**3GPP TSG-CT WG1 Meeting #141eC1-232042\_r1**

**Online 17– 21 April 2023**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **24.558** | **CR** | **0028** | **rev** | **-** | **Current version:** | **18.0.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Enhanced EES service differentiation |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | EDGEAPP\_Ph2 |  | ***Date:*** | 2023-03-27 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | SA6 improved service provisioning procedure to enable support for EES service differentiation for UEs, by adding a list of desired ECSP identifier(s) in the service provisioning request and service provisioning subscription request.TS 24.558 needs to be aligned with the above SA6 requirement. |
|  |  |
| ***Summary of change:*** | Clause 3.3: added abbreviations for ECSP.Clause 7.2.2.2.2: added that if the EdgeApp\_2 feature is supported and the EEC provided the list of desired ECSP within the "ecspIds" attribute, the ECS shall identify the matching EESs based on registered ECSP identifier in EES profile.Clause 7.2.2.3.2: added that if the EdgeApp\_2 feature is supported the body of the POST request may contain the list of desired ECSP identifiers.Clause 7.2.2.4.2: added that if the EdgeApp\_2 feature is supported and the ECS received the list of desired ECSP identifiers, the ECS identifies the EES(s) based on registered ECSP identifier in EES profile.Clause 8.1.5.2.2: "ecspIds" attribute containing the list of ECSP identifiers added in the ECSServProvReq data type.Clauses 8.1.5.2.4: "ecspIds" attribute ECSP identifiers added in the ECSServProvSubscription data type.Clause 8.1.7: new feature EdgeApp\_2 added in table 8.1.7-1.OpenAPI file of the Eecs\_ServiceProvisioning API accordingly updated.**Backward compatibility analysis:**This CR introduces backward feature to the Eecs\_ServiceProvisioning API since it adds optional attributes. |
|  |  |
| ***Consequences if not approved:*** | Partial support for EES service differentiation for UEs. |
|  |  |
| ***Clauses affected:*** | 3.3, 7.2.2.2.2, 7.2.2.3.2, 7.2.2.4.2, 8.1.5.2.2, 8.1.5.2.4, 8.1.7, B.1 |
|  |  |
|  | **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 backward compatible feature to the OpenAPI file of Eecs\_ServiceProvisioning API. |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\* First Change \*\*\*

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

AC Application Client

ACR Application Context Relocation

API Application Programming Interface

EAS Edge Application Server

ECS Edge Configuration Server

ECSP Edge Computing Service Provider

EEC Edge Enabler Client

EES Edge Enabler Server

NAS Non Access Stratum

URI Uniform Resource Locator

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

##### 7.2.2.2.2 EEC requesting service provisioning information using Eecs\_ServiceProvisioning\_Request operation

To request for the one-time service provisioning information, the EEC shall send an HTTP POST request (custom operation: "Request") to the ECS with the request URI set to"{apiRoot}/eecs-serviceprovisioning/<apiVersion>/request". And the body including the ECSServProvReq data structure, as specified in clause 8.1.5.2.2.

Upon receiving the HTTP POST message from the EEC, the ECS shall:

a) process the EEC service provisioning request information;

b) verify and check if the EEC is authorized to request service provisioning information from ECS;

c) if the EEC is authorized to request service provisioning information from ECS, then the ECS:

1) may obtain the UE's location as specified in clause 5.3 of 3GPP TS 29.122 [3];

2) if AC profile(s) are provided by the EEC, the ECS identifies the EES(s) based on the provided AC profile(s) and the UE location, and if the enNB1 feature is supported, the "userLocation" attribute may be provided in the "locInf" attribute within the EasDiscoveryReq data type;

i) if acSvcContSupp information is included in the AC Profile, the matching EES has to support ACRScenario indicated in the acSvcContSupp information; and

ii) for each AC Profile, if eass information is included in the AC Profile, the ECS identifies the matching EES such that the EES profile matches easId information;

3) if AC profiles(s) are not provided:

i. if available, the ECS identifies the EES(s) based on the UE-specific service information at the ECS and the UE location; and

ii. ECS identifies the EES(s) by applying the ECSP policy (e.g. based on the UE location);

4) if the EdgeApp\_2 feature is supported and the EEC provided the list of desired ECSP identifiers within the "ecspIds" attribute, the ECS shall identify the matching EESs based on registered ECSP identifier in EES profile; and

NOTE 1: For EEC desired ECSP identifier usage, it is assumed that the ECSP providing the EES and PLMN operator are the same organization and an ECSP providing the EES (desired by the EEC) registers its EES in ECS provided by another ECSP based on service agreement to provide services to EEC.

