**3GPP TSG CT WG3 Meeting #138 *C3-246365***

**Orlando, US, 18th – 22nd November, 2024 was C3-246087**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0058** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | |
| ***Title:*** | Define the API definition clauses of the UAE\_NTZManagement API | | | | | | | | |
|  |  | | | | | | | | |
| ***Source to WG:*** | Huawei, InterDigital, Nokia | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** | UASAPP\_Ph3 | | | | |  | ***Date:*** | | 2024-11-18 |
|  |  | | | |  | |  | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | |  |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | |
| ***Reason for change:*** | | | As per the agreed S6-244554 (CR#0059 to TS 23.255), the "Support NTZ" functionality was defined in Rel-19 and led to the introduction of a new UAE Server exposed API, i.e., the UAE\_NTZManagement API. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Define the API definition clauses of the new UAE\_NTZManagement API. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * The above-detailed Rel-19 updates are not specified in stage 3. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | 6.8 (new clause) | | | | | | | |
|  | |  | | | | | | | |
|  | | **Y** | | **N** |  | | |  | |
| ***Other specs*** | | **X** | |  | Other core specifications | | | TS 23.255 CR#0059 | |
| ***affected:*** | |  | | **X** | Test specifications | | | TS/TR ... CR ... | |
| ***(show related CRs)*** | |  | | **X** | O&M Specifications | | | TS/TR ... CR ... | |
|  | |  | | | | | | | |
| ***Other comments:*** | | This CR does not impact the OpenAPI descriptions of the APIs defined in this specification. | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

\* \* \* \* Start of changes \* \* \* \*

## 6.8 UAE\_NTZManagement Service API

### 6.8.1 Introduction

The UAE\_NTZManagement service shall use the UAE\_NTZManagement API.

The API URI of the UAE\_NTZManagement API shall be:

**{apiRoot}/<apiName>/<apiVersion>**

The request URIs used in HTTP requests shall have the Resource URI structure defined in clause 5.2.4 of 3GPP TS 29.122 [2], i.e.:

**{apiRoot}/<apiName>/<apiVersion>/<apiSpecificSuffixes>**

with the following components:

- The {apiRoot} shall be set as described in clause 5.2.4 of 3GPP TS 29.122 [2].

- The <apiName>shall be "uae-ntz".

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clause 5.2.4 of 3GPP TS 29.122 [2].

NOTE: When 3GPP TS 29.122 [2] is referenced for the common protocol and interface aspects for API definition in the clauses under clause 6.8, the UAE Server takes the role of the SCEF and the service consumer takes the role of the SCS/AS.

### 6.8.2 Usage of HTTP

The provisions of clause 5.2.2 of 3GPP TS 29.122 [2] shall apply for the UAE\_NTZManagement API.

### 6.8.3 Resources

#### 6.8.3.1 Overview

This clause describes the structure for the Resource URIs and the resources and methods used for the service.

Figure 6.8.3.1-1 depicts the resource URIs structure for the UAE\_NTZManagement API.



Figure 6.8.3.1-1: Resource URIs structure of the UAE\_NTZManagement API

Table 6.8.3.1-1 provides an overview of the resources and applicable HTTP methods for the UAE\_NTZManagement API.

Table 6.8.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| NTZ Configurations | /configurations | GET | Retrieve all the active NTZ Configurations managed by the UAE Server. |
| POST | Request the creation of a NTZ Configuration. |
| Individual NTZ Configuration | /configurations/{configId} | GET | Retrieve an existing "Individual NTZ Configuration" resource. |
| PUT | Request the update of an existing "Individual NTZ Configuration" resource. |
| PATCH | Request the modification of an existing "Individual NTZ Configuration" resource. |
| DELETE | Request the deletion of an existing "Individual NTZ Configuration" resource. |

#### 6.8.3.2 Resource: NTZ Configurations

##### 6.8.3.2.1 Description

This resource represents the collection of NTZ Configurations managed by the UAE Server.

