**3GPP TSG-CT3 Meeting #142 *C3-253561***

**Stor-Göteborg, Sweden, 25th Aug 2025 - 29th Aug 2025 (revision of *C3-253194*)**

**Source: Nokia**

**Title: Pseudo-CR on definition for AIMLES\_AssistedMLModelSelection API**

**Spec: 3GPP TS 29.482 v 1.0.0**

**Agenda item: 19.41**

**Document for: Agreement**

**1. Introduction**

There is a need to start a OpenAPI annex of AIMLES\_AssistedMLModelSelection API under the AIML\_App WI.

**2. Reason for Change**

Define the OpenAPI annex of AIMLES\_AssistedMLModelSelection service as defined in clause 8.23 in 3GPP TS 23.482.

**3. Conclusions**

This pCR proposes to specify the Annex of AIMLES\_AssistedMLModelSelection API.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.482 V 1.0.0.

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

### 6.1.x AIMLES\_AssistedMLModelSelection API

#### 6.1.x.1 Introduction

The AIMLES\_AssistedMLModelSelection service shall use the AIMLES\_AssistedMLModelSelection API.

The API URI of the AIMLES\_AssistedMLModelSelection API shall be:

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

The request URIs used in HTTP requests shall have the Resource URI structure defined in clause 6.5 of 3GPP TS 29.549 [14], i.e.:

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

with the following components:

- The {apiRoot} shall be set as described in clause 6.5 of 3GPP TS 29.549 [14].

- The <apiName>shall be "aimles-amlmsel".

- The <apiVersion> shall be "v1".

- The <apiSpecificSuffixes> shall be set as described in clauses 6.1.x.3 and 6.1.x.4.

NOTE: When 3GPP TS 29.122 [2] is referenced for the common protocol and interface aspects for API definition in the clauses under clause 6.1.x, the AIMLE Server takes the role of the SCEF and the service consumer takes the role of the SCS/AS.

#### 6.1.x.2 Usage of HTTP

The provisions of clause 6.3 of 3GPP TS 29.549 [14] shall apply for the AIMLES\_AssistedMLModelSelection API.

#### 6.1.x.3 Resources

##### 6.1.x.3.1 Overview

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

Figure 6.1.x.3.1-1 depicts the resource URIs structure for the AIMLES\_AssistedMLModelSelection API.



Figure 6.1.x.3.1-1: Resource URI structure of the AIMLES\_AssistedMLModelSelection API

Table 6.1.x.3.1-1 provides an overview of the resources and applicable HTTP methods.

Table 6.1.x.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI | HTTP method or custom operation | Description |
| AIMLE Assisted ML Model Selection Subscriptions | /subscriptions | POST | Request the creation of a AIMLE Assisted ML Model Selection Subscription resource. |
| Individual AIMLE Assisted ML Model Selection Subscription | /subscriptions/{subscriptionId} | GET | Retrieve an existing "Individual AIMLE Assisted ML Model Selection Subscription" resource. |
| PUT | Request the update of an existing "Individual AIMLE Assisted ML Model Selection Subscription" resource. |
| PATCH | Request the modification of an existing "Individual AIMLE Assisted ML Model Selection Subscription" resource. |
| DELETE | Request the deletion of an existing "Individual AIMLE Assisted ML Model Selection Subscription" resource. |

##### 6.1.x.3.2 Resource: AIMLE Assisted ML Model Selection Subscriptions

6.1.x.3.2.1 Description

This resource represents the collection of AIMLE Assisted ML Model Selection Subscriptions managed by the AIMLE Server.

6.1.x.3.2.2 Resource Definition

Resource URI: {**apiRoot**}/**aimles-amlmsel**/<**apiVersion**>/**subscriptions**

This resource shall support the resource URI variables defined in table 6.1.x.3.2.2-1.

