**3GPP TSG CT WG3 Meeting #138 *C3-246484***

**Orlando, US, 18 - 22 November, 2024** (revision of C3-246120)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **558** | **CR** |  | **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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Tunnel information in retrieve T-EES procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI19, EDGEAPP\_Ph2 | | | | |  | ***Date:*** | | | 2024-11-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories 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:*** | | As per the agreed TS 23.558 CR 0655 (S6-243697), the tunnel information if available is included in the retrieve T-EES request. The same needs to implemented for Eecs\_TargetEESDiscovery API.  New feature is needed, as this is introduced from EDGEAPP\_Ph2. Since the CR is proposed for Rel-19, new feature name is defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Add tunnel information as new query parameter for Eecs\_TargetEESDiscovery  2. Defined Tunnel Info data type  3. New feature  4. Open API updates | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Tunnel information missing and not aligned with stage-2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.2.2.2.3.1, 9.2.5.1, 9.2.5.2, (new) 9.2.5.2.1, (new) 9.2.5.2.2, 9.2.7, A.12 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 proposes backward compatible feature to Eecs\_TargetEESDiscovery Open API specification file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* \* Start of Change \* \* \* \*

###### 9.2.2.2.3.1 GET

This method allows the service consumer to fetch the target Enabler Server information as specified in 3GPP TS 23.558 [2], from the ECS with a given discovery filters.

This method shall support the URI query parameters specified in table 9.2.2.2.3.1-1.

Table 9.2.2.2.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| ees-id | string | M | 1 | Unique identifier of the target Enabler Server. |  |
| eas-id | string | M | 1 | Represents the application identifier of the source Application Server (e.g., S-EAS or CAS), e.g. URI, FQDN. |  |
| target-dnai | Dnai | O | 0..1 | The DNAI information associated with the potential target Enabler Server(s) and/or target Application Server(s). |  |
| ue-id | Gpsi | O | 0..1 | Identifier of the UE. |  |
| ue-location | LocationArea5G | O | 0..1 | The location information of the UE. |  |
| eec-srv-cont-supp | EECSrvContinuitySupport | O | 0..1 | Indicates whether the EEC supports service continuity or not and the related service continuity support information. | EdgeApp\_2 |
| ac-svc-cont-supp | array(ACRScenario) | O | 1..N | Indicates that the AC supports service continuity and contains the related service continuity support information (i.e., supported ACR scenarios). | EdgeApp\_2 |
| bdl-id | string | O | 0..1 | Contains the identifier of the EAS bundle.  This query parameter may be present only when the "bdl-type" query parameter is also present and set to "PROXY". | EdgeApp\_2 |
| bdl-type | BdlType | O | 0..1 | Contains the EAS bundle type. | EdgeApp\_2 |
| ens-ind | boolean | O | 0..1 | Indicates whether edge node sharing is requested.  - When set to "true", it indicates that edge node sharing is requested.  - When set to "false" (default if omitted), it indicates that node sharing is not requested. | EdgeApp\_2 |
| app-grp-id | string | O | 0..1 | Contains the application group identifier.  When this query parameter is provided, then it indicates that the request is for the retrieval of an EES list for the announcement of common EAS. | EdgeApp\_2 |
| supp-feats | SupportedFeatures | C | 0..1 | Contains the list of supported feature(s) among the ones defined in clause 9.2.7.  This query parameter shall be present only when feature negotiation needs to take place. |  |
| serving-mno-info | PlmnIdNid | O | 0..1 | Contains the serving MNO information, i.e., the MNO that is serving the subscriber. | EdgeApp\_3 |
| pred-exp-time | DateTime | O | 0..1 | Contains the prediction expiration time, i.e., the estimated time at which the UE should reach the predicted/expected location or EAS service area at the latest. | EdgeApp\_3 |
| tunnel-info | TunnelInfo | O | 0..1 | Contains the target tunnel information. | EdgeApp\_2\_Ext1 |

This method shall support the request data structures specified in table 9.2.2.2.3.1-2 and the response data structures and response codes specified in table 9.2.2.2.3.1-3.

Table 9.2.2.2.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 9.2.2.2.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| ECSServProvResp | M | 1 | 200 OK | The EDN configuration and the target Enabler Server information determined by the ECS based on the query parameters. |
| NOTE: The mandatory HTTP error status code for the HTTP GET method listed in Table 5.2.6-1 of 3GPP TS 29.122 [6] shall also apply. | | | | |

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

#### 9.2.5.1 General

This clause specifies the application data model supported by the API. Data types listed in clause 7.2 apply to this API.

Table 9.2.5.1-1 specifies the data types defined specifically for the Eecs\_TargetEESDiscovery API.

Table 9.2.5.1-1: Eecs\_TargetEESDiscovery API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| TunnelInfo | 9.2.5.2.2 | Contains the tunnel information. | EdgeApp\_2\_Ext1 |

Table 9.2.5.1-2 specifies data types re-used by the Eecs\_TargetEESDiscovery API service.