##### 6.8.3.2.2 Resource Definition

Resource URI: **{apiRoot}/uae-ntz/****<apiVersion>/configurations**

This resource shall support the resource URI variables defined in table 6.8.3.2.2-1.

Table 6.8.3.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.8.1. |

##### 6.8.3.2.3 Resource Standard Methods

###### 6.8.3.2.3.1 GET

The HTTP GET method allows a service consumer to retrieve all the active NTZ Configurations managed by the UAE Server.

This method shall support the URI query parameters specified in table 6.8.3.2.3.1-1.

Table 6.8.3.2.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 6.8.3.2.3.1-2 and the response data structures and response codes specified in table 6.8.3.2.3.1-3.

Table 6.8.3.2.3.1-2: Data structures supported by the GET Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 6.8.3.2.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| array(NTZConfig) | M | 0..N | 200 OK | Successful case. All the active NTZ Configurations managed by the UAE Server shall be returned.  When there are no active NTZ Configurations at the UAE Server, an empty array shall be returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.3.2.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

Table 6.8.3.2.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

###### 6.8.3.2.3.2 POST

The HTTP POST method allows a service consumer to request the creation of an NTZ Configuration at the UAE Server.

This method shall support the URI query parameters specified in table 6.8.3.2.3.2-1.

Table 6.8.3.2.3.2-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 6.8.3.2.3.2-2 and the response data structures and response codes specified in table 6.8.3.2.3.2-3.

Table 6.8.3.2.3.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NTZConfigReq | M | 1 | Represents the parameters to request the creation of an NTZ Configuration. |

Table 6.8.3.2.3.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| NTZConfigResp | M | 1 | 201 Created | Successful case. The NTZ Configuration is successfully created and a representation of the created "Individual NTZ Configuration" resource shall be returned.  An HTTP "Location" header that contains the URI of the created resource shall also be included. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.3.2.3.2-4: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure:  {apiRoot}/uae-ntz/<apiVersion>/configurations/{configId} |

##### 6.8.3.2.4 Resource Custom Operations

There are no resource custom operations defined for this resource in this release of the specification.

#### 6.8.3.3 Resource: Individual NTZ Configuration

##### 6.8.3.3.1 Description

This resource represents an NTZ Configuration managed by the UAE Server.

##### 6.8.3.3.2 Resource Definition

Resource URI: **{apiRoot}/uae-ntz/<apiVersion>/configurations/{configId}**

This resource shall support the resource URI variables defined in table 6.8.3.3.2-1.

Table 6.8.3.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.8.1. |
| configId | string | Represents the identifier of the "Individual NTZ Configuration" resource. |

##### 6.8.3.3.3 Resource Standard Methods

###### 6.8.3.3.3.1 GET

The HTTP GET method allows a service consumer to retrieve an existing "Individual NTZ Configuration" resource at the UAE Server.

This method shall support the URI query parameters specified in table 6.8.3.3.3.1-1.

Table 6.8.3.3.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 6.8.3.3.3.1-2 and the response data structures and response codes specified in table 6.8.3.3.3.1-3.

Table 6.8.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 6.8.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| NTZConfig | M | 1 | 200 OK | Successful case. The requested "Individual NTZ Configuration" resource shall be returned. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP GET method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.3.3.3.1-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

Table 6.8.3.3.3.1-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

###### 6.8.3.3.3.2 PUT

The HTTP PUT method allows a service consumer to request the update of an existing "Individual NTZ Configuration" resource at the UAE Server.

This method shall support the URI query parameters specified in table 6.8.3.3.3.2-1.

Table 6.8.3.3.3.2-1: URI query parameters supported by the PUT method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 6.8.3.3.3.2-2 and the response data structures and response codes specified in table 6.8.3.3.3.2-3.

