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| Technical Specification | |
| 3rd Generation Partnership Project;  Technical Specification Group Core Network and Terminals;  5G System; Application Function ProSe Service;  Stage 3  (Release 18) | |
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# 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 Application Function ProSe Service of the 5G System. It provides stage 3 protocol definitions and message flows, and specifies the API for the Naf\_ProSe service.

The 5G System stage 2 architecture and procedures are specified in 3GPP TS 23.501 [2], 3GPP TS 23.502 [3] and 3GPP TS 23.304 [14].

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].

The Application Function ProSe Service is provided by the Application Function (AF). This service supports 5G ProSe Direct Discovery authorization.

# 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 23.304: "Proximity based Services (ProSe) in the 5G System (5GS); Stage 2".

[15] 3GPP TS 23.303: "Proximity-based services (ProSe); Stage 2".

[16] 3GPP TS 29.555: "5G System; 5G Direct Discovery Name Management Services; Stage 3".

[17] IETF RFC 7396: "JSON Merge Patch".

[18] 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].

**example:** text used to clarify abstract rules by applying them literally.

## 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].

5G DDNMF 5G Direct Discovery Name Management Function

5G ProSe 5G Proximity-based Services

RPAUID Restricted ProSe Application User ID

PDUID ProSe Discovery UE ID

# 4 Overview

The Application Function ProSe (Naf\_ProSe) Service, as defined in clause 7.2.2 of 3GPP TS 23.304 [14], is provided by the Application Function (AF) which owns the functionality of ProSe Application Server.

Figure 4-1 and figure 4-2 provide the reference architecture (in service based interface representation and reference point representation), with focus on the ProSe Service of the Application Function.



Figure 4-1: Naf\_ProSe Service architecture, SBI representation

The Naf\_ProSe Service is part of the Naf service-based interface exhibited by the AF. The service is provided by the AF and consumed by NF service consumers (e.g. 5G DDNMF), as shown in figure 4-1 for the SBI representation and figure 4-2 for the reference point model.



Figure 4-2: Naf\_ProSe Service architecture, reference point representation

# 5 Naf\_ProSe Service offered by the AF

## 5.1 Introduction

Table 5.1-1 shows the Application Function ProSe Service and the corresponding Service Operations.

Table 5.1-1: Application Function ProSe Service

|  |  |  |  |
| --- | --- | --- | --- |
| Service Name | Service Operations | Operation  Semantics | Example Consumer(s) |
| Naf\_ProSe | DiscoveryAuthorization | Request/Response | 5G DDNMF |
| DiscoveryAuthorizationUpdateNotify | Subscribe/Notify | 5G DDNMF |
| DiscoveryAuthorizationResultUpdate | Request/Response | 5G DDNMF |

Table 5.1-2 summarizes the corresponding APIs defined for this specification.

Table 5.1-2: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service Name | Clause | Description | OpenAPI Specification File | apiName | Annex |
| Naf\_ProSe | 6.1 | Application Function ProSe Service | TS29557\_Naf\_ProSe | naf-prose | A.2 |

## 5.2 Naf\_ProSe Service

### 5.2.1 Service Description

The Naf\_ProSe Service enables NF service consumers (e.g. 5G DDNMF) to request authorization for a UE of a 5G ProSe Discovery request.

This service hence supports the following functionalities:

- mapping of RPAUID and PDUID and authentication of the RPAUID(s) for restricted 5G ProSe Direct Discovery;

- allocation of a ProSe Application Code Suffix pool, if open 5G ProSe Direct Discovery with application-controlled extension is used;

- allocation of mask(s) for the ProSe Application Code Suffix(es), if open 5G ProSe Direct Discovery with application-controlled extension is used;

- allocation of a ProSe Restricted Code Suffix pool, if restricted 5G ProSe Direct Discovery with application-controlled extension is used; and

- allocation of mask(s) for ProSe Restricted Code Suffix, if restricted 5G ProSe Direct Discovery with application-controlled extension is used; and

- update of authorization information to revoke Restricted ProSe Direct Discovery permission(s).

### 5.2.2 Service Operations

#### 5.2.2.1 Introduction

The service operations defined for the Naf\_ProSe Service are as follows:

- DiscoveryAuthorization: It allows a NF service consumer (e.g. 5G DDNMF) to request the authorization for a UE of a 5G ProSe Direct Discovery request;

- DiscoveryAuthorizationUpdateNotify: It allows an AF to update the authorization information to revoke discovery permissions related to some other users at the NF service consumer for Restricted ProSe Direct Discovery;

- DiscoveryAuthorizationResultUpdate: It allows a NF service consumer (e.g. 5G DDNMF) to inform the AF of the revocation result associated to the update of authorization information for Restricted ProSe Direct Discovery.

#### 5.2.2.2 DiscoveryAuthorization

##### 5.2.2.2.1 General

The DiscoveryAuthorization service operation is used by a NF service consumer (e.g. 5G DDNMF) to obtain the authorization for a UE of a 5G ProSe Direct Discovery request, i.e. detect and identify other UEs in proximity using NR radio signals.

The following procedures are supported using the DiscoveryAuthorization Service Operation:

- Auth Request procedures (see 3GPP TS 23.304 [14], clause 6.3, and 3GPP TS 23.303 [15], clause 5.3).

##### 5.2.2.2.2 Auth Request procedures using DiscoveryAuthorization service operation

These procedures are invoked by a NF service consumer (e.g. HPLMN 5G DDNMF) towards an AF to request the authorization for a UE to perform 5G ProSe Direct Discovery.



Figure 5.2.2.2.2-1: Authorization of Discovery Request for a UE

1. In order to request the authorization for a UE of a 5G ProSe Direct Discovery request, the NF service consumer shall send an HTTP POST request with the request URI set to "{apiRoot}/naf-prose/<apiVersion>/authorize-discovery" and the request body containing the AuthDisReqData data structure, as described in figure 5.2.2.2.2-1.

The AuthDisReqData data structure shall contain the authorization request type related to the received 5G ProSe Direct Discovery request within the "authRequestType" attribute. The remaining content of the AuthDisReqData data structure differs according to the following cases, as defined in clauses 5.2.2.2.3, 5.2.2.2.4, 5.2.2.2.5, 5.2.2.2.6 and 5.2.2.2.7.

- Open 5G ProSe Direct Discovery request with application-controlled extension initiated by an announcing UE (see clause 5.3.3 of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.3.

- Open 5G ProSe Direct Discovery request with application-controlled extension initiated by a monitoring UE (see clause 5.3.3 of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.3.

- Restricted 5G ProSe Direct Discovery request initiated by an announcing UE (see clause 5.3.3 of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.4.

- Restricted 5G ProSe Direct Discovery request with application-controlled extension initiated by an announcing UE (see clause 5.3.3 of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.5.

- Restricted 5G ProSe Direct Discovery request initiated by a monitoring UE (see clause 5.3.3 of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.4.

- Restricted 5G ProSe Direct Discovery request with application-controlled extension initiated by a monitoring UE (see clause 5.3.3 of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.5.

