**3GPP TSG- Meeting #C3-243xxx**

**Hyderabad, IN, 27 - 31 May, 2024 was C3-243262**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **1292** | **rev** | **1** | **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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | |
| ***Title:*** | Define the PATCH method on the ECS Address Configuration Information resource | | | | | | | | |
|  |  | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** | EDGE\_Ph2 | | | | |  | ***Date:*** | | 2024-05-20 |
|  |  | | | |  | |  | |  |
| ***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 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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | |
| ***Reason for change:*** | | | The definition of the ECSAddress API needs further corrections and alignments with the drafting rules and NBI TS skeleton (in addition to the agreed corrections in C3-242567).  In addition, the HTTP PATCH method on the individual resource is not defined for this API. As already agreed in Rel-17, it is recommended to always suppot both PUT and PATCH for resource update, unless one of them is deemed technically not appropriate with regards to the use case or functionality, which is not the case here.  Also, the collection resource name ends with "Information" which does not take "s" at the end. It is hence preferable that the resource name ends with a word that can take "s" at the end in the plural mode. Therefore, it would be better that the resource is name "ECS Address Configurations". The "apiName" and indivdual resource names can also be updated/simplified accordingly. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Correct the above-detailed issues. * Add the support for the HTTP PUT method on the individual resource. * Update the resources names as per the above proposal. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * The provisions related to the definition of the ECSAddress API continue to contain errors and misalignments with the drafting rules and NBI TS skeleton. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | 5.1, 5.36.2.1, 5.36.2.2.1, 5.36.2.2.2, 5.36.2.2.3.1, 5.36.2.2.3.2, 5.36.2.2.3.3, 5.36.2.3.1, 5.36.2.3.2, 5.36.2.3.3.1, 5.36.2.3.3.2, 5.36.2.3.3.3, 5.36.2.3.3.3A (new clause), 5.36.2.3.3.4, 5.36.5.1, 5.36.5.3.2, 5.36.5.3.3, 5.36.5.3.4 (new clause), A.34 | | | | | | | |
|  | |  | | | | | | | |
|  | | **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 new feature and corrections to the OpenAPI description of the ECSAddress API defined in this specification. * The clashes between this CR and C3-242567 are to be solved by the rapporteur. | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

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

## 5.1 Introduction

The NEF Northbound APIs are a set of APIs defining the related procedures and resources for the interaction between the NEF and the AF.

Tables 5.1-1 summarizes the APIs defined in this specification.

