**3GPP TSG-CT WG3 Meeting #116e C3-213380**

**E-Meeting, 19th – 28th May 2021 (Revision of C3-213206)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.522** | **CR** | **0354** | **rev** | **1** | **Current version:** | **17.1.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | API definition of AM PolicyAuthorization service | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17\_DCAMP | | | | |  | ***Date:*** | | | 2021-05-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | TS 23.502 clause 5.2.6.22 defines Nnef\_AMPolicyAuthorization service with service operations and parameters to provides the ability to provide inputs that can be used by the PCF for deciding access and mobility management related policies.  Hence the resource, methods and data model for AM Policy Authorization service also need to be defined in this specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding the API definition for AM PolicyAuthorization service. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not support stage 2 requirement on NEF support AF to provide inputs to PCF for deciding access and mobility management related policy service.. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.x(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces a new OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

# A.x AmPolicyAuthorization API

openapi: 3.0.0

info:

title: 3gpp-am-policyauthorization

version: 1.0.0-alpha.1

description: |

API for AM policy authorization.

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externalDocs:

description: 3GPP TS 29.522 V17.2.0; 5G System; Network Exposure Function Northbound APIs.

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/3gpp-am-policyauthorization/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/{afId}/appAmContexts:

post:

summary: Creates a new Individual application AM Context resource

operationId: PostAppAmContexts

tags:

- Application AM Contexts

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/AppAmContextExpData'

responses:

'201':

description: Created (Successful creation)

content:

application/json:

schema:

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

headers:

Location:

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

required: true

schema:

type: string

'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'

callbacks:

terminationRequest:

'{$requestbody#/termNotifUri}':

post:

requestBody:

description: Request of the termination of the Individual Application AM Context

required: true

content:

application/json:

schema:

$ref: 'TS29534\_Npcf\_AMPolicyAuthorization.yaml#/components/schemas/AmTerminationInfo'

responses:

'204':

description: The receipt of the notification is acknowledged.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

amEventNotification:

'{$requestbody#/evSubsc/eventNotifUri}':

post:

requestBody:

description: Notification of an event occurrence.

required: true

content:

application/json:

schema:

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

responses:

'204':

description: The receipt of the notification is acknowledged

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/{afId}/appAmContexts/{appAmContextId}:

get:

summary: read an existing Individual application AM context

operationId: GetAppAmContext

tags:

- Individual Application AM Context

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: appAmContextId

in: path

description: Identifier of the Individual application AM context

required: true

schema:

type: string

responses:

'200':

description: OK (A representation of the resource is successfully returned)

content:

application/json:

schema:

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

'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'

patch:

summary: partial modifies an existing Individual application AM context

operationId: ModAppAmContext

tags:

- Individual Application AM Context

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: appAmContextId

in: path

description: Identifier of the application AM context resource

required: true

schema:

type: string

requestBody:

required: true

content:

application/merge-patch+json:

schema:

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

responses:

'200':

description: successful modification of the resource and a representation of that resource is returned. If a subscribed event is matched, the event notification is also included in the response.

content:

application/json:

schema:

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

'204':

description: The successful modification

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

amEventNotification:

'{$requestbody#/evSubsc/eventNotifUri}':

post:

requestBody:

description: Notification of an event occurrence.

required: true

content:

application/json:

schema:

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

responses:

'204':

description: The receipt of the notification is acknowledged

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

summary: Deletes an existing Individual Application AM Context

operationId: DeleteAppAmContext

tags:

- Individual Application AM Context

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: appAmContextId

in: path

description: string identifying the Individual aaplication AM context resource

required: true

schema:

type: string

responses:

'204':

description: The deletion is confirmed without returning additional data.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

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$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

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'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/{afId}/appAmContexts/{appAmContextId}/eventsSubscription:

put:

summary: creates or modifies an AM Policy Events Subscription sub-resource.

operationId: UpdateAmEventsSubsc

tags:

- AM Policy Events Subscription

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: appAmContextId

in: path

description: string identifying the AM Policy Events Subscription subresource

required: true

schema:

type: string

requestBody:

description: Creation or modification of an application AM Policy Events Subscription sub-resource.

required: true

content:

application/json:

schema:

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

responses:

'201':

description: The creation of the application AM Policy Events Subscription sub-resource is confirmed and its representation is returned. If an AM Event is matched, the response also includes the notification.

content:

application/json:

schema:

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

headers:

Location:

description: 'Contains the URI of the created AM Policy Events Subscription subresource, according to the structure: {apiRoot}/3gpp-am-policyauthorization/v1/{afId}/app-am-contexts/{appAmContextId}/events-subscription}'

required: true

schema:

type: string

'200':

description: The modification of the AM Policy Events Subscription subresource is confirmed and its representation is returned. If an AM Event is matched, the response also includes the notification.

content:

application/json:

schema:

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

'204':

description: The modification of the AM Policy Events Subscription subresource is confirmed without returning additional data.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

amEventNotification:

'{$requestbody#/evSubsc/eventNotifUri}':

post:

requestBody:

description: Contains the information for the notification of an event occurrence.

required: true

content:

application/json:

schema:

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

responses:

'204':

description: The receipt of the notification is acknowledged.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

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$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

summary: deletes the AM Policy Events Subscription sub-resource

operationId: DeleteAmEventsSubsc

tags:

- AM Policy Events Subscription

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: appAmContextId

in: path

description: string identifying the Individual Application AM Context resource.

required: true

schema:

type: string

responses:

'204':

description: The deletion of the of the AM Policy Events Subscription subresource is confirmed without returning additional data.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

AppAmContextExpData:

description: Represents an Individual application AM Context exposure resource.

type: object

properties:

self:

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

evSubsc:

$ref: 'TS29534\_Npcf\_AMPolicyAuthorization.yaml#/components/schemas/AmEventsSubscData'

gpsi:

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

afAppId:

type: string

description: Identifies an application.

reqThrputUl:

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

reqThrputDl:

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

policyDuration:

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

reqResSvArea:

type: array

items:

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

minItems: 0

termNotifUri:

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

suppFeat:

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

required:

- gpsi

- termNotifUri

AppAmContextUpdateData:

description: Contains the modification(s) to be applied to the Individual application AM context resource.

type: object

properties:

evSubsc:

$ref: 'TS29534\_Npcf\_AMPolicyAuthorization.yaml#/components/schemas/AmEventsSubscDataRm'

reqThrputUl:

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

reqThrputDl:

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

policyDuration:

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

reqResSvArea:

type: array

items:

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

minItems: 0

AppAmContextExpRespData:

description: It represents a response to a modification or creation request of an Individual Application AM resource. It may contain the notification of the already met events

anyOf:

- $ref: 'TS29534\_Npcf\_AMPolicyAuthorization.yaml#/components/schemas/AppAmContextData'

- $ref: 'TS29534\_Npcf\_AMPolicyAuthorization.yaml#/components/schemas/AmEventsNotification'

ServiceAreaInfo:

description: Indicates the service area information,

type: object

properties:

ecgis:

description: Contains a list of E-UTRA cell identities.

type: array

items:

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

minItems: 1

ncgis:

description: Contains a list of NR cell identities.

type: array

items:

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

minItems: 1

tais:

description: Contains a list of tracking area identities.

type: array

items:

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

minItems: 1

# Editor's note: The OpenAPI is classified as preliminary currently.

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