Table 6.8.3.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NTZConfig | M | 1 | Represents the updated representation of the "Individual NTZ Configuration" resource. |

Table 6.8.3.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| NTZConfig | M | 1 | 200 OK | Successful case. The "Individual NTZ Configuration" resource is successfully updated and a representation of the updated resource shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The "Individual NTZ Configuration" resource is successfully updated and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.3.3.3.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

Table 6.8.3.3.3.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

###### 6.8.3.3.3.3 PATCH

The HTTP PATCH method allows a service consumer to request the modification of an existing "Individual NTZ Configuration" resource at the UAE Server.

This method shall support the URI query parameters specified in table 6.8.3.3.3.3-1.

Table 6.8.3.3.3.3-1: URI query parameters supported by the PATCH method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 6.8.3.3.3.3-2 and the response data structures and response codes specified in table 6.8.3.3.3.3-3.

Table 6.8.3.3.3.3-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NTZConfigPatch | M | 1 | Represents the parameters to request the modification of the "Individual NTZ Configuration" resource. |

Table 6.8.3.3.3.3-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| NTZConfig | M | 1 | 200 OK | Successful case. The "Individual NTZ Configuration" resource is successfully modified and a representation of the updated resource shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The "Individual NTZ Configuration" resource is successfully modified and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.3.3.3.3-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

Table 6.8.3.3.3.3-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

###### 6.8.3.3.3.4 DELETE

The HTTP DELETE method allows a service consumer to request the deletion of an existing "Individual NTZ Configuration" resource at the UAE Server.

This method shall support the URI query parameters specified in table 6.8.3.3.3.4-1.

Table 6.8.3.3.3.4-1: URI query parameters supported by the DELETE method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 6.8.3.3.3.4-2 and the response data structures and response codes specified in table 6.8.3.3.3.4-3.

Table 6.8.3.3.3.4-2: Data structures supported by the DELETE Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 6.8.3.3.3.4-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Successful case. The "Individual NTZ Configuration" resource is successfully deleted. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative UAE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP DELETE method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.3.3.3.4-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

Table 6.8.3.3.3.4-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative UAE Server. |

##### 6.8.3.3.4 Resource Custom Operations

There are no resource custom operations defined for this resource in this release of the specification.

### 6.8.4 Custom Operations without associated resources

There are no custom Operations without associated resources defined for this resource in this release of the specification.

### 6.8.5 Notifications

#### 6.8.5.1 General

Notifications shall comply to clause 5.2.5 of 3GPP TS 29.122 [2].

Table 6.8.5.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description  (service operation) |
| NTZ Configuration Completion Status Notification | {notifUri}/ntz-comp | ntz-comp (POST) | This service operation enables a UAE Server to notify a previously subscribed service consumer on the completion status of NTZ configuration. |
| NTZ Events Notification | {notifUri}/ntz-events | ntz-events (POST) | This service operation enables a UAE Server to notify a previously subscribed service consumer of NTZ related event(s). |

#### 6.8.5.2 NTZ Configuration Completion Status Notification

##### 6.8.5.2.1 Description

The NTZ Configuration Completion Status Notification is used by a UAE Server to notify a previously subscribed service consumer on the completion status of NTZ configuration.

##### 6.8.5.2.2 Target URI

The Callback URI **"{notifUri}**/**ntz-comp"** shall be used with the callback URI variables defined in table 6.8.5.2.2-1.

Table 6.8.5.2.2-1: Callback URI variables

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| notifUri | Uri | Represents the callback URI encoded as a string formatted as a URI. |

##### 6.8.5.2.3 Standard Methods

###### 6.8.5.2.3.1 POST

This method shall support the request data structures specified in table 6.8.5.2.3.1-1 and the response data structures and response codes specified in table 6.8.5.2.3.1-2.

