**3GPP TSG- WG3 Meeting #30 *4396\_r1***

**Xiamen, China, 9 - 13 October, 2023**  *(revision of C3-234396)*

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **132** | **rev** | **-** | **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:***  | ACRManagementEvent - EAS ack and service continuity |
|  |  |
| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | EDGEAPP\_Ph2 |  | ***Date:*** | 2023-09-29 |
|  |  |  |  |  |
| ***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 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:*** | As agreed in S6-231624, the EAS may indicate acknowledgement indication in the ACR maangement event subscription to indicate to the EES that it shall send an acknowledment to the EES’s ACR maangement notification. The acknowledgement indicates the acceptance or failure of the ACT.  |
|  |  |
| ***Summary of change:*** | Following updates to Eees\_ACRManagementEvent service API1. Updates to service operation description
2. Update API data model to support fetching EES list based on application group identifier
3. Open API file update.
 |
|  |  |
| ***Consequences if not approved:*** | No support of EAS acknowledgement indication and ACR management events for service continuity planning aligning to stage-2. |
|  |  |
| ***Clauses affected:*** | 5.8.2.5.2, 8.6.4.2.2, 8.6.5.1, 8.6.5.2.3, (new) 8.6.5.2.15, 8.6.5.3.8, 8.6.7, A.7 |
|  |  |
|  | **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 change to Eees\_ACRManagementEvent API. |
|  |  |
| ***This CR's revision history:*** |  |

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

##### 5.8.2.5.2 EES notifying ACR management events using Eees\_ACRManagementEvent\_Notify operation

In order to notify the ACR management event information, the EES shall send an HTTP POST message using the Notification Destination URI received during the creation or modification of subscription. The body of POST message shall include the AcrMgntEventsNotification data type as specified in clause 8.6.5.2.4.

Upon receiving the HTTP POST message, the EAS shall process the event report information and return either:

1. "204 No Content" message; or

2. "200 OK" message including EasAckInformation data type as specified in clause 8.6.5.2.15, to the EES.

On failure, the EAS shall take proper error handling actions, as specified in clause 8.6.6, and respond to the EES with an appropriate error status code.

If the EAS determines that the received HTTP POST request needs to be redirected, the EAS may respond with an HTTP "307 Temporary Redirect" status code or an HTTP "308 Permanent Redirect" status code including an HTTP "Location" header containing an alternative URI representing the end point of an alternative EAS where the notification should be redirected. Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [6].

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

##### 8.6.4.2.2 Notification definition

The POST method is used by the EES for the notifications of subscribed ACR management event(s) and the callback URI shall be provided by the EAS during the creation of the Individual ACR Management Events Subscription resource.

Callback URI: **{notificationDestination}**

This method shall support the URI query parameters specified in table 8.6.4.2.2-1.

Table 8.6.4.2.2-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
|  |  |  |  |  |

This method shall support the request data structures specified in table 8.6.4.2.2-2 and the response data structures and response codes specified in table 8.6.4.2.2-3.

Table 8.6.4.2.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AcrMgntEventsNotification | M | 1 | Notification of the ACR management events. |

Table 8.6.4.2.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | The receipt of the Notification is acknowledged. |
| EasAckInformation | M | 1 | 200 OK | The receipt of the Notification is acknowledged and includes the acknowledgement information. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection, during event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative EAS where the notification should be sent.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [6]. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection, during event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative EAS where the notification should be sent.Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [6]. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [6] also apply. |

Table 8.6.4.2.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative EAS towards which the notification should be redirected. |

Table 8.6.4.2.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative EAS towards which the notification should be redirected. |

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

#### 8.6.5.1 General

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

Table 8.6.5.1-1 specifies the data types defined specifically for the Eees\_ACRManagementEvent API service.

