|  |  |
| --- | --- |
| 3GPP TS 29.578 V18.1.0 (2023-12) | |
| Technical Specification | |
| 3rd Generation Partnership Project;  Technical Specification Group Core Network and Terminals;  5G System; Mobile Number Portability Services;  Stage 3  (Release 18) | |
|  | |
|  |  |
|  | |
| The present document has been developed within the 3rd Generation Partnership Project (3GPP TM) and may be further elaborated for the purposes of 3GPP. The present document has not been subject to any approval process by the 3GPPOrganizational Partners and shall not be implemented. This Specification is provided for future development work within 3GPPonly. The Organizational Partners accept no liability for any use of this Specification. Specifications and Reports for implementation of the 3GPP TM system should be obtained via the 3GPP Organizational Partners' Publications Offices. | |
|  | |

|  |
| --- |
|  |
| ***3GPP***  Postal address  3GPP support office address  650 Route des Lucioles - Sophia Antipolis  Valbonne - FRANCE  Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16  Internet  http://www.3gpp.org |
| ***Copyright Notification***  No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.  © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).  All rights reserved.  UMTS™ is a Trade Mark of ETSI registered for the benefit of its members  3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners LTE™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners  GSM® and the GSM logo are registered and owned by the GSM Association |

Contents

Foreword 6

1 Scope 8

2 References 8

3 Definitions, symbols and abbreviations 9

3.1 Definitions 9

3.2 Symbols 9

3.3 Abbreviations 9

4 Overview 9

4.1 Introduction 9

5 Services offered by the MNPF 10

5.1 Introduction 10

5.2 Nmnpf\_NPStatus Service 10

5.2.1 Service Description 10

5.2.2 Service Operations 10

5.2.2.1 Introduction 10

5.2.2.2 Get 10

5.2.2.2.1 General 10

5.2.2.2.2 MNPF Status information retrieval 10

6 API Definitions 11

6.1 Nmnpf\_NPStatus Service API 11

6.1.1 Introduction 11

6.1.2 Usage of HTTP 11

6.1.2.1 General 11

6.1.2.2 HTTP standard headers 12

6.1.2.2.1 General 12

6.1.2.2.2 Content type 12

6.1.2.3 HTTP custom headers 12

6.1.3 Resources 12

6.1.3.1 Overview 12

6.1.3.2 Resource: NPstatus 13

6.1.3.2.1 Description 13

6.1.3.2.2 Resource Definition 13

6.1.3.2.3 Resource Standard Methods 13

6.1.4 Custom Operations without associated resources 13

6.1.5 Notifications 13

6.1.6 Data Model 14

6.1.6.1 General 14

6.1.6.2 Structured data types 14

6.1.6.2.1 Introduction 14

6.1.6.2.2 Type: NpStatusInfo 14

6.1.6.3 Simple data types and enumerations 14

6.1.6.3.1 Introduction 14

6.1.6.3.2 Simple data types 14

6.1.6.4 Data types describing alternative data types or combinations of data types 15

6.1.6.5 Binary data 15

6.1.7 Error Handling 15

6.1.7.1 General 15

6.1.7.2 Protocol Errors 15

6.1.7.3 Application Errors 15

6.1.8 Feature negotiation 15

6.1.9 Security 15

Annex A (normative): OpenAPI specification 16

A.1 General 16

A.2 Nmnpf\_NPStatus API 16

Annex B (informative): Withdrawn API versions 17

B.1 General 17

B.2 Nmnpf\_NPstatus API 17

Annex C (informative): Change history 19

# Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

In the present document, modal verbs have the following meanings:

**shall** indicates a mandatory requirement to do something

**shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

**can** indicates that something is possible

**cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

**will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

# 1 Scope

The present document specifies the stage 3 protocol and data model for the Nmnpf Service Based Interface. It provides stage 3 protocol definitions and message flows, and specifies the API for each service offered by the MNPF.

