#### 3GPP TSG-S4 Ad hoc post Meeting #119-e *S4aI221366*

**Online, 27th May 2022–9th August 2022**

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| *CR-Form-v12.0* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** | **–** | **Current version:** |  |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** |  | | | | | | | | |
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| ***Source to WG:*** | , BBC, Huawei | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | |  |
|  |  | | | |  | |  | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | |  |
|  |  | | | | | | | | |
| ***Reason for change:*** | | Corrections are necessary to the API specifications of the *Data Reporting Provisioning Session* and *Data Reporting Configuration* resources.  Regarding the former, it is clearly stated in both clauses 4.2.3.2.4 and 6.3.2.1 that the Update operation (by the Provisioning AF of the Application Service Provider) on the DataReportingProvisioningSession resource is not allowed. However, clause 6.2.3.3.2 is inconsistent with those stated rules by permitting the use of either the PUT or PATCH method for modifying this resource.  Regarding the latter, clause 4.2.3.3.5 indicates that updating of the *Data Reporting Configuration* resource is permitted by use of either the PUT (complete replacement) or PATCH (partial replacement) method. That is reflected in the description of the resource standard methods of PUT vs. PATCH in clause 6.2.5.3.2. However, it would be clearer and better aligned with the nomenclature used in TS 29.122 and TS 29.522 by defining different data structures for the PUT vs. PATCH request bodies – i.e., by specifying the data type DataReportingConfiguration for the PUT method vs. the data type DataReportingConfigurationPatch for the PATCH method.  As alternative to the “200 OK” response (status) code, the “204 No Content” response code could also be returned by the Data Collection AF to the Provisioning AF as indication of successful update of the Data Reporting Configuration resource.  A new property *dataAccessProfileId* is added to the data model of the DataAccessProfile type in Table 6.3.2.3-1. The *dataAccessProfileId* might be used in support of integrity protection of the secure channel between the Data Collection AF and the Authorization AS. | | | | | | | |
|  | |  | | | | | | | |
| ***Summary of change:*** | | Corrections to the following clauses of TS 26.532:   * Clause 4.2.3.3.2: Correction of reference to definition of the DataAccessProfile data type associated with the *dataAccessProfiles* property of the Data Reporting Configuration resource, along with a simple editorial change. * Clause 6.2.1: Delete the operation name *UpdateSession* and associated HTTP method and description from Table 6.2.1-1. * Clause 6.2.3.3.2: 1) Change the clause title to “Ndcaf\_DataReportingProvisioning\_UpdateSession operation” with the description that neither the PUT or PATCH method shall be used, and delete all other existing contents of this clause. * Clause 6.2.5.3.2: 1) Change the title of Table 6.2.5.3.2-2 to “Data structures supported by the PUT request body on this resource”, 2) add a new Table 6.2.5.3.2.2a with the title “Data structures supported by the PATCH request body on this resource”, and define its data type as DataReportingConfigurationPatch along with the appropriate description for this data type, 3) modify the description of the DataReportingConfiguration data type in, and add a new row entry for the response code “204 No Content” to Table 6.2.5.3.2-4, 4) add a new Table 6.2.5.3.2-4a “Data structures supported by the PATCH response body on this resource”, and 5) revise the title of Table 6.2.5.3.2-5 to indicate that the supported headers pertain also to the 204 response code. * Clause 6.3: 1) Add a new data type *DataReportingConfigurationPatch* in Table 6.3.1-1, 2) add a new subclause 6.3.2.2A “DataReportingConfigurationPatch resource type” and definition of this resource type in Table 6.3.2.2A-1, 3) add the property dataAccessProfileId to Table 6.3.2.3-1, and 4) minor typo correction on title of clause 6.3.3. * Clause B.3: OpenAPI additions and bug fixes. * Clause B.4: OpenAPI bug fixes. | | | | | | | |
|  | |  | | | | | | | |
| ***Consequences if not approved:*** | | Inconsistent and incorrect specification. | | | | | | | |
| ***Q*** | |  | | | | | | | |
| ***Clauses affected:*** | | 4.2.3.3.2, 6.2.1, 6.2.3.3.2, 6.2.5.3.2, 6.3, B.3, B.4 | | | | | | | |
|  | |  | | | | | | | |
|  | | **Y** | **N** |  | | | |  | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 29.522 | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | |
|  | |  | | | | | | | |
| ***Other comments:*** | |  | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

FIRST CHANGE

##### 4.2.3.3.2 Data Reporting Configuration entity

A given instance of a Data Reporting Configuration resource is identified by the dataReportingConfigurationId property of the DataReportingConfiguration resource, and applies to one type of data collection client. The properties of this resource, as defined in the following clauses, pertain to UE data collection and reporting by different data collection clients to the Data Collection AF, and control of access by different consumer entities to event data exposed by the Data Collection AF.

The type of a Data Reporting Configuration resource is identified by the dataCollectionClientType property of the DataReportingConfiguration resource as specified in clause 6.3.2.2.

NOTE 1: The *dataCollectionClientType* property corresponds to the *Data collection client type* parameter in table 4.6.2-1 of TS 26.531 [7].

The Data Reporting Configuration resource shall include one or more sets of instructions for data collection clients on the collection and reporting of UE data to the Data Collection AF, and may contain one or more sets of data exposure restrictions, expressed as Data Access Profiles (see clause 6.3.2.3), each one determining the level of access by event consumer entities to the event-related UE data reported to the Data Collection AF. A Data Access Profile defines the granularity of access to a particular subset of collected event data parameters for the Event ID of concern. This granularity is expressed as a set of data aggregation functions along the time, user, and location dimensions. The subset of parameters to be exposed is identified using a controlled vocabulary specific to the Event ID. An authorization procedure is in place to determine which Data Access Profile is granted to a particular event consumer entity.