Table 6.1.x.3.2.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 6.1.x.1. |

6.1.x.3.2.3 Resource Standard Methods

6.1.x.3.2.3.1 POST

The HTTP POST method enables a AIMLE service consumer to request the creation of a new Individual AIMLE Assisted ML Model Selection Subscription at the AIMLE Server.

This method shall support the URI query parameters specified in table 6.1.x.3.2.3.1-1.

Table 6.1.x.3.2.3.1-1: URI query parameters supported by the POST method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
|  |  |  |  |  |

This method shall support the request data structures specified in table 6.1.x.3.2.3.1-2 and the response data structures and response codes specified in table 6.1.x.3.2.3.1-3.

Table 6.1.x.3.2.3.1-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AssistMLMdlSelSubsc | M | 1 | Create a new Individual AIMLE Assisted ML Model Selection Subscription resource. |

Table 6.1.x.3.2.3.1-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| AssistMLMdlSelSubsc | M | 1 | 201 Created | Successful case. The creation of an Individual AIMLE Assisted ML Model Selection Subscription resource is confirmed and a representation of that resource is returned in the response body.  An HTTP "Location" header that contains the URI of the created resource shall also be included. |
| NOTE: The mandatory HTTP error status codes for the HTTP POST method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply. | | | | |

Table 6.1.x.3.2.3.1-4: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure:  {apiRoot}/aimles-amlmsel/<apiVersion>/subscriptions{subscriptionId} |

6.1.x.3.2.4 Resource Custom Operations

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

##### 6.1.x.3.3 Resource: Individual AIMLE Assisted ML Model Selection Subscription

6.1.x.3.3.1 Description

6.1.x.3.3.2 Resource Definition

Resource URI: {**apiRoot**}/**aimles-amlmsel**/<**apiVersion**>/**subscriptions**/{**subscriptionId**}

This resource shall support the resource URI variables defined in table 6.1.x.3.3.2-1.

Table 6.1.x.3.3.2-1: Resource URI variables for this resource

|  |  |  |
| --- | --- | --- |
| Name | Data Type | Definition |
| apiRoot | string | See clause 6.1.x.1 |
| subscriptionId | string | Represents the identifier of an "Individual AIMLE Assisted ML Model Selection Subscription" resource. |

6.1.x.3.3.3 Resource Standard Methods

6.1.x.3.3.3.1 GET

The HTTP GET method allows a service consumer to retrieve an existing " Individual AIMLE Assisted ML Model Selection Subscription" resource at the AIMLE Server.

This method shall support the URI query parameters specified in table 6.1.x.3.3.3.1-1.

Table 6.1.x.3.3.3.1-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 6.1.x.3.3.3.1-2 and the response data structures and response codes specified in table 6.1.x.3.3.3.1-3.

Table 6.1.x.3.3.3.1-2: Data structures supported by the GET Request Body on this resource

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

Table 6.1.x.3.3.3.1-3: Data structures supported by the GET Response Body on this resource

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

Table 6.1.x.3.3.3.1-4: Headers supported by the 307 Response Code on this resource

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

Table 6.1.x.3.3.3.1-5: Headers supported by the 308 Response Code on this resource

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

6.1.x.3.3.3.2 PUT

The HTTP PUT method allows a service consumer to request the update of an existing "Individual AIMLE Assisted ML Model Selection Subscription" resource at the AIMLE Server.

This method shall support the URI query parameters specified in table 6.1.x.3.3.3.2-1.

Table 6.1.x.3.3.3.2-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 6.1.x.3.3.3.2-2 and the response data structures and response codes specified in table 6.1.x.3.3.3.2-3.