The 5G System stage 2 architecture and procedures are specified in 3GPP TS 23.501 [2] and 3GPP TS 23.502 [3].

The Technical Realization of the Service Based Architecture and the Principles and Guidelines for Services Definition are specified in 3GPP TS 29.500 [4] and 3GPP TS 29.501 [5].

Stage 2 requirements for the Nmnpf services are specified in 3GPP TS 23.540 [14].

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] OpenAPI: "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.

[7] 3GPP TR 21.900: "Technical Specification Group working methods".

[8] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[9] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[10] 3GPP TS 29.510: "5G System; Network Function Repository Services; Stage 3".

[11] IETF RFC 9113: "HTTP/2".

[12] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[13] IETF RFC 9457: "Problem Details for HTTP APIs".

[14] 3GPP TS 23.540: " Technical realization of Service Based Short Message Service; Stage 2".

[15] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**Nmnpf:** Service-based interface exhibited by the MNPF server

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

MNPF Mobile Number Portability Function

# 4 Overview

## 4.1 Introduction

Within the 5GC, the MNPF offers services to the SMS-GMSC, NRF and SCP via the Nmnpf service based interface (see 3GPP TS 23.501 [2], 3GPP TS 23.502 [3], and 3GPP TS 23.540 [14]).

Figure 4.1-1 provides the reference model (in service based interface representation and in reference point representation), with focus on the MNPF.



Figure 4.1-1: Reference model – MNPF

The functionalities supported by the MNPF are listed in clause 6.7 of 3GPP TS 23.540 [14].

# 5 Services offered by the MNPF

## 5.1 Introduction

The MNPF offers the following services via the Nmnpf interface:

- Nmnpf\_NPStatus Service

Table 5.1-1 summarizes the corresponding APIs defined for this specification.

Table 5.1-1: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service Name | Clause | Description | OpenAPI Specification File | apiName | **Annex** |
| Nmnpf\_NPStatus | 6.1 | MNPF Number portability Status Service | TS29578\_Nmnpf\_NPStatus.yaml | nmnpf-npstatus | A.2 |

## 5.2 Nmnpf\_NPStatus Service

### 5.2.1 Service Description

See 3GPP TS 23.540 [14] clause 6.7.1.

### 5.2.2 Service Operations

#### 5.2.2.1 Introduction

For the Nmnpf\_NPStatus service the following service operations are defined:

- Get

The Nmnpf\_NPStatus Service is used by Consumer NFs (SMS-GMSC, NRF, SCP) to retrieve the UE's subscription network by means of the Get service operation.

#### 5.2.2.2 Get

##### 5.2.2.2.1 General

This clause provides a general description of the Get service operation.

##### 5.2.2.2.2 MNPF Status information retrieval

Figure 5.2.2.2.2-1 shows a scenario where the NF service consumer (e.g. SMS-GMSC, NRF, SCP) sends a request to the MNPF to receive the UE's Subscription Network (see also clause 5.1.7.2, clause 5.1.7.3 and clause 5.1.7.4 of 3GPP TS 23.540 [14]. The request contains the UE's identity (/{gpsi}).



Figure 5.2.2.2.2-1: Requesting a UE's NP statusI

1. The NF service consumer (e.g. SMS-GMSC, NRF, SCP) sends a GET request to the resource representing the UE's number portability status.

2a. On success, the MNPF responds with "200 OK" with the message body containing the UE's Number Portability Status Information.

2b. If there is no valid information for the UE, HTTP status code "404 Not Found" shall be returned including additional error information in the response body (in the "ProblemDetails" element).

On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the GET response body.

# 6 API Definitions

## 6.1 Nmnpf\_NPStatus Service API

### 6.1.1 Introduction

The Nmnpf\_NPStatus service shall use the Nmnpf\_NPStatus API.

The API URI of the Nmnpf\_NPStatus API shall be:

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

The request URIs used in HTTP requests from the NF service consumer towards the NF service producer shall have the Resource URI structure defined in clause 4.4.1 of 3GPP TS 29.501 [5], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in 3GPP TS 29.501 [5].

