**3GPP TSG- WG3 Meeting #****125 C3-225245\_r1**

**Toulouse, France, - , November, 2022**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.522** | **CR** | **0752** | **rev** | **-** | **Current version:** | **17.7.0** |  |
|  |
| *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:***  | Enumeration definitions in the OpenAPI files |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | NBI18 |  | ***Date:*** | 2022-11-01 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | TS 29.122 specifies in clause 5.2.9.10 for the enumeration definition in the OpenAPI file that the schema:- shall contain the "anyOf" keyword listing as alternatives:1. the "type: string" keyword and the "enum" keyword with a list of all defined values for the enumeration; and2. the "type: string" keyword and the "description" keyword with a description stating that the string is only provided for extensibility and is not used to encode contents defined in the present version of the specification. And- may contain a description listing the defined values of the enumeration together with explanations of those values.However, the OpenAPI files of the 5GLANParameterProvision, ServiceParameter and TimeSyncExposure APIs are not aligned with the above requirement from TS 29.122 i.e. in definitions of enumerations, descriptions of the string data type provided for forward compatibility with future extensions are incorrect. |
|  |  |
| ***Summary of change:*** | Definitions of enumerations:descriptions of the string data type provided for forward compatibility with future extensions corrected and specified in accordance with TS 29.122. |
|  |  |
| ***Consequences if not approved:*** | The OpenAPI files of the 5GLANParameterProvision, ServiceParameter and TimeSyncExposure APIs will remain not fully compliant with the OpenAPI requirements specified in TS 29.122. |
|  |  |
| ***Clauses affected:*** | A.5, A.9, A.13 |
|  |  |
|  | **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 to the OpenAPI files of the 5GLANParameterProvision, ServiceParameter and TimeSyncExposure APIs. |
|  |  |
| ***This CR's revision history:*** |  |

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

# A.5 5GLANParameterProvision API

openapi: 3.0.0

info:

 title: 3gpp-5glan-pp

 version: 1.1.1

 description: |

 API for 5G LAN Parameter Provision.

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externalDocs:

 description: >

 3GPP TS 29.522 V17.7.0; 5G System; Network Exposure Function Northbound APIs.

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-5glan-pp/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{afId}/subscriptions:

 get:

 summary: read all of the active subscriptions for the AF

 operationId: RealAllSubscriptions

 tags:

 - 5GLAN Parameters Provision Subscriptions

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 responses:

 '200':

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

 content:

 application/json:

 schema:

 type: array

 items:

 $ref: '#/components/schemas/5GLanParametersProvision'

 minItems: 0

 '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'

 post:

 summary: Creates a new subscription resource

 operationId: CreateAnSubscription

 tags:

 - 5GLAN Parameters Provision 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/5GLanParametersProvision'

 responses:

 '201':

 description: Created (Successful creation)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 headers:

 Location:

 description: Contains the URI of the newly created resource.

 required: true

 schema:

 type: string

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 /{afId}/subscriptions/{subscriptionId}:

 get:

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

 operationId: ReadAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision 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:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 '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: Fully updates/replaces an existing subscription resource

 operationId: FullyUpdateAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision 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/5GLanParametersProvision'

 responses:

 '200':

 description: OK (Successful deletion of the existing subscription)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 '204':

 description: >

 Successful case. The resource has been successfully updated and no additional

 content is to be sent in the response message.

 '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: Partial updates an existing subscription resource

 operationId: PartialUpdateAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision 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:

 required: true

 content:

 application/merge-patch+json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvisionPatch'

 responses:

 '200':

 description: OK. The subscription was modified successfully.

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/5GLanParametersProvision'

 '204':

 description: >

 Successful case. The resource has been successfully updated and no additional

 content is to be sent in the response message.

 '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: Deletes an already existing subscription

 operationId: DeleteAnSubscription

 tags:

 - Individual 5GLAN Parameters Provision 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)

 '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:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 5GLanParametersProvision:

 description: Represents an individual 5G LAN parameters provision subscription resource.

 type: object

 properties:

 self:

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

 5gLanParams:

 $ref: '#/components/schemas/5GLanParameters'

 suppFeat:

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

 required:

 - 5gLanParams

 - suppFeat

 5GLanParametersProvisionPatch:

 description: >

 Represents the 5G LAN parameters to request the modification of a subscription

 to provision parameters.

 type: object

 properties:

 5gLanParamsPatch:

 $ref: '#/components/schemas/5GLanParametersPatch'

 5GLanParameters:

 description: Represents 5G LAN service related parameters that need to be provisioned.

 type: object

 properties:

 exterGroupId:

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

 gpsis:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains the list of 5G VN Group members, each member is identified by GPSI.

