**3GPP TSG CT WG3 Meeting #135 *C3-243153r1***

**Hyderabad, IN, 27 - 31 May, 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.575** | **CR** | **0083** | **rev** | **1** | **Current version:** | **18.5.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Support of ML Models update |
|  |  |
| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | eNA\_Ph3 |  | ***Date:*** | 2024-05-20 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | According to clause 10.3.2 of 23.288 and clause 4.3.2.1 of this specification, Nadrf\_MLModelManagement\_StorageRequest can be used to update ML models. |
|  |  |
| ***Summary of change:*** | To support updating ML Models:- 4.3.2.2.3(new) is added to introduce the ML models update procedure;- 5.2.3.3.3.2(new) is added to introduce PUT method.- OpenAPI file is upated accordingly.The missing P column in Table 5.2.3.3.3.1-3 is added. |
|  |  |
| ***Consequences if not approved:*** | Misalignment with stage2 requirement. |
|  |  |
| ***Clauses affected:*** | 4.3.2.2.3(new), 5.2.3.3.3.1, 5.2.3.3.3.2(new), A.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces backward compatible new features to the OpenAPI file for Nadrf\_MLModelManagement API. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

##### 4.3.2.2.3 Update Storage of ML model(s)

Figure 4.3.2.2.3-1 shows a scenario where the NF service consumer sends a request to the ADRF to update ML model(s).



Figure 4.3.2.2.3-1: NF service consumer requesting to update ML model(s)

The NF service consumer shall invoke the Nadrf\_MLModelManagement\_StorageRequest service operation to update ML model(s). The NF service consumer shall send an HTTP PUT request with "{apiRoot}/nadrf-mlmodelmanagement/<apiVersion>/mlmodel-store-records/{storeTransId}" as Resource URI representing an "Individual ADRF ML Model Store Record" resource, as shown in figure 4.3.2.2.3-1, step 1, to update that resource according to the information in the message body. The NadrfMLModelStoreRecord data structure provided in the request body shall include the same contents as described in clause 4.3.2.2.2.

Upon the reception of an HTTP PUT request with "{apiRoot}/nadrf-mlmodelmanagement/<apiVersion>/mlmodel-store-records/{storeTransId}" as Resource URI and NadrfMLModelStoreRecord data structure as request body, the ADRF shall:

- download the ML model(s) if needed;

- update the ML model store record;

and shall respond with:

a) HTTP "200 OK" status code with the message body containing a representation of updated ML model record, as shown in figure 4.3.2.2.3-1, step 2a. or

b) HTTP "204 No Content" status code, as shown in figure 4.3.2.2.3-1, step 2b.

If an error occurs when processing the HTTP PUT request, the ADRF shall send an HTTP error response as specified in clause 5.2.7.

If the ADRF determines the received HTTP PUT request needs to be redirected, the ADRF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [4].

\*\*\* 2nd Change \*\*\*

###### 5.2.3.3.3.1 DELETE

This method shall support the URI query parameters specified in table 5.2.3.3.3.1-1.

Table 5.2.3.3.3.1-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 5.2.3.3.3.1-2 and the response data structures and response codes specified in table 5.2.3.3.3.1-3.

Table 5.2.3.3.3.1-2: Data structures supported by the DELETE Request Body on this resource

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

Table 5.2.3.3.3.1-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response****codes** | **Description** |
| n/a |  |  | 204 No Content | The Individual ADRF ML Model Store Record resource was deleted successfully. |
| array(MLModelDelResult) | M | 1..N | 200 OK | Attempted to remove ML model(s) in the Individual ADRF ML Model Store Record resource. A representation of ML Model delete result information is returned.  |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during Individual ADRF ML Model Store Record deletion.(NOTE 2) |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during Individual ADRF ML Model Store Record deletion.(NOTE 2) |
| ProblemDetails | O | 0..1 | 404 Not Found | NOTE 3 |
| ProblemDetails | O | 0..1 | 500 Internal Server Error | NOTE 3 |
| NOTE 1: The mandatory HTTP error status code for the DELETE method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.NOTE 2: The RedirectResponse data structure may be provided by an SCP (cf. clause 6.10.9.1 of 3GPP TS 29.500 [4]).NOTE 3: Failure cases are described in clause 5.2.7.3. |

Table 5.2.3.3.3.1-4: 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 ADRF (service) instance towards which the request is redirected.For the case where the request is redirected to the same target via a different SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [4]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target ADRF (service) instance towards which the request is redirected. |

Table 5.2.3.3.3.1-5: 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 ADRF (service) instance towards which the request is redirected.For the case where the request is redirected to the same target via a different SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [4]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target ADRF (service) instance towards which the request is redirected. |

\*\*\* 3rd Change \*\*\*

###### 5.2.3.3.3.2 PUT

This method shall support the URI query parameters specified in table 5.2.3.3.3.2-1.

