**TSG-CT WG3 Meeting #119bis-e *C3-220171***

**E-Meeting, 17th – 21th January 2022**

**Source: Huawei**

**Title: Support of configuration of PTP port**

**Spec: 3GPP TS 29.565 v1.0.0**

**Agenda item: 17.16**

**Document for: Decision**

**1. Introduction**

<Introduction part (optional)>

**2. Reason for Change**

As defined in Table 4.15.9.3-1 of 23.502, the AF may provide the configuration for each port within the PTP instance.

**3. Conclusions**

Introduce the Add “portConfigs” attribute in the PtpInstance. Define the ConfigForPort data type.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.565.

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

#### 6.1.6.1 General

This clause specifies the application data model supported by the API.

Table 6.1.6.1-1 specifies the data types defined for the Ntsctsf\_TimeSynchronization service based interface protocol.

Table 6.1.6.1-1: Ntsctsf\_TimeSynchronization specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| AccessTimeDistributionData | 6.1.6.1.7 | Contains the parameters for the creation of 5G access stratum time distribution configuration. |  |
| AsTimeDistributionParam | 6.1.6.1.8 | Contains the 5G access stratum time distribution parameters. |  |
| ActiveUe | 6.1.6.2.11 | Contains the UE identifier whose status of the access stratum time distribution is active and the optional requested time synchronization error budget. |  |
| ConfigForPort | 6.1.6.2.x3 | Contains the configuration for a port. |  |
| PtpCapabilitiesPerUe | 6.1.6.2.6 | Contains the PTP capabilities supported by a UE. |  |
| PtpInstance | 6.1.6.2.x2 | Contains the PTP Instance. |  |
| TimeSyncExposureSubsc | 6.1.6.2.2 | Contains the parameters for the subscription to notification of capability of time synchronization service |  |
| TimeSyncCapability | 6.1.6.2.5 | Contains the capability of time synchronization service |  |
| TimeSyncExposureConfig | 6.1.6.2.x1 | Contains the configuration of time synchronization service |  |
| TimeSyncExposureSubsNotif | 6.1.6.2.3 | Contains the notification of time synchronization service. |  |
| StatusRequestData | 6.1.6.2.9 | Contains the parameters for retrieval of the status of the access stratum time distribution for a list of UEs. |  |
| StatusResponseData | 6.1.6.2.10 | Contains the parameters for the status of the access stratum time distribution for a list of UEs. |  |
| SubsEventNotification | 6.1.6.2.4 | Contains the notification of capability of time synchronization for a list of UEs. |  |

Table 6.1.6.1-2 specifies data types re-used by the Ntsctsf\_TimeSynchronization service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Ntsctsf\_TimeSynchronization service based interface.

Table 6.1.6.1-2: Ntsctsf\_TimeSynchronization re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| DateTime | 3GPP TS 29.571 [15] | String with format "date-time" as defined in OpenAPI Specification [6]. |  |
| DistributionMethod | 3GPP TS 29.522 [17] | Identifies the time synchronization distribution methods supported by 5GS. |  |
| Dnn | 3GPP TS 29.571 [15] | The DNN the user is connected to. |  |
| DurationSec | 3GPP TS 29.571 [15] | Identifies a period of time in units of seconds. |  |
| EventFilter | 3GPP TS 29.522 [17] | Contains the conditions to match for notifying the event. |  |
| GmCapable | 3GPP TS 29.522 [17] | Indicates separately whether 5GS supports acting as a gPTP or PTP grandmaster. |  |
| GroupId | 3GPP TS 29.571 [15] | Identifies a group of internal globally unique ID. |  |
| Snssai | 3GPP TS 29.571 [15] | Identifies the S-NSSAI. |  |
| SubscribedEvent | 3GPP TS 29.522 [17] | Indicates the subscribed event. |  |
| Supi | 3GPP TS 29.571 [15] | The identification of the user (i.e. IMSI, NAI). |  |
| SupportedFeatures | 3GPP TS 29.571 [15] | Used to negotiate the applicability of the optional features defined in table 5.8-1. |  |
| TimeSyncExposureConfig | 3GPP TS 29.522 [17] | Contains the parameters of time synchronization configuration. |  |
| Uinteger | 3GPP TS 29.571 [15] | Unsigned integer. |  |
| Uint64 | 3GPP TS 29.571 [15] |  |  |
| Uri | 3GPP TS 29.571 [15] | Identifies a referenced resource. |  |