- The <apiName>shall be "nmnpf-npstatus".

- The <apiVersion> shall be "v1".

- The <apiSpecificResourceUriPart> shall be set as described in clause 6.1.3.

### 6.1.2 Usage of HTTP

#### 6.1.2.1 General

HTTP/2, IETF RFC 9113 [11], shall be used as specified in clause 5 of 3GPP TS 29.500 [4].

HTTP/2 shall be transported as specified in clause 5.3 of 3GPP TS 29.500 [4].

The OpenAPI [6] specification of HTTP messages and content bodies for the Nmnpf\_NPStatus API is contained in Annex A.

#### 6.1.2.2 HTTP standard headers

##### 6.1.2.2.1 General

See clause 5.2.2 of 3GPP TS 29.500 [4] for the usage of HTTP standard headers.

##### 6.1.2.2.2 Content type

JSON, IETF RFC 8259 [12], shall be used as content type of the HTTP bodies specified in the present specification as specified in clause 5.4 of 3GPP TS 29.500 [4]. The use of the JSON format shall be signalled by the content type "application/json".

"Problem Details" JSON object shall be used to indicate additional details of the error in a HTTP response body and shall be signalled by the content type "application/problem+json", as defined in IETF RFC 9457 [13].

#### 6.1.2.3 HTTP custom headers

The mandatory HTTP custom header fields specified in clause 5.2.3.2 of 3GPP TS 29.500 [4] shall be supported, and the optional HTTP custom header fields specified in clause 5.2.3.3 of 3GPP TS 29.500 [4] may be supported.

### 6.1.3 Resources

#### 6.1.3.1 Overview

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

Figure 6.1.3.1-1 depicts the resource URIs structure for the Nmnpf\_NPStatus API.



Figure 6.1.3.1-1: Resource URI structure of the Nmnpf\_NPStatus API

Table 6.1.3.1-1 provides an overview of the resources and applicable HTTP methods.

Table 6.1.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource purpose/name | Resource URI (relative path after API URI) | HTTP method or custom operation | Description (service operation) |
| NPstatus | /{gpsi} | GET | Retrieve the NP status of the GPSI |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

#### 6.1.3.2 Resource: NPstatus

##### 6.1.3.2.1 Description

This resource represents the Number Portability status for a GPSI.

##### 6.1.3.2.2 Resource Definition

Resource URI: **{apiRoot}/nmnpf-npstatus/<apiVersion>/{gpsi}**

This resource shall support the resource URI variables defined in table 6.1.3.2.2-1.

Table 6.1.3.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| apiRoot | string | See clause 6.1.1 |
| gpsi | Gpsi | See 3GPP TS 29.571 [15]; the only valid format is MSISDN |

##### 6.1.3.2.3 Resource Standard Methods

6.1.3.2.3.1 GET

This method shall support the URI query parameters specified in table 6.1.3.2.3.1-1.

Table 6.1.3.2.3.1-1: 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 6.1.3.2.3.1-2 and the response data structures and response codes specified in table 6.1.3.2.3.1-3.

Table 6.1.3.2.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.1.3.2.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| NpStatusInfo | M | 1 | 200 OK | Upon success, the response body contains the Number Portability Status information. |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute may be used to indicate one of the following application errors:  - GPSI\_NOT\_FOUND |
| NOTE: The mandatory HTTP error status code for the GET method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply. | | | | |

### 6.1.4 Custom Operations without associated resources

None.

### 6.1.5 Notifications

None.

### 6.1.6 Data Model

#### 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 Nmnpf\_NPStatus service based interface protocol.

Table 6.1.6.1-1: Nmnpf\_NPStatus specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| NpStatusInfo | 6.1.6.2.2 | Number Portability Status Information |  |

Table 6.1.6.1-2 specifies data types re-used by the Nmnpf\_NPStatus 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 Nmnpf\_NPStatus service based interface.