 Any string value can be used as a key of the map.

 dnn:

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

 aaaIpv4Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 aaaIpv6Addr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 aaaUsgs:

 type: array

 items:

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

 minItems: 1

 mtcProviderId:

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

 snssai:

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

 sessionType:

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

 sessionTypes:

 type: array

 items:

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

 minItems: 1

 description: Further allowed PDU Session types.

 appDesps:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: Describes the operation systems and the corresponding applications for each operation systems. The key of map is osId.

 required:

 - exterGroupId

 - gpsis

 - dnn

 - snssai

 - sessionType

 - appDesps

 5GLanParametersPatch:

 description: Represents 5G LAN service related parameters that need to be modified.

 type: object

 properties:

 gpsis:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains the list of 5G VN Group members, each member is identified by GPSI.

 Any string value can be used as a key of the map.

 appDesps:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Describes the operation systems and the corresponding applications for

 each operation systems. The key of map is osId.

 AppDescriptor:

 description: Represents an operation system and the corresponding applications.

 type: object

 properties:

 osId:

 $ref: 'TS29519\_Policy\_Data.yaml#/components/schemas/OsId'

 appIds:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies applications that are running on the UE's operating system.

 Any string value can be used as a key of the map.

 required:

 - osId

 - appIds

 AppDescriptorRm:

 description: >

 Represents the same as the AppDescriptor data type but with the nullable:true

 property.

 type: object

 properties:

 appIds:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies applications that are running on the UE's operating system.

 Any string value can be used as a key of the map.

 AaaUsage:

 anyOf:

 - type: string

 enum:

 - AUTH

 - IP\_ALLOC

 - 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: |

 Possible values are:

 - AUTH: secondary authentication/authorization needed from DN-AAA server

 - IP\_ALLOC: UE IP address allocation needed from DN-AAA server

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

# A.9 ServiceParameter API

openapi: 3.0.0

info:

 title: 3gpp-service-parameter

 version: 1.1.1

 description: |

 API for AF service paramter

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externalDocs:

 description: >

 3GPP TS 29.522 V17.7.0; 5G System; Network Exposure Function Northbound APIs.

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-service-parameter/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{afId}/subscriptions:

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 get:

 summary: read all of the active subscriptions for the AF

 operationId: ReadAllSubscriptions

 tags:

 - Service Parameter Subscriptions

 parameters:

 - name: gpsis

 in: query

 description: The GPSI of the requested UE(s).

 required: false

 schema:

 type: array

 items:

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

 minItems: 1

 - name: ip-addrs

 in: query

 description: The IP address(es) of the requested UE(s).

 required: false

 schema:

 type: array

 items:

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

 minItems: 1

 - name: ip-domain

 in: query

 description: >

 The IPv4 address domain identifier. The attribute may only be provided

 if IPv4 address is included in the ip-addrs query parameter.

 required: false

 schema:

 type: string

 - name: mac-addrs

 in: query

 description: The MAC address(es) of the requested UE(s).

 required: false

 schema:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 minItems: 1

 responses:

 '200':

 description: OK.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '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'

 post:

 summary: Creates a new subscription resource

 operationId: CreateAnSubscription

 tags:

 - Service Parameter Subscriptions

 requestBody:

 description: Request to create a new subscription resource

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Created (Successful creation of subscription)

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: Contains the URI of the newly created resource.

 required: true

 schema:

 type: string

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 notificationDestination:

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

 post:

 requestBody:

 description: >

 Notifications upon AF Service Parameter Authorization Update,

 and/or AF subscribed event notification of the outcome related

 to the invocation of service parameters provisioning.

 required: true

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 responses:

 '204':

 description: Expected response to a successful callback processing without a body

 '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'

 /{afId}/subscriptions/{subscriptionId}:

 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

 get:

 summary: read an active subscriptions for the SCS/AS and the subscription Id

 operationId: ReadAnSubscription

 tags:

 - Individual Service Parameter Subscription

 responses:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

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

 '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: Fully updates/replaces an existing subscription resource

 operationId: FullyUpdateAnSubscription

 tags:

 - Individual Service Parameter Subscription

 requestBody:

 description: Parameters to update/replace the existing subscription

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful update of the subscription)

 content:

 application/json:

 schema:

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

 '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: Partial updates/replaces an existing subscription resource

 operationId: PartialUpdateAnSubscription

 tags:

 - Individual Service Parameter Subscription

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK. The subscription was modified successfully.

 content:

 application/json:

 schema:

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

 '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: Deletes an already existing subscription

 operationId: DeleteAnSubscription

 tags:

 - Individual Service Parameter Subscription

 responses:

 '204':

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

 '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:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 ServiceParameterData:

 description: Represents an individual Service Parameter subscription resource.

 type: object

 properties:

 afServiceId:

 type: string

 description: Identifies a service on behalf of which the AF is issuing the request.

 appId:

 type: string

 description: Identifies an application.

 dnn:

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

 snssai:

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

 externalGroupId:

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

 anyUeInd:

 type: boolean

 description: >

 Identifies whether the AF request applies to any UE. This attribute

 shall set to "true" if applicable for any UE, otherwise, set to "false".

 gpsi:

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

 ueIpv4:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ueIpv6:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 ueMac:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 self:

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

 subNotifEvents:

 type: array

 items:

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

 minItems: 1

 notificationDestination:

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

 requestTestNotification:

 type: boolean

 description: >

 Set to true by the AF to request the NEF to send a test notification

 as defined in clause 5.2.5.3 of 3GPP TS 29.122. Set to false or omitted otherwise.

 websockNotifConfig:

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

 paramOverPc5:

 $ref: '#/components/schemas/ParameterOverPc5'

 paramOverUu:

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

 paramForProSeDd:

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

 paramForProSeDc:

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

 paramForProSeU2NRelUe:

 $ref: '#/components/schemas/ParamForProSeU2NRelUe'

 paramForProSeRemUe:

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

 urspGuidance:

 type: array

 items:

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

 minItems: 1

 description: Contains the service parameter used to guide the URSP.

 mtcProviderId:

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

 suppFeat:

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

 ServiceParameterDataPatch:

 description: >

 Represents the parameters to request the modification of a service parameter

 subscription resource.

 type: object

 properties:

 paramOverPc5:

 $ref: '#/components/schemas/ParameterOverPc5Rm'

 paramOverUu:

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

 paramForProSeDd:

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

 paramForProSeDc:

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

 paramForProSeU2NRelUe:

 $ref: '#/components/schemas/ParamForProSeU2NRelUeRm'

 paramForProSeRemUe:

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

 urspGuidance:

 type: array

 items:

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

 minItems: 1

 description: Contains the service parameter used to guide the URSP.

 subNotifEvents:

 type: array

 items:

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

 minItems: 1

 nullable: true

 notificationDestination:

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

 ParameterOverPc5:

 description: >

 Represents configuration parameters for V2X communications over PC5 reference point.

 type: string

 ParameterOverPc5Rm:

 description: >

 Represents the same as the ParameterOverPc5 data type but with the nullable:true property.

 type: string

 nullable: true

 ParameterOverUu:

 description: >

 Represents configuration parameters for V2X communications over Uu reference point.

 type: string

 ParameterOverUuRm:

 description: >

 Represents the same as the ParameterOverUu data type but with the nullable:true property.

 type: string

 nullable: true

 ParamForProSeDd:

 description: Represents the service parameters for 5G ProSe direct discovery.

 type: string

 ParamForProSeDdRm:

 description: >

 This data type is defined in the same way as the ParamForProSeDd data type,

 but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 ParamForProSeDc:

 description: Represents the service parameters for 5G ProSe direct communications.

 type: string

 ParamForProSeDcRm:

 description: >

 This data type is defined in the same way as the ParamForProSeDc data type,

 but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 ParamForProSeU2NRelUe:

 description: Represents the service parameters for 5G ProSe UE-to-network relay UE.

 type: string

 ParamForProSeU2NRelUeRm:

 description: >

 This data type is defined in the same way as the ParamForProSeU2NRelay data type,

 but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 ParamForProSeRemUe:

 description: Represents the service parameters for 5G ProSe Remate UE.

 type: string

 ParamForProSeRemUeRm:

 description: >

 This data type is defined in the same way as the ParamForProSeRemUe data type,

 but with the OpenAPI nullable property set to true.

 type: string

 nullable: true

 UrspRuleRequest:

 description: Contains parameters that can be used to guide the URSP.

 type: object

 properties:

 trafficDesc:

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

 relatPrecedence:

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

 routeSelParamSets:

 type: array

 items:

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

 minItems: 1

 description: Sets of parameters that may be used to guide the Route Selection Descriptors of the URSP.