Table 6.1.x.3.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AssistMLMdlSelSubsc | M | 1 | Represents the updated representation of the "Individual AIMLE Assisted ML Model Selection Subscription" resource. |

Table 6.1.x.3.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| AssistMLMdlSelSubsc | M | 1 | 200 OK | Successful case. The "Individual AIMLE Assisted ML Model Selection Subscription" resource is successfully updated and a representation of the updated resource shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The "Individual AIMLE Assisted ML Model Selection Subscription" resource is successfully updated and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative AIMLE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative AIMLE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| ProblemDetails | O | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the HTTP PUT method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply.  NOTE 2: Failure causes are described in clause 6.4.7. | | | | |

Table 6.1.x.3.3.3.2-4: Headers supported by the 307 Response Code on this resource

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

Table 6.1.x.3.3.3.2-5: Headers supported by the 308 Response Code on this resource

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

6.1.x.3.3.3.3 PATCH

The HTTP PATCH method allows a service consumer to request the modification of an existing "Individual AIMLE Assisted ML Model Selection Subscription" resource at the AIMLE Server.

This method shall support the URI query parameters specified in table 6.1.x.3.3.3.3-1.

Table 6.1.x.3.3.3.3-1: URI query parameters supported by the PATCH method on this resource

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

This method shall support the request data structures specified in table 6.1.x.3.3.3.3-2 and the response data structures and response codes specified in table 6.1.x.3.3.3.3-3.

Table 6.1.x.3.3.3.3-2: Data structures supported by the PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AssistMLMdlSelSubscPatch | M | 1 | Represents the parameters to request the modification of the "Individual AIMLE Assisted ML Model Selection Subscription" resource. |

Table 6.1.x.3.3.3.3-3: Data structures supported by the PATCH Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| AssistMLMdlSelSubsc | M | 1 | 200 OK | Successful case. The "Individual AIMLE Assisted ML Model Selection Subscription" resource is successfully modified and a representation of the updated resource shall be returned in the response body. |
| n/a |  |  | 204 No Content | Successful case. The "Individual AIMLE Assisted ML Model Selection Subscription" resource is successfully modified and no content is returned in the response body. |
| n/a |  |  | 307 Temporary Redirect | Temporary redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative AIMLE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| n/a |  |  | 308 Permanent Redirect | Permanent redirection.  The response shall include a Location header field containing an alternative URI of the resource located in an alternative AIMLE Server.  Redirection handling is described in clause 5.2.10 of 3GPP TS 29.122 [2]. |
| ProblemDetails | O | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the HTTP PATCH method listed in table 5.2.6-1 of 3GPP TS 29.122 [2] shall also apply.  NOTE 2: Failure causes are described in clause 6.4.7. | | | | |

Table 6.1.x.3.3.3.3-4: Headers supported by the 307 Response Code on this resource

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

Table 6.1.x.3.3.3.3-5: Headers supported by the 308 Response Code on this resource

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

6.1.x.3.3.3.4 DELETE

The HTTP PATCH method allows a AIMLE service consumer to request the deletion of an existing "Individual AIMLE Assisted ML Model Selection Subscription" resource.

Table 6.1.x.3.3.3.4-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 6.1.x.3.3.3.4-2 and the response data structures and response codes specified in table 6.1.x.3.3.3.4-3.

Table 6.1.x.3.3.3.4-2: Data structures supported by the DELETE Request Body on this resource

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

Table 6.1.x.3.3.3.4-3: Data structures supported by the DELETE Response Body on this resource

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

Table 6.1.x.3.3.3.4-4: Headers supported by the 307 Response Code on this resource

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

Table 6.1.x.3.3.3.4-5: Headers supported by the 308 Response Code on this resource

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

6.1.x.3.3.4 Resource Custom Operations

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

#### 6.1.x.4 Custom Operations without associated resources

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

#### 6.1.x.5 Notifications

##### 6.1.x.5.1 General

Notifications shall comply to clause 6.6 of 3GPP TS 29.549 [14].