Table 8.6.5.1-1: Eees\_ACRManagementEvent API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| AcrMgntEventFailureCode | 8.6.5.3.6 | Represents the reason for ACR Management subscription failure for an event. |  |
| AcrMgntEventFilter | 8.6.5.3.4 | Represents the ACR Management Event filter. |  |
| AcrMgntEventsSubscription | 8.6.5.2.2 |  |  |
| AcrMgntEventSubsc | 8.6.5.2.3 |  |  |
| AcrMgntEventsSubscriptionPatch | 8.6.5.2.4 |  |  |
| AcrMgntEventsNotification | 8.65.2.5 |  |  |
| AcrMgntEventReport | 8.6.5.2.6 |  |  |
| ACRParameters | 8.6.5.2.13 | Represents ACR parameters. | EdgeApp\_2 |
| ActStatus | 8.6.5.3.5 | Represents ACT status, i.e. ACT start or stop. |  |
| AvailabilityNotif | 8.6.5.2.11 | Represents the availability information of user plane path management events monitoring via the 3GPP 5GC network. |  |
| AvailabilityStatus | 8.6.5.3.7 | Represents the availability status. |  |
| EasAckInformation | 8.6.5.2.15 | Represents the acknowledgement information from EAS in response to ACR notifications. | EdgeApp\_2 |
| FailureAcrMgntEventInfo | 8.6.5.2.7 |  |  |
| AcrMgntEvent | 8.6.5.3.3 |  |  |
| IndtUeIdentification | 8.6.5.2.10 | Contains individual UE identification information. |  |
| ResultCode | 8.6.5.3.8 | Contains the EAS acknowledgement response message. | EdgeApp\_2 |
| SelectedACRScenarios | 8.6.5.2.12 | Represents the selected ACR scenario(s) applicable for a given combination of AC and UE. | EdgeApp\_2 |
| TargetUeIdentification | 8.6.5.2.8 | Contains target UE(s) identification information. |  |
| TrafficFilterInfo | 8.6.5.2.14 | Represents the traffic filter information. | EdgeApp\_2 |
| UpPathChangeInfo | 8.6.5.2.9 | Contains user plane path change information. |  |

Table 8.6.5.1-2 specifies data types re-used by the Eees\_ACRManagementEvent API service.

Table 8.6.5.1-2: Re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| ACRScenario | 9.1.5.3.3 | To represent the selected ACR scenarios in ACR\_SELECTION event. | EdgeApp\_2 |
| EasCharacteristics | 3GPP TS 24.558 [14] | Represents the EAS characteristics. |  |
| DateTime | 3GPP TS 29.122 [6] |  |  |
| Dnai | 3GPP TS 29.571 [8] | Identifies a DNAI. |  |
| DnaiChangeType | 3GPP TS 29.571 [8] |  |  |
| DnaiChangeTypeRm | 3GPP TS 29.571 [8] |  |  |
| DomainNameProtocol | 3GPP TS 29.122 [6] | Indicates the additional protocol and protocol field for domain names to be matched. | EdgeApp\_2 |
| Endpoint | Clause 8.1.5.2.5 | Represents the endpoint information. |  |
| ExternalGroupId | 3GPP TS 29.571 [8] | Represents an external group of UEs. |  |
| ExternalId | 3GPP TS 29.122 [6] | Represents an external identifier of a UE. |  |
| Gpsi | 3GPP TS 29.571 [8] |  |  |
| GroupId | 3GPP TS 29.571 [8] | Represents an internal group of UEs. |  |
| IpAddr | 3GPP TS 29.571 [8] |  |  |
| Ipv4Addr | 3GPP TS 29.122 [6] | Identifying the IPv4 address of the UE. |  |
| Ipv6Prefix | 3GPP TS 29.571 [8] | Identifies an IPv6 Prefix. |  |
| ReportingInformation | 3GPP TS 29.523 [13] |  |  |
| RouteToLocation | 3GPP TS 29.571 [8] | Describes the traffic routes to the locations of the application. |  |
| SupportedFeatures | 3GPP TS 29.571 [8] | Used to negotiate the applicability of optional features. |  |
| TestNotification | 3GPP TS 29.122 [6] | This type represents a notification that can be sent to test whether a chosen notification mechanism works |  |
| Uri | 3GPP TS 29.122 [6] |  |  |
| WebsockNotifConfig | 3GPP TS 29.122 [6] | This type represents configuration for the delivery of notifications over Websockets. |  |

Editor's Note: Whether the ACRScenario data type needs to be added to the above table is FFS and pending stage 2 progress.