Table 5.1-1: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service Name | Clause defined | Description | OpenAPI Specification File | API Name | Annex |
| TrafficInfluence | 5.4 | Traffic Influence API | TS29522\_TrafficInfluence.yaml | 3gpp-traffic-influence | A.2 |
| NiddConfigurationTrigger | 5.5 | NIDD (Non-IP Data Delivery) Configuration Trigger API | TS29522\_NiddConfigurationTrigger.yaml | 3gpp-nidd-configuration-trigger | A.3 |
| AnalyticsExposure | 5.6 | Analytics Exposure API | TS29522\_AnalyticsExposure.yaml | 3gpp-analyticsexposure | A.4 |
| 5GLANParameterProvision | 5.7 | 5G LAN Parameter Provision API | TS29522\_5GLANParameterProvision.yaml | 3gpp-5glan-pp | A.5 |
| ApplyingBdtPolicy | 5.8 | Applying BDT Policy API | TS29522\_ApplyingBdtPolicy.yaml | 3gpp-applying-bdt-policy | A.6 |
| IPTVConfiguration | 5.9 | IPTV Configuration API | TS29522\_IPTVConfiguration.yaml | 3gpp-iptvconfiguration | A.7 |
| LpiParameterProvision | 5.10 | LPI (Location Privacy Indicator) Parameter Provision API | TS29522\_LpiParameterProvision.yaml | 3gpp-lpi-pp | A.8 |
| ServiceParameter | 5.11 | Service Parameter API | TS29522\_ServiceParameter.yaml | 3gpp-service-parameter | A.9 |
| ACSParameterProvision | 5.12 | ACS Parameter Provision API | TS29522\_ACSParameterProvision.yaml | 3gpp-acs-pp | A.10 |
| MoLcsNotify | 5.13 | MO LCS Notify API | TS29522\_MoLcsNotify.yaml | 3gpp-mo-lcs-notify | A.11 |
| AKMA | 5.14 | AKMA API | TS29522\_AKMA.yaml | 3gpp-akma | A.12 |
| TimeSyncExposure | 5.15 | Time Sync Exposure API | TS29522\_TimeSyncExposure.yaml | 3gpp-time-sync-exposure | A.13 |
| EcsAddressProvision | 5.16 | ECS Address Provision API | TS29522\_EcsAddressProvision.yaml | 3gpp-ecs-address-provision | A.14 |
| AMPolicyAuthorization | 5.17 | AM Policy Authorization API | TS29522\_AMPolicyAuthorization.yaml | 3gpp-am-policyauthorization | A.15 |
| AMInfluence | 5.18 | AM Influence API | TS29522\_AMInfluence.yaml | 3gpp-am-influence | A.16 |
| MBSTMGI | 5.19 | MBS TMGI API | TS29522\_MBSTMGI.yaml | 3gpp-mbs-tmgi | A.17 |
| MBSSession | 5.20 | MBS Session API | TS29522\_MBSSession.yaml | 3gpp-mbs-session | A.18 |
| EASDeployment | 5.21 | EAS Deployment API | TS29522\_EASDeployment.yaml | 3gpp-eas-deployment | A.19 |
| ASTI | 5.22 | ASTI API | TS29522\_ASTI.yaml | 3gpp-asti | A.20 |
| DataReporting | 5.23 | DataReporting API | TS29522\_DataReporting.yaml | 3gpp-data-reporting | A.21 |
| DataReportingProvisioning | 5.24 | DataReportingProvisioning API | TS29522\_DataReportingProvisioning.yaml | 3gpp-data-reporting-provisioning | A.22 |
| UEId | 5.25 | UE ID API | TS29522\_UEId.yaml | 3gpp-ueid | A.23 |
| MBSUserService | 5.26 | MBSUserService API | TS29522\_MBSUserService.yaml | 3gpp-mb-us | A.24 |
| MBSUserDataIngestSession | 5.27 | MBSUserDataIngestSession API | TS29522\_MBSUserDataIngestSession.yaml | 3gpp-mb-ud-ingest | A.25 |
| MSEventExposure | 5.28 | MSEventExposure API | TS29522\_MSEventExposure.yaml | 3gpp-event-exposure | A.26 |
| MBSGroupMsgDelivery | 5.29 | MBSGroupMsgDelivery API | TS29522\_MBSGroupMsgDelivery.yaml | 3gpp-mbs-group-msg | A.27 |
| DNAIMapping | 5.30 | DNAIMapping API | TS29522\_DNAIMapping.yaml | 3gpp-dnai-mapping | A.28 |
| PDTQPolicyNegotiation | 5.31 | PDTQPolicyNegotiation API | TS29522\_PDTQPolicyNegotiation.yaml | 3gpp-pdtq-policy-negotiation | A.29 |
| MemberUESelectionAssistance | 5.32 | MemberUESelectionAssistance API | TS29522\_MemberUESelectionAssistance.yaml | 3gpp-musa | A.30 |
| GroupParametersProvisioning | 5.33 | Group Parameters Provisioning API | TS29.522\_GroupParametersProvisioning.yaml | 3gpp-grp-pp | A.31 |
| SliceParamProvision | 5.34 | Network Slice Parameters Provisioning API | TS29.522\_SliceParamProvision.yaml | 3gpp-slice-pp | A.32 |
| ECSAddress | 5.36 | ECS Address Configuration Information API | TS29522\_ECSAddress.yaml | 3gpp-ecs-address | A.34 |

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

#### 5.36.2.1 Overview

This clause describes the structure for the Resource URIs as shown in figure 5.36.2.1-1 and the resources and HTTP methods used for AF provisioned ECS Address Configuration Information management in the ECSAddress API.



Figure 5.36.2.1-1: Resource URI structure of the northbound ECSAddress API

Table 5.36.2.1-1 provides an overview of the resources and HTTP methods applicable for the northbound ECSAddress API.