- Restricted 5G ProSe Direct Discovery request initiated by a discoveree UE (see clause 5.3.3A of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.6.

- Restricted 5G ProSe Direct Discovery request initiated by a discoverer UE (see clause 5.3.3A of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.7.

- Restricted 5G ProSe Direct Discovery match report (see clauses 5.3.4 and 5.3.4A of 3GPP TS 23.303 [15]). This is defined in clause 5.2.2.2.3.

2a On success, a response with HTTP "200 OK" status code shall be returned. The response body shall contain the parameters related to the 5G ProSe Direct Discovery authorization response data within the AuthDisResData data structure, which shall contain the authorization response type related to the received 5G ProSe Direct Discovery request within the "authResponseType" attribute. The remaining content of the AuthDisResData data structure also differs according to the above listed cases in step 1, as defined in clauses 5.2.2.2.3, 5.2.2.2.4, 5.2.2.2.5, 5.2.2.2.6 and 5.2.2.2.7.

2b On failure, one of the HTTP status codes listed in table 6.1.4.2.2-2 may be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails structure with the "cause" attribute set to one of the application errors listed in table 6.1.7.3-1.

##### 5.2.2.2.3 Open 5G ProSe Direct Discovery (Model A) with application-controlled extension

When Open 5G ProSe Direct Discovery (Model A) with application-controlled extension is used, the NF service consumer (e.g. 5G DDNMF) shall provide the following attributes within the AuthDisReqData data structure, as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3.2, 5.3.3.3, 5.3.3.4 and 5.3.3.5 of 3GPP TS 23.303 [15].

- When the 5G ProSe Direct Discovery request is initiated by an announcing UE:

- the ProSe Application ID within the "proseAppId" attribute, indicating what the UE is interested to announce;

- the allowed number of suffixes within the "allowedSuffixNum" attribute, indicating how many ProSe Application Code Suffixes the ProSe Application Server can assign for the UE;

- the application level container within the "appLevelContainer" attribute, containing the request and any relevant information for the 5G ProSe AF to assign a (set of) ProSe Application Code Suffix(es); and

- the authorization request type set to "OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE" within the "authRequestType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a monitoring UE:

- the ProSe Application ID(s) within the "proseAppId" attribute, indicating what the UE is interested to monitor;

- the application level container within the "appLevelContainer" attribute, containing the request and information corresponding to the ProSe Application Code Suffix; and

- the authorization request type set to "OPEN\_DISCOVERY\_EXTENSION\_MONITOR" within the "authRequestType" attribute.

If the processing of the request is successful, the 5G ProSe AF shall provide the following attributes within the AuthDisResData data structure, also as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3.2, 5.3.3.3, 5.3.3.4 and 5.3.3.5 of 3GPP TS 23.303 [15]:

- When the 5G ProSe Direct Discovery request is initiated by an announcing UE:

- the ProSe Application Code Suffix Pool within the "proseAppCodeSuffixPool" attribute, containing the Suffix(es) allocated by the 5G ProSe AF based on the inputs provided by the NF service consumer (e.g. 5G DDNMF) in the associated request;

- the authorization response type set to "OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK" within the "authResponseType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a monitoring UE:

- the mask(s) for the ProSe Application Code Suffix(es) within the "proseAppMasks" attribute, corresponding to ProSe Application ID provided by the NF service consumer (e.g. 5G DDNMF) in the related request;

- the authorization response type set to "OPEN\_DISCOVERY\_EXTENSION\_MONITOR\_ACK" within the "authResponseType" attribute.

##### 5.2.2.2.4 Restricted 5G ProSe Direct Discovery (Model A)

When Restricted 5G ProSe Direct Discovery (Model A) is used, the NF service consumer (e.g. 5G DDNMF) shall provide the following attributes within the AuthDisReqData data structure, as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3.2A, 5.3.3.3A, 5.3.3.4A and 5.3.3.5A of 3GPP TS 23.303 [15].

- When the 5G ProSe Direct Discovery request is initiated by an announcing UE:

- the RPAUID within the "rpauid" attribute, indicating what the UE is interested to announce; and

- the authorization request type set to "RESTRICTED\_DISCOVERY\_ANNOUNCE" within the "authRequestType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a monitoring UE:

- the authorization request type set to either "RESTRICTED\_DISCOVERY\_MONITOR" or "RESTRICTED\_DISCOVERY\_PERMISSION" within the "authRequestType" attribute; and

- if the authorization request type is set to "RESTRICTED\_DISCOVERY\_MONITOR":

- the RPAUID within the "rpauid" attribute, indicating the identity that the UE uses to obtain the permission to monitor; and

- the application level container within the "appLevelContainer" attribute, containing the Target RPAUID(s) indicating what the UE is interested to monitor;

otherwise,

- if the authorization request type is set to "RESTRICTED\_DISCOVERY\_PERMISSION":

- the RPAUID within the "rpauid" attribute, indicating the identity that the UE uses to obtain the permission to monitor;

- the target RPAUID within the "targetRpauid" attribute, containing the Target RPAUID;

If the processing of the request is successful, the 5G ProSe AF shall provide the following attributes within the AuthDisResData data structure, also as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3.2A, 5.3.3.3A, 5.3.3.4A and 5.3.3.5A of 3GPP TS 23.303 [15]:

- When the 5G ProSe Direct Discovery request is initiated by an announcing UE:

- the PDUID(s) within the "pduids" attribute, containing the PDUID(s) corresponding to the provided RPAUID; and

- the authorization response type set to "RESTRICTED\_DISCOVERY\_ANNOUNCE\_ACK" within the "authResponseType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a monitoring UE:

- the authorization response type set to either "RESTRICTED\_DISCOVERY\_MONITOR\_ACK" or "RESTRICTED\_DISCOVERY\_PERMISSION\_ACK" within the "authResponseType" attribute; and

- if the authorization response type is set to "RESTRICTED\_DISCOVERY\_MONITOR\_ACK":

- the PDUID within the "pduids" attribute, containing the PDUID corresponding to the provided RPAUID;

- a response application level container within the "appLevelContainer" attribute, containing the successfully authenticated Target RPAUID(s); and

- N sets of Target PDUID - Target RPAUID - Metadata Indicator within the "targetDataSet" attribute, containing N sets of Target PDUID - Target RPAUID - Metadata Indicator (Each Target PDUID is returned with the corresponding Target RPAUID(s) that the RPAUID is allowed to discover);

NOTE: The Metadata Indicator is optional. It indicates whether there is metadata associated with the RPAUID, and if so, whether updating this metadata is allowed.

otherwise,

- if the authorization response type is set to "RESTRICTED\_DISCOVERY\_PERMISSION\_ACK":

- the target PDUID within the "targetPduid" attribute, containing the Target PDUID;

##### 5.2.2.2.5 Restricted 5G ProSe Direct Discovery (Model A) with application-controlled extension

When Restricted 5G ProSe Direct Discovery (Model A) is used, the NF service consumer (e.g. 5G DDNMF) shall provide the following attributes within the AuthDisReqData data structure, as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3.2A, 5.3.3.3A, 5.3.3.4A and 5.3.3.5A of 3GPP TS 23.303 [15].