Table 6.8.5.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NTZConfigNotif | M | 1 | Represents the NTZ Configuration Completion Status Notification. |

Table 6.8.5.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The NTZ Configuration Completion Status notification is successfully received and acknowledged. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.5.2.3.1-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

Table 6.8.5.2.3.1-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

#### 6.8.5.3 NTZ Events Notification

##### 6.8.5.3.1 Description

The NTZ Events Notification is used by a UAE Server to notify a previously subscribed service consumer of NTZ related event(s).

##### 6.8.5.3.2 Target URI

The Callback URI **"{notifUri}**/**ntz-events"** shall be used with the callback URI variables defined in table 6.8.5.3.2-1.

Table 6.8.5.3.2-1: Callback URI variables

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| notifUri | Uri | Represents the callback URI encoded as a string formatted as a URI. |

##### 6.8.5.3.3 Standard Methods

###### 6.8.5.3.3.1 POST

This method shall support the request data structures specified in table 6.8.5.3.3.1-1 and the response data structures and response codes specified in table 6.8.5.3.3.1-2.

Table 6.8.5.3.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NTZNotif | M | 1 | Represents the NTZ Events Notification. |

Table 6.8.5.3.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | Successful case. The NTZ Events Notification is successfully received and acknowledged. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI representing the end point of an alternative service consumer towards which the notification should be sent.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.8.5.3.3.1-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

Table 6.8.5.3.3.1-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative service consumer towards which the notification should be redirected. |

### 6.8.6 Data Model

#### 6.8.6.1 General

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

Table 6.8.6.1-1 specifies the data types defined for the UAE\_NTZManagement API.

Table 6.8.6.1-1: UAE\_NTZManagement API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| FreqBand | 6.8.6.2.13 | Represents a frequency band. |  |
| FreqBandName | 6.8.6.3.6 | Represents a frequency band name. |  |
| NTZConfig | 6.8.6.2.4 | Represents an NTZ Configuration. |  |
| NTZConfigNotif | 6.8.6.2.7 | Represents an NTZ Configuration Completion Status Notification. |  |
| NTZConfigReq | 6.8.6.2.2 | Represents the parameters to request the creation of an NTZ Configuration. |  |
| NTZConfigResp | 6.8.6.2.3 | Represents the response to an NTZ Configuration creation request. |  |
| NTZConfigPatch | 6.8.6.2.5 | Represents the parameters to request the modification of an NTZ Configuration. |  |
| NTZConfigStatus | 6.8.6.3.3 | Represents the completion status of a NTZ Configuration. |  |
| NTZEvent | 6.8.6.3.4 | Represents an NTZ Event. |  |
| NTZEventInfo | 6.8.6.2.9 | Represents an NTZ Event report. |  |
| NTZNotif | 6.8.6.2.8 | Represents an NTZ Events Notification. |  |
| NTZEnforceInfo | 6.8.6.2.12 | Represents NTZ enforcement information. |  |
| NTZPolicy | 6.8.6.2.6 | Represents an NTZ Policy. |  |
| NTZTransInfo | 6.8.6.2.11 | Represents NTZ transmission information. |  |
| TimeValidityReqs | 6.8.6.2.10 | Represents the time validity requirements. |  |
| TransStatus | 6.8.6.3.5 | Represents the transmission status. |  |

Table 6.8.6.1-2 specifies data types re-used by the UAE\_NTZManagement API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the UAE\_NTZManagement API.

Table 6.8.6.1-2: UAE\_NTZManagement API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| DateTime | 3GPP TS 29.122 [2] | Represents a date and a time. |  |
| DurationSec | 3GPP TS 29.122 [2] | Represents a time duration expressed in units of seconds. |  |
| LocationInfo | 3GPP TS 29.122 [2] | Represents user location information. |  |
| ReportingInformation | 3GPP TS 29.523 [14] | Represents the event reporting requirements. |  |
| ServArea | Clause 6.3.6.2.7 | Represents a service area. |  |
| SupportedFeatures | 3GPP TS 29.571 [7] | Represents the list of supported feature(s) and used to negotiate the applicability of the optional features. |  |
| ScheduledCommunicationTime | 3GPP TS 29.122 [2] | Represents a time schedule. |  |
| Uri | 3GPP TS 29.122 [2] | Represents a URI. |  |

#### 6.8.6.2 Structured data types

##### 6.8.6.2.1 Introduction

This clause defines the data structures to be used in resource representations.