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

##### 8.6.5.2.3 Type: AcrMgntEventSubsc

Table 8.6.5.2.3-1: Definition of type AcrMgntEventSubsc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | AcrMgntEvent | M | 1 | Indicates the subscribed ACR management event. |  |
| eventFilter | AcrMgntEventFilter | O | 0..1 | Represents the event filter for the subscribed ACR management event.This attribute may be provided only if the "event" attribute is set to "ACR\_MONITORING". |  |
| evtReq | ReportingInformation | O | 0..1 | Indicates the event reporting requirements (e.g. reporting periodicity, immediate reporting indication, etc).(NOTE) |  |
| tgtUeId | TargetUeIdentification | C | 0..1 | Contains the UE identification information.This attribute shall be provided only if the "event" attribute is set to either "UP\_PATH\_CHG", "ACR\_MONITORING" or "ACR\_FACILITATION". |  |
| dnaiChgType | DnaiChangeType | O | 0..1 | Identifies a type of notification regarding UP path management event.This attribute may be provided only if the "event" attribute is set to "UP\_PATH\_CHG". |  |
| easAckInd | boolean | O | 0..1 | Identifies whether EAS acknowledgement of UP path change event notifications is to be expected.Set to "true" if the EAS acknowledgement is expected. Default value is "false".This attribute may be provided only if the "event" attribute is set to "UP\_PATH\_CHG". |  |
| easChars | array(EasCharacteristics) | O | 1..N | Represents a list of EAS characteristics.This attribute may be provided only if the "event" attribute is set to either "ACR\_MONITORING" or "ACR\_FACILITATION". |  |
| acIds | array(string) | O | 1..N | List of identifiers of the ACs for which the list of selected ACR scenarios are to be notified.This attribute may be provided only if the "event" attribute is set to "ACR\_SELECTION" | EdgeApp\_2 |
| trafFilterInfo | TrafficFilterInfo | O | 0..1 | Represents the traffic filter information.This attribute may be present only if the "event" attribute is set to "UP\_PATH\_CHG", "ACR\_MONITORING" and/or "ACR\_FACILITATION". | EdgeApp\_2 |
| servContPlanInd | boolean | O | 0..1 | Contains the service continuity planning indication (i.e., whether or not the EES shall monitor whether the UE(s) enter the predicted location).- When set to "true", it indicates that service continuity planning is required.- When set to "false", it indicates that service continuity planning is not required.- The default value when this attribute is omitted is false. | EdgeApp\_2 |
| easAckSvcCont | boolean | O | 0..1 | Indicates that the EAS will provide an acknowledgement as a response to the notification of ACR management notification related to service continuity planning.Set to "true" if the EAS acknowledgement is expected. Set to "false" if the EAS acknowledgement is not expected. Default value is "false".This attribute may be provided only if the "event" attribute is set to "ACR\_MONITORING" and/or "ACR\_FACILITATION". | EdgeApp\_2 |
| NOTE: The "evtReq" takes precedence over the "evtReq" attribute of the AcrMgntEventsSubscription data structure when both are present. |

Editor's Note: The definition and encoding of the "acIds" attribute and whether it is needed or not is FFS and pending stage 2 progress.

Editor's Note: The ACR management event(s) to which the "servContPlanInd" attribute shall apply is FFS and pending stage 2 progress.

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

##### 8.6.5.2.15 Type: EasAckInformation

Table 8.6.5.2.15-1: Definition of type EasAckInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| resCode | ResultCode | M | 1 | Indicates the acceptance or rejection of the ACT. |  |

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

##### 8.6.5.3.8 Enumeration: ResultCode

Table 8.6.5.3.8-1: Enumeration ResultCode

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| ACCEPTED | Indicates acceptance of the ACT. |  |
| REJECTED | Indicates rejection of the ACT. |  |

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

### 8.6.7 Feature negotiation

General feature negotiation procedures are defined in clause 7.8. Table 8.6.7-1 lists the supported features for Eees\_ACRManagementEvent API.

Table 8.6.7-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | Notification\_test\_event | Testing of notification connection is supported according to clause 7.6. |
| 2 | Notification\_websocket | The delivery of notifications over Websocket is supported according to clause 7.6. This feature requires that the Notification\_test\_event feature is also supported. |
| 3 | EdgeApp\_2 | This feature indicates the support of the enhancements to the Edge Applications. Within this feature the following enhacements are covered:- Support of ACR selection event reporting.- Support of additional ACT start/stop event related information.- Support of service continuity planning support indication.- Support of EAS acknowledgement for service continuity planning. |

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

# A.7 Eees\_ACRManagementEvent API

openapi: 3.0.0

info:

 title: EES ACR Management Event\_API

 description: |

 API for EES ACR Management Event.

 © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

 All rights reserved.

 version: 1.1.0-alpha.4

externalDocs:

 description: >

 3GPP TS 29.558 V18.3.0 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}/eees-acrmgntevent/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /subscriptions:

 post:

 summary: Creates a new Individual ACR Management Events Subscription

 operationId: CreateACRMngEventSubscr

 tags:

 - ACR Management Events Subscriptions (Collection)

 description: Create an Individual ACR Management Event Subscription resource.

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 callbacks:

 ACRManagementEventsNotification:

 '{request.body#/notificationDestination}':

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (The notification is received successfully)

 content:

 application/json:

 schema:

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

 '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'

 UPPathChangeAvailabilityNotif:

 '{request.body#/notificationDestination}/report-availability':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content. The notification is successful received.

 '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: Created (Successful creation)

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource'

 required: true

 schema:

 type: string

 '204':

 description: >

 Successful case. The resource has been successfully created and no

 additional content is to be sent in the response message.

 '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'

 get:

 summary: Read all ACR Management Events Subscriptions

 operationId: GetACRMngEventSubscrs

 tags:

 - ACR Management Events Subscriptions (Collection)

 description: Retrieve all the ACR Management Events Subscriptions information.

 parameters:

 - name: supp-feat

 in: query

 description: Features supported by the EAS.

 required: false

 schema:

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

 responses:

 '200':

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

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 description: All the active ACR management events subscriptions

 '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'

 /subscriptions/{subscriptionId}:

 get:

 summary: Read an Individual ACR Management Events Subscription

 operationId: GetIndACRMngEventSubscr

 tags:

 - Individual ACR Management Events Subscription (Document)

 description: Retrieve an Individual ACR Management Events Subscription.

 parameters:

 - name: subscriptionId

 in: path

 description: Subscription Id.

 required: true

 schema:

 type: string

 - name: supp-feat

 in: query

 description: Features supported by the EAS.

 required: false

 schema:

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

 responses:

 '200':

 description: OK (Successful get the active subscription).

 content:

 application/json:

 schema:

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

 '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: Update an Individual ACR Management Events Subscription

 operationId: UpdateIndACRMngEventSubscr

 tags:

 - Individual ACR Management Events Subscription (Document)

 description: Fully replace an existing Individual ACR Management Events Subscription.

 parameters:

 - name: subscriptionId

 in: path

 description: Subscription Id.

 required: true

 schema:

 type: string

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful get the active subscription).

 content:

 application/json:

 schema:

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

 '204':

 description: No Content

 '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: Modify an Individual ACR Management Events Subscription

 operationId: ModifyIndACRMngEventSubscr

 tags:

 - Individual ACR Management Events Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: Subscription Id.

 required: true

 schema:

 type: string

 requestBody:

 description: Partial update an existing Individual ACR Management Events Subscription.

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 The Individual ACR Management Events Subscription is successfully modified

 and the updated subscription information is returned in the response.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content.

 '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: Delete an Individual ACR Management Events Subscription

 operationId: DeleteIndACRMngEventSubscr

 tags:

 - Individual ACR Management Events Subscription (Document)

 description: Delete an existing Individual ACR Management Events Subscription.

 parameters:

 - name: subscriptionId

 in: path

 description: Subscription Id.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: The individual subscription 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'

# Components

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 AcrMgntEventsSubscription:

 type: object

 description: Represents an Individual ACR Management Events Subscription.

 properties:

 self:

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

 easId:

 type: string

 description: Identifier of an EAS.

 eventSubscs:

 type: array

 items:

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

 minItems: 1

 description: The subscribed ACR management events.

 evtReq:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 notificationDestination:

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

 eventReports:

 type: array

 items:

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

 minItems: 1

 description: The ACR management event report(s).

 availabilityInfo:

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

 failEventReports:

 type: array

 items:

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

 minItems: 1

 description: Failure event reports.

 requestTestNotification:

 type: boolean

 description: >

 Set to true by the EAS to request the EES to send a test notification.