Table 6.1.x.5.1-1: Notifications overview

|  |  |  |  |
| --- | --- | --- | --- |
| Notification | Callback URI | HTTP method or custom operation | Description  (service operation) |
| AIMLE Assisted ML Model Selection Event Notification | {notifUri} | POST | This service operation enables an AIMLE Server to notify a previously subscribed service consumer on AIML Assisted ML Model Selection related event(s). |

##### 6.1.x.5.2 AIMLE Assisted ML Model Selection Event Notification

6.1.x.5.2.1 Description

The AIMLE Assisted ML Model Selection Event Notification is used by the AIMLE Server to notify a previously subscribed AIMLE service consumer on AIML Assisted ML Model Selection related event(s).

6.1.x.5.2.2 Target URI

The Callback URI **"{notifUri}"** shall be used with the callback URI variables defined in table 6.1.x.5.2.2-1.

Table 6.1.x.5.2.2-1: Callback URI variables

|  |  |
| --- | --- |
| Name | Definition |
| notifUri | The Notification Uri is assigned within the Individual AIMLE Assisted ML Model Selection Subscription and described within the AssistMLMdlSelSubsc type |

6.1.x.5.2.3 Standard Methods

6.1.x.5.2.3.1 POST

This method shall support the request data structures specified in table 6.1.x.5.2.3-1 and the response data structures and response codes specified in table 6.1.x.5.2.3-2.

Table 6.1.x.5.2.3-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AssistMLMdlSelNotif | M | 1 | Represents the AIMLE Assisted ML Model Selection Event Notification. |

Table 6.1.x.5.2.3-2: Data structures supported by the POST Response Body on this resource

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

Table 6.1.x.5.2.3-3: Headers supported by the 307 Response Code on this resource

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

Table 6.1.x.5.2.3-4: Headers supported by the 308 Response Code on this resource

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

#### 6.1.x.6 Data Model

##### 6.1.x.6.1 General

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

Table 6.1.x.6.1-1 specifies the data types defined for the AIMLES\_AssistedMLModelSelection API.

Table 6.1.x.6.1-1: AIMLES\_AssistedMLModelSelection API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| AimlProfile | Clause 6.1.x.6.2.4 | Represents the ML model selection operation. |  |
| AssistMLMdlSelSubsc | Clause 6.1.x.6.2.2 | Represents the AIMLE Assisted ML Selection subscription information. |  |
| AssistMLMdlSelNotif | Clause 6.1.x.6.2.3 | Represents the AIMLE Assisted ML Selection notification. |  |
| AssistMLMdlSelSubscPatch | Clause 6.1.x.6.2.7 | Represents the requested modifications to a AIMLE Assisted ML Selection subscription information. |  |
| CandMLMdl | Clause 6.1.x.6.2.9 | Contains the candidate ML model selection information. |  |
| PerformanceMetric | Clause 6.1.x.6.3.3 | Represents the performance metric for training the ML model. |  |
| PerformanceRequirement | Clause 6.1.x.6.2.6 | Represents the performance requirements for ML model selection. |  |
| ReportingInformation | Clause 6.1.x.6.2.8 | Represents the reporting requirements for ML model selection. |  |
| TrainingRequirement | Clause 6.1.x.6.2.5 | Represents the training requirements for ML model selection. |  |

Table 6.1.x.6.1-2 specifies data types re-used by the AIMLES\_AssistedMLModelSelection API service.

Table 6.1.x.6.1-2: AIMLES\_AssistedMLModelSelection API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AimleClientId | Clause 6.1.2.6.3.2 | Represents unique identifier of a AIMLE client. |  |
| ClientDiscCriteria | Clause 6.2.2.6.2.2 | Represents the AIMLE Client selection criteria. |  |
| DataMgmtOp | Clause 6.1.2.6.3.3 | Represents the data management operation type. |  |
| DateTime | 3GPP TS 29.122 [2] | Represents a date and a time. |  |
| DurationSec | 3GPP TS 29.122 [2] | Unsigned integer identifying a period of time in units of seconds. |  |
| MlModelInfo | Clause 6.2.1.6.2.B | Represents the ML model Information. |  |
| MLModelTrainingInfo | Clause 6.2.1.6.2.9 | Represents the ML Model training information. |  |
| Uinteger | 3GPP TS 29.571 [15] | Represents an unsigned Integer. |  |