Table 5.36.2.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| **Resource name** | **Resource URI** | **HTTP method** | **Description** |
| ECS Address Configuration Information Sets | /{afId}/configurations | GET | Read all ECS Address Configuration Information Set for a given AF. |
| POST | Create a new "Individual ECS Address Configuration Information Set" resource. |
| Individual ECS Address Configuration Information Set | /{afId}/configurations/{configId} | GET | Reads an active "Individual ECS Address Configuration Information Set" resource. |
| PUT | Update an existing "Individual ECS Address Configuration Information Set" resource. |
| PATCH | Modify an existing "Individual ECS Address Configuration Information Set" resource. |
| DELETE | Deletes an existing Individual ECS Address Configuration Information resource. |

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

##### 5.36.2.2.1 Introduction

This resource allows an AF to request the creation of a new Individual ECS Address Configurationsresource.

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

##### 5.36.2.2.2 Resource Definition

Resource URI: **{apiRoot}/3gpp-ecs-address/v1/{afId}/configurations**

This resource shall support the resource URI variables defined in table 5.36.2.2.2-1.

Table 5.36.2.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| **Name** | **Data type** | **Definition** |
| apiRoot | string | See clause 5.2.4 of 3GPP TS 29.122 [4]. |
| afId | string | Identifier of the AF. |

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

5.36.2.2.3.2 GET

The GET method allows to read all active ECS Address Configurationsfor a given AF.

This method shall support the URI query parameters specified in table 5.36.2.2.3.2-1.

Table 5.36.2.2.3.2-1: URI query parameters supported by the GETmethod on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| N/A |  |  |  |  |

This method shall support the request data structures specified in table 5.36.2.2.3.2-2, the response data structures and response codes specified in table 5.36.2.2.3.2-3, and the location headers specified in table 5.36.2.2.3.2-4 and table 5.36.2.2.3.2-5.

Table 5.36.2.2.3.2-2: Data structures supported by the GETRequest Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| N/A |  |  |  |

Table 5.36.2.2.3.2-3: Data structures supported by theGET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| array(EcsAddrInfo) | M | 0..N | 200 OK | The ECS Address Configuration Information Set(s) for the AF in the request URI are returned. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection, during ECS Address Configuration Information retrieval. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection, during ECS Address Configuration Information retrieval. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. | | | | |

Table 5.36.2.2.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

Table 5.36.2.2.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

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

5.36.2.2.3.3 POST

The POST method creates a new resource of Individual ECS Address Configuration Information Set for a given AF.

This method shall support the request data structures specified in table 5.36.2.2.3.3-1, the response data structures and response codes specified in table 5.36.2.2.3.3-2, and the Location Headers specified in table 5.36.2.2.3.3-3.

Table 5.36.2.2.3.3-1: Data structures supported by the POSTRequest Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| EcsAddrInfo | M | 1 | ECS Address Configuration Information Set, indicates how edge configuration servers are assigned with IP addresses. |

Table 5.36.2.2.3.3-2: Data structures supported by thePOST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| EcsAddrInfo | M | 1 | 201 Created | The Individual ECS Address Configuration Information Set resource was created successfully.  The URI of the created resource shall be returned in the "Location" HTTP header. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. | | | | |

Table 5.36.2.2.3.3-3: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-ecs-address/v1/{afId}/configurations/{configId} |

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

##### 5.36.2.3.1 Introduction

This resource allows an AF to read, update or delete an existing Individual ECS Address Configuration Information Set.

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

##### 5.36.2.3.2 Resource Definition

Resource URI: **{apiRoot}/3gpp-ecs-address/v1/{afId}/configurations/{configId}**

This resource shall support the resource URI variables defined in table 5.36.2.3.2-1.

Table 5.36.2.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| **Name** | **Data type** | **Definition** |
| apiRoot | string | See clause 5.2.4 of 3GPP TS 29.122 [4]. |
| afId | string | Identifier of the AF. |
| configId | string | Identifier of the ECS Address Configuration Information Set. |

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

5.36.2.3.3.2 GET

The GET method allows to read the existing ECS Address Configuration Information Set for a given AF and a given ECS Address Configuration Information Id.

This method shall support the URI query parameters specified in table 5.36.2.3.3.2-1.