 RouteSelectionParameterSet:

 description: >

 Contains parameters that can be used to guide the Route Selection

 Descriptors of the URSP.

 type: object

 properties:

 dnn:

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

 snssai:

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

 precedence:

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

 spatialValidityAreas:

 type: array

 items:

 $ref: 'TS29522\_AMPolicyAuthorization.yaml#/components/schemas/GeographicalArea'

 minItems: 1

 description: >

 Indicates where the route selection parameters apply. It may correspond

 to a geographical area, for example using a geographic shape that

 is known to the AF and is configured by the operator to correspond to a list

 of or TAIs.

 spatialValidityTais:

 type: array

 items:

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

 minItems: 1

 description: Indicates the TAIs in which the route selection parameters apply. This attribute is applicable only within the 5GC and it shall not be included in the request messages of untrusted AFs for URSP guidance.

 Event:

 anyOf:

 - type: string

 enum:

 - SUCCESS\_UE\_POL\_DEL\_SP

 - UNSUCCESS\_UE\_POL\_DEL\_SP

 - 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: |

 Possible values are:

 - SUCCESS\_UE\_POL\_DEL\_SP: Successful UE Policy Delivery related to the invocation of AF provisioned Service Parameters.

 - UNSUCCESS\_UE\_POL\_DEL\_SP: Unsuccessful UE Policy Delivery related to the invocation of AF provisioned Service Parameters.

 AfNotification:

 description: >

 Notifications upon AF Service Parameter Authorization Update e.g. to

 revoke the authorization, and/or AF subscribed event notification of the

 outcome related to the invocation of service parameter provisioning.

 type: object

 properties:

 subscription:

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

 reportEvent:

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

 authResult:

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

 gpsis:

 type: array

 items:

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

 minItems: 1

 dnn:

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

 snssai:

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

 eventInfo:

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

 required:

 - subscription

 anyOf:

 - required: [reportEvent]

 - required: [authResult]

 TrafficDescriptorComponents:

 description: Traffic descriptor components for the requested URSP.

 type: object

 properties:

 appDescs:

 type: object

 additionalProperties:

 $ref: 'TS29522\_5GLANParameterProvision.yaml#/components/schemas/AppDescriptor'

 minProperties: 1

 description: Describes the operation systems and the corresponding applications for each operation systems. The key of map is osId.

 flowDescs:

 type: array

 items:

 type: string

 minItems: 1

 description: Represents a 3-tuple with protocol, server ip and server port for UL/DL application traffic. The content of the string has the same encoding as the IPFilterRule AVP value as defined in IETF RFC 6733.

 domainDescs:

 type: array

 items:

 type: string

 minItems: 1

 description: FQDN(s) or a regular expression which are used as a domain name matching criteria.

 ethFlowDescs:

 type: array

 items:

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

 minItems: 1

 description: Descriptor(s) for destination information of non-IP traffic in which only ethernet flow description is defined.

 dnns:

 type: array

 items:

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

 minItems: 1

 description: This is matched against the DNN information provided by the application.

 connCaps:

 type: array

 items:

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

 minItems: 1

 description: This is matched against the information provided by a UE application when it requests a network connection with certain capabilities.

 anyOf:

 - required: [appDescs]

 - required: [flowDescs]

 - required: [domainDescs]

 - required: [ethFlowDescs]

 - required: [dnns]

 - required: [connCaps]

 AuthorizationResult:

 anyOf:

 - type: string

 enum:

 - AUTH\_REVOKED

 - 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: |

 Possible values are:

 - AUTH\_REVOKED: Indicated the service parameters authorization is revoked.

 EventInfo:

 description: Indicates the event information.

 type: object

 properties:

 failureCause:

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

 Failure:

 oneOf:

 - type: string

 enum:

 - UNSPECIFIED

 - UE\_NOT\_REACHABLE

 - UNKNOWN

 - UE\_TEMP\_UNREACHABLE

 - 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: |

 Possible values are:

 - UNSPECIFIED: Indicates the PCF received the UE sent UE policy delivery service cause #111 (Protocol error, unspecified).

 - UE\_NOT\_REACHABLE: Indicates the PCF received the notification from the AMF that the UE is not reachable.