- When the 5G ProSe Direct Discovery request is initiated by an announcing UE:

- the RPAUID within the "rpauid" attribute, indicating what the UE is interested to announce;

- the allowed number of suffixes within the "allowedSuffixNum" attribute, indicating how many ProSe Restricted Code Suffixes the ProSe Application Server can assign for the UE;

- the authorization request type set to "RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE" within the "authRequestType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a monitoring UE:

- the RPAUID within the "rpauid" attribute, indicating the identity that the UE uses to obtain the permission to monitor; and

- the application level container within the "appLevelContainer" attribute, containing the Target RPAUID(s) indicating what the UE is interested to monitor; and

- the authorization request type set to "RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR" within the "authRequestType" attribute.

If the processing of the request is successful, the 5G ProSe AF shall provide the following attributes within the AuthDisResData data structure, also as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3.2A, 5.3.3.3A, 5.3.3.4A and 5.3.3.5A of 3GPP TS 23.303 [15]:

- When the 5G ProSe Direct Discovery request is initiated by an announcing UE:

- the PDUID(s) within the "pduids" attribute, containing the PDUID(s) corresponding to the provided RPAUID; and

- the ProSe Restricted Code Suffix Pool within the "restrictedCodeSuffixPool" attribute, containing the Suffix(es) allocated by the 5G ProSe AF based on the inputs provided by the NF service consumer (e.g. 5G DDNMF) in the associated request;

- the authorization response type set to "RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK" within the "authResponseType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a monitoring UE:

- the PDUID within the "pduids" attribute, containing the PDUID corresponding to the provided RPAUID;

- a response application level container within the "appLevelContainer" attribute, containing the successfully authenticated Target RPAUID(s);

- N sets of Target PDUID - Target RPAUID - Metadata Indicator within the "targetDataSet" attribute, containing N sets of Target PDUID - Target RPAUID - Metadata Indicator (Each Target PDUID is returned with the corresponding Target RPAUID(s) that the RPAUID is allowed to discover); and

NOTE: The Metadata Indicator is optional. It indicates whether there is metadata associated with the RPAUID, and if so, whether updating this metadata is allowed.

- the authorization response type set to "RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR\_ACK" within the "authResponseType" attribute.

The AuthDisResData data structure may also include in this case:

- the mask(s) for the ProSe Restricted Code Suffix(es) within the "proSeRestrictedMasks" attribute, corresponding to each of the provided Target RPAUID(s);

##### 5.2.2.2.6 Restricted 5G ProSe Direct Discovery (Model B)

When Restricted 5G ProSe Direct Discovery (Model B) is used, the NF service consumer (e.g. 5G DDNMF) shall provide the following attributes within the AuthDisReqData data structure, as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3A.2, 5.3.3A.3, 5.3.3A.4 and 5.3.3A.5 of 3GPP TS 23.303 [15].

- When the 5G ProSe Direct Discovery request is initiated by a discoveree UE:

- the RPAUID within the "rpauid" attribute, indicating what the UE is interested to announce; and

- the authorization request type set to "RESTRICTED\_DISCOVERY\_RESPONSE" within the "authRequestType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a discoverer UE:

- the RPAUID within the "rpauid" attribute, indicating the identity that the UE uses to obtain the permission to discover; and

- either:

- the application level container within the "appLevelContainer" attribute (e.g. if the NF service consumer is the HPLMN 5G DDNMF), containing the Target RPAUID(s) indicating what the UE is interested to discover; or

- the target RPAUID within the "targetRpauid" attribute (if the NF service consumer is a 5G DDNMF located in another PLMN), containing the Target RPAUID; and

- the authorization request type set to "RESTRICTED\_DISCOVERY\_QUERY" within the "authRequestType" attribute.

If the processing of the request is successful, the 5G ProSe AF shall provide the following attributes within the AuthDisResData data structure, also as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.3A.2, 5.3.3A.3, 5.3.3A.4 and 5.3.3A.5 of 3GPP TS 23.303 [15]:

- When the 5G ProSe Direct Discovery request is initiated by a discoveree UE:

- the PDUID(s) within the "pduids" attribute, containing the PDUID(s) corresponding to the provided RPAUID; and

- the authorization response type set to "RESTRICTED\_DISCOVERY\_RESPONSE\_ACK" within the "authResponseType" attribute.

- When the 5G ProSe Direct Discovery request is initiated by a discoverer UE:

- the PDUID within the "pduids" attribute, containing the PDUID corresponding to the provided RPAUID;

- either:

- N sets of Target PDUID - Target RPAUID within the "targetDataSet" attribute (e.g. if the NF service consumer is the HPLMN 5G DDNMF and an application level container was received in the associated request), containing N sets of Target PDUID - Target RPAUID (Each Target PDUID is returned with the corresponding Target RPAUID(s) that the RPAUID is allowed to discover); or

- the target PDUID within the "targetPduid" attribute (if the NF service consumer is a 5G DDNMF located in another PLMN and only one target RPAUID was received in the associated request), containing the Target PDUID; and

- the authorization response type set to "RESTRICTED\_DISCOVERY\_QUERY\_ACK" within the "authResponseType" attribute.

##### 5.2.2.2.7 Restricted 5G ProSe Direct Discovery match report

For a Restricted 5G ProSe Direct Discovery match report, the NF service consumer (e.g. 5G DDNMF) shall provide the following attributes within the AuthDisReqData data structure, as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.4.1A, 5.3.4.2A, 5.3.4A.1 and 5.3.4A.2 of 3GPP TS 23.303 [15].

- the RPAUID within the "rpauid" attribute, indicating what the UE is interested to announce; and

- the target RPAUID within the "targetRpauid" attribute (if the NF service consumer is a 5G DDNMF located in another PLMN), containing the Target RPAUID; and

- the authorization request type set to "RESTRICTED\_DISCOVERY\_MATCH" within the "authRequestType" attribute.

If the processing of the request is successful, the 5G ProSe AF shall provide the following attributes within the AuthDisResData data structure, also as specified in clause 6.3 of 3GPP TS 23.304 [14] and clauses 5.3.4.1A, 5.3.4.2A, 5.3.4A.1 and 5.3.4A.2 of 3GPP TS 23.303 [15]:

- the PDUID within the "pduids" attribute, containing the PDUID corresponding to the provided RPAUID;

- the target PDUID within the "targetPduid" attribute, containing the Target PDUID;

- the metadata within the "metaData" attribute, corresponding to the Target PDUID; and

- the authorization response type set to "RESTRICTED\_DISCOVERY\_MATCH\_ACK" within the "authResponseType" attribute.

#### 5.2.2.3 DiscoveryAuthorizationUpdateNotify

##### 5.2.2.3.1 General

The DiscoveryAuthorizationUpdateNotify service operation is used by an AF to update the authorization information to revoke discovery permissions relating to some other users at the NF service consumer (e.g. 5G DDNMF) for Restricted ProSe Direct Discovery. See Figure 5.2.2.3.1-1.