Table 5.36.2.3.3.2-1: URI query parameters supported by theGETmethod on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| N/A |  |  |  |  |

This method shall support the request data structures specified in table 5.36.2.3.3.2-2, the response data structures and response codes specified in table 5.36.2.3.3.2-3, and the Location Headers specified in table 5.36.2.3.3.2-4 and table 5.36.2.3.3.2-5.

Table 5.36.2.3.3.2-2: Data structures supported by the GETRequest Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| N/A |  |  |  |

Table 5.36.2.3.3.2-3: Data structures supported by theGET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| EcsAddrInfo | M | 1 | 200 OK | Successful case.  The contents of the Individual ECS Address Configuration Information Set in the request URI are returned. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection, during the ECS Address Configuration Information retrieval. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection, during the ECS Address Configuration Information retrieval. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. | | | | |

Table 5.36.2.3.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

Table 5.36.2.3.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

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

5.36.2.3.3.3 PUT

The PUT method is used to modify an existing Individual ECS Address Configuration Information Set resource.

This method shall support the URI query parameters specified in table 5.36.2.3.3.3-1.

Table 5.36.2.3.3.3-1: URI query parameters supported by the PUT method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 5.36.2.3.3.3-2, the response data structures and response codes specified in table 5.36.2.3.3.3-3, and the Location Headers specified in table 5.36.2.3.3.3-4 and table 5.36.2.3.3.3-5.

Table 5.36.2.3.3.3-2: Data structures supported by the PUTRequest Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| EcsAddrInfo | M | 1 | Modify the Individual ECS Address Configuration Information Set resource. |

Table 5.36.2.3.3.3-3: Data structures supported by thePUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| EcsAddrInfo | M | 1 | 200 OK | Successful case.  The representation of the updated ECS Address Configuration Information Set is returned. |
| N/A |  |  | 204 No Content | Successful case.  The ECS Address Configuration Information Set was updated successfully. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection, during the ECS Address Configuration Information modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection, during the ECS Address Configuration Information modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. | | | | |

Table 5.36.2.3.3.3-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

Table 5.36.2.3.3.3-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

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

###### 5.36.2.3.3.3A PATCH

This method enables to request the modification of an existing "Individual ECS Address Configuration Information Set" resource at the NEF.

This method shall support the URI query parameters specified in table 5.36.2.3.3.3A-1.

Table 5.36.2.3.3.3A-1: URI query parameters supported by the PATCH method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 5.36.2.3.3.3A-2 and the response data structures and response codes specified in table 5.36.2.3.3.3A-3.

Table 5.36.2.3.3.3A-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| EcsAddrInfoPatch | M | 1 | Contains the requested modifications to the "Individual ECS Address Configuration Information Set" resource. |

Table 5.36.2.3.3.3A-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| EcsAddrInfo | M | 1 | 200 OK | Successful response. The "Individual ECS Address Configuration Information Set" resource is successfully modified and a representation of the updated resource is returned in the response body. |
| n/a |  |  | 204 No Content | Successful response. The "Individual ECS Address Configuration Information Set" resource is successfully modified and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative target URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] shall also apply. | | | | |

Table 5.36.2.3.3.3A-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI of the resource located in an alternative NEF. |

Table 5.36.2.3.3.3A-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative target URI of the resource located in an alternative NEF. |

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

5.36.2.3.3.4 DELETE

The DELETE method deletes an existing Individual ECS Address Configuration Information Set resource.

This method shall support the URI query parameters specified in table 5.36.2.3.3.4-1.

Table 5.36.2.3.3.4-1: URI query parameters supported by theDELETE method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| N/A |  |  |  |  |

This method shall support the request data structures specified in table 5.36.2.3.3.4-2, the response data structures and response codes specified in table 5.36.2.3.3.4-3, and the Location Headers specified in table 5.36.2.3.3.4-4 and table 5.36.2.3.3.4-5.