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

##### 5.15.4.3.x1 Type: TimeSyncExposureConfig

Table 5.15.4.3.x1-1: Definition of type TimeSyncExposureConfig

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| upNodeId | Uint64 | M | 1 | Identifies the applicable NW-TT. Contains a TSC user plane node Id. If integrated with TSN, the user plane node Id is a bridge Id defined in IEEE 802.1Q [41] clause 14.2.5. |  |
| reqPtpIns | PtpInstance | M | 1 | Identifies the PtP instance configuration and activation requested by the AF. |  |
| gmEnable | boolean | C | 0..1 | Indicates that the AF requests 5GS to act as a grandmaster for PTP or gPTP if it is included and set to true. The default value "false" shall apply, if the attribute is not present. |  |
| gmPrio | Uinteger | C | 0..1 | Indicates a priority used as defaultDS.priority1 when generating Announce message when 5GS acts as (g)PTP GM. It may be present if the "gmEnable" is set to true. |  |
| timeDom | Uinteger | M | 1 | Indicate the (g)PTP domain that the (TSN)AF is located in. |  |
| timeSyncErrBdgt | Uinteger | O | 0..1 | Indicates the time synchronization budget for the time synchronization service in units of microseconds.Minimum = 1. |  |
| tempValidity | TemporalValidity | O | 0..1 | Indicates the time period when the time synchronization service for a PTP instance is active. |  |
| configNotifUri | Uri | M | 1 | Notification URI for configuration state reporting. |  |
| configNotifId | string | M | 1 | Notification Correlation ID assigned by the NF service consumer. |  |

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

##### 5.15.4.3.x2 Type: PtpInstance

Table 5.15.4.3.x2-1: Definition of type PtpInstance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| instanceType | InstanceType | M | 1 | Indicates the PTP instance type. |  |
| protocol | Protocol | M | 1 | Indicates the protocol type. |  |
| ptpProfile | string | M | 1 | Identifies the PTP profile.  |  |
| portConfigs | arrary(ConfigForPort) | O | 1..N | Contains the configurations for the PTP port(s) in the PTP instance. |  |

##### 5.15.4.3.x3 Type: ConfigForPort

Table 5.15.4.3.x3-1: Definition of type ConfigForPort

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| supi | supi | C | 0..1 | Identifies the UE/DS-TT which the parameters below apply. |  |
| n6Ind | boolean | C | 0..1 | Indicates the N6 termination which the parameters below apply. |  |
| ptpEnable | boolean | O | 0..1 | This is used to set the portDS.portEnable. If omitted, the default value as described in the PTP Profile is used |  |
| logSyncInter | integer | O | 0..1 | Specifies the mean time interval between successive Sync messages. This is applicable for IEEE Std 1588 [45] Boundary Clock or IEEE Std 802.1AS [46] operation. If omitted, the default value as described in the PTP Profile is used. |  |
| logSyncInterInd | boolean | O | 0..1 | When set to FALSE, the value of "logSyncInter" attribute is used to set the initialLogSyncInterval as described in IEEE Std 802.1AS [46]. When set to TRUE, the value of "logSyncInter" attribute is used to set the mgtSettableLogSyncInterval as described in IEEE Std 802.1AS [46].If omitted, the default value as described in the IEEE Std 802.1AS [46] is used. |  |
| logAnnouInter | integer | O | 0..1 | Specifies the mean time interval between successive Announce messages. This is applicable for IEEE Std 1588 [45] Boundary Clock or IEEE Std 802.1AS [46] operation. If omitted, the default value as described in the PTP Profile is used. |  |
| logAnnouInterInd | boolean | O | 0..1 | When set to FALSE, the value of "logAnnouInter" attribute is used to set the initialLogAnnounceInterval as described in IEEE 802.1AS [46]. When set to TRUE, the value of "logAnnouInter" attribute is used to set the mgtSettableLogAnnounceInterval as described in IEEE Std 802.1AS [46].If omitted, the default value as described in the IEEE Std 802.1AS [46 is used. |  |
| NOTE: Either "supi" or "n6Ind" attribute shall be included. |