##### 6.8.6.2.2 Type: NTZConfigReq

Table 6.8.6.2.2-1: Definition of type NTZConfigReq

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| requestorId | Uri | M | 1 | Contains the identity of the service consumer that is sending the request. |  |
| ntzConfig | NTZConfig | M | 1 | Contains the NTZ Configuration to be created. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported features among the ones defined in clause 6.8.8.  This attribute shall be present only when feature negotiation is required. |  |

##### 6.8.6.2.3 Type: NTZConfigResp

Table 6.8.6.2.3-1: Definition of type NTZConfigResp

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ntzConfig | NTZConfig | M | 1 | Contains the created NTZ Configuration. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported features among the ones defined in clause 6.8.8.  This attribute shall be present only when feature negotiation is required. |  |

##### 6.8.6.2.4 Type: NTZConfig

Table 6.8.6.2.4-1: Definition of type NTZConfig

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ntzPolicies | map(NTZPolicy) | M | 1..N | Contains the NTZ policy(ies).  The key of the map shall be set to the identifier of the NTZ policy (provided within the "ntzPolId" attribute of the NTZPolicy data structure) that is provided in the corresponding map value. |  |
| notifUri | Uri | M | 1 | Contains the notification URI via which the NTZ Configuration related notifications shall be delivered. |  |

##### 6.8.6.2.5 Type: NTZConfigPatch

Table 6.8.6.2.5-1: Definition of type NTZConfigPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ntzPolicies | map(NTZPolicy) | O | 1..N | Contains the NTZ policy(ies).  The key of the map shall be set to the identifier of the NTZ policy (provided within the "ntzPolId" attribute of the NTZPolicy data structure) that is provided in the corresponding map value. |  |
| notifUri | Uri | O | 0..1 | Contains the notification URI via which the NTZ Configuration related notifications shall be delivered. |  |

##### 6.8.6.2.6 Type: NTZPolicy

Table 6.8.6.2.6-1: Definition of type NTZPolicy

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ntzPolId | string | M | 1 | Contains the identifier of the NTZ policy. |  |
| ntzArea | ServArea | M | 1 | Contains the area within which the NTZ policy shall apply, i.e., the area constituting the NTZ. |  |
| validity | TimeValidityReqs | M | 1 | Contains the time validity requirements of the NTZ policy, i.e., the time window, schedule or duration within which the NTZ policy shall apply. |  |
| freqBands | array(FreqBand) | M | 1..N | Contains the frequency bands for which the NTZ policy shall apply, i.e., the frequency bands that are not allowed to be transmitted within the NTZ. |  |
| ntzEvents | array(NTZEvent) | O | 1..N | Contains the subscribed NTZ event(s). |  |
| repReqs | ReportingInformation | O | 0..1 | Contains the reporting requirements to be used for NTZ related event(s) reporting.  This attribute shall be present only if the "ntzEvents" attribute is also present. |  |

##### 6.8.6.2.7 Type: NTZConfigNotif

Table 6.8.6.2.7-1: Definition of type NTZConfigNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| status | NTZConfigStatus | M | 1 | Contains the the completion status of the NTZ Configuration. |  |

##### 6.8.6.2.8 Type: NTZNotif

Table 6.8.6.2.8-1: Definition of type NTZNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| configId | string | M | 1 | Contains the identifier of the "Individual NTZ Configuration" resource to which the NTZ event(s) notification is related. |  |
| reports | array(NTZEventInfo) | M | 1..N | Contains the detected NTZ event(s) and the related information. |  |

##### 6.8.6.2.9 Type: NTZEventInfo

Table 6.8.6.2.9-1: Definition of type NTZEventInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | NTZEvent | M | 1 | Contains the reported NTZ event.  (NOTE) |  |
| ntzTransInfo | NTZTransInfo | M | 1 | Contains the NTZ transmission information. |  |
| timestamp | DateTime | M | 1 | Contains the time at which the reported event is received from the UAE Client. |  |
| location | LocationInfo | M | 1 | Contains the location of the UAE Client at the time the reported event is received from the UAE Client. |  |
| ntzEnforceInfo | NTZEnforceInfo | C | 0..1 | Contains the NTZ enforcement information.  This attribute shall be present only if the reported NTZ event within the "event" attribute is either "IMMINENT\_ENTRY" or "EXIT".  (NOTE) |  |
| NOTE: When the "event" attribute is set to "IMMINENT\_ENTRY", the content of the "ntzEnforceInfo" attribute shall include the "estStartTime" and "estEndTime" attributes. When the "event" attribute is set to "EXIT", the content of the "ntzEnforceInfo" attribute shall include the "compTime" attribute. | | | | | |

##### 6.8.6.2.10 Type: TimeValidityReqs

Table 6.8.6.2.10-1: Definition of type TimeValidityReqs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| duration | DurationSec | C | 0..1 | Contains the time duration. |  |
| timeWindow | TimeWindow | C | 0..1 | Contains the time window |  |
| schedule | array(ScheduledCommunicationTime) | C | 1..N | Contains the time schedule. |  |
| NOTE: These attributes are mutually exclusive and either one of them shall be present. | | | | | |

##### 6.8.6.2.11 Type: NTZTransInfo

Table 6.8.6.2.11-1: Definition of type NTZTransInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| status | TransStatus | M | 1 | Contains the transmission status. |  |
| freqBands | array(integer) | M | 1..N | Contains the frequency band (e.g., ARFCN value, EARFCN value, NR-EARFCN value) information for which the transmission status provided within the "status" attribute applies.  Each array element within this attribute shall be encoded as an integer with a value range from 0 to 262143. |  |

##### 6.8.6.2.12 Type: NTZEnforceInfo

Table 6.8.6.2.12-1: Definition of type NTZEnforceInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| estStartTime | DateTime | C | 0..1 | Contains the estimated start time of NTZ, i.e., the time at which the NTZ enforcement is expected to start. |  |
| estEndTime | DateTime | C | 0..1 | Contains the estimated end time of NTZ, i.e., the time at which the NTZ enforcement is expected to end. |  |
| compTime | DateTime | C | 0..1 | Contains the actual NTZ completion (i.e., end) time. |  |
| NOTE: At least one of these attributes shall be present. | | | | | |

##### 6.8.6.2.13 Type: FreqBand

Table 6.8.6.2.13-1: Definition of type FreqBand

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| name | FreqBandName | M | 1 | Contains the frequency band name (e.g., ARFCN, EARFCN, NR-EARFCN). |  |
| otherName | string | C | 0..1 | Contains the other frequency band name.  This attribute shall be present only when the "name" attribute is set ti "OTHER". |  |
| value | integer | M | 1 | Contains the frequency band value (e.g., ARFCN value, EARFCN value, NR-EARFCN value).  Minimum: 0, Maximum: 262143. |  |

#### 6.8.6.3 Simple data types and enumerations

##### 6.8.6.3.1 Introduction

This clause defines simple data types and enumerations that can be referenced from data structures defined in the previous clauses.

##### 6.8.6.3.2 Simple data types

The simple data types defined in table 6.8.6.3.2-1 shall be supported.

Table 6.8.6.3.2-1: Simple data types

|  |  |  |  |
| --- | --- | --- | --- |
| Type Name | Type Definition | Description | Applicability |
|  |  |  |  |

##### 6.8.6.3.3 Enumeration: NTZConfigStatus

The enumeration NTZConfigStatus represents the completion status of an NTZ Configuration. It shall comply with the provisions defined in table 6.8.6.3.3-1.

Table 6.8.6.3.3-1: Enumeration NTZConfigStatus

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| SUCCESSFUL | Indicates that the NTZ Configuration was successful. |  |
| NOT\_SUCCESSFUL | Indicates that the NTZ Configuration was not successful. |  |

##### 6.8.6.3.4 Enumeration: NTZEvent

The enumeration NTZEvent represents the NTZ event. It shall comply with the provisions defined in table 6.8.6.3.4-1.

Table 6.8.6.3.4-1: Enumeration NTZEvent

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| IMMINENT\_ENTRY | Indicates that the NTZ event is the imminent entry to the NTZ. |  |
| EXIT | Indicates that the NTZ event is the exit from the NTZ. |  |
| UNKNOWN | Indicates that the NTZ event is unknown status. |  |

##### 6.8.6.3.5 Enumeration: TransStatus

The enumeration TransStatus represents the transmission status. It shall comply with the provisions defined in table 6.8.6.3.5-1.

Table 6.8.6.3.5: Enumeration TransStatus

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| ON | Indicates that the transmission is switched on. |  |
| OFF | Indicates that the transmission is switched off. |  |
| UNKNOWN | Indicates that the transmission status is unknown. |  |

##### 6.8.6.3.6 Enumeration: FreqBandName

The enumeration FreqBandName represents the frequency band name. It shall comply with the provisions defined in table 6.8.6.3.6-1.

Table 6.8.6.3.6-1: Enumeration FreqBandName

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| ARFCN | Indicates that the frequency band name is ARFCN. |  |
| EARFCN | Indicates that the frequency band name is EARFCN. |  |
| NR-EARFCN | Indicates that the frequency band name is NR-EARFCN. |  |
| OTHER | Indicates that the frequency band name is another name. |  |

#### 6.8.6.4 Data types describing alternative data types or combinations of data types

There are no data types describing alternative data types or combinations of data types defined for this API in this release of the specification.

#### 6.8.6.5 Binary data

##### 6.8.6.5.1 Binary Data Types

Table 6.8.6.5.1-1: Binary Data Types

|  |  |  |
| --- | --- | --- |
| Name | Clause defined | Content type |
|  |  |  |

### 6.8.7 Error Handling

#### 6.8.7.1 General

For the UAE\_NTZManagement API, HTTP error responses shall be supported as specified in clause 5.2.6 of 3GPP TS 29.122 [2]. Protocol errors and application errors specified in clause 5.2.6 of 3GPP TS 29.122 [2] shall be supported for the HTTP status codes specified in table 5.2.6-1 of 3GPP TS 29.122 [2].

In addition, the requirements in the following clauses are applicable for the UAE\_NTZManagement API.

#### 6.8.7.2 Protocol Errors

No specific protocol errors for the UAE\_NTZManagement API are specified.

#### 6.8.7.3 Application Errors

The application errors defined for the UAE\_NTZManagement API are listed in Table 6.8.7.3-1.

Table 6.8.7.3-1: Application errors

|  |  |  |  |
| --- | --- | --- | --- |
| Application Error | HTTP status code | Description | Applicability |
|  |  |  |  |

### 6.8.8 Feature negotiation

The optional features listed in table 6.8.8-1 are defined for the UAE\_NTZManagement API. They shall be negotiated using the extensibility mechanism defined in clause 5.2.7 of 3GPP TS 29.122 [2].

Table 6.8.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
|  |  |  |

### 6.8.9 Security

The provisions of clause 6 of 3GPP TS 29.122 [2] shall apply for the UAE\_NTZManagement API.

\* \* \* \* End of changes \* \* \* \*