**3GPP TSG-CT WG3 Meeting #118e C3-215129**

**E-Meeting, 11th – 15th October 2021 (Revision of C3-21xxxx)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.517** | **CR** | **0052** | **rev** | **-** | **Current version:** | **17.3.0** |  |
|  | | | | | | | | |
| *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:*** | Updates to UE data volume dispersion collection | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNA\_Ph2 | | | | |  | ***Date:*** | | | 2021-09-20 |
|  |  | | | |  | |  | | |  |
| ***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 23.288 CR 0389 updates in Table 6.10.2-3 adding Internal UE ID SUPI, also adding NOTE assume the AF is provisioned with the list of UE IDs (GPSIs or SUPIs) belonging to an External or Internal Group ID.  Hence need to update above in this specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding SUPI in data type DispersionCollection, add NOTE in type EventFilter assumed that the AF is provisioned with the list of UE IDs (GPSIs or SUPIs) belonging to an External or Internal Group ID. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not aligned with stage 2, cannot support SUPI as UE ID for trusted AF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.2.2, 5.6.2.21, A.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 into the OpenAPI file applicable to Naf\_EventExposure API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

#### 4.2.2.2 Creating a new subscription

Figure 4.2.2.2-1 illustrates the creation of a subscription.



Figure 4.2.2.2-1: Creation of a subscription

To subscribe to event notifications, the NF service consumer shall send an HTTP POST request to the AF with: "{apiRoot}/naf-eventexposure/<apiVersion>/subscriptions" as request URI as shown in step 1 of figure 4.2.2.2-1, and the "AfEventExposureSubsc" data structure as request body.

The "AfEventExposureSubsc" data structure shall include:

- description of subscribed event information as "eventsSubs" attribute by using one or more "EventsSubs" data;

- description of the event reporting information as "eventsRepInfo" attribute;

- a URI where to receive the requested notifications as "notifUri" attribute;

- a Notification Correlation Identifier assigned by the NF service consumer for the requested notifications as "notifId" attribute.

The "EventsSubs" data shall include:

- a event to subscribe as a "event" attribute; and

- event filter information as "eventFilter" attribute associated with the event.

The "eventsRepInfo" attribute may include:

- event notification method (periodic, one time, on event detection) as "notifMethod" attribute;

- Maximum Number of Reports as "maxReportNbr" attribute;

- Monitoring Duration as "monDur" attribute;

- repetition period for periodic reporting as "repPeriod" attribute;

- immediate reporting indication as "immRep" attribute;

- sampling ratio as "sampRatio" attribute;

- partitioning criteria for partitioning the UEs before performing sampling as "partitionCriteria" attribute if the EneNA feature is supported;

- group reporting guard time as "grpRepTime" attribute; and/or

- a notification flag as "notifFlag" attribute if the EneNA feature is supported.

The "eventFilter" shall include:

- identification of target UE(s) to which the subscription applies via :

1) identification of individual UE(s) via "gpsis" attribute or "supis" attribute; or

2) identification of group(s) of UE(s) via "exterGroupIds" attribute or "interGroupIds" attribute; or

3) identification of any UE via "anyUeInd" attribute.

NOTE: It is assumed that the AF is provisioned with the list of UE IDs (GPSIs or SUPIs) belonging to an External or Internal Group ID.

Depending on the event type:

- if the feature "ServiceExperience" is supported and the event is "SVC\_EXPERIENCE", the "eventFilter" attribute may provide:

1) identification of application to which the subscription applies via "appIds" attribute;

2) an area of interest via "locArea" attribute.

- if the feature "Exceptions" is supported and the event is "EXCEPTIONS", the "eventFilter" attribute may provide:

1) identification of application to which the subscription applies via "appIds" attribute;

2) an area of interest via "locArea" attribute;

- if the feature "UeCommunication" is supported and the event is "UE\_COMM", the "eventFilter" attribute may provide:

1) identification of application to which the subscription applies via "appIds" attribute;

2) an area of interest via "locArea" attribute.