NOTE 2: The process of matching event consumers to Data Access Profiles is implementation-specific and therefore beyond the scope of the present document.

NEXT CHANGE

## 6.2 Resources

### 6.2.1 Resource structure

Figure 6.2.1-1 depicts the URL path model for the Ndcaf\_DataReportingProvisioning service.



Figure 6.2.1‑1: URL path model of Ndcaf\_DataReportingProvisioning service API

Table 6.2.1-1 provides an overview of the resources and applicable HTTP methods.

Table 6.2.1‑1: Resources and methods overview

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service name | Operation name | Resource name | Resource path suffix | HTTP method | Description |
| Ndcaf\_DataReporting‌Provisioning | CreateSession | Data Reporting Provisioning Sessions collection | /sessions | POST | Provisioning AF establishes a Data Reporting Provisioning Session resource at the Data Collection AF. |
|  | RetrieveSession | Data Reporting Provisioning Session | /sessions/{sessionId} | GET | Retrieves an existing Data Reporting Provisioning Session resource from the Data Collection AF. |
|  | DestroySession | DELETE | Destroys a Data Reporting Provisioning Session resource. |
|  | CreateConfiguration | Data Reporting Configurations collection | /sessions/‌*{sessionId}*/‌configurations | POST | Creates a Data Reporting Configuration resource at the Data Collection AF. |
|  | RetrieveConfiguration | Data Reporting Configuration | /sessions/‌*{sessionId}*/‌configurations/‌*{configurationId}* | GET | Retrieves an existing Data Reporting Configuration resource from the Data Collection AF. |
|  | UpdateConfiguration | PUT,  PATCH | Modifies an existing Data Reporting Configuration resource at the Data Collection AF. |
|  | DestroyConfiguration | DELETE | Destroys a Data Reporting Configuration resource at the Data Collection AF. |

NEXT CHANGE

##### 6.2.3.3.2 Ndcaf\_DataReportingProvisioning\_UpdateSession operation

The PUT or PATCH method shall not be used as the update operation is not permitted on the Data Reporting Provisioning Session resource.























NEXT CHANGE

##### 6.2.5.3.2 Ndcaf\_DataReportingProvisioning\_UpdateConfiguration operation using PUT or PATCH method

This method shall support the URL query parameters specified in table 6.2.5.3.2-1.

Table 6.2.5.3.2-1: URL query parameters supported by the PUT or PATCH method on this resource

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

The PUT and PATCH methods shall support the request data structures specified in tables 6.2.5.3.2-2 and 6.2.5.3.2-2a, respectively, the request headers specified in 6.2.5.3.2-3, and the response data structures and response codes specified in tables 6.2.5.3.2-4 and 6.2.5.3.2-5, respectively.

Table 6.2.5.3.2-2: Data structures supported by the PUT request body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DataReportingConfiguration | M | 1 | Parameters to replace an existing Data Reporting Configuration resource. |

Table 6.2.5.3.2-2a: Data structures supported by the PATCH request body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| DataReportingConfigurationPatch | M | 1 | Parameters to modify an existing Data Reporting Configuration resource. |

Table 6.2.5.3.2-3: Headers supported for PUT or PATCH requests on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HTTP request header | Data type | P | Cardinality | Description |
| Authorization | string | M | 1 | For authentication of the Provisioning AF (see NOTE). |
| Origin | string | O | 0..1 | Indicates the origin of the requester. |
| NOTE : If OAuth 2.0 authorization is used the value is *Bearer* followed by a string representing the access token, see section 2.1 RFC 6750 [8] | | | | |

Table 6.2.5.3.2-4: Data structures supported by the PUT or PATCH response body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| DataReportingConfiguration | M | 1 | 200 OK | Confirmation of successful replacement or modification of a Data Reporting Configuration resource, along with a representation of the status of the update operation, carried in the response body, is returned by the Data Collection AF. |
| n/a |  | 0 | 204 No Content | Confirmation of successful replacement or modification of a Data Reporting Configuration resource is returned by the Data Collection AF, without an associated response body. |
| ProblemDetails | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during a Data Reporting Configuration update operation. The response shall include a Location header field containing an alternative URL of the resource located in another Data Collection AF (service) instance.  Applicable if the feature "ES3XX" (Extended Support of HTTP 307/308 redirection as defined in TS 29.502 [11]) is supported. |
| ProblemDetails | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during a Data Reporting Configuration update operation. The response shall include a Location header field containing an alternative URL of the resource located in another Data Collection AF (service) instance.  Applicable if the feature "ES3XX" is supported. |
| ProblemDetails | O | 0..1 | 404 Not Found | This Data Reporting Configuration resource does not exist (see NOTE 2). |
| NOTE 1: The mandatory HTTP error status codes for the PUT and PATCH methods listed in table 5.2.7.1-1 of TS 29.500 [9] also apply.  NOTE 2: Failure cases are described in clause 6.4. | | | | |

Table 6.2.5.3.2-5: Headers supported by the 200 or 204 response code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HTTP response header | Data type | P | Cardinality | Description |
| Access-Control-Allow-Origin | string | O | 0..1 | Part of CORS [10]. Supplied if the request included the Origin header. |
| Access-Control-Allow-