 Set to false or omitted otherwise.

 websockNotifConfig:

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

 suppFeat:

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

 required:

 - easId

 - eventSubscs

 - notificationDestination

 AcrMgntEventSubsc:

 type: object

 description: Represents an ACR Management Event Subscription.

 properties:

 event:

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

 eventFilter:

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

 evtReq:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 tgtUeId:

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

 dnaiChgType:

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

 easAckInd:

 type: boolean

 description: >

 Identifies whether EAS acknowledgement of UP path change event notifications is to be

 expected. Set to "true" if the EAS acknowledgement is expected. Default value is

 "false". This attribute may be provided only if the "event" attribute is set to

 "UP\_PATH\_CHG".

 easChars:

 type: array

 items:

 $ref: 'TS24558\_Eees\_EASDiscovery.yaml#/components/schemas/EasCharacteristics'

 minItems: 1

 description: A list of EAS characteristics.

 trafFilterInfo:

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

 servContPlanInd:

 type: boolean

 description: >

 Represents the service continuity planning indication (i.e., whether or not the EES

 shall monitor whether the UE(s) enter the predicted location).

 When set to true, it indicates that service continuity planning is required.

 When set to false, it indicates that Service continuity planning is not required.

 The default value when this attribute is omitted is false.

 easAckSvcCont:

 type: boolean

 description: >

 Indicates that the EAS will provide an acknowledgement as a response to the notification

 of ACR management notification related to service continuity planning. Set to "true" if

 the EAS acknowledgement is expected. Default value is "false". This attribute may be

 provided only if the "event" attribute is set to "ACR\_MONITORING" and/or

 "ACR\_FACILITATION". required:

 - event

 AcrMgntEventsSubscriptionPatch:

 type: object

 description: >

 Represents a modification request of Individual ACR Management Events Subscription.

 properties:

 eventSubscs:

 type: array

 items:

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

 minItems: 1

 description: The subscribed ACR management events.

 evtReq:

 $ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/ReportingInformation'

 notificationDestination:

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

 AcrMgntEventsNotification:

 type: object

 description: Represents the ACR management events notification.

 properties:

 subpId:

 type: string

 description: >

 String identifying the Individual ACR Management Events Subscription

 for which the notification is delivered.

 eventReports:

 type: array

 items:

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

 minItems: 1

 description: A list of ACR management event reports.

 required:

 - subpId

 - eventReports

 AcrMgntEventReport:

 type: object

 description: Represents an ACR management event report.

 properties:

 event:

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

 timeStamp:

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

 upPathChgInfo:

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

 easEndPoint:

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

 actStatus:

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

 acrParams:

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

 acId:

 type: string

 selACRScen:

 type: array

 items:

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

 minItems: 1

 servContPlanInd:

 type: boolean

 description: >

 Represents the service continuity planning indication (i.e., whether or not the EES will

 monitor whether the UE(s) enter the predicted location).

 When set to true, it indicates that service continuity planning will be performed.

 When set to false, it indicates that Service continuity planning will not be performed.

 The default value when this attribute is omitted is false.

 required:

 - event

 ACRParameters:

 type: object

 description: Represents the ACR parameters.

 properties:

 predictExpTime:

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

 FailureAcrMgntEventInfo:

 type: object

 description: Represents a failure ACR management event.

 properties:

 event:

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

 failureCode:

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

 required:

 - event

 - failureCode

 TargetUeIdentification:

 description: Identifies the target UE information.

 type: object

 properties:

 gpsi:

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

 intGrpId:

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

 extGrpId:

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

 ueIpAddr:

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

 oneOf:

 - required: [gpsi]

 - required: [intGrpId]

 - required: [extGrpId]

 - required: [ueIpAddr]

 AvailabilityNotif:

 type: object

 description: >

 Represents the availability information of user plane path management events monitoring

 via the 3GPP 5GC network.

 properties:

 availabilityStatus:

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

 required:

 - availabilityStatus

 UpPathChangeInfo:

 description: Represents user plane path change information.

 type: object

 properties:

 ueId:

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

 dnaiChgType:

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

 sourceTrafficRoute:

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

 targetTrafficRoute:

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

 sourceDnai:

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

 targetDnai:

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

 srcUeIpv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 srcUeIpv6Prefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 tgtUeIpv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 tgtUeIpv6Prefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 required:

 - ueId

 - dnaiChgType

 IndUeIdentification:

 description: Represents identification information of a UE.

 type: object

 properties:

 gpsi:

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

 externalId:

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

 ueIpAddr:

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

 oneOf:

 - required: [gpsi]

 - required: [externalId]

 - required: [ueIpAddr]

 TrafficFilterInfo:

 description: Represents the Traffic Filter Information.

 type: object

 properties:

 ipFlows:

 type: array

 items:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/FlowDescription'

 minItems: 1

 description: Contains the flow description for the Uplink and/or Downlink IP flows.

 uris:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates URI(s) matching criteria.

 domainNames:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates Domain Name matching criteria.

 dnProtocol:

 $ref: 'TS29122\_PfdManagement.yaml#/components/schemas/DomainNameProtocol'

 anyOf:

 - required: [ipFlows]

 - required: [uris]

 - required: [domainNames]

 SelectedACRScenarios:

 type: object

 description: >

 Represents the selected ACR scenario(s) applicable for a given combination of AC and UE.

 properties:

 acrList:

 type: array

 items:

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

 minItems: 0

 acId:

 type: string

 ueId:

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

 required:

 - acrList

 - acId

 - ueId

 EasAckInformation:

 type: object

 description: Represents the EAS acknowledgement information.

 properties:

 resCode:

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

 required:

 - resCode

#

# ENUMERATIONS DATA TYPES

#

 AcrMgntEvent:

 anyOf:

 - type: string

 enum:

 - UP\_PATH\_CHG

 - ACR\_MONITORING

 - ACR\_FACILITATION

 - ACT\_START\_STOP

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the ACR Management event.

 Possible values are:

 - UP\_PATH\_CHG: User plane path change event.

 - ACR\_MONITORING: ACR monitoring event.

 - ACR\_FACILITATION: ACR facilitation event.

 - ACT\_START\_STOP: ACT start/stop event.

 AcrMgntEventFilter:

 anyOf:

 - type: string

 enum:

 - INTRA\_EDN\_MOBILITY

 - INTER\_EDN\_MOBILITY

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the filtering criteria for the ACR Management event.

 Possible values are:

 - INTRA\_EDN\_MOBILITY: Indicates that the ACR Management Event filter is intra-EDN mobility.

 - INTER\_EDN\_MOBILITY: Indicates that the ACR Management Event filter is inter-EDN mobility.

 ActStatus:

 anyOf:

 - type: string

 enum:

 - ACT\_START

 - ACT\_STOP

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the ACT status.

 Possible values are:

 - ACT\_START: Indicates ACT start.

 - ACT\_STOP: Indicates ACT stop.

 AcrMgntEventFailureCode:

 anyOf:

 - type: string

 enum:

 - 3GPP\_UP\_PATH\_CHANGE\_MON\_NOT\_AVAILABLE

 - OTHER\_REASONS

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the failure reason for the ACR Management event.

 Possible values are:

 - 3GPP\_UP\_PATH\_CHANGE\_MON\_NOT\_AVAILABLE: Indicates that the ACR Management Event

 Subscription failed because user plane path management event notifications from the 3GPP

 network is NOT available. This value is only applicable for the "UP\_PATH\_CHG",

 "ACR\_MONITORING" and "ACR\_FACILITATION" events.

 - OTHER\_REASONS: Indicates that the ACR Management Event Subscription failed for other

 reasons. This value is applicable for all events.

 AvailabilityStatus:

 anyOf:

 - type: string

 enum:

 - AVAILABLE

 - NOT\_AVAILABLE

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the availability status.

 Possible values are:

 - AVAILABLE: Indicates availability.

 - NOT\_AVAILABLE: Indicates unavailability.

 ResultCode:

 anyOf:

 - type: string

 enum:

 - ACCEPTED

 - REJECTED

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents the result code of ACT acceptance by EAS.

 Possible values are:

 - ACCEPTED: Indicates acceptance of the ACT.

 - REJECTED: Indicates rejection of the ACT.

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