The following procedures are supported using the DiscoveryAuthorizationUpdateNotify Service Operation:

- Auth Update procedures (see 3GPP TS 23.303 [15], clause 5.3.6A.2).



Figure 5.2.2.3.1-1: DiscoveryAuthorizationUpdate Notification

1. The AF shall send an HTTP POST request to the callback URI of the NF consumer (e.g. 5G DDNMF). The request body shall contain the AuthUpdateData data structure.

The callback URI is provided to the AF during the Auth Request procedures defined in clause 5.2.2.2.

2a. On success, a response with an HTTP "204 No content" status code shall be returned by the NF service consumer.

2b. On failure, one of the HTTP status codes listed in Table 6.1.5.2.3.1-2 may be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails data structure with the "cause" attribute set to one of the application errors listed in Table 6.1.5.2.3.1-2.

#### 5.2.2.4 DiscoveryAuthorizationResultUpdate

##### 5.2.2.4.1 General

The DiscoveryAuthorizationResultUpdate service operation is used by a NF service consumer (e.g. 5G DDNMF) to inform the AF of the result of the revocation request to update the authorization information for Restricted ProSe Direct Discovery. See Figure 5.2.2.4.1-1.

The following procedures are supported using the DiscoveryAuthorizationResultUpdate Service Operation:

- Auth Update Result procedures (see 3GPP TS 23.303 [15], clause 5.3.6A.2).



Figure 5.2.2.4.1-1: DiscoveryAuthorizationResultUpdate Request/Response

1. In order to inform the AF of the result of the revocation related to discovery authorization update, the NF service consumer shall send an HTTP POST request with the request URI set to "{apiRoot}/naf-prose/<apiVersion>/authorize-update-result" and the request body containing the AuthUpdateData data structure, as described in figure 5.2.2.4.1-1.

2a On success, a response with an HTTP "204 No Content" status code shall be returned by the AF.

2b On failure, one of the HTTP status codes listed in Table 6.1.4.3.2-2 may be returned. For a 4xx/5xx response, the message body may contain a ProblemDetails structure with the "cause" attribute set to one of the application errors listed in Table 6.1.4.3.2-2.

# 6 API Definitions

## 6.1 Naf\_ProSe Service API

### 6.1.1 Introduction

The Naf\_ProSe shall use the Naf\_ProSe API.

The API URI of the Naf\_ProSe 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 "naf-prose ".

- 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 naf-prose API is contained in Annex A.2.

#### 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].

JSON Merge Patch, as defined in IETF RFC 7396 [17], signalled by the content type "application/merge-patch+json".

#### 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

In this release of this specification, no resource is defined for the Naf\_ProSe Service.

### 6.1.4 Custom Operations without associated resources

#### 6.1.4.1 Overview

The structure of the custom operation URIs of the Naf\_ProSe Service is shown in figure 6.1.4.1-1.



Figure 6.1.4.1-1: Resource URI structure of the Naf\_ProSe API

Table 6.1.4.1-1 provides an overview of the custom operations and applicable HTTP methods.

Table 6.1.4.1-1: Custom operations

|  |  |  |
| --- | --- | --- |
| **Custom operation URI** | **Mapped HTTP method** | **Description** |
| /authorize-discovery | POST | Obtain the authorization of Discovery Request from the 5G DDNMF for a UE. |
| /authorization-update-result | POST | Inform the AF of the result of the revocation request to update authorization information |

#### 6.1.4.2 Operation: authorize-discovery

##### 6.1.4.2.1 Description

This clause represents the custom operation and what it is used for, and the custom operation URI.

##### 6.1.4.2.2 Operation Definition

This operation shall support request data structures specified in table 6.1.4.2.2-1 and response data structures specified in table 6.1.4.2.2-2.

Table 6.1.4.2.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AuthDisReqData | M | 1 | Contains the request data to obtain the authorization for a UE of a 5G ProSe Discovery Request. |

Table 6.1.4.2.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| AuthDisResData | M | 1 | 200 OK | Contains the response data for the authorization of a 5G ProSe Direct Discovery Request for a UE. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing a different URI. The URI shall be an alternative URI of the resource located on an alternative AF. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing a different URI. The URI shall be an alternative URI of the resource located on an alternative AF. |
| ProblemDetails | O | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status code for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.  NOTE 2: Failure cases are described in clause 6.1.7.3. | | | | |

Table 6.1.4.2.2-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative AF. |

Table 6.1.4.2.2-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative AF. |

#### 6.1.4.3 Operation: authorization-update-result

##### 6.1.4.3.1 Description

This clause represents the custom operation and what it is used for, and the custom operation URI.

##### 6.1.4.3.2 Operation Definition

This operation shall support request data structures specified in table 6.1.4.3.2-1 and response data structures specified in table 6.1.4.3.2-2.

Table 6.1.4.3.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AuthUpdateData | M | 1 | Contains the result of the revocation request to update authorization information for Restricted ProSe Direct Discovery. |

Table 6.1.4.3.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Data type | | P | | Cardinality | | Response  codes | Description |
| n/a | |  | |  | | 204 No Content | This case represents successful report of discovery authorization update result. |
| N/A |  | |  | | 307 Temporary Redirect | | Temporary redirection. The response shall include a Location header field containing a different URI. The URI shall be an alternative URI of the resource located on an alternative AF. |
| N/A |  | |  | | 308 Permanent Redirect | | Permanent redirection. The response shall include a Location header field containing a different URI. The URI shall be an alternative URI of the resource located on an alternative AF. |
| ProblemDetails | | O | | 0..1 | | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status code for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.  NOTE 2: Failure cases are described in clause 6.1.7.3. | | | | | | | |

Table 6.1.4.3.2-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative AF. |

Table 6.1.4.3.2-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative AF. |

### 6.1.5 Notifications

#### 6.1.5.1 General

Table 6.1.5.1-1 provides an overview of the notification operation and applicable HTTP method.

Table 6.1.5.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method | Description |
| DiscoveryAuthorizationUpdateNotify | {authUpdateCallbackUri} | POST | Update the authorization information to revoke discovery permissions related to some other users in the NF service consumer (e.g. 5G DDNMF). |

#### 6.1.5.2 DiscoveryAuthorizationUpdateNotify

##### 6.1.5.2.1 Description

The DiscoveryAuthorizationUpdateNotify service operation is used to update the authorization information to revoke discovery permissions related to some other users in the NF service consumer (e.g. 5G DDNMF).

##### 6.1.5.2.2 Notification Definition

Call-back URI: {authUpdateCallbackUri}

See clause 5.2.2.2.1 for the description of how the AF obtains the Call-back URI of the NF service consumer.

##### 6.1.5.2.3 Notification Standard Methods

###### 6.1.5.2.3.1 POST

This method sends a discovery authorization update notification to the NF service consumer.

This method shall support the request and response data structures and response codes specified in table 6.1.5.2.3.1-1 and table 6.1.5.2.3.1-2.

