**3GPP TSG CT WG3 Meeting #142 *C3-253369***

**Goteborg, SE, 25th – 29th August, 2025**

**Source: Huawei**

**Title: Pseudo-CR on defining the service description clauses of the Naf\_VFLTraining API**

**Spec: 3GPP TS 29.530**

**Agenda item: 19.39 (AIML\_CN)**

**Document for: Agreement**

**1. Introduction**

The stage 2 requirements for the new Naf\_VFLTraining API have been defined in clauses TS 23.288.

**2. Reason for Change**

Define the service description clauses of this new API in the corresponding new AI/ML related AF Services TS.

**3. Conclusions**

N/A

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.530 V 0.0.0.

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

# 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".

[17] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

\* \* \* \* Next changes \* \* \* \*

## 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].

VFL Vertical Federated Learning

\* \* \* \* Next changes \* \* \* \*

## 5.1 Introduction

The AF provides the following services:

- Naf\_VFLTraining

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

Table 5.1-x: API Descriptions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service Name | Clause | Description | OpenAPI Specification File | apiName | Annex |
| Naf\_VFLTraining | 5.2 | VFL Training Service | TS29530\_Naf\_VFLTraining.yaml | naf-vfl-train | A.2 |

\* \* \* \* Next changes \* \* \* \*

## 5.2 Naf\_VFLTraining Service

### 5.2.1 Service Description

The Naf\_VFLTraining service exposed by the AF enables an NF service consumer to:

- request the creation/update of a VFL Training Subscription; and

- receive VFL Training related event(s) reporting.

### 5.2.2 Service Operations

#### 5.2.2.1 Introduction

The service operations defined for the Naf\_VFLTraining service are shown in table 5.2.2.1-1.

Table 5.2.2.1-1: Naf\_VFLTraining Service Operations

|  |  |  |
| --- | --- | --- |
| Service Operation Name | Description | Initiated by |
| Naf\_VFLTraining\_Subscribe | This service operation enables the NF service consumer to request the creation/update of a VFL Training Subscription. | e.g., NWDAF, NEF |
| Naf\_VFLTraining\_Unsubscribe | This service operation enables the NF service consumer to request the deletion of a VFL Training Subscription. | e.g., NWDAF, NEF |
| Naf\_VFLTraining\_Notify | This service operation enables the NF service consumer to receive VFL Training related event(s) reporting. | AF |

Editor's Note: The definition of the Naf\_VFLTraining\_Request service operation is FFS and pending stage 2 progress.

#### 5.2.2.2 Naf\_VFLTraining\_Subscribe

##### 5.2.2.2.1 General

This service operation is used by an NF service consumer to request the creation/update of a VFL Training Subscription at the AF.

The following procedures are supported by the "Naf\_VFLTraining\_Subscribe" service operation:

- VFL Training Subscription Creation.

- VFL Training Subscription Update.

##### 5.2.2.2.2 VFL Training Subscription Creation

Figure 5.2.2.2.2-1 depicts a scenario where an NF service consumer sends a request to the AF to request the creation of a VFL Training Subscription (see also clause 6.2H of 3GPP°TS°23.288°[17]).



Figure 5.2.2.2.2-1: Procedure for VFL Training Subscription Creation

1. In order to subscribe to VFL Training, the NF service consumer shall send an HTTP POST request to the AF targeting the URI of the " VFL Training Subscriptions" collection resource, with the request body including the VflTrainingSubs data structure.

2a. Upon success, the AF shall respond with an HTTP "201 Created" status code with the response body containing a representation of the created "Individual VFL Training Subscription" resource within the VflTrainingSubs data structure, and an HTTP "Location" header field containing the URI of the created resource.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.1.7.

##### 5.2.2.2.3 VFL Training Subscription Update

Figure 5.2.2.2.3-1 depicts a scenario where an NF service consumer sends a request to the AF to request the update of an existing VFL Training Subscription (see also clause 6.2H of 3GPP°TS°23.288°[17]).



Figure 5.2.2.2.3-1: Procedure for VFL Training Subscription Update

1. In order to request the update of an existing VFL Training Subscription, the NF service consumer shall send an HTTP PUT/PATCH request to the AF, targeting the URI of the corresponding "Individual VFL Training Subscription" resource, with the request body including either:

- the updated representation of the resource within the VflTrainingSubs data structure, in case the HTTP PUT method is used; or

- the requested modifications to the resource within the VflTrainingSubsPatch data structure, in case the HTTP PATCH method is used.

2a. Upon success, the AF shall update the targeted "Individual VFL Training Subscription" resource accordingly and respond with either:

- an HTTP "200 OK" status code with the response body containing a representation of the updated "Individual VFL Training Subscription" resource within the VflTrainingSubs data structure; or

- an HTTP "204 No Content" status code.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP PUT/PATCH response body, as specified in clause 6.1.7.

#### 5.2.2.3 Naf\_VFLTraining\_Unsubscribe

##### 5.2.2.3.1 General

This service operation is used by an NF service consumer to request the deletion of a VFL Training Subscription at the AF.

The following procedures are supported by the "Naf\_VFLTraining\_Unsubscribe" service operation:

- VFL Training Subscription Deletion.

##### 5.2.2.3.2 VFL Training Subscription Deletion

Figure 5.2.2.3.2-1 depicts a scenario where an NF service consumer sends a request to the AF to delete an existing VFL Training Subscription (see also clause 6.2H of 3GPP°TS°23.288°[17]).



Figure 5.2.2.3.2-1: Procedure for VFL Training Subscription Deletion

1. In order to request the deletion of an existing VFL Training Subscription, the NF service consumer shall send an HTTP DELETE request to the AF targeting the URI of the corresponding "Individual VFL Training Subscription" resource.

2a. Upon success, the AF shall respond with an HTTP "204 No Content" status code.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP DELETE response body, as specified in clause 6.1.7.

#### 5.2.2.4 Naf\_VFLTraining\_Notify

##### 5.2.2.4.1 General

This service operation is used by the AF to notify a previously subscribed service consumer on:

- VFL Training report(s).

The following procedures are supported by the "Naf\_VFLTraining\_Notify" service operation:

- VFL Training Notification.

##### 5.2.2.4.2 VFL Training Notification

Figure 5.2.2.4.2-1 depicts a scenario where the AF sends a request to notify a previously subscribed service consumer on VFL Training report(s) (see also clause 6.2H of 3GPP°TS°23.288°[17]).



Figure 5.2.2.4.2-1: Procedure for VFL Training Notification

1. In order to notify a previously subscribed service consumer on VFL Training report(s), the AF shall send an HTTP POST request to the NF service consumer with the request URI set to "{notifUri}", where the "notifUri" variable is set to the value received from the NF service consumer during the creation/update of the corresponding VFL Training Subscription using the procedures defined in clauses 5.5.2.2, and the request body including the VflTrainingNotify data structure.

2a. Upon success, the NF service consumer shall respond to the AF with an HTTP "204 No Content" status code to acknowledge the reception of the notification.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 6.1.7.

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