 - UNKNOWN: Indicates unknown reasons upon no response from the UE, e.g. UPDS message type is not defined or not implemented by the UE, or not compatible with the UPDS state, in which the UE shall ignore the UPDS message.

 - UE\_TEMP\_UNREACHABLE: Indicates the PCF received the notification from the AMF that the UE is not reachable but the PCF will retry again.

 ConnectionCapabilities:

 anyOf:

 - type: string

 enum:

 - IMS

 - MMS

 - SUPL

 - INTERNET

 - 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: |

 Possible values are:

 - IMS: Indicates the connection capability to support IMS service.

 - MMS: Indicates the connection capability to support MMS service.

 - SUPL: Indicates the connection capability to support SUPL service.

 - INTERNET: Indicates the connection capability to support Internet service.

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

# A.13 TimeSyncExposure API

openapi: 3.0.0

info:

 title: 3gpp-time-sync-exposure

 version: 1.0.1

 description: |

 API for time synchronization exposure.

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externalDocs:

 description: >

 3GPP TS 29.522 V17.7.0; 5G System; Network Exposure Function Northbound APIs.

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-time-sync/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{afId}/subscriptions:

 get:

 summary: read all of the active subscriptions for the AF

 operationId: ReadAllSubscriptions

 tags:

 - Time Synchronization Exposure Subscriptions

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 responses:

 '200':

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

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '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'

 post:

 summary: Creates a new subscription resource

 operationId: CreateNewSubscription

 tags:

 - Time Synchronization 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/TimeSyncExposureSubsc'

 responses:

 '201':

 description: Created (Successful creation)

 content:

 application/json:

 schema:

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

 headers:

 Location:

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

 required: true

 schema:

 type: string

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 timeSyncSubsNotification:

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

 post:

 requestBody:

 description: Notification for Time Synchronization Capability for a list of UEs.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: Expected response to a successful callback processing without a body

 '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'

 /{afId}/subscriptions/{subscriptionId}:

 get:

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

 operationId: ReadAnSubscription

 tags:

 - Individual Time Synchronization 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:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

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

 '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: Fully updates/replaces an existing subscription resource

 operationId: FullyUpdateAnSubscription

 tags:

 - Individual Time Synchronization 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/TimeSyncExposureSubsc'

 responses:

 '200':

 description: OK (Successful deletion of the existing subscription)

 content:

 application/json:

 schema:

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

 '204':

 description: >

 Successful case. The resource has been successfully updated and no additional

 content is to be sent in the response message.

 '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: Deletes an already existing subscription

 operationId: DeleteAnSubscription

 tags:

 - Individual Time Synchronization 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)

 '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'

 /{afId}/subscriptions/{subscriptionId}/configurations:

 get:

 summary: read all of the active configurations for the AF

 operationId: ReadAllConfirguations

 tags:

 - Time Synchronization Exposure Configurations

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 description: String identifying the individual synchronization Exposure Subscription resource in the NEF

 in: path

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (Successful get all of the active configurations for the AF)

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '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'

 post:

 summary: Creates a new configuration resource

 operationId: CreateNewConfirguation

 tags:

 - Time Synchronization Exposure Configurations

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 description: >

 String identifying the individual synchronization Exposure Subscription

 resource in the NEF.

 in: path

 required: true

 schema:

 type: string

 requestBody:

 description: new configuration creation

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Created (Successful creation)

 content:

 application/json:

 schema:

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

 headers:

 Location:

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

 required: true

 schema:

 type: string

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 timeSyncConfigNotification:

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

 post:

 requestBody:

 description: Notification for Time Synchronization Service status.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: Expected response to a successful callback processing without a body

 '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'

 /{afId}/subscriptions/{subscriptionId}/configurations/{instanceReference}:

 get:

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

 operationId: ReadTimeSynSubscription

 tags:

 - Individual Time Synchronization 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: instanceReference

 in: path

 description: Identifier of the configuration resource

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

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

 '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: Fully updates/replaces an existing configuration resource

 operationId: FullyUpdateAnConfiguration

 tags:

 - Individual Time Synchronization Exposure Configuration

 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: instanceReference

 in: path

 description: Identifier of the configuration resource

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to update/replace the existing configuration

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful deletion of the existing configuration)

 content:

 application/json:

 schema:

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

 '204':

 description: >

 Successful case. The resource has been successfully updated and no additional

 content is to be sent in the response message.