Table 6.1.5.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AuthUpdateData | M | 1 | Input parameters to the "DiscoveryAuthorizationUpdateNotify" service operation, including the updated authorization information for Restricted ProSe Direct Discovery. |

Table 6.1.5.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | This case represents successful notification of the event. |
| N/A |  |  | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing a different URI. The URI shall be an alternative URI of the resource located on an alternative AF. |
| N/A |  |  | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing a different URI. The URI shall be an alternative URI of the resource located on an alternative AF. |
| ProblemDetails | O | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status code for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.  NOTE 2: Failure cases are described in clause 6.1.7.3. | | | | |

Table 6.1.5.2.3-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative AF. |

Table 6.1.5.2.3-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative AF. |

### 6.1.6 Data Model

#### 6.1.6.1 General

This clause specifies the application data model supported by the Naf\_ProSe API.

Table 6.1.6.1-1 specifies the data types defined for the Naf\_ProSe service based interface.

Table 6.1.6.1-1: Naf\_ProSe specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Clause defined** | **Description** | **Applicability** |
| AuthDisReqData | 6.1.6.2.2 | Represents Data used to request the authorization for a UE of 5G ProSe Direct Discovery Request. |  |
| AuthDisResData | 6.1.6.2.3 | Represents the obtained authorization Data for a UE of 5G ProSe Direct Discovery Request. |  |
| TargetData | 6.1.6.2.4 | Represents a combination of Target PDUID - Target RPAUID - Metadata Indicator. |  |
| AllowedSuffixNum | 6.1.6.3.2 | Represents the allowed number of suffixes. |  |
| AppLevelContainer | 6.1.6.3.2 | Represents an Application Layer Container. |  |
| MetadataIndic | 6.1.6.3.5 | Contains Metadata Indicator. |  |
| AuthRequestType | 6.1.6.3.3 | Represents the authorization request type. |  |
| AuthResponseType | 6.1.6.3.4 | Represents the authorization response type. |  |
| ProSeRestrictedMask | 6.1.6.3.2 | Represents a Prose Restricted Mask. |  |
| AuthUpdateData | 6.1.6.2.5 | Represents the updated authorization information for Restricted ProSe Direct Discovery. |  |
| BannedAuthData | 6.1.6.2.6 | Represents a set of Banned RPAUID - Banned PDUID that are no longer allowed to discover the ProSe Restricted Code corresponding to the user's RPAUID for the Application ID associated with that AF. |  |
| RevocationResult | 6.1.6.3.6 | Represents the revocation result of a set of Banned RPAUID - Banned PDUID for Restricted ProSe Direct Discovery. |  |

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

Table 6.1.6.1-2: Naf\_ProSe re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| ProseApplicationId | 3GPP TS 29.555 [16] | A string representing the ProSe Application ID. |  |
| ProseApplicationCodeSuffixPool | 3GPP TS 29.555 [16] | Contains a ProSe Application Code Suffix Pool. |  |
| Rpauid | 3GPP TS 29.555 [16] | Represents a Restricted ProSe Application User ID. |  |
| Pduid | 3GPP TS 29.555 [16] | Represents a ProSe Discovery UE ID. |  |
| ProseApplicationMask | 3GPP TS 29.555 [16] | Represents a Mask for a ProSe Application Code Suffix corresponding to a ProSe Applicantation ID. |  |
| MetaData | 3GPP TS 29.555 [16] | Contains Metadata. |  |
| RestrictedCodeSuffixPool | 3GPP TS 29.555 [16] | Contains a ProSe Restricted Code Suffix pool. |  |
| Uri | 3GPP TS 29.571 [18] | Contains a URI. |  |

#### 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: AuthDisReqData

Table 6.1.6.2.2-1: Definition of type AuthDisReqData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| authRequestType | AuthRequestType | M | 1 | This attribute contains the authorization request type for 5G ProSe Direct Discovery. |  |
| proseAppId | array(ProseApplicationId) | O | 0..N | This attribute contains the ProSe Application ID(s). (NOTE) |  |
| allowedSuffixNum | AllowedSuffixNum | O | 0..1 | This attribute contains the allowed number of suffixes. |  |
| appLevelContainer | AppLevelContainer | O | 0..1 | This attribute contains an application level container. |  |
| rpauid | Rpauid | O | 0..1 | This attribute contains the RPAUID. |  |
| targetRpauid | Rpauid | O | 0..1 | This attribute contains the Target RPAUID. |  |
| authUpdateCallbackUri | Uri | O | 0..1 | The call-back URI of the NF service consumer (i.e. 5G DDNMF) for implicit subscription to notification of DiscoveryAuthorizationUpdateNotify. |  |
| NOTE: If provided, at least one element shall be present in the attribute “proseAppId”. | | | | | |

##### 6.1.6.2.3 Type: AuthDisResData

Table 6.1.6.2.3-1: Definition of type AuthDisResData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| authResponseType | AuthResponseType | M | 1 | This attribute contains the authorization response type for 5G ProSe Direct Discovery. |  |
| proseAppCodeSuffixPool | ProseApplicationCodeSuffixPool | O | 0..1 | This attribute contains the ProSe Application Code Suffix Pool. |  |
| pduids | array(Pduid) | O | 0..N | This attribute contains the PDUID(s) corresponding to the provided RPAUID. |  |
| restrictedCodeSuffixPool | array(RestrictedCodeSuffixPool) | O | 0..N | This attribute contains a ProSe Restricted Code Suffix pool. (NOTE) |  |
| proseAppMasks | array(ProseApplicationMask) | O | 0..N | This attribute contains the mask(s) for the ProSe Application Code Suffix(es) corresponding to the ProSe Application ID. |  |
| proSeRestrictedMasks | array(ProSeRestrictedMask) | O | 0..N | This attribute contains the mask(s) for the ProSe Restricted Code Suffix(es) corresponding to each of the Target RPAUID(s). |  |
| resAppLevelContainer | AppLevelContainer | O | 0..1 | This attribute contains the Application Level Container. |  |
| targetDataSet | array(TargetData) | O | 0..N | This attribute contains N sets of Target PDUID - Target RPAUID - Metadata Indicator. |  |
| targetPduid | Pduid | O | 0..1 | This attribute contains the Target PDUID. |  |
| metaData | MetaData | O | 0..1 | This attribute contains metadata corresponding to the Target PDUID. |  |
| NOTE: If provided, exactly one element shall be present in the attribute. | | | | | |

##### 6.1.6.2.4 Type: TargetData

Table 6.1.6.2.4-1: Definition of type TargetData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| targetRpauid | Rpauid | M | 1 | This attribute contains the RPAUID. |  |
| pduid | Pduid | M | 1 | This attribute contains the Target PDUID. |  |
| metadataIndic | MetadataIndic | O | 0..1 | This attribute is optional and contains the Metadata Indicator to indicate whether there is metadata associated with the RPAUID, and if so, whether updates of metadata is allowed.  (NOTE) |  |
| NOTE: The default value of metadataIndic is "NO\_METADATA" if this attribute is not supplied. | | | | | |