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

## A.2 Ntsctsf\_TimeSynchronization API

openapi: 3.0.0

info:

 title: Ntsctsf\_TimeSynchronization Service API

 version: 1.0.0-alpha.1

 description: |

 TSCTSF Time Synchronization Service.

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externalDocs:

 description: 3GPP TS 29.565 V1.0.0; 5G System; Time Sensitive Communication and Time Synchronization Function Services; Stage 3.

 url: 'http://www.3gpp.org/ftp/Specs/archive/29\_series/29.565/'

#

servers:

 - url: '{apiRoot}/ntsctsf-time-sync/v1'

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - {}

 - oAuth2ClientCredentials:

 - ntsctsf-timesynchronization

paths:

 /subscriptions:

 post:

 summary: Creates a new subscription to notification of capability of time synchronization service resource

 operationId: TimeSynchronizationExposureSubscriptions

 tags:

 - Time Synchronization Exposure Subscriptions (Collection)

 requestBody:

 description: Contains the information for the creation the resource

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Successful creation of the resource

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the created individual time synchronization exposure subscription resource, according to the structure: {apiRoot}/ntsctsf-time-sync/{apiVersion}/subscriptions/{subscriptionId}'

 required: true

 schema:

 type: string

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 subsEventNotification:

 '{$request.body#/subsNotifUri':

 post:

 requestBody:

 description: Notification of an event occurrence in the TSCTSF.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: The receipt of the notification is acknowledged

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 /subscriptions/{subscriptionId}:

 get:

 summary: "Reads an existing Individual Time Synchronization Exposure Subscription"

 operationId: GetIndividualTimeSynchronizationExposureSubscription

 tags:

 - Individual Time Synchronization Exposure Subscription (Document)

 parameters:

 - name: subscriptionId

 description: string identifying an Individual Time Synchronization Exposure Subscription

 in: path

 required: true

 schema:

 type: string

 responses:

 '200':

 description: A representation of the resource is returned.

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 delete:

 operationId: DeleteIndividualTimeSynchronizationExposureSubscription

 summary: Delete an Individual TimeSynchronization Exposure Subscription

 tags:

 - Individual Time Synchronization Exposure Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: string identifying an Individual Time Synchronization Exposure Subscription

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was successfully deleted

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 /subscriptions/{subscriptionId}/configurations:

 post:

 summary: "Craete a new Individual Time Synchronization Exposure Configuration"

 operationId: CreateIndividualTimeSynchronizationExposureConfiguration

 tags:

 - Individual Time Synchronization Exposure Configuration (Document)

 parameters:

 - name: subscriptionId

 description: string identifying an Individual Time Synchronization Exposure Subscription

 in: path

 required: true

 schema:

 type: string

 requestBody:

 description: Contains the information for the creation the resource

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/TimeSyncExposureConfig'

 responses:

 '201':

 description: Successful creation of the resource

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the created individual time synchronization exposure configuration resource, according to the structure: {apiRoot}/ntsctsf-time-sync/{apiVersion}/subscriptions/{subscriptionId}/configurations/{configurationId}'

 required: true

 schema:

 type: string

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 configEventNotification:

 '{$request.body#/configNotifUri':

 post:

 requestBody:

 description: Notification of an event occurrence in the TSCTSF.