Table 5.36.2.3.3.4-2: Data structures supported by the DELETERequest Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| N/A |  |  |  |

Table 5.36.2.3.3.4-3: Data structures supported by theDELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| N/A |  |  | 204 No Content | The Individual ECS Address Configuration Information Set resource was terminated successfully. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection, during the termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection, during the termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative V-NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. | | | | |

Table 5.36.2.3.3.4-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

Table 5.36.2.3.3.4-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative V-NEF. |

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

#### 5.36.3.1 Overview

The structure of the custom operation URIs of the Nnef\_ECSAddress service is shown in Figure 5.36.3.1-1.



Figure 5.36.3.1-1: Custom operation URI structure of the Nnef\_ECSAddress API

Table 5.36.3.1-1 provides an overview of the custom operations and applicable HTTP methods.

Table 5.36.3.1-1: Custom operations without associated resources

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Custom operation URI** | **Mapped HTTP method** | **Description** |
|  | {apiRoot}/3gpp-ecs-address/<apiVersion>/remove-ecsaddr | POST | Request the V-NEF to delete ECS Address Configuration information based on given attributes. |

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

##### 5.36.3.2.1 Description

The operation is used by the NF service consumer to delete ECS Address Configuration information based on given attributes.

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

##### 5.36.3.2.2 Operation Definition

This operation shall support the request data structures shown in Table 5.36.3.2.2-1 and the response data structures and error codes specified in Table 5.36.3.2.2-2.

Table 5.36.3.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| EcsAddrDeleteCriteria | M | 1 | Information about the criteria to be used for ECS Address Configuration information deletion. |

Table 5.36.3.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response**  **codes** | **Description** |
| n/a |  |  | 204 No Content | Successful request to remove ECS Address Configuration information based on given criteria. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing an alternative URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative URI of the resource located in an alternative NEF.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [4] |
| NOTE: The mandatory HTTP error status codes for the POST method listed in Table 5.2.6-1 of 3GPP TS 29.122 [4] also apply. | | | | |

Table 5.36.3.2.2-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative NEF. |

Table 5.36.3.2.2-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative NEF. |

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

#### 5.36.5.1 General

This clause specifies the application data model supported by the ECSAddress API. Table 5.36.5.1-1 specifies the data types defined for the ECSAddress API.

Table 5.36.5.1-1: ECSAddress API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| EcsAddrDeleteCriteria | 5.36.5.3.3 | Contains criteria for deleting ECS Address Configuration information. |  |
| EcsAddrInfo | 5.36.5.3.2 | Represents an ECS Address Configuration Information. |  |
| EcsAddrInfoPatch | 5.30.5.2.4 | Represents the requested modifications to an ECS Address Configuration Information. |  |

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

##### 5.36.5.3.2 Type: EcsAddrInfo

Table 5.36.5.3.2-1: Definition of type EcsAddrInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| self | Link | C | 0..1 | Identifies the individual resource.  It 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). |  |
| spatialValidityCond | SpatialValidityCond | O | 0..1 | Indicates the spatial validity condition. |  |
| tgtUe | TargetUeId | O | 0..1 | Target UE information.  Only the attributes "anyUeInd" and "exterGroupId" of the TargetUeId data structure are applicable. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the negotiated supported features. It shall be provided in an HTTP POST response if it was provided in the HTTP POST request. |  |

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

##### 5.36.5.3.3 Type: EcsAddrDeleteCriteria

Table 5.36.5.3.3-1: Definition of type EcsAddrDeleteCriteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| afIds | array(AfId) | C | 1..N | AF identifiers to be used as deletion criterion. (NOTE 1) |  |
| dnn | Dnn | C | 0..1 | DNN to be used as deletion criterion.  (NOTE 1) |  | |
| snssai | Snssai | C | 0..1 | S-NSSAI to be used as deletion criterion.  (NOTE 1) |  | |
| ecsAddrInfo | EcsAddrInfo | C | 0..1 | ECS Address Configuration information to be used as deletion criterion. Only entries that are exact matches of this attribute shall be deleted.  (NOTE 1) (NOTE 2) |  |
| NOTE 1: At least one of those attributes shall be provided.  NOTE 2: The attributes "self" and "suppFeat" of EcsAddrInfo shall not be provided and shall not be considered when finding the matching entries. | | | | | |