##### 6.1.6.2.5 Type: AuthUpdateData

Table 6.1.6.2.5-1: Definition of type AuthUpdateData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| targetRpauid | Rpauid | M | 1 | This attribute contains the RPAUID of the user that would like to revoke discovery permissions of some other users in the AF. |  |
| bannedAuthData | array(BannedAuthData) | M | 1..N | The attribute contains N sets of Banned RPAUID - Banned PDUID that are no longer allowed to discover the ProSe Restricted Code corresponding to the user's RPAUID for the Application ID associated with that AF. |  |

##### 6.1.6.2.6 Type: BannedAuthData

Table 6.1.6.2.6-1: Definition of type BannedAuthData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| bannedRpauid | Rpauid | M | 1 | The attribute contains a RPAUID within a Banned RPAUID - Banned PDUID set that is no longer allowed to discover the ProSe Restricted Code corresponding to the user's RPAUID for the Application ID associated with the AF. |  |
| bannedPduid | Pduid | M | 1 | The attribute contains the PDUID within a Banned RPAUID - Banned PDUID set that is no longer allowed to discover the ProSe Restricted Code corresponding to the user's RPAUID for the Application ID associated with the AF. |  |
| revocationResult | RevocationResult | C | 0..1 | The attribute contains the revocation result of a set of Banned RPAUID - Banned PDUID for Restricted ProSe Direct Discovery, which is only conveyed in within a DiscoveryAuthorizationResultUpdate service operation |  |

#### 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** |
| AllowedSuffixNum | integer | Contains the allowed number of suffixes. |  |
| AppLevelContainer | sting | Contains the Application Level Container. |  |
| ProSeRestrictedMask | string | Contains a ProSe Restricted Mask. |  |

##### 6.1.6.3.3 Enumeration: AuthRequestType

The enumeration AuthRequestType represents the Authorization Request Type. It shall comply with the provisions of table 6.1.6.3.3-1.

Table 6.1.6.3.3-1: Enumeration AuthRequestType

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE | Indicates that the Authorization Request Type is "open discovery with application-controlled extension/announce". |  |
| RESTRICTED\_DISCOVERY\_ANNOUNCE | Indicates that the Authorization Request Type is "restricted discovery/announce". |  |
| RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE | Indicates that the Authorization Request Type is "restricted discovery with application-controlled extension/announce". |  |
| OPEN\_DISCOVERY\_EXTENSION\_MONITOR | Indicates that the Authorization Request Type is "open discovery with application-controlled extension/monitor". |  |
| RESTRICTED\_DISCOVERY\_MONITOR | Indicates that the Authorization Request Type is "restricted discovery/monitor". |  |
| RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR | Indicates that the Authorization Request Type is "restricted discovery with application-controlled extension/monitor". |  |
| RESTRICTED\_DISCOVERY\_PERMISSION | Indicates that the Authorization Request Type is "restricted discovery/permission". |  |
| RESTRICTED\_DISCOVERY\_RESPONSE | Indicates that the Authorization Request Type is "restricted discovery/response". |  |
| RESTRICTED\_DISCOVERY\_QUERY | Indicates that the Authorization Response Type is "restricted discovery/query". |  |
| RESTRICTED\_DISCOVERY\_MATCH | Indicates that the Authorization Response Type is "restricted discovery/match". |  |

##### 6.1.6.3.4 Enumeration: AuthResponseType

The enumeration AuthRequestType represents the Authorization Response Type. It shall comply with the provisions defined in table 6.1.6.3.4-1.

Table 6.1.6.3.4-1: Enumeration AuthResponseType

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK | Indicates that the Authorization Response Type is "open discovery with application-controlled extension/announce ack". |  |
| RESTRICTED\_DISCOVERY\_ANNOUNCE\_ACK | Indicates that the Authorization Response Type is "restricted discovery/announce ack". |  |
| RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK | Indicates that the Authorization Response Type is "restricted discovery with application-controlled extension/announce ack". |  |
| OPEN\_DISCOVERY\_EXTENSION\_MONITOR\_ACK | Indicates that the Authorization Response Type is "open discovery with application-controlled extension/monitor ack". |  |
| RESTRICTED\_DISCOVERY\_MONITOR\_ACK | Indicates that the Authorization Response Type is "restricted discovery/monitor ack". |  |
| RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR\_ACK | Indicates that the Authorization Response Type is "restricted discovery with application-controlled extension/monito ack". |  |
| RESTRICTED\_DISCOVERY\_PERMISSION\_ACK | Indicates that the Authorization Response Type is "restricted discovery /permission ack". |  |
| RESTRICTED\_DISCOVERY\_RESPONSE\_ACK | Indicates that the Authorization Response Type is "restricted discovery /response ack". |  |
| RESTRICTED\_DISCOVERY\_QUERY\_ACK | Indicates that the Authorization Response Type is "restricted discovery /query ack". |  |
| RESTRICTED\_DISCOVERY\_MATCH\_ACK | Indicates that the Authorization Response Type is "restricted discovery /match ack". |  |

##### 6.1.6.3.5 Enumeration: MetadataIndic

The enumeration MetadataIndic represents the possible options for metadata associated with a particular target RPAUID. It shall comply with the provisions of table 6.1.6.3.5-1.

Table 6.1.6.3.5-1: Enumeration MetadataIndic

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| NO\_METADATA | Indicates that there is no metadata associated with the target RPAUID. |  |
| METADATA\_UPDATE\_DISALLOWED | Indicates that there is metadata associated with the target RPAUID, but it is not allowed to update this metadata. |  |
| METADATA\_UPDATE\_ALLOWED | Indicates that there is metadata associated with the target RPAUID, and it is allowed to update this metadata. |  |

##### 6.1.6.3.6 Enumeration: RevocationResult

The enumeration RevocationResult represents the revocation result of a set of Banned RPAUID - Banned PDUID for Restricted ProSe Direct Discovery. It shall comply with the provisions of table 6.1.6.3.6-1.

Table 6.1.6.3.6-1: Enumeration MetadataIndic

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| REVOCATION\_SUCCESSFUL | Indicates the successful revocation for a set of Banned RPAUID - Banned PDUID for Restricted ProSe Direct Discovery. |  |
| REVOCATION\_NOT\_SUCCESSFUL | Indicates that unsuccessful revocation for a set of Banned RPAUID - Banned PDUID for Restricted ProSe Direct Discovery. |  |

#### 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 Naf\_ProSe 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 Naf\_ProSe 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 Naf\_ProSe service are listed in table 6.1.7.3-1.

Table 6.1.7.3-1: Application errors

|  |  |  |
| --- | --- | --- |
| **Application Error** | **HTTP status code** | **Description** |
| UNSPECIFIED | 403 Forbidden | The request is rejected due to unspecified reasons. |

### 6.1.8 Feature negotiation

The optional features in table 6.1.8-1 are defined for the Naf\_ProSe 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 Naf\_ProSe 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 Naf\_ProSe 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 Naf\_ProSe service.