Table 5.2.3.3.3.2-1: 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 5.2.3.3.3.2-2 and the response data structures and response codes specified in table 5.2.3.3.3.2-3.

Table 5.2.3.3.3.2-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NadrfMLModelStoreRecord | M | 1 | Parameters to replace an individual ML Model Store Record. |

Table 5.2.3.3.3.2-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response****codes** | **Description** |
| NadrfMLModelStoreRecord | M | 1 | 200 OK | The Individual ADRF ML Model Store Record resource was modified successfully and a representation of that resource is returned. |
| n/a |  |  | 204 No Content | The Individual ADRF ML Model Store Record resource was modified successfully. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during Individual NWDAF Event Subscription Transfer modification.(NOTE 3) |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during Individual NWDAF Event Subscription Transfer modification.(NOTE 3) |
| ProblemDetails | O | 0..1 | 404 Not Found | (NOTE 2) |
| ProblemDetails | O | 0..1 | 500 Internal Server Error | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status code for the PUT 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 5.2.7.3.NOTE 3: The RedirectResponse data structure may be provided by an SCP (cf. clause 6.10.9.1 of 3GPP TS 29.500 [4]). |

\*\*\* 4th Change \*\*\*

# A.3 Nadrf\_MLModelManagement API

openapi: 3.0.0

info:

 version: 1.0.0-alpha.3

 title: Nadrf\_MLModelManagement

 description: |

 ADRF ML Model Management Service.

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externalDocs:

 description: 3GPP TS 29.575 V18.5.0; 5G System; Analytics Data Repository Services; Stage 3.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.575/'

#

servers:

 - url: '{apiRoot}/nadrf-mlmodelmanagement/v1'

 variables:

 apiRoot:

 default: https://example.com

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

#

security:

 - {}

 - oAuth2ClientCredentials:

 - nadrf-mlmodelmanagement

#

paths:

 /mlmodel-store-records:

 post:

 summary: Creates a new Individual ADRF ML Model Store Record resource.

 operationId: CreateADRFMLModelStoreRecord

 tags:

 - ADRF ML Model Store Records (Collection)

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 description: ADRF ML model store record to be stored.

 responses:

 '201':

 description: Successful creation of new Individual ADRF ML Model Store Record resource.

 headers:

 Location:

 description: >

 Contains the URI of the newly created resource, according to the structure

 {apiRoot}/nadrf-mlmodelmanagement/<apiVersion>/mlmodel-store-records/{storeTransId}

 required: true

 schema:

 type: string

 content:

 application/json:

 schema:

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

 '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:

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

 get:

 summary: Retrieves existing Individual ADRF ML Model Store Record.

 operationId: GetAdrfMLModelStoreRecord

 tags:

 - ADRF ML Model Store Records (Collection)

 parameters:

 - name: store-trans-id

 description: A storage transaction identifier of a ML model store record in ADRF.

 in: query

 required: false

 schema:

 type: string

 - name: modelUniqueIds

 description: Unique Model identifier of a ML model.

 in: query

 required: false

 schema:

 type: array

 items:

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

 responses:

 '200':

 description: ML model store records are returned.

 content:

 application/json:

 schema:

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

 '204':

 description: No matching ADRF ML Model were found.

 '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'

 '406':

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

 '429':

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

 '500':

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

 '502':

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

 '503':

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

 default:

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

 /mlmodel-store-records/{storeTransId}:

 delete:

 summary: Delete an existing Individual ADRF ML Model Store Record.

 operationId: DeleteADRFMLModelStoreRecord

 tags:

 - Individual ADRF ML Model Store Record (Document)

 parameters:

 - name: storeTransId

 in: path

 description: String identifying a ML Model Store Record in ADRF.

 required: true

 schema:

 type: string

 responses:

 '200':

 description: >

 Attempted to remove ML model(s) in the Individual ADRF ML Model Store Record resource.

 The result is returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 '204':

 description: >

 No Content. The Individual ADRF ML Model Store Record resource matching the

 storeTransId was deleted.