5) the ECS also determines other information that needs to be provisioned, e.g. identification of the EDN, EDN service area, EES endpoints; and

d) if the ECS is able to determine service provisioning information using the inputs in service provisioning request, UE-specific service information at the ECS or the ECSP's policy, then the ECS returns an HTTP "200 OK" status code response with the response body including the ECSServProvResp data structure which may include the lifetime of the provided EDN configuration information.

 If the inputs in service provisioning request do not match any EDN configuration information (i.e. there is no client side error), the ECS sends an HTTP "204 No Content" status code response code.

 Otherwise, the ECS shall reject the service provisioning request and respond with an appropriate failure cause.

The EEC may cache the service provisioning information (e.g. EES endpoint). If the lifeTime attribute is included in the service provisioning response, then the EEC may cache and reuse the service provisioning information only for the duration specified by the lifeTime attribute.

NOTE 2: How EEC maintains the service provisioning information is implementation specific.

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

##### 7.2.2.3.2 EEC subscribing to service provisioning information from ECS using Eecs\_ServiceProvisioning\_Subscribe operation

To subscribe to changes to service provisioning information at the ECS, the EEC shall send an HTTP POST message to the ECS on the Service Provisioning Subscriptions resource. The body of the POST message shall include Notification Target Address (e.g. URL) and may include the UE identifier (e.g. GPSI), connectivity information, proposed expiration time, AC Profile information and if the EdgeApp\_2 feature is supported the list of desired ECSP identifiers, as specified in clause 8.1.2.3.3.1.

Upon receiving the HTTP POST message from the EEC, the ECS shall:

a) process the EEC service provisioning subscription request;

b) verify and check if the EEC is authorized to subscribe for the service provisioning information; and

c) if the EEC is authorized to subscribe for the service provisioning information, then the ECS;

1) may obtain the UE's location as specified in clause 5.3 of 3GPP TS 29.122 [3];

2) shall create a new resource with the Service Provisioning Subscriptions resource as specified in clause 8.1.2.3; and

3) if the ECS determines the EES information using the inputs in service provisioning subscription request, UE-specific service information at the ECS or the ECSP policy, then the ECS returns the service provisioning subscription response, which includes the subscription identifier and may include the expiration time, indicating when the subscription will automatically expire. Otherwise, the ECS shall reject the service provisioning subscription request and respond with an appropriate failure cause.

If the expiration time is provided, then to maintain the subscription, the EEC shall send a Service provisioning subscription update request (as described in clause 7.2.2.5) prior to the expiration time. If a Service provisioning subscription update request is not received prior to the expiration time, the ECS shall treat the EEC as implicitly unsubscribed and remove the corresponding service provisioning subscription resource.

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

##### 7.2.2.4.2 ECS notifying the service provisioning information to EEC using Eecs\_ServiceProvisioning\_Notify operation

The ECS determines to notify the EEC with the service provisioning information, when an event occurs at the ECS that satisfies trigger conditions for updating service provisioning of a subscribed EEC.

The ECS may obtain the UE's location as specified in clause 5.3 of 3GPP TS 29.122 [3]. If AC profile(s) were provided by the EEC during subscription creation, the ECS identifies the EES(s) based on the provided AC profile(s) and the UE location.

NOTE 1: How the ECS identifies the EES(s) based on the provided AC profile(s) and the UE location is implementation specific.

If AC profiles(s) were not provided, then if available, the ECS identifies the EES(s) based on the UE-specific service information at the ECS and the UE location. The ECS may also identify the EES(s) by applying the ECSP policy (e.g. based only on the UE location). If the EdgeApp\_2 feature is supported and the ECS received the list of desired ECSP identifiers, the ECS identifies the EES(s) based on registered ECSP identifier in EES profile.