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

##### 5.36.5.3.4 Type: EcsAddrInfoPatch

Table 5.36.5.3.4-1: Definition of type EcsAddrInfoPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| ecsServerAddr | EcsServerAddr | O | 0..1 | Represents the updated ECS address(es) information. |  |
| spatialValidityCond | SpatialValidityCond | O | 0..1 | Contains the updated spatial validity conditions. |  |
| tgtUe | TargetUeId | O | 0..1 | Contains the updated target UE information.  Only the "anyUeInd" and "exterGroupId" attributes of the TargetUeId data structure are applicable. |  |

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

A.34 ECSAddress API

openapi: 3.0.0

info:

title: 3gpp-ecs-address

version: 1.0.0-alpha.2

description: |

API for AF provisioned ECS Address Configuration Information.

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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/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 ECS Address Configuration Information Set(s) for a given AF

operationId: ReadAllEACIs

tags:

- ECS Address Configuration Information Sets (Collection)

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

responses:

'200':

description: OK (Successful retrieval of the ECS Address Configuration Information)

content:

application/json:

schema:

type: array

items:

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

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: Create a new Individual ECS Address Configuration Information Set resource.

operationId: CreateEACI

tags:

- ECS Address Configuration Information Sets (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/EcsAddrInfo'

responses:

'201':

description: Created (Successful creation)

content:

application/json:

schema:

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

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/{configId}:

get:

summary: Read an active Individual ECS Address Configuration Information Set resource for the AF

operationId: ReadEACI

tags:

- Individual ECS Address Configuration Information Set

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: configId

in: path

description: Identifier of ECS Address Configuration Information.

required: true

schema:

type: string

responses:

'200':

description: OK (Successful retrieval of the active resource)

content:

application/json:

schema:

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

'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: UpdateEACI

tags:

- Individual ECS Address Configuration

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: configId

in: path

description: Identifier of the ECS Address Configuration Information resource

required: true

schema:

type: string

requestBody:

description: Parameters to update/replace the existing resource

required: true

content:

application/json:

schema:

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

responses:

'200':

description: OK (Successful update of the existing resource)

content:

application/json:

schema:

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

'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'

patch:

summary: Request the modification of an existing Individual ECS Address Configuration Information Set resource.

operationId: ModifyEACI

tags:

- Individual Individual ECS Address Configuration (Document)

requestBody:

required: true

content:

application/merge-patch+json:

schema:

$ref: '#/components/schemas/EcsAddrInfo Patch'

responses:

'200':

description: >

OK. The Individual ECS Address Configuration Information Set resource is successfully

modified and a representation of the updated resource is returned in the response body.

content:

application/json:

schema:

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

'204':

No Content. The Individual ECS Address Configuration Information Set 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'

'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 existing ECS Address Configuration Information Set resource

operationId: DeleteEACI

tags:

- Individual ECS Address Configuration Information Set

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: configId

in: path

description: Identifier of the ECS Address Configuration Information Set 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'

/remove-ecsaddr:

post:

summary: Remove ECS Address Configuration information based on given criteria.

operationId: DeleteEACIs

tags:

- ECS Address Configuration Information removal

requestBody:

description: Criteria to be used for deleting ECS Address Configuration Information.

content:

application/json:

schema:

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

required: true

responses:

'204':

description: >

No Content. The entries matching the provided criteria have been 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'

'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:

EcsAddrInfo:

description: Represents an ECS Address Configuration Information.

type: object

properties:

self:

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

ecsServerAddr:

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

spatialValidityCond:

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

tgtUe:

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

suppFeat:

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

required:

- ecsServerAddr

EcsAddrDeleteCriteria:

description: >

Contains criteria to be used for deleting ECS Address Configuration information.

type: object

properties:

afIds:

type: array

items:

$ref: 'TS29522\_AKMA.yaml#/components/schemas/AfId'

minItems: 1

description: AF identifiers to be used as deletion criterion.

dnn:

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

snssai:

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

ecsAddrInfo:

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

anyOf:

- required: [afIds]

- required: [dnn]

- required: [snssai]

- required: [ecsAddrInfo]

EcsAddrInfoPatch:

description: >

Represents the requested modifications to an ECS Address Configuration Information.

type: object

properties:

ecsServerAddr:

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

spatialValidityCond:

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

tgtUe:

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

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