 '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: Deletes an already existing configuration

 operationId: DeleteAnConfiguration

 tags:

 - Individual Time Synchronization Exposure Configuration

 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: instanceReference

 in: path

 description: Identifier of the configuration resource

 required: true

 schema:

 type: string

 responses:

 '204':

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

 '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:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 TimeSyncExposureSubsc:

 description: >

 Contains requested parameters for the subscription to the notification

 of time synchronization capability.

 type: object

 properties:

 exterGroupId:

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

 gpsis:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains a list of UE for which the time synchronization capabilities is requested.

 anyUeInd:

 type: boolean

 description: >

 Any UE indication. This IE shall be present if the event subscription

 is applicable to any UE. Default value "false" is used, if not present.

 afServiceId:

 type: string

 description: Identifies a service on behalf of which the AF is issuing the request.

 dnn:

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

 snssai:

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

 subsNotifId:

 type: string

 description: Notification Correlation ID assigned by the NF service consumer.

 subsNotifUri:

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

 subscribedEvents:

 type: array

 items:

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

 minItems: 1

 description: Subscribed events

 eventFilters:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains the filter conditions to match for notifying the event(s)

 of time synchronization capabilities for a list of UE(s).

 notifMethod:

 $ref: 'TS29508\_Nsmf\_EventExposure.yaml#/components/schemas/NotificationMethod'

 maxReportNbr:

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

 expiry:

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

 repPeriod:

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

 requestTestNotification:

 type: boolean

 description: >

 Set to true by the SCS/AS to request the SCEF to send a test notification

 as defined in clause 5.2.5.3 of 3GPP TS 29.122. Set to false or omitted otherwise.

 websockNotifConfig:

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

 suppFeat:

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

 required:

 - subsNotifUri

 - subsNotifId

 TimeSyncCapability:

 description: Contains time synchronization capability.

 type: object

 properties:

 upNodeId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 gmCapables:

 type: array

 items:

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

 asTimeRes:

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

 ptpCapForUes:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains the PTP capabilities supported by each of the UE(s).

 The key of the map is the gpsi.

 required:

 - upNodeId

 anyOf:

 - required: [gmCapables]

 - required: [asTimeRes]

 TimeSyncExposureConfig:

 description: Contains the Time Synchronization Configuration parameters.

 type: object

 properties:

 upNodeId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 reqPtpIns:

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

 gmEnable:

 type: boolean

 description: >

 Indicates that the AF requests 5GS to act as a grandmaster for PTP

 or gPTP if it is included and set to true.

 gmPrio:

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

 timeDom:

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

 timeSyncErrBdgt:

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

 configNotifId:

 type: string

 description: Notification Correlation ID assigned by the NF service consumer.

 configNotifUri:

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

 tempValidity:

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

 required:

 - upNodeId

 - reqPtpIns

 - timeDom

 - configNotifId

 - configNotifUri

 TimeSyncExposureSubsNotif:

 description: Contains the notification of time synchronization capability.

 type: object

 properties:

 subsNotifId:

 type: string

 description: Notification Correlation ID assigned by the NF service consumer.

 eventNotifs:

 type: array

 items:

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

 minItems: 1

 required:

 - subsNotifId

 - eventNotifs

 SubsEventNotification:

 description: Notifications about subscribed Individual Events.

 type: object

 properties:

 event:

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

 timeSyncCapas:

 type: array

 items:

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

 minItems: 1

 required:

 - event

 TimeSyncExposureConfigNotif:

 description: Contains the notification of time synchronization service state.

 type: object

 properties:

 configNotifId:

 type: string

 description: Notification Correlation ID assigned by the NF service consumer.

 stateOfConfig:

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

 required:

 - configNotifId

 - stateOfConfig

 PtpCapabilitiesPerUe:

 description: Contains the supported PTP capabilities per UE.

 type: object

 properties:

 gpsi:

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

 ptpCaps:

 type: array

 items:

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

 minItems: 1

 required:

 - gpsi

 - ptpCaps

 EventFilter:

 description: >

 Contains the filter conditions to match for notifying the event(s) of time

 synchronization capabilities.

 type: object

 properties:

 instanceTypes:

 type: array

 items:

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

 minItems: 1

 transProtocols:

 type: array

 items:

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

 minItems: 1

 ptpProfiles:

 type: array

 items:

 type: string

 minItems: 1

 PtpInstance:

 description: Contains PTP instance configuration and activation requested by the AF.