Table 6.1.6.1-2: Nmnpf\_NPStatus re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| Gpsi | 3GPP TS 29.571 [15] | General Public Subscription Identifier |  |
| ProblemDetails | 3GPP TS 29.571 [15] | Error description |  |
| PlmnId | 3GPP TS 29.571 [15] | PLMN Identity |  |

#### 6.1.6.2 Structured data types

##### 6.1.6.2.1 Introduction

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

##### 6.1.6.2.2 Type: NpStatusInfo

Table 6.1.6.2.2-1: Definition of type NpStatusInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| subscriptionNetwork | PlmnId | M | 1 | Identifies the GPSI's subscriptionNetwork |  |
| tbc |  |  |  |  |  |

#### 6.1.6.3 Simple data types and enumerations

##### 6.1.6.3.1 Introduction

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

##### 6.1.6.3.2 Simple data types

The simple data types defined in table 6.1.6.3.2-1 shall be supported.

Table 6.1.6.3.2-1: Simple data types

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

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

None.

#### 6.1.6.5 Binary data

None.

### 6.1.7 Error Handling

#### 6.1.7.1 General

For the Nmnpf\_NPStatus API, HTTP error responses shall be supported as specified in clause 4.8 of 3GPP TS 29.501 [5]. Protocol errors and application errors specified in table 5.2.7.2-1 of 3GPP TS 29.500 [4] shall be supported for an HTTP method if the corresponding HTTP status codes are specified as mandatory for that HTTP method in table 5.2.7.1-1 of 3GPP TS 29.500 [4].

In addition, the requirements in the following clauses are applicable for the Nmnpf\_NPStatus API.

#### 6.1.7.2 Protocol Errors

Protocol errors handling shall be supported as specified in clause 5.2.7 of 3GPP TS 29.500 [4].

#### 6.1.7.3 Application Errors

The application errors defined for the Nmnpf\_NPStatus service are listed in Table 6.1.7.3-1.

Table 6.1.7.3-1: Application errors

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

### 6.1.8 Feature negotiation

The optional features in table 6.1.8-1 are defined for the Nmnpf\_NPStatus API. They shall be negotiated using the extensibility mechanism defined in clause 6.6 of 3GPP TS 29.500 [4].

Table 6.1.8-1: Supported Features

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

### 6.1.9 Security

As indicated in 3GPP TS 33.501 [8] and 3GPP TS 29.500 [4], the access to the Nmnpf\_NPStatus API may be authorized by means of the OAuth2 protocol (see IETF RFC 6749 [9]), based on local configuration, using the "Client Credentials" authorization grant, where the NRF (see 3GPP TS 29.510 [10]) plays the role of the authorization server.

If OAuth2 is used, an NF Service Consumer, prior to consuming services offered by the Nmnpf\_NPStatus API, shall obtain a "token" from the authorization server, by invoking the Access Token Request service, as described in 3GPP TS 29.510 [10], clause 5.4.2.2.

NOTE: When multiple NRFs are deployed in a network, the NRF used as authorization server is the same NRF that the NF Service Consumer used for discovering the Nmnpf\_NPStatus service.

The Nmnpf\_NPStatus API defines a single scope "nmnpf-npstatus" for the entire service, and it does not define any additional scopes at resource or operation level.

Annex A (normative):  
OpenAPI specification

# A.1 General

This Annex specifies the formal definition of the API(s) defined in the present specification. It consists of OpenAPI specifications in YAML format.

This Annex takes precedence when being discrepant to other parts of the specification with respect to the encoding of information elements and methods within the API(s).

NOTE 1: The semantics and procedures, as well as conditions, e.g. for the applicability and allowed combinations of attributes or values, not expressed in the OpenAPI definitions but defined in other parts of the specification also apply.

Informative copies of the OpenAPI specification files contained in this 3GPP Technical Specification are available on a Git-based repository that uses the GitLab software version control system (see clause 5.3.1 of 3GPP TS 29.501 [5] and clause 5B of 3GPP TR 21.900 [7]).