Table 9.2.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| ACRScenario | Clause 9.1.5.3.3 | Represents ACR scenarios. | EdgeApp\_2 |
| BdlType | Clause 8.1.5.3.6 | Represent EAS Bundle type. | EdgeApp\_2 |
| DateTime | 3GPP TS 29.122 [6] | Represents a date and a time. | EdgeApp\_3 |
| Dnai | 3GPP TS 29.571 [8] | Used to indicate the target DNAI information. |  |
| ECSServProvResp | 3GPP TS 24.558 [14] | The response to the target EES discovery request, which includes the EDN configuration along with list of EES(s) information. |  |
| EECSrvContinuitySupport | Clause 8.7.5.2.8 | Represent service continuity support related information for an EEC. | EdgeApp\_2 |
| Gpsi | 3GPP TS 29.571 [8] | Used to identify the UE in the query parameter. |  |
| LocationArea5G | 3GPP TS 29.122 [6] | Used to indicate the location information of the UE in the query parameter. |  |
| PlmnIdNid | 3GPP TS 29.571 [8] | Represents the identifier of the network, i.e., PLMN or SNPN. | EdgeApp\_3 |
| TunnelAddress | 3GPP TS 29.571 [8] | Represents the tunnel address information. | EdgeApp\_2\_Ext1 |

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

#### 9.2.5.2 Structured data types

##### 9.2.5.2.1 Introduction

This clause defines the structures to be used in resource representations.

##### 9.2.5.2.2 Type: TunnelInfo

Table 9.2.5.2.2-1: Definition of type TunnelInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| servProvId | string | M | 1 | Contains the identifier of the service provider. |  |
| endPoint | TunnelAddress | M | 1 | Contains the endpoint address of the tunnel server. |  |

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

### 9.2.7 Feature negotiation

General feature negotiation procedures are defined in clause 7.8. Table 9.2.7-1 lists the supported features for Eecs\_TargetEESDiscovery API.

Table 9.2.7-1: Supported Features

|  |  |  |
| --- | --- | --- |
| **Feature number** | **Feature Name** | **Description** |
| 1 | EdgeApp\_2 | This feature indicates the support of the enhancements to the Edge Applications. Within this feature, the following enhancements are covered:  - Support T-EAS discovery based on EEC service continuity information and/or AC service continuity information.  - Support EAS bundle information management.  - Support of requesting edge node sharing.  - Support of T-EES discovery based on application group identifier. |
| 2 | EdgeApp\_3 | This feature indicates the support of the enhancements to the Edge Applications.  Within this feature, the following enhancements are covered:  - Support of the allowed MNO information in the T-EES discovery request.  - Support of the prediction expiration time in the T-EES discovery request. |
| 3 | EdgeApp\_2\_Ext1 | This feature indicates the support of the enhancements to the Edge Applications.  Within this feature, the following enhancements are covered:  - Support of the tunnel information in the T-EES discovery request. |

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

# A.12 Eecs\_TargetEESDiscovery API

openapi: 3.0.0

info:

title: ECS Target EES Discovery API

description: |

API for Target EES Discovery.

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version: 1.2.0-alpha.1

externalDocs:

description: >

3GPP TS 29.558 V19.0.0 Enabling Edge Applications;

Application Programming Interface (API) specification; Stage 3

url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.558/

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/eecs-targeteesdiscovery/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 7.5 of 3GPP TS 29.558.

paths:

/ees-profiles:

get:

summary: Read all the targeted Enabler Server Profiles

operationId: GetEESProfiles

tags:

- EES Profiles (Collection)

description: Retrieve the T-EES information.

parameters:

- name: ees-id

in: query

description: Unique identifier of the source Enabler Server.

required: true

schema:

type: string

- name: eas-id

in: query

description: Unique identifier of the source Application Server.

required: true

schema:

type: string

- name: target-dnai

in: query

description: >

The DNAI information associated with the potential target Enabler Server(s)

and/or target Application Server(s).

required: false

schema:

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

- name: ue-id

in: query

description: Identifier of the UE.

required: false

schema:

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

- name: ue-location

in: query

description: The location information of the UE.

required: false

schema:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

- name: eec-srv-cont-supp

in: query

description: >

Indicates whether the EEC supports service continuity or not and the related service

continuity support information.

required: false

schema:

$ref: 'TS29558\_Eees\_EECContextRelocation.yaml#/components/schemas/EECSrvContinuitySupport'

- name: ac-svc-cont-supp

in: query

description: >

Indicates that the AC supports service continuity and contains the related service

continuity support information (i.e., supported ACR scenarios).

required: false

schema:

type: array

items:

$ref: 'TS29558\_Eecs\_EESRegistration.yaml#/components/schemas/ACRScenario'

minItems: 1

- name: bdl-id

in: query

description: >

Contains EAS bundle identifier.

required: false

schema:

type: string

- name: bdl-type

in: query

description: >

Contains EAS bundle type.

required: false

schema:

$ref: 'TS29558\_Eees\_EASRegistration.yaml#/components/schemas/BdlType'

- name: ens-ind

in: query

description: indicates whether edge node sharing is requested.

required: false

schema:

type: boolean

description: >

Set to true if edge node sharing is requested.

Set to false if edge node sharing is not requested.

The default value when omitted is false.

- name: app-grp-id

in: query

description: >

Contains the application group identifier.

required: false

schema:

type: string

- name: supp-feats

in: query

description: Contains the list of supported feature(s).

required: false

schema:

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

- name: serving-mno-info

in: query

description: >

Contains the serving MNO information, i.e., the MNO that is serving the subscriber.

required: false

schema:

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

- name: pred-exp-time

in: query

description: >

Contains the prediction expiration time.

required: false

schema:

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

- name: tunnel-info

in: query

description: >

Contains the target tunnel information.

required: false

content:

application/json:

schema:

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

responses:

'200':

description: >

The EDN configuration and the Enabler Server information determined by the ECS.

content:

application/json:

schema:

$ref: 'TS24558\_Eecs\_ServiceProvisioning.yaml#/components/schemas/ECSServProvResp'

'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'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

#

# STRUCTURED DATA TYPES

#

schemas:

TunnelInfo:

description: >

Represents the tunnel information.

type: object

properties:

servProvId:

type: string

endPoint:

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

required:

- servProvId

- endPoint

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