- if the feature "UeMobility" is supported and the event is "UE\_MOBILITY", the "eventFilter" attribute may provide:

1) identification of application to which the subscription applies via "appIds" attribute;

2) an area of interest via "locArea" attribute.

- if the feature "UserDataCongestion" is supported and the event is "USER\_DATA\_CONGESTION", the "eventFilter" attribute may provide:

1) identification of application to which the subscription applies via "appIds" attribute;

2) an area of interest via "locArea" attribute.

- if the feature "PerformanceData" is supported and the event is "PERF\_DATA", the "eventFilter" attribute may provide:

1) identification of application to which the subscription applies via "appIds" attribute;

2) an area of interest via "locArea" attribute.

- if the feature "CollectiveBehaviour" is supported and the event is "COLLECTIVE\_BEHAVIOUR", the "eventFilter" attribute may provide:

1) collective attributes information via "collAttrs" attribute;

2) an area of interest via "locArea" attribute.

- if the feature "Dispersion" is supported and the event is "DISPERSION", the "eventFilter" attribute may provide:

1) identification of application to which the subscription applies via "appIds" attribute;

2) an area of interest via "locArea" attribute.

If the AF cannot successfully fulfil the received HTTP POST request due to an internal error or an error in the HTTP POST request, the AF shall send the HTTP error response as specified in clause 5.7.

Upon successful reception of the HTTP POST request with "{apiRoot}/naf-eventexposure/<apiVersion>/subscriptions" as request URI and "AfEventExposureSubsc" data structure as request body, the AF shall create a new "Individual Application Event Subscription" resource, store the subscription and send an HTTP "201 Created" response as shown in step 2 of figure 4.2.2.2-1, containing:

- a Location header field; and

- an "AfEventExposureSubsc" data type in the payload body.

The Location header field shall contain the URI of the created individual application session context resource i.e. "{apiRoot}/naf-eventexposure/<apiVersion>/subscriptions/{subscriptionId}".

The "AfEventExposureSubsc" data type payload body shall contain the representation of the created "Individual Application Event Subscription".

When the "monDur" attribute is included in the response by the AF, it represents AF selected expiry time that is equal or less than the expiry time received in the request.

When the "immRep" attribute is included and sets to "true" in the subscription and the subscribed events are available, the AF shall include the reports of the events subscribed, if available, in the HTTP POST response.

When the sampling ratio as, "sampRatio" attribute, is included in the subscription without a "partitionCriteria" attribute, the AF shall select a random subset of UEs among the target UEs according to the sampling ratio and only report the event(s) related to the selected subset of UEs. If the "partitionCriteria" attribute is additionally included, then the AF shall first partition the UEs according to the value of the "partitionCriteria" attribute and then select a random subset of UEs from each partition according to the sampling ratio and only report the event(s) related to the selected subsets of UEs.

When the group reporting guard time as the "grpRepTime" attribute is included in the subscription, the AF shall accumulate all the event reports for the target UEs until the group reporting guard time expires. Then the AF shall notify the NF service consumer using the Naf\_EventExposure\_Notify service operation, as described in clause 4.2.4.2.

When the "notifFlag" attribute is included and set to "DEACTIVATE" in the request, the AF shall mute the event notification and store the available events.

\*\*\* 2nd Change \*\*\*

5.6.2.21 Type DispersionCollection

**Table 5.6.2.21-1: Definition of type DispersionCollection**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| gpsi | Gpsi | C | 0..1 | Indicates external UE identifier. (NOTE 1) |  |
| supi | Supi | C | 0..1 | Indicates internal UE identifier, represents a SUPI identifying a UE (NOTE 1) |  |
| ueAddr | IpAddr | C | 0..1 | Indicates UE IP address. (NOTE 1) |  |
| dataUsage | UsageThreshold | M | 1 | Data volume exchanged for the UE. |  |
| flowDesp | FlowDescription | C | 0..1 | Represents IP 5-tuple with protocol, IP address and port for UL/DL application traffic. (NOTE 2) |  |
| appId | ApplicationId | C | 0..1 | Indicates an Application Identifier. (NOTE 2) |  |
| dnais | array(Dnai) | O | 1..N | Indicates the DN Access Identifiers representing location of the service flow.  May only be provided if the "ueAddr" attribute is provided. |  |
| NOTE 1: One of the "supi" "gpsi" or "ueAddr" attribute shall be provided.  NOTE 2: If the "ueAddr" attribute is provided, either the "appId" or "flowDesp" attribute shall be provided. | | | | | |

\*\*\* 3rd Change \*\*\*

# A.2 Naf\_EventExposure API

openapi: 3.0.0

info:

version: 1.1.0-alpha.3

title: Naf\_EventExposure

description: |

AF Event Exposure Service.

