is "false".

 maxGrpDataRateInfo:

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

 cpParams:

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

 npConfigParams:

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

 lpiParams:

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

 acsParams:

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

 ecsAddrParams:

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

 dnnSnssaiParams:

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

 notifUri:

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

 requestTestNotification:

 type: boolean

 description: >

 Set to true to request to send a test notification as defined in clause 5.2.5.3.

 Set to false or omitted otherwise.

 websockNotifConfig:

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

 required:

 - exterGroupId

 - gpsis

 - dnn

 - snssai

 - sessionType

 - appDesps

 5GLanParametersPatch:

 description: Represents 5G LAN service related parameters that need to be modified.

 type: object

 properties:

 gpsis:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains the list of 5G VN Group members, each member is identified by GPSI.

 Any string value can be used as a key of the map.

 appDesps:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Describes the operation systems and the corresponding applications for

 each operation systems. The key of map is osId.

 cpParams:

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

 npConfigParams:

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

 lpiParams:

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

 acsParams:

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

 ecsAddrParams:

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

 dnnSnssaiParams:

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

 notifUri:

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

 AppDescriptor:

 description: Represents an operation system and the corresponding applications.

 type: object

 properties:

 osId:

 $ref: 'TS29519\_Policy\_Data.yaml#/components/schemas/OsId'

 appIds:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies applications that are running on the UE's operating system.

 Any string value can be used as a key of the map.

 required:

 - osId

 - appIds

 AppDescriptorRm:

 description: >

 Represents the same as the AppDescriptor data type but with the nullable:true

 property.

 type: object

 properties:

 appIds:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies applications that are running on the UE's operating system.

 Any string value can be used as a key of the map.

 MaxGrpDataRateInfo:

 description: >

 Represents the Maximum Group Data Rate related information.

 type: object

 properties:

 maxGrpDataRateUl:

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

 maxGrpDataRateDl:

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

 anyOf:

 - required: [maxGrpDataRateUl]

 - required: [maxGrpDataRateDl]

 CpParams:

 description: Represents Communication Pattern parameters.

 type: object

 properties:

 cpParameterSets:

 type: object

 additionalProperties:

 $ref: 'TS29122\_CpProvisioning.yaml#/components/schemas/CpParameterSet'

 minProperties: 1

 description: >

 Contains one or more set(s) of CP parameters information for the 5G VN group.

 Any string value may be used as a key of the map.

 cpReports:

 type: object

 additionalProperties:

 $ref: 'TS29122\_CpProvisioning.yaml#/components/schemas/CpReport'

 minProperties: 1

 description: >

 Contains the identifier(s) of the set(s) of CP parameters for which the provided CP

 parameters are not added or modified successfully with the corresponding failure reason.

 Each element provides the related information for one or more CP set identifier(s).

 The key of the map is a string representing the failure identifier.

 readOnly: true

 required:

 - cpParameterSets

 NpConfigParams:

 description: Represents Network Parameters Configuration information.

 type: object

 properties:

 maximumLatency:

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

 maximumResponseTime:

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

 suggestedNumberOfDlPackets:

 type: integer

 minimum: 0

 description: >

 Contains the number of packets that the serving gateway shall buffer in case the UE is

 not reachable.

 groupReportingGuardTime:

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

 validityTime:

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

 LpiParams:

 description: Represents Location Privacy Indication parameters.

 type: object

 properties:

 lpi:

 $ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/Lpi'

 required:

 - lpi

 AcsParams:

 description: Represents ACS configuration parameters.

 type: object

 properties:

 acsInfo:

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

 required:

 - acsInfo

 ECSAddrParams:

 description: Represents ECS address configuration parameters.

 type: object

 properties:

 ecsServerAddr:

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

 spatialValidityCond:

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

 ecsAuthMethods:

 type: array

 items:

 $ref: 'TS29503\_Nudm\_PP.yaml#/components/schemas/EcsAuthMethod'

 minItems: 1

 required:

 - ecsServerAddr

 DnnSnssaiParams:

 description: Represents DNN and S-NSSAI specific Group Parameters.

 type: object

 properties:

 defQos:

 $ref: 'TS29522\_GroupParametersProvisioning.yaml#/components/schemas/AfReqDefaultQoS'

 ladnServArea:

 $ref: 'TS29522\_GroupParametersProvisioning.yaml#/components/schemas/LadnServArea'

 anyOf:

 - required: [ defQos ]

 - required: [ ladnServArea ]

 5GLanParamProvNotif:

 description: Represents a 5G LAN Parameter Provisioning Event Notification.

 type: object

 properties:

 npConfigNotif:

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

 NpConfigNotif:

 description: Represents a Network Parameters Configuration related notification.

 type: object

 properties:

 configResults:

 type: array

 items:

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

 minItems: 1

 appliedParam:

 $ref: 'TS29122\_MonitoringEvent.yaml#/components/schemas/AppliedParameterConfiguration'

 AaaUsage:

 anyOf:

 - type: string

 enum:

 - AUTH

 - IP\_ALLOC

 - 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 usage of the DN-AAA server.

 Possible values are:

 - AUTH: secondary authentication/authorization needed from DN-AAA server

 - IP\_ALLOC: UE IP address allocation needed from DN-AAA server

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

# A.14 EcsAddressProvision API

openapi: 3.0.0

info:

 title: 3gpp-ecs-address-provision

 version: 1.1.0-alpha.3

 description: |

 API for ECS Address Provisioning.

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externalDocs:

 description: >

 3GPP TS 29.522 V18.5.0; 5G System; Network Exposure Function Northbound APIs.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.522/'

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-ecs-address-provision/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 5.2.4 of 3GPP TS 29.122.

paths:

 /{afId}/configurations:

 get:

 summary: Read all active configurations for a given AF

 operationId: ReadAllConfigurations

 tags:

 - ECS Address Provision Configurations (Collection)

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (Successful get all of the active resources for the AF)

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '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'

 post:

 summary: Creates a new configuration resource

 operationId: CreateNewConfiguration

 tags:

 - ECS Address Provision Configurations (Collection)

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 requestBody:

 description: new resource creation

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Created (Successful creation)

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created 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'

 /{afId}/configurations/{configurationId}:

 get:

 summary: Read an active resource for the AF and the configuration Id

 operationId: ReadAnConfiguration

 tags:

 - Individual ECS Address Provision Configuration

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: configurationId

 in: path

 description: Identifier of the configuration resource

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (Successful get the active resource)

 content:

 application/json:

 schema:

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

 '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: Fully updates/replaces an existing resource

 operationId: FullyUpdateAnConfiguration

 tags:

 - Individual ECS Address Provision Configuration

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: configurationId

 in: path

 description: Identifier of the configuration resource

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to update/replace the existing resource

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful update of the existing resource)

 content:

 application/json:

 schema:

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

 '204':

 description: >

 Successful case. The resource has been successfully updated and no additional

 content is sent in the response message.

 '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'

 delete:

 summary: Deletes an already existing configuration resource

 operationId: DeleteAnConfiguration

 tags:

 - Individual ECS Address Provision Configuration

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: configurationId

 in: path

 description: Identifier of the configuration resource

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content (Successful deletion of the existing resource)

 '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'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 EcsAddressProvision:

 description: Represents ECS address provision configuration.

 type: object

 properties:

 self:

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

 ecsServerAddr:

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

 mtcProviderId:

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

 spatialValidityCond:

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

 tgtUe:

 $ref: 'TS29522\_AnalyticsExposure.yaml#/components/schemas/TargetUeId'

 plmnId:

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

 suppFeat:

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

 ecsAuthMethods:

 type: array

 items:

 $ref: 'TS29503\_Nudm\_PP.yaml#/components/schemas/EcsAuthMethod'

 minItems: 1

 required:

 - ecsServerAddr

 - suppFeat

\*\*\* End of Change \*\*\*