The Naf\_ProSe API defines a single scope "naf\_prose" for OAuth2 authorization (as specified in 3GPP TS 33.501 [8]) 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 3.0.0 specifications in YAML format.

This Annex shall take 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 Naf\_ProSe API

openapi: 3.0.0

info:

title: Naf\_ProSe API

version: 1.1.0-alpha.2

description: |

Naf\_ProSe Service.

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externalDocs:

description: >

3GPP TS 29.557 V18.1.0; 5G System; Application Function ProSe Service; Stage 3.

url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.557/

servers:

- url: '{apiRoot}/naf-prose/v1'

variables:

apiRoot:

default: https://example.com

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

security:

- {}

- oAuth2ClientCredentials:

- naf-prose

paths:

/authorize-discovery:

post:

summary: Obtain the authorization of Discovery Request from 5G DDNMF for a UE

operationId: ObtainDiscAuth

tags:

- Obtain the authorization of Discovery Request for a UE

requestBody:

content:

application/json:

schema:

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

responses:

'200':

description: Expected response to a valid request

content:

application/json:

schema:

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

'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'

'502':

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

'503':

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

default:

description: Unexpected error

callbacks:

DiscoveryAuthorizationUpdateNotify:

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

post:

requestBody:

description: >

update of authorization information to revoke discovery permissions

relating to some other users in the NF consumer for Restricted ProSe Direct Discovery

content:

application/json:

schema:

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

responses:

'204':

description: Expected response to a valid notification

'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'

'502':

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

'503':

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

'504':

$ref: 'TS29571\_CommonData.yaml#/components/responses/504'

default:

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

/authorization-update-result:

post:

summary: >

report the result of update of authorization information to revoke discovery

permissions relating to some other users in the NF consumer for Restricted ProSe Direct

Discovery

operationId: AuthorizationUpdateResult

tags:

- Authorization Information Update Result

requestBody:

content:

application/json:

schema:

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

required: true

responses:

'204':

description: Expected response to a successful cancellation

'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'

'502':

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

'503':

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

'504':

$ref: 'TS29571\_CommonData.yaml#/components/responses/504'

default:

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

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

naf-prose: Access to the Naf\_ProSe API

schemas:

# COMPLEX TYPES:

AuthDisReqData:

type: object

description: >

Represents Data used to request the authorization for a UE of a 5G ProSe Direct

Discovery request.

required:

- authRequestType

properties:

authRequestType:

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

proseAppId:

type: array

items:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/ProseApplicationId'

allowedSuffixNum:

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

appLevelContainer:

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

rpauid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Rpauid'

targetRpauid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Rpauid'

authUpdateCallbackUri:

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

AuthDisResData:

type: object

description: >

Represents the obtained authorization Data for a UE of a 5G ProSe Direct Discovery

request.

required:

- authResponseType

properties:

authResponseType:

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

proseAppCodeSuffixPool:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/ProseApplicationCodeSuffixPool'

pduids:

type: array

items:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Pduid'

restrictedCodeSuffixPool:

type: array

items:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/RestrictedCodeSuffixPool'

proseAppMasks:

type: array

items:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/ProseApplicationMask'

proSeRestrictedMasks:

type: array

items:

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

resAppLevelContainer:

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

targetDataSet:

type: array

items:

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

targetPduid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Pduid'

metaData:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/MetaData'

TargetData:

type: object

description: Represents a set of Target PDUID - Target RPAUID - Metadata Indicator.

required:

- targetRpauid

- pduid

properties:

targetRpauid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Rpauid'

pduid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Pduid'

metadataIndic:

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

AuthUpdateData:

type: object

description: >

Represents the update data and resulting update data of authorization information

for Restricted ProSe Direct Discovery.

required:

- targetRpauid

- bannedAuthData

properties:

targetRpauid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Rpauid'

bannedAuthData:

type: array

items:

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

minItems: 1

BannedAuthData:

type: object

description: Represents a set of Banned PDUID - Banned RPAUID.

required:

- bannedRpauid

- bannedPduid

properties:

bannedRpauid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Rpauid'

bannedPduid:

$ref: 'TS29555\_N5g-ddnmf\_Discovery.yaml#/components/schemas/Pduid'

revocationResult:

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

# SIMPLE TYPES:

AllowedSuffixNum:

description: contains the allowed number of suffixes.

type: integer

AppLevelContainer:

description: Contains the Application Level Container.

type: string

ProSeRestrictedMask:

description: Contains a ProSe Restricted Mask.

type: string

# ENUMS:

AuthRequestType:

anyOf:

- type: string

enum:

- OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE

- RESTRICTED\_DISCOVERY\_ANNOUNCE

- RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE

- OPEN\_DISCOVERY\_EXTENSION\_MONITOR

- RESTRICTED\_DISCOVERY\_MONITOR

- RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR

- RESTRICTED\_DISCOVERY\_PERMISSION

- RESTRICTED\_DISCOVERY\_RESPONSE

- RESTRICTED\_DISCOVERY\_QUERY

- RESTRICTED\_DISCOVERY\_MATCH

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the authorization request type.

Possible values are:

- OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE: Indicates that the Authorization Request Type is

open discovery with application-controlled extension/announce.

- RESTRICTED\_DISCOVERY\_ANNOUNCE: Indicates that the Authorization Request Type is restricted

discovery/announce.

- RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE: Indicates that the Authorization Request Type is

restricted discovery with application-controlled extension/announce.

- OPEN\_DISCOVERY\_EXTENSION\_MONITOR: Indicates that the Authorization Request Type is open

discovery with application-controlled extension/monitor.

- RESTRICTED\_DISCOVERY\_MONITOR: Indicates that the Authorization Request Type is restricted

discovery/monitor.

- RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR: Indicates that the Authorization Request Type is

restricted discovery with application-controlled extension/monitor.

- RESTRICTED\_DISCOVERY\_PERMISSION: Indicates that the Authorization Request Type is

restricted discovery/permission.

- RESTRICTED\_DISCOVERY\_RESPONSE: Indicates that the Authorization Request Type is restricted

discovery/response.

- RESTRICTED\_DISCOVERY\_QUERY: Indicates that the Authorization Request Type is restricted

discovery/query.

- RESTRICTED\_DISCOVERY\_MATCH: Indicates that the Authorization Request Type is restricted

discovery/match.

AuthResponseType:

anyOf:

- type: string

enum:

- OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK

- RESTRICTED\_DISCOVERY\_ANNOUNCE\_ACK

- RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK

- OPEN\_DISCOVERY\_EXTENSION\_MONITOR\_ACK

- RESTRICTED\_DISCOVERY\_MONITOR\_ACK

- RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR\_ACK

- RESTRICTED\_DISCOVERY\_PERMISSION\_ACK

- RESTRICTED\_DISCOVERY\_RESPONSE\_ACK

- RESTRICTED\_DISCOVERY\_QUERY\_ACK

- RESTRICTED\_DISCOVERY\_MATCH\_ACK

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the authorization response type.

Possible values are:

- OPEN\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK: Indicates that the Authorization Response Type is

open discovery with application-controlled extension/announce ack.