# A.2 Nmnpf\_NPStatus API

openapi: 3.0.0

info:

title: 'Nmnpf\_NPStatus'

version: '1.1.0-alpha.1'

description: |

Nmnpf Number Portability Status Service.

© 2022, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

All rights reserved.

externalDocs:

description: 3GPP TS 29.578 V18.0.0; Mobile Number Portability Services.

url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.578/

servers:

- url: '{apiRoot}/nmnpf-npstatus/v1'

variables:

apiRoot:

default: https://example.com

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

security:

- {}

- oAuth2ClientCredentials:

- nmnpf-npstatus

paths:

/{gpsi}:

get:

summary: Retrieves the Number Portability status of the UE

operationId: GetNumberPortabilityStatus

tags:

- Number Portability Status (Document)

parameters:

- name: gpsi

in: path

description: GPSI of the UE

required: true

schema:

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

responses:

'200':

description: Expected response to a valid request

content:

application/json:

schema:

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

'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':

description: GPSI Not Found

content:

application/problem+json:

schema:

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

'406':

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

'429':

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

'500':

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

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

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

default:

description: Unexpected error

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

nmnpf-npstatus: Access to the nmnpf-npstatus API

schemas:

# COMPLEX TYPES:

NpStatusInfo:

description: Contains the Subscription Network

type: object

required:

- subscriptionNetwork

properties:

subscriptionNetwork:

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

# SIMPLE TYPES:

# ENUMS:

Annex B (informative):  
Withdrawn API versions

# B.1 General

This Annex lists withdrawn API versions of the APIs defined in the present specification. 3GPP TS 29.501 [5] clause 4.3.1.6 describes the withdrawal of API versions.

# B.2 Nmnpf\_NPstatus API

The API versions listed in table B.2-1 are withdrawn for the Nmnpf\_NPStatus API.

Table B.2-1: Withdrawn API versions of the Nmnpf\_NPStatus service

|  |  |
| --- | --- |
| API version number | Remarks |
|  |  |

Annex C (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2022-02 | CT4#108e | C4-221536 |  |  |  | Initial draft | 0.1.0 |
| 2022-04 | CT4#109e | C4-222270 |  |  |  | Pseudo-CR on SCP and NRF supported | 0.2.0 |
| 2022-05 | CT4#110e | C4-223092 |  |  |  | Pseudo-CR on MNPF name | 0.3.0 |
| 2022-05 | CT4#110e | C4-223093 |  |  |  | Pseudo-CR on Document Clean Up | 0.3.0 |
| 2022-05 | CT4#110e | C4-223354 |  |  |  | Pseudo-CR on Remove the apiVersion placeholder from the resource URI variables table | 0.3.0 |
| 2022-06 | CT#96 | CP-221079 |  |  |  | TS presented for information and approval | 1.0.0 |
| 2022-06 | CT#96 | CP-221079 |  |  |  | TS approved at CT#95 | 17.0.0 |
| 2022-09 | CT#97e | CP-222027 | 0003 |  | F | Alignment on the service name used with template | 17.1.0 |
| 2022-09 | CT#97e | CP-222027 | 0004 | 1 | F | Update the reference model | 17.1.0 |
| 2022-12 | CT#98e | CP-223027 | 0006 | 1 | F | Missing Mandatory Status Codes in OpenAPI | 18.0.0 |
| 2022-12 | CT#98e | CP-223033 | 0007 |  | F | 29.578 Rel-18 API version and External doc update | 18.0.0 |
| 2023-12 | CT#102 | CP-233028 | 0008 | 1 | F | HTTP RFCs obsoleted by IETF RFC 9110, 9111 and 9113 | 18.1.0 |
| 2023-12 | CT#102 | CP-233029 | 0009 |  | F | ProblemDetails RFC 7807 obsoleted by 9457 | 18.1.0 |