 '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'

 '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:

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

 put:

 summary: Update an existing Individual ADRF ML Model Store Record

 operationId: UpdateADRFMLModelStoreRecord

 tags:

 - Individual ADRF ML Model Store Record (Document)

 parameters:

 - name: storeTransId

 in: path

 description: String identifying a ML Model Store Record in ADRF.

 required: true

 schema:

 type: string

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '200':

 description: >

 The Individual ADRF ML Model Store Record resource was modified successfully

 and a representation of that resource is returned.

 content:

 application/json:

 schema:

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

 '204':

 description: The Individual ADRF ML Model Store Record resource was modified successfully.

 '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:

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

 /remove-stored-mlmodel:

 post:

 summary: Remove stored ML model based on unique ML model identifier.

 operationId: DeleteADRFMLModel

 tags:

 - ADRF Stored ML Model

 requestBody:

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 required: true

 responses:

 '200':

 description: >

 The ADRF ML model matching the provided unique ML model identifier

 was attempted to be deleted. The result is returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 '204':

 description: >

 No Content. The ML models matching all identifiers provided in the request body

 were deleted.

 '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:

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

#

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 nadrf-mlmodelmanagement: Access to the nadrf-mlmodelmanagement API

#

 schemas:

#

 NadrfMLModelStoreRecord:

 description: Represents an Individual ADRF ML Model Store Record.

 type: object

 allOf:

 - oneOf:

 - required: [nfInstanceId]

 - required: [nfSetId]

 - anyOf:

 - required: [mlModelInfo]

 - required: [mlModels]

 properties:

 nfInstanceId:

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

 nfSetId:

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

 mlModelInfo:

 type: array

 items:

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

 minItems: 1

 description: List of ML Model Information.

 mlModels:

 type: array

 items:

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

 minItems: 1

 description: Represents ML Model(s).

 modelStoreResult:

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

 suppFeat:

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

#

 MLModelInfo:

 description: Represents informatiom of the ML Model.

 type: object

 allOf:

 - required: [modelUniqueId]

 - required: [mlFileAddr]

 - required: [mlStorageSize]

 properties:

 modelUniqueId:

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

 mlFileAddr:

 $ref: 'TS29520\_Nnwdaf\_MLModelProvision.yaml#/components/schemas/MLModelAddr'

 mlStorageSize:

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

 allowConsumerList:

 type: array

 items:

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

 minItems: 1

 description: The allowed consumer list of the ML Model.

#

 AllowedConsumer:

 description: Represents informatiom of the allowed consumer list of the ML Model.

 type: object

 properties:

 nfInstanceId:

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

 nfSetId:

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

 oneOf:

 - required: [nfInstanceId]

 - required: [nfSetId]

#

 MLModelDelResult:

 description: Represents informatiom of the ML Model.

 type: object

 allOf:

 - required: [modelUniqueId]

 - required: [DeleteResult]

 properties:

 modelUniqueId:

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

 deleteResult:

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

#

 MLModel:

 description: Represents an ML Model.

 type: object

 allOf:

 - required: [modelUniqueId]

 - required: [mlModel]

 properties:

 modelUniqueId:

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

 mlModel:

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

#

 ModelStoreResult:

 description: Contains information about ML Model storage result.

 type: object

 allOf:

 - required: [modelUniqueId]

 - required: [storeResult]

 properties:

 modelUniqueId:

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

 storeResult:

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

#

# ENUMERATIONS DATA TYPES

#

 DeleteResult:

 anyOf:

 - type: string

 enum:

 - ML\_MODEL\_DELETED

 - ML\_MODEL\_NOT\_FOUND

 - ML\_MODEL\_FOUND\_BUT\_NOT\_DELETED

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the store result type.

 Possible values are:

 - ML\_MODEL\_DELETED: Indicates that the ML model was deleted in ADRF.

 - ML\_MODEL\_FILE\_ADDRESS\_NOT\_FOUND: Indicates that the ML model was not found in ADRF.

 - ML\_MODEL\_FOUND\_BUT\_NOT\_DELETED: Indicates that the ML model was found in ADRF but not deleted.

#

 StoreResult:

 anyOf:

 - type: string

 enum:

 - ML\_MODEL\_FILE\_STORED\_IN\_ADRF

 - ML\_MODEL\_FILE\_ADDRESS\_NOT\_FOUND

 - ML\_MODEL\_FILE\_DOWNLOAD\_FAILED

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the store result type.

 Possible values are:

 - ML\_MODEL\_FILE\_STORED\_IN\_ADRF: Indicates that the ML model was successfully stored in ADRF.

 - ML\_MODEL\_FILE\_ADDRESS\_NOT\_FOUND: Indicates that the ML model file address was not found.

 - ML\_MODEL\_FILE\_DOWNLOAD\_FAILED: Indicates that the download of the ML model file failed.

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