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/TimeSyncExposureConfigNotif'

 responses:

 '204':

 description: The receipt of the notification is acknowledged

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 /subscriptions/{subscriptionId}/configurations/{configurationId}:

 get:

 summary: "Reads an existing Individual Time Synchronization Exposure Configuration"

 operationId: GetIndividualTimeSynchronizationExposureConfiguration

 tags:

 - Individual Time Synchronization Exposure Configuration (Document)

 parameters:

 - name: subscriptionId

 description: string identifying an Individual Time Synchronization Exposure Subscription

 in: path

 required: true

 schema:

 type: string

 - name: configurationId

 description: string identifying an Individual Time Synchronization Exposure Configuration

 in: path

 required: true

 schema:

 type: string

 responses:

 '200':

 description: A representation of the resource is returned.

 content:

 application/json:

 schema:

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

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 put:

 operationId: ReplaceIndividualTimeSynchronizationExposureConfiguration

 summary: Replace an individual Time Synchronization Exposure Configuration

 tags:

 - IndividualTimeSynchronizationExposureConfiguration (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/TimeSyncExposureConfig'

 parameters:

 - name: subscriptionId

 description: string identifying an Individual Time Synchronization Exposure Subscription

 in: path

 required: true

 schema:

 type: string

 - name: configurationId

 description: string identifying an Individual Time Synchronization Exposure Configuration

 in: path

 required: true

 schema:

 type: string

 responses:

 '200':

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

 content:

 application/json:

 schema:

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

 '204':

 description: No Content. Resource was successfully modified

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 delete:

 operationId: DeleteIndividualTimeSynchronizationExposureConfiguration

 summary: Delete an Individual TimeSynchronization Exposure Configuration

 tags:

 - Individual Time Synchronization Exposure Configuration (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: string identifying an Individual Time Synchronization Exposure Subscription

 required: true

 schema:

 type: string

 - name: configurationId

 description: string identifying an Individual Time Synchronization Exposure Configuration

 in: path

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was successfully deleted

 '307':

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

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 ntsctsf-timesynchronization: Access to the Ntsctsf\_TimeSynchronization API

 schemas:

 TimeSyncExposureSubsc:

 description: Contains the parameters for the subscription to notification of capability of time synchronization service.

 type: object

 properties:

 supis:

 type: array

 items:

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

 minItems: 1

 interGrpId:

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

 anyUeInd:

 type: boolean

 description: Identifies whether the request applies to any UE. This attribute shall set to "true" if applicable for any UE, otherwise, set to "false".

 notifMethod:

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

 dnn:

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

 snssai:

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

 subscribedEvents:

 type: array

 items:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/SubscribedEvent'

 minItems: 1

 eventFilters:

 type: array

 items:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/EventFilter'

 minItems: 1

 subsNotifUri:

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

 subsNotifId:

 type: string

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

 maxReportNbr:

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

 expiry:

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

 repPeriod:

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

 suppFeat:

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

 required:

 - subsNotifUri

 - subsNotifId

 TimeSyncExposureSubsNotif:

 description: Contains the notification of time synchronization service.

 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

 SubsEventNotification:

 description: Contains the notification of capability of time synchronization for a list of UEs.

 type: object

 properties:

 event:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/SubscribedEvent'

 timeSyncCapas:

 type: array

 items:

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

 minItems: 1

 TimeSyncCapability:

 description: Contains the capability of time synchronization service

 type: object

 properties:

 upNodeId:

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

 gmCapables:

 type: array

 items:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/GmCapable'

 minItems: 1

 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 supi.

 required:

 - upNodeId

 - ptpCapForUes

 PtpCapabilitiesPerUe:

 description: Contains the supported PTP capabilities per UE.

 type: object

 properties:

 supi:

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

 ptpCaps:

 type: array

 items:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/EventFilter'

 minItems: 1

 required:

 - supi

 - ptpCaps

 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

 PtpInstance:

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

 type: object

 properties:

 instanceType:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/components/schemas/InstanceType'

 protocol:

 $ref: 'TS29522\_TimeSyncExposure.yaml#/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:

 supi:

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

 n6Ind:

 type: boolean

 ptpEnable:

 type: boolean

 logSyncInter:

 type: integer

 logSyncInterInd:

 type: boolean

 logAnnouInter:

 type: integer

 logAnnouInterInd:

 type: boolean

 oneOf:

 - required: [supi]

 - required: [n6Ind]

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