##### 6.1.x.6.2 Structured data types

6.1.x.6.2.1 Introduction

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

6.1.x.6.2.2 Type: AssistMLMdlSelSubsc

Table 6.1.x.6.2.2-1: Definition of type AssistMLMdlSelSubsc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| aimlProfile | AimlProfile | M | 1 | Contains the requirements for the ML model selection operation. |  |
| notifUri | Uri | O | 0..1 | Indicates the URI towards which the notification should be delivered. |  |
| repInfo | ReportingInformation | C | 0..1 | Contains the type of reporting that the subscription requires.  Shall be provided if the "notifUri" attribute is present. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Represents the supported features.  This attribute shall be provided when feature negotiation needs to take place. |  |

6.1.x.6.2.3 Type: AssistMLMdlSelNotif

Table 6.1.x.6.2.3-1: Definition of type AssistMLMdlSelNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| opStatus | DataMgmtOp | M | 1 | Contains the received data management operation type. |  |
| trainMLModel | MLModelTrainingInfo | M | 1 | Contains the result of the ML model training. |  |
| elapseTime | DurationSec | O | 0..1 | Contains the duration of elapsed time in seconds for the ML model selection operation. |  |
| timeStamp | DateTime | O | 0..1 | Contains the timestamp of the AIMLE assisted ML model selection notification. |  |

6.1.x.6.2.4 Type: AimlProfile

Table 6.1.x.6.2.4-1: Definition of type AimlProfile

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| candMLMdls | array(CandMLMdl) | M | 1..N | Contains the list of candidate ML models and initial model parameters for training. |  |
| mlMdlReq | MlModelInfo | O | 0..N | Contains the additional list of candidate ML models for training. |  |
| dataSetIds | array(string) | M | 1..N | Represents the list dataset identifiers. |  |
| trainReq | array(TrainingRequirement) | M | 1..N | Contains the parameters for training requirements. |  |
| clientList | array(AimleClientId) | C | 1..N | Contains the list of AIMLE client set identifier to train the ML model.  (NOTE 1) |  |
| clientSelCriteria | ClientDiscCriteria | C | 0..N | Contains the selection criteria for finding suitable AIMLE clients for training the ML model.  (NOTE 1) |  |
| clNumber | Uinteger | C | 0..1 | Represents the required number of the AIMLE Clients for training the ML model.  This attribute shall be provided if the "clientSelCriteria" attribute is present. |  |
| NOTE1: At least one of the information elements shall be provided. | | | | | |

6.1.x.6.2.5 Type: TrainingRequirement

Table 6.1.x.6.2.5-1: Definition of type TrainingRequirement

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| perfReq | array(PerformanceRequirement) | M | 1..N | Identifies the performance metrics to evaluate ML model training. |  |
| trainCount | Unteger | M | 1 | Contains number of training rounds for the ML training. |  |
| sampleCount | Unteger | M | 1 | Contains number of data samples for the ML training. |  |

6.1.x.6.2.6 Type: PerformanceRequirement

Table 6.1.x.6.2.6-1: Definition of type PerformanceRequirement

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| perfMetric | PerformanceMetric | M | 1 | Identifies the performance metrics to evaluate ML model training. |  |
| perfTarget | Uinteger | O | 0..1 | Indicates the target value acceptable performance is reached and training can be stopped.  Identifies an unsigned integer between 0 and 100 representing the target value. |  |

6.1.x.6.2.7 Type: AssistMLMdlSelSubscPatch

Table 6.1.x.6.2.7-1: Definition of type AssistMLMdlSelSubscPatch

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mlModelReq | MlModelInfo | O | 0..1 | Contains the additional list of candidate ML models for training. |  |
| trainReq | array(TrainingRequirement) | O | 0..N | Contains the parameters for training requirements. |  |
| notifUri | Uri | O | 0..1 | Indicates the URI towards which the notification should be delivered. |  |