 type: object

 properties:

 instanceType:

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

 protocol:

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

 ptpProfile:

 type: string

 portConfigs:

 type: array

 items:

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

 minItems: 1

 required:

 - instanceType

 - protocol

 - ptpProfile

 ConfigForPort:

 description: Contains configuration for each port.

 type: object

 properties:

 gpsi:

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

 n6Ind:

 type: boolean

 ptpEnable:

 type: boolean

 logSyncInter:

 type: integer

 logSyncInterInd:

 type: boolean

 logAnnouInter:

 type: integer

 logAnnouInterInd:

 type: boolean

 StateOfConfiguration:

 description: Contains the state of the time synchronization configuration.

 type: object

 properties:

 stateOfNwtt:

 type: boolean

 description: >

 When the PTP port state is Leader, Follower or Passive, it is included and set to true

 to indicate the state of configuration for NW-TT port is active; when PTP port state is

 in any other case, it is included and set to false to indicate the state of

 configuration for NW-TT port is inactive. Default value is false.

 stateOfDstts:

 description: >

 Contains the PTP port states of the DS-TT(s).

 type: array

 items:

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

 minItems: 1

 StateOfDstt:

 description: Contains the PTP port state of a DS-TT.

 type: object

 properties:

 gpsi:

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

 state:

 type: boolean

 description: >

 When the PTP port state is Leader, Follower or Passive, it is included and set to true

 to indicate the state of configuration for DS-TT port is active; when PTP port state is

 in any other case, it is included and set to false to indicate the state of

 configuration for DS port is inactive. Default value is false.

 required:

 - gpsi

 - state

 Protocol:

 anyOf:

 - type: string

 enum:

 - ETH

 - IPV4

 - IPV6

 - 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: |

 Possible values are:

 - ETH: Indicates Ethernet as defined in IEEE Std 1588 [45] Annex E is supported.

 - IPV4: Indicates IPv4 as defined in IEEE Std 1588 [45] Annex C is supported.

 - IPV6: Indicates IPv6 as defined in IEEE Std 1588 [45] Annex D is supported.

 GmCapable:

 anyOf:

 - type: string

 enum:

 - GPTP

 - PTP

 - 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: |

 Possible values are:

 - GPTP: gPTP grandmaster is supported.

 - PTP: PTP grandmaste is supported.

 InstanceType:

 anyOf:

 - type: string

 enum:

 - BOUNDARY\_CLOCK

 - E2E\_TRANS\_CLOCK

 - P2P\_TRANS\_CLOCK

 - P2P\_RELAY\_INSTANCE

 - 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: |

 Possible values are:

 - BOUNDARY\_CLOCK: Indicates Boundary Clock as defined in IEEE Std 1588.

 - E2E\_TRANS\_CLOCK: Indicates End-to-End Transparent Clock as defined in IEEE Std 1588.

 - P2P\_TRANS\_CLOCK: Indicates Peer-to-Peer Transparent Clock as defined in IEEE Std 1588.

 - P2P\_RELAY\_INSTANCE: Indicates PTP Relay instance as defined in IEEE Std 802.1AS.

 SubscribedEvent:

 anyOf:

 - type: string

 enum:

 - AVAILABILITY\_FOR\_TIME\_SYNC\_SERVICE

 - 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: |

 Possible values are:

 - AVAILABILITY\_FOR\_TIME\_SYNC\_SERVICE: The UE is availability for time synchronization service.

 AsTimeResource:

 anyOf:

 - type: string

 enum:

 - ATOMIC\_CLOCK

 - GNSS

 - TERRESTRIAL\_RADIO

 - SERIAL\_TIME\_CODE

 - PTP

 - NTP

 - HAND\_SET

 - INTERNAL\_OSCILLATOR

 - OTHER

 - 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: |

 Possible values are:

 - ATOMIC\_CLOCK: Indicates atomic clock is supported.

 - GNSS: Indicates Global Navigation Satellite System is supported.

 - TERRESTRIAL\_RADIO: Indicates terrestrial radio is supported.

 - SERIAL\_TIME\_CODE: Indicates serial time code is supported.

 - PTP: Indicates PTP is supported.

 - NTP: Indicates NTP is supported.

 - HAND\_SET: Indicates hand set is supported.

 - INTERNAL\_OSCILLATOR: Indicates internal oscillator is supported.

 - OTHER: Indicates other source of time is supported.

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