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externalDocs:

description: 3GPP TS 29.517 V17.3.0; 5G System; Application Function Event Exposure Service; Stage 3.

url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.517/

servers:

- url: '{apiRoot}/naf-eventexposure/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

security:

- {}

- oAuth2ClientCredentials: []

paths:

/subscriptions:

post:

summary: Creates a new Individual Application Event Exposure Subscription resource

operationId: PostAfEventExposureSubsc

tags:

- Application Event Subscription (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'201':

description: Success

content:

application/json:

schema:

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

headers:

Location:

description: 'Contains the URI of the created individual application event subscription resource'

required: true

schema:

type: string

'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:

AfEventExposureNotif:

'{$request.body#/notifUri}':

post:

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'204':

description: No Content, Notification was successful

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_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'

/subscriptions/{subscriptionId}:

get:

summary: "Reads an existing Individual Application Event Subscription"

operationId: GetAfEventExposureSubsc

tags:

- Individual Application Event Subscription (Document)

parameters:

- name: subscriptionId

in: path

description: Application Event Subscription ID

required: true

schema:

type: string

- name: supp-feat

in: query

description: Features supported by the NF service consumer

required: false

schema:

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

responses:

'200':

description: OK. Resource representation is returned

content:

application/json:

schema:

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

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_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'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'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'

put:

summary: "Modifies an existing Individual Application Event Subscription "

operationId: PutAfEventExposureSubsc

tags:

- Individual Application Event Subscription (Document)

requestBody:

required: true

content:

application/json:

schema:

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

parameters:

- name: subscriptionId

in: path

description: Application Event Subscription ID

required: true

schema:

type: string

responses:

'200':

description: OK. Resource was successfully modified and representation is returned

content:

application/json:

schema:

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

'204':

description: No Content. Resource was successfully modified

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_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'

delete:

summary: "Cancels an existing Individual Application Event Subscription "

operationId: DeleteAfEventExposureSubsc

tags:

- Individual Application Event Subscription (Document)

parameters:

- name: subscriptionId

in: path

description: Application Event Subscription ID

required: true

schema:

type: string

responses:

'204':

description: No Content. Resource was successfully deleted

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_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: '{tokenUri}'

scopes: {}

description: for trusted AF, the 'naf-eventexposure' shall be used as 'scopes' and '{nrfApiRoot}/oauth2/token' shall be used as 'tokenUri'.

schemas:

AfEventExposureNotif:

description: Represents notifications on application event(s) that occurred for an Individual Application Event Subscription resource.

type: object

properties:

notifId:

type: string

eventNotifs:

type: array

items:

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

minItems: 1

required:

- notifId

- eventNotifs

AfEventExposureSubsc:

description: Represents an Individual Application Event Subscription resource.

type: object

properties:

eventsSubs:

type: array

items:

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

minItems: 1

eventsRepInfo:

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

notifUri:

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

notifId:

type: string

eventNotifs:

type: array

items:

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

minItems: 1

suppFeat:

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

required:

- eventsSubs

- eventsRepInfo

- notifId

- notifUri

AfEventNotification:

description: Represents information related to an event to be reported.

type: object

properties:

event:

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

timeStamp:

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

svcExprcInfos:

type: array

items:

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

minItems: 1

ueMobilityInfos:

type: array

items:

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

minItems: 1

ueCommInfos:

type: array

items:

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

minItems: 1

excepInfos:

type: array

items:

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

minItems: 1

congestionInfos:

type: array

items:

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

minItems: 1

perfDataInfos:

type: array

items:

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

minItems: 1

dispersionInfos:

type: array

items:

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

minItems: 1

required:

- event

- timeStamp

EventsSubs:

description: Represents an event to be subscribed and the related event filter information.

type: object

properties:

event:

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

eventFilter:

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

required:

- event

- eventFilter

EventFilter:

description: Represents event filter information for an event.

type: object

properties:

gpsis:

type: array

items:

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

minItems: 1

supis:

type: array

items:

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

minItems: 1

exterGroupIds:

type: array

items:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/ExtGroupId'

minItems: 1

interGroupIds:

type: array

items:

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

anyUeInd:

type: boolean

appIds:

type: array

items:

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

minItems: 1

locArea:

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

ServiceExperienceInfoPerApp:

description: Contains service experience information associated with an application.

type: object

properties:

appId:

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

svcExpPerFlows:

type: array

items:

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

minItems: 1

gpsis:

type: array

items:

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

minItems: 1

supis:

type: array

items:

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

minItems: 1

required:

- svcExpPerFlows

ServiceExperienceInfoPerFlow:

description: Contains service experience information associated with a service flow.

type: object

properties:

svcExprc:

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

timeIntev:

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

dnai:

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

ipTrafficFilter:

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

ethTrafficFilter:

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

SvcExperience:

description: Contains a mean opinion score with the customized range.

type: object

properties:

mos:

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

upperRange:

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

lowerRange:

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

UeMobilityCollection:

description: Contains UE mobility information associated with an application.

type: object

properties:

gpsi:

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

supi:

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

appId:

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

ueTrajs:

type: array

items:

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

minItems: 1

required:

- appId

- ueTrajs

UeCommunicationCollection:

description: Contains UE communication information associated with an application.

type: object

properties:

gpsi:

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

supi:

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

exterGroupId:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/ExtGroupId'

interGroupId:

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

appId:

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

comms:

type: array

items:

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

minItems: 1

required:

- appId

- comms

UeTrajectoryCollection:

description: Contains UE trajectory information associated with an application.

type: object

properties:

ts:

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

locArea:

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

required:

- ts

- locArea

CommunicationCollection:

description: Contains communication information.

type: object

properties:

startTime:

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

endTime:

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

ulVol:

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

dlVol:

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

required:

- startTime

- endTime

- ulVol

- dlVol

ExceptionInfo:

description: Represents the exceptions information provided by the AF.

type: object

properties:

ipTrafficFilter:

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

ethTrafficFilter:

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

exceps:

type: array

items:

$ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/Exception'

minItems: 1

UserDataCongestionCollection:

description: Contains User Data Congestion Analytics related information collection.

type: object

properties:

appId:

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

ipTrafficFilter:

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

timeInterv:

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

thrputUl:

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

thrputDl:

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

thrputPkUl:

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

thrputPkDl:

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

PerformanceDataCollection:

description: Contains Performance Data Analytics related information collection.

type: object

properties:

appId:

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

ueIpAddr:

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

ipTrafficFilter:

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

ueLoc:

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

appLocs:

type: array

items:

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

minItems: 1

asAddr:

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

perfData:

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

timeStamp:

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

required:

- perfData

- timeStamp

PerformanceData:

description: Contains Performance Data.

type: object

properties:

pdb:

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

plr:

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

thrputUl:

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

thrputDl:

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

AddrFqdn:

description: IP address and/or FQDN.

type: object

properties:

ipAddr:

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

fqdn:

type: string

description: Indicates an FQDN.

DispersionCollection:

description: Contains the dispersion information collected for an AF.

type: object

properties:

gpsi:

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

supi:

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

ueAddr:

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

dataUsage:

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

flowDesp:

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

appId:

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

dnais:

type: array

items:

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

minItems: 1

required:

- dataUsage

# Simple data types and Enumerations

AfEvent:

description: Represents Application Events.

anyOf:

- type: string

enum:

- SVC\_EXPERIENCE

- UE\_MOBILITY

- UE\_COMM

- EXCEPTIONS

- USER\_DATA\_CONGESTION

- PERF\_DATA

- DISPERSION

- type: string

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