6.1.x.6.2.8 Type: ReportingInformation

Table 6.1.x.6.2.8-1: Definition of type ReportingInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| notifMethod | NotificationMethod | O | 0..1 | Represents the type of notification moethod.  If "notifMethod" attribute is not supplied, the default value "ON\_EVENT\_DETECTION" applies. |  |
| jobPercentage | Uinteger | O | 0..1 | Represents the requirement job percentage completion.  Identifies an unsigned integer between 0 and 100 representing the percentage of accuracy.  Shall be provided if the notification method is set to "ON\_JOB\_COMPLETION". |  |
| timeWindow | TimeWindow | O | 0..1 | Identifies the starting and ending reporting time period for the event.  Shall be provided if the notification method is set to "PERIODIC". |  |

6.1.x.6.2.9 Type: CandMLMdl

Table 6.1.x.6.2.9-1: Definition of type CandMLMdl

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mlMdlId | string | M | 1 | Identifies the ML model to train. |  |
| mlMdlParam | string | M | 1 | Indicates the initial model parameters to train. |  |

##### 6.1.x.6.3 Simple data types and enumerations

6.1.x.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.x.6.3.2 Simple data types

The simple data types defined in table 6.1.x.6.3.2-1 shall be supported.

Table 6.1.x.6.3.2-1: Simple data types

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

6.1.x.6.3.3 Enumeration: PerformanceMetric

Table 6.1.x.6.3.3-1: Enumeration PerformanceMetric

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| ACCURACY | Indicates the performance metric is accuracy. |  |
| PRECISION | Indicates the performance metric is precision. |  |
| RECALL | Indicates the performance metric is recall. |  |
| MEAN\_SQUARED\_ERROR | Indicates the performance metric is mean squared error. |  |
| MEAN\_ABSOLUTE\_ERROR | Indicates the performance metric is mean absolute error. |  |

6.1.x.6.3.4 Enumeration: NotificationMethod

Table 6.1.x.6.3.4-1: Enumeration NotificationMethod

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| PERIODIC | The notification of the ML model status is periodically sent. |  |
| ON\_JOB\_COMPLETION | The notification is sent only after the entire ML model selection job is completed. |  |
| ON\_PCT\_COMPLETION | The notification is sent after the certain job percentage completion. |  |
| ON\_EVENT\_DETECTION | The notification is sent each time the event is detected. |  |

##### 6.1.x.6.4 Data types describing alternative data types or combinations of data types

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

##### 6.1.x.6.5 Binary data

6.1.x.6.5.1 Binary Data Types

Table 6.1.x.6.5.1-1: Binary Data Types

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

#### 6.1.x.7 Error Handling

##### 6.1.x.7.1 General

For the AIMLES\_AssistedMLModelSelection API, error handling shall be supported as specified in clause 6.7 of 3GPP TS 29.549 [14].

In addition, the requirements in the following clauses are applicable for the AIMLES\_AssistedMLModelSelection API.

##### 6.1.x.7.2 Protocol Errors

No specific protocol errors for the AIMLES\_AssistedMLModelSelection API are specified.

##### 6.1.x.7.3 Application Errors

The application errors defined for AIMLES\_AssistedMLModelSelection API are listed in table 6.1.x.7.3-1.

Table 6.1.x.7.3-1: Application errors

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

#### 6.1.x.8 Feature negotiation

The optional features in table 6.1.x.8-1 are defined for the AIMLES\_AssistedMLModelSelection API. They shall be negotiated using the extensibility mechanism defined clause 6.8 of 3GPP TS 29.549 [14].

Table 6.1.x.8-1: Supported Features

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

#### 6.1.x.9 Security

The provisions of clause 9 of 3GPP TS 29.549 [14] shall apply for the AIMLES\_AssistedMLModelSelection API.

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