NOTE 2: For the EEC desired ECSP identifier usage, it is assumed that the ECSP providing the EES and PLMN operator are the same organization and the ECSP providing the EES (desired by the EEC) registers its EES in the ECS provided by another ECSP based on service agreement to provide services to EEC.

The ECS also determines other information that needs to be provisioned, e.g. identification of the EDN, EDN service area, EES endpoints.

To notify the service provisioning information events, the ECS shall send an HTTP POST message using the Notification Destination URI received in the subscription request, as specified in clause 8.1.4.2.

Upon receiving the HTTP POST message, the EEC shall process the service provisioning information. The EEC may cache the service provisioning information (e.g. EES endpoint). If the lifeTime attribute is included in the service provisioning response, then the EEC may cache and reuse the service provisioning information only for the duration specified by the lifeTime attribute. If the ECS provided information regarding the service continuity support of individual EESs, the EEC may take this information into account when selecting an EES for EEC registration, EAS discovery or T-EAS discovery, respectively.

NOTE 3: How the EEC maintains the service provisioning information is implementation specific.

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

##### 8.1.5.2.2 Type: ECSServProvReq

Table 8.1.5.2.2-1: Definition of type ECSServProvReq

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| eecId | string | M | 0..1 | Represents a unique identifier of the EEC. |  |
| ueId | Gpsi | O | 0..1 | Represents the identifier of the UE. |  |
| acProfs | array(ACProfile) | O | 1..N | Information about services the EEC wants to connect to.  |  |
| eecSvcContSupp | array(ACRScenario) | O | 0..1 | The ACR scenarios supported by the EEC for service continuity. If this attribute is not present, then the EEC does not support service continuity. |  |
| connInfo | array(ConnectivityInfo) | O | 0..N | List of connectivity information for the UE. |  |
| locInf | LocationInfo | O | 0..1 | Represents location information of the UE.If the UserLocation feature is supported, the "userLocation" attribute shall be provided in the LocationInfo data type. |  |
| ecspIds | array(string) | O | 1..N | Indicates to the ECS which EES providers are preferred by the EEC. | EdgeApp\_2 |
| suppFeat | SupportedFeatures | C | 0..1 | Represents a list of Supported features used as described in clause 6.3.7.Shall be present in the HTTP POST request/response. |  |

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

##### 8.1.5.2.4 Type: ECSServProvSubscription

Table 8.1.5.2.4-1: Definition of type ECSServProvSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| eecId | string | M | 0..1 | Represents a unique identifier of the EEC. |  |
| ueId | Gpsi | O | 0..1 | Represents the identifier of the UE. |  |
| acProfs | array(ACProfile) | O | 1..N | Information about services the EEC wants to connect to.  |  |
| expTime | DateTime | O | 0..1 | Indicates the expiration time of the subscription. If the expiration time is not present, then it indicates that the EEC subscription never expires. |  |
| eecSvcContSupp | array(ACRScenario) | O | 0..1 | The ACR scenarios supported by the EEC for service continuity. If this attribute is not present, then the EEC does not support service continuity. |  |
| connInfo | array(ConnectivityInfo) | O | 0..N | List of connectivity information for the UE. |  |
| notificationDestination | Uri | O | 1 | The notification target address containing the URI where the service provisioning notification should be delivered to. This attribute shall be present in HTTP POST message to ECS. (NOTE) |  |
| requestTestNotification | boolean | O | 0..1 | Set to true by Subscriber to request the ECS to send a test notification as defined in clause 7.6 of 3GPP TS 29.558 [4]. Set to false or omitted otherwise. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol as defined in clause 7.6 of 3GPP TS 29.558 [4]. | Notification\_websocket |
| ecspIds | array(string) | O | 1..N | Indicates to the ECS which EES providers are preferred by the EEC. | EdgeApp\_2 |
| suppFeat | SupportedFeatures | O | 0..1 | Used to negotiate the supported optional features of the API as described in clause 7.8 of 3GPP TS 29.558 [4].This attribute shall be provided in the HTTP POST request and in the response of successful resource creation.This attribute also shall be provided in the HTTP PUT request and in the response of successful resource modification. |  |
| NOTE: The notification target address can terminate at the EEC (e.g. in an IoT device) if the deployment supports EEC reachability, or it can terminate at a push notification service. Details of the push notification service are out of scope of this release. |

