**3GPP TSG-CT WG3 Meeting #112e C3-205380**

**E-Meeting, 4th – 13th November 2020 (Revision of C3-205321)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.522** | **CR** | **0233** | **rev** | **1** | **Current version:** | **16.5.0** |  |
|  | | | | | | | | |
| *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:*** | Corrections to snssai dnn and appId exposed in AnalyticsExposure API | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNA | | | | |  | ***Date:*** | | | 2020-10-18 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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:*** | | Type AnalyticsEventFilter contains the optional attribute "appIds" applicable to Abnormal\_Behavior, while no snssai dnn and appId presence can be found in Type AbnormalExposure in this specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding the missing attributes "appId" in Type AbnormalExposure. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not align with the application Id information to the applicable analytics event subscribed/requested by AF. Not fulfilling the requested appId exposure. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.6.3.3.15, A.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 corrections into the OpenAPI files applicable to AnalyticsExposure API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 5.6.3.3.15 Type AbnormalExposure

Table 5.6.3.3.15-1: Definition of type AbnormalExposure

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| gpsis | array(Gpsi) | C | 1..N | Each element identifies a UE which is affected with the Exception.  Shall be present if the subscription request applies to more than one UE. |  |
| excep | Exception | M | 1 | Contains the exception information. |  |
| appId | ApplicationId | O | 0..1 | Identifies an application. May be present if the "appIds" attribute was provided within AnalyticsEventFilter during the subscription for event notification procedure. |  |
| ratio | SamplingRatio | C | 0..1 | This attribute contains the percentage of UEs with same analytics result in the group or among all UEs.  Shall be present if the analytics result applies for a group of UEs or any UE. |  |
| confidence | Uinteger | C | 0..1 | Indicates the confidence of the prediction. (NOTE)  Shall be present if the analytics result is a prediction. |  |
| addtMeasInfo | AdditionalMeasurement | O | 0..1 | Additional measurement. |  |
| NOTE: If the requested period identified by the "startTs" and "endTs" attributes in the "EventReportingRequirement" type is a future time period, which means the analytics result is a prediction. If no sufficient data is collected to provide the confidence of the prediction before the time deadline, a zero confidence shall be returned. | | | | | |

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

# A.4 AnalyticsExposure API

openapi: 3.0.0

info:

title: 3gpp-analyticsexposure

version: 1.0.1

description: |

API for Analytics Exposure.

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externalDocs:

description: 3GPP TS 29.522 V16.5.0; 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-analyticsexposure/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/{afId}/subscriptions:

get:

summary: read all of the active subscriptions for the AF

tags:

- Analytics Exposure Subscriptions

parameters:

- name: afId

in: path

description: Identifier of the AF

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 (Successful get all of the active subscriptions for the AF)

content:

application/json:

schema:

type: array

items:

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

minItems: 0

'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'

post:

summary: Creates a new subscription resource

tags:

- Analytics Exposure Subscriptions

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

requestBody:

description: new subscription creation

required: true

content:

application/json:

schema:

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

callbacks:

notification:

'{request.body#/notifUri}':

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

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

responses:

'204':

description: No Content (successful notification)

'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/AnalyticsExposureSubsc'

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'

/{afId}/subscriptions/{subscriptionId}:

get:

summary: read an active subscription for the AF and the subscription Id

tags:

- Individual Analytics Exposure Subscription

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: subscriptionId

in: path

description: Identifier of the subscription resource

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 (Successful get the active subscription)

content:

application/json:

schema:

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

'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: Updates/replaces an existing subscription resource

tags:

- Individual Analytics Exposure Subscription

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: subscriptionId

in: path

description: Identifier of the subscription resource

required: true

schema:

type: string

requestBody:

description: Parameters to update/replace the existing subscription

required: true

content:

application/json:

schema:

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

responses:

'200':

description: OK (Successful deletion of the existing subscription)

content:

application/json:

schema:

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

'204':

description: Successful case. The resource has been successfully updated 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'

delete:

summary: Deletes an already existing subscription

tags:

- Individual Analytics Exposure Subscription

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

- name: subscriptionId

in: path

description: Identifier of the subscription resource

required: true

schema:

type: string

responses:

'204':

description: No Content (Successful deletion of the existing subscription)

'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'

/{afId}/fetch:

post:

summary: Fetch analytics information

tags:

- AnalyticsExposure API Fetch analytics information

parameters:

- name: afId

in: path

description: Identifier of the AF

required: true

schema:

type: string

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'200':

description: The requested information was returned successfully.

content:

application/json:

schema:

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

'204':

description: No Content (The requested Analytics data does not exist)

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29122\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29122\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29122\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

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

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

AnalyticsExposureSubsc:

type: object

properties:

analyEventsSubs:

type: array

items:

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

minItems: 1

analyRepInfo:

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

notifUri:

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

notifId:

type: string

eventNotifis:

type: array

items:

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

minItems: 1

suppFeat:

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

self:

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

required:

- analyEventsSubs

- notifUri

- notifId

AnalyticsEventNotification:

type: object

properties:

notifId:

type: string

analyEventNotifs:

type: array

items:

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

minItems: 1

required:

- notifId

- analyEventNotifs

AnalyticsEventNotif:

type: object

properties:

analyEvent:

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

expiry:

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

timeStamp:

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

ueMobilityInfos:

type: array

items:

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

minItems: 1

ueCommInfos:

type: array

items:

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

minItems: 1

abnormalInfos:

type: array

items:

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

minItems: 1

congestInfos:

type: array

items:

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

minItems: 1

nwPerfInfos:

type: array

items:

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

minItems: 1

qosSustainInfos:

type: array

items:

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

minItems: 1

required:

- analyEvent

- timeStamp

AnalyticsEventSubsc:

type: object

properties:

analyEvent:

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

analyEventFilter:

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

tgtUe:

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

required:

- analyEvent

AnalyticsEventFilterSubsc:

type: object

properties:

nwPerfReqs:

type: array

items:

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

minItems: 1

locArea:

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

appIds:

type: array

items:

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

minItems: 1

excepRequs:

type: array

items:

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

minItems: 1

exptAnaType:

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

exptUeBehav:

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

reptThlds:

type: array

items:

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

minItems: 1

snssai:

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

qosReq:

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

qosFlowRetThds:

type: array

items:

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

minItems: 1

ranUeThrouThds:

type: array

items:

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

minItems: 1

extraReportReq:

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

TargetUeId:

type: object

properties:

anyUeInd:

type: boolean

gpsi:

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

exterGroupId:

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

UeMobilityExposure:

type: object

properties:

ts:

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

recurringTime:

$ref: 'TS29122\_CpProvisioning.yaml#/components/schemas/ScheduledCommunicationTime'

duration:

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

durationVariance:

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

locInfo:

type: array

items:

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

minItems: 1

required:

- duration

- locInfo

UeLocationInfo:

type: object

properties:

loc:

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

ratio:

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

confidence:

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

required:

- loc

AnalyticsRequest:

type: object

properties:

analyEvent:

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

analyEventFilter:

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

analyRep:

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

tgtUe:

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

suppFeat:

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

required:

- analyEvent

- suppFeat

AnalyticsEventFilter:

type: object

properties:

locArea:

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

dnn:

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

nwPerfTypes:

type: array

items:

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

minItems: 1

appIds:

type: array

items:

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

minItems: 1

excepIds:

type: array

items:

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

minItems: 1

exptAnaType:

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

exptUeBehav:

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

snssai:

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

qosReq:

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

AnalyticsData:

type: object

properties:

expiry:

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

ueMobilityInfos:

type: array

items:

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

minItems: 1

ueCommInfos:

type: array

items:

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

minItems: 1

nwPerfInfos:

type: array

items:

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

minItems: 1

abnormalInfos:

type: array

items:

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

minItems: 1

congestInfos:

type: array

items:

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

minItems: 1

qosSustainInfos:

type: array

items:

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

minItems: 1

suppFeat:

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

required:

- suppFeat

NetworkPerfExposure:

type: object

properties:

locArea:

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

nwPerfType:

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

relativeRatio:

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

absoluteNum:

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

confidence:

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

required:

- locArea

- nwPerfType

AbnormalExposure:

type: object

properties:

gpsis:

type: array

items:

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

minItems: 1

appId:

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

excep:

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

ratio:

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

confidence:

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

addtMeasInfo:

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

required:

- excep

CongestInfo:

type: object

properties:

locArea:

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

cngAnas:

type: array

items:

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

minItems: 1

required:

- locArea

- cngAnas

CongestionAnalytics:

type: object

properties:

cngType:

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

tmWdw:

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

nsi:

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

confidence:

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

required:

- cngType

- tmWdw

- nsi

QosSustainabilityExposure:

type: object

properties:

locArea:

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

startTs:

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

endTs:

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

qosFlowRetThd:

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

ranUeThrouThd:

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

confidence:

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

required:

- locArea

- startTs

- endTs

AnalyticsEvent:

anyOf:

- type: string

enum:

- UE\_MOBILITY

- UE\_COMM

- ABNORMAL\_BEHAVIOR

- CONGESTION

- NETWORK\_PERFORMANCE

- QOS\_SUSTAINABILITY

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: >

Possible values are

- UE\_MOBILITY: The AF requests to be notified about analytics information of UE mobility.

- UE\_COMM: The AF requests to be notified about analytics information of UE communication.

- ABNORMAL\_BEHAVIOR: The AF requests to be notified about analytics information of UE’s abnormal behavior.

- CONGESTION: The AF requests to be notified about analytics information of user data congestion information.

- NETWORK\_PERFORMANCE: The AF requests to be notified about analytics information of network performance.

- QOS\_SUSTAINABILITY: The AF requests to be notified about analytics information of QoS sustainability.

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