- RESTRICTED\_DISCOVERY\_ANNOUNCE\_ACK: Indicates that the Authorization Response Type is

restricted discovery/announce ack.

- RESTRICTED\_DISCOVERY\_EXTENSION\_ANNOUNCE\_ACK: Indicates that the Authorization Response

Type is restricted discovery with application-controlled extension/announce ack.

- OPEN\_DISCOVERY\_EXTENSION\_MONITOR\_ACK: Indicates that the Authorization Response Type is

open discovery with application-controlled extension/monitor ack.

- RESTRICTED\_DISCOVERY\_MONITOR\_ACK: Indicates that the Authorization Response Type is

restricted discovery/monitor ack.

- RESTRICTED\_DISCOVERY\_EXTENSION\_MONITOR\_ACK: Indicates that the Authorization Response Type

is restricted discovery with application-controlled extension/monitor ack.

- RESTRICTED\_DISCOVERY\_PERMISSION\_ACK: Indicates that the Authorization Response Type is

restricted discovery/permission ack.

- RESTRICTED\_DISCOVERY\_RESPONSE\_ACK: Indicates that the Authorization Response Type is

restricted discovery/response ack.

- RESTRICTED\_DISCOVERY\_QUERY\_ACK: Indicates that the Authorization Response Type is

restricted discovery/query ack.

- RESTRICTED\_DISCOVERY\_MATCH\_ACK: Indicates that the Authorization Response Type is

restricted discovery/match ack.

MetadataIndic:

anyOf:

- type: string

enum:

- NO\_METADATA

- METADATA\_UPDATE\_DISALLOWED

- METADATA\_UPDATE\_ALLOWED

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the Metadata Indicator.

Possible values are:

- NO\_METADATA: This value may be used to indicate that there is no metadata associated with

the target RPAUID. This is the default value applicable if this IE is not supplied.

- METADATA\_UPDATE\_DISALLOWED: This value shall be used to indicate that there exists

metadata associated with the target RPAUID, but the metadata is not allowed to be updated.

- METADATA\_UPDATE\_ALLOWED: This value shall be used to indicate that there exists metadata

associated with the target RPAUID, and the metadata is allowed to be updated.

RevocationResult:

anyOf:

- type: string

enum:

- REVOCATION\_SUCCESSFUL

- REVOCATION\_NOT\_SUCCESSFUL

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents the revocation result of a set of Banned RPAUID - Banned PDUID for Restricted

ProSe Direct Discovery.

Possible values are:

- REVOCATION\_SUCCESSFUL: Indicates the successful revocation for a set of Banned RPAUID -

Banned PDUID for Restricted ProSe Direct Discovery.

- REVOCATION\_NOT\_SUCCESSFUL: Indicates that unsuccessful revocation for a set of Banned

RPAUID - Banned PDUID for Restricted ProSe Direct Discovery.

Annex B (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2021-04 | CT3#115-e | C3-212446 |  |  |  | Draft skeleton provided by the rapporteur. | 0.0.0 |
| 2021-05 | CT3#116-e | C3-213504 |  |  |  | Implementing the following p-CR agreed by CT3: C3-212447  Editorial change from the rapporteur.  Specification number added. | 0.1.0 |
| 2021-08 | CT3#117-e | C3-214590 |  |  |  | Implementing the following p-CR agreed by CT3: C3-214021 and C3-214022.  Editorial change from the rapporteur. | 0.2.0 |
| 2021-09 | CT3#117-e | C3-214590 |  |  |  | Change filename – removed Stable | 0.2.1 |
| 2021-09 | CT#93-e | CP-212188 |  |  |  | The p-CRs are agreed in CT#93-e. | 0.2.1 |
| 2021-10 | CT3#118-e | C3-215453 |  |  |  | Implementing the following p-CR agreed by CT3: C3-215453 | 0.3.0 |
| 2021-12 | CT#94-e | CP-213209 |  |  |  | Presentation for information | 1.0.0 |
| 2022-01 | CT3#119bis-e | C3-220451 |  |  |  | Implementing the following p-CR agreed by CT3: C3-220417 | 1.1.0 |
| 2022-02 | CT3#120-e | C3-221556 |  |  |  | Implementing the following p-CR agreed by CT3: C3-221166 | 1.2.0 |
| 2022-03 | CT#95e | CP-220157 |  |  |  | Presentation to TSG CT for approval | 2.0.0 |
| 2022-03 | CT#95e | CP-220157 |  |  |  | Approved by TSG CT | 17.0.0 |
| 2022-06 | CT#96 | CP-221116 | 0001 | 1 | F | Adding the missing description fields in the OpenAPI file | 17.1.0 |
| 2022-06 | CT#96 | CP-221116 | 0002 | 1 | F | Miscellaneous corrections | 17.1.0 |
| 2022-06 | CT#96 | CP-221116 | 0003 |  | F | API URI of the Naf\_ProSe API | 17.1.0 |
| 2022-06 | CT#96 | CP-221152 | 0004 |  | F | Update of info and externalDocs fields | 17.1.0 |
| 2022-09 | CT#97e | CP-222132 | 0005 | 1 | F | Application errors reference update in the tables defining methods on the resources for Naf\_ProSe API | 17.2.0 |
| 2022-12 | CT#98e | CP-223162 | 0007 | 1 | F | Correction to AuthDisResData data type | 17.3.0 |
| 2022-12 | CT#98e | CP-223162 | 0008 | 1 | F | Correction to AuthDisReqData data type | 17.3.0 |
| 2022-12 | CT#98e | CP-223162 | 0009 | 1 | F | Corrections to DiscoveryAuthorization service operation | 17.3.0 |
| 2022-12 | CT#98e | CP-223162 | 0011 | 1 | F | Add the missing status codes for the HTTP operations | 17.3.0 |
| 2022-12 | CT#98e | CP-223162 | 0012 | 1 | F | Corrections for data types and API of Naf\_ProSe service | 17.3.0 |
| 2022-12 | CT#98e | CP-223188 | 0017 |  | F | Update of info and externalDocs fields | 17.3.0 |
| 2022-12 | CT#98e | CP-223191 | 0006 |  | F | Adding the mandatory error code 502 Bad Gateway | 18.0.0 |
| 2022-12 | CT#98e | CP-223192 | 0010 | 1 | F | Enumeration definitions in the OpenAPI file | 18.0.0 |
| 2022-12 | CT#98e | CP-223199 | 0013 | 1 | F | Update for the Naf\_ProSe Service architecture | 18.0.0 |
| 2022-12 | CT#98e | CP-223190 | 0018 |  | F | Update of info and externalDocs fields | 18.0.0 |
| 2023-03 | CT#99 | CP-230166 | 0019 |  | F | Correction of the description fields in enumerations | 18.1.0 |
| 2023-03 | CT#99 | CP-230161 | 0020 |  | F | Update of info and externalDocs fields | 18.1.0 |
| 2023-12 | CT#102 | CP-233229 | 0021 | 1 | F | HTTP RFC uplifting | 18.2.0 |