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

### 8.1.7 Feature negotiation

General feature negotiation procedures are described in clause 7.8 of 3GPP TS 29.558 [4]. Table 8.1.7-1 lists the supported features for Eecs\_ServiceProvisioning API.

Table 8.1.7-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | Notification\_test\_event | Testing of notification connection is supported according to clause 7.6 of 3GPP TS 29.558 [4]. |
| 2 | Notification\_websocket | The delivery of notifications over Websocket is supported according to clause 7.6 of 3GPP TS 29.558 [4]. This feature requires that the Notification\_test\_event feature is also supported. |
| 3 | enNB1 | This feature indicates the support of enhancements to this northbound API in Rel-18. |
| 4 | EdgeApp\_2 | This feature indicates support of the enhancements for the Enabling Edge Applications. Within this feature the following enhancements are covered:- support of enhanced EES service differentiation. |

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

# B.1 Eecs\_ServiceProvisioning

openapi: 3.0.0

info:

 title: Eecs\_ServiceProvisioning

 version: "1.1.0-alpha.1"

 description: |

 API for ECS Service Provisioning.

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externalDocs:

 description: 3GPP TS 24.558 V18.0.0 Enabling Edge Applications; Protocol specification.

 url: https://www.3gpp.org/ftp/Specs/archive/24\_series/24.558/

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

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

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /subscriptions:

 post:

 description: >

 Creates a new subscription in ECS in order to be notified of provisioning data

 changes of interest.

 tags:

 - Service Provisioning Subscriptions

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 callbacks:

 notificationDestination:

 '{request.body#/notificationDestination}':

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content (successful 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'

 responses:

 '201':

 description: >

 Individual ECS Service Provisioning Subscription resource created successfully.

 content:

 application/json:

 schema:

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

 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'

 /subscriptions/{subscriptionId}:

 put:

 description: >

 Updates an existing individual service provisioning subscription identified

 by the subscriptionId.

 tags:

 - Individual Service Provisioning Subscription

 parameters:

 - name: subscriptionId

 in: path

 description: Identifies an individual service provisioning subscription

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to replace the existing subscription

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK (The individual service provisioning subscription matching the subscriptionId

 was modified successfully).

 content:

 application/json:

 schema:

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

 '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:

 description: >

 Deletes an existing individual service provisioning subscription identified by

 the subscriptionId.

 tags:

 - Individual Service Provisioning Subscription

 parameters:

 - name: subscriptionId

 in: path

 description: Identifies an individual service provisioning subscription

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 The individual service provisioning subscription matching the subscriptionId is

 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'

 '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:

 description: >

 Partially updates an existing individual service provisioning subscription identified

 by the subscriptionId.

 tags:

 - Individual Service Provisioning Subscription

 parameters:

 - name: subscriptionId

 in: path

 description: Identifies an individual service provisioning subscription

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to replace the existing subscription

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK (The individual service provisioning subscription matching the subscriptionId

 was modified successfully)

 content:

 application/json:

 schema:

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

 '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'

 /request:

 post:

 summary: Request service provisioning information.

 operationId: RequestServProv

 tags:

 - Request Service Provisioning

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK (The requested service provisioning information was returned successfully).

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content (the requested service provisioning information does not exist).

 '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:

 ECSServProvReq:

 description: ECS service provisioning request information.

 type: object

 properties:

 eecId:

 type: string

 description: Represents a unique identifier of the EEC.

 ueId:

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

 acProfs:

 type: array

 items:

 $ref: 'TS24558\_Eees\_EECRegistration.yaml#/components/schemas/ACProfile'

 description: Information about services the EEC wants to connect to.

 eecSvcContSupp:

 type: array

 items:

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

 description: >

 Indicates if the EEC supports service continuity or not, also indicates which

 ACR scenarios are supported by the EEC.

 connInfo:

 type: array

 items:

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

 description: List of connectivity information for the UE.

 locInf:

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

 ecspIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates to the ECS which EES providers are preferred by the EEC.

 suppFeat:

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

 required:

 - eecId

 ECSServProvResp:

 description: ECS service provisioning response information.

 type: object

 properties:

 ednCnfgInfo:

 type: array

 items:

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

 minItems: 1

 description: List of EDN configuration information.

 required:

 - ednCnfgInfo

 ECSServProvSubscription:

 description: Represents an individual service provisioning subscription resource.

 type: object

 properties:

 eecId:

 type: string

 description: Represents a unique identifier of the EEC.

 ueId:

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

 acProfs:

 type: array

 items:

 $ref: 'TS24558\_Eees\_EECRegistration.yaml#/components/schemas/ACProfile'

 description: Information about services the EEC wants to connect to.

 expTime:

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

 eecSvcContSupp:

 type: array

 items:

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

 description: >

 Indicates if the EEC supports service continuity or not, also indicates which

 ACR scenarios are supported by the EEC.

 connInfo:

 type: array

 items:

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

 description: List of connectivity information for the UE.

 notificationDestination:

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

 requestTestNotification:

 type: boolean

 description: >

 Set to true by Subscriber to request the ECS to send a test notification. Set to

 false or omitted otherwise.

 websockNotifConfig:

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

 ecspIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates to the ECS which EES providers are preferred by the EEC.

 suppFeat:

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

 required:

 - eecId

 ServProvNotification:

 description: Represents notification information of a service provisioning Event.

 type: object

 properties:

 subId:

 type: string

 description: >

 Identifier of the individual service provisioning subscription for which the service

 provisioning notification is delivered.

 ednCnfgInfo:

 type: array

 items:

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

 minItems: 1

 description: List of EDN configuration information.

 required:

 - subId

 - ednCnfgInfo

 ConnectivityInfo:

 description: Represents the connectivity information for the UE.

 type: object

 properties:

 plmnId:

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

 ssId:

 type: string

 description: Identifies the SSID of the access point to which the UE is attached.

 EDNConfigInfo:

 description: Represents the EDN information.

 type: object

 properties:

 ednConInfo:

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

 eess:

 type: array

 items:

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

 minItems: 1

 description: Contains the list of EESs of the EDN.

 lifeTime:

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

 required:

 - ednConInfo

 - eess

 EDNConInfo:

 description: Represents an EDN connection information .

 type: object

 properties:

 dnn:

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

 snssai:

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

 ednTopoSrvArea:

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

 EESInfo:

 description: Represents EES information.

 type: object

 properties:

 eesId:

 type: string

 description: Identity of the EES

 endPt:

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

 easIds:

 type: array

 items:

 type: string

 description: Application identities of the Edge Application Servers registered with the EES.

 ecspInfo:

 type: string

 description: Represents an ECSP Information.

 svcArea:

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

 dnais:

 type: array

 items:

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

 description: Represents list of Data network access identifier.

 eesSvcContSupp:

 type: array

 items:

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

 description: >

 Indicates if the EES supports service continuity or not, also indicates which ACR

 scenarios are supported by the EES.

 eecRegConf:

 type: boolean

 description: >

 Indicates whether the EEC is required to register on the EES to use edge services

 or not.

 required:

 - eesId

 - eecRegConf

 ECSServProvSubscriptionPatch:

 description: Represents an individual service provisioning subscription resource.

 type: object

 properties:

 acProfs:

 type: array

 items:

 $ref: 'TS24558\_Eees\_EECRegistration.yaml#/components/schemas/ACProfile'

 description: Information about services the EEC wants to connect to.

 expTime:

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

 eecSvcContSupp:

 type: array

 items:

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

 description: >

 Indicates if the EEC supports service continuity or not, also indicates which ACR

 scenarios are supported by the EEC.

 connInfo:

 type: array

 items:

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

 description: List of connectivity information for the UE.

\*\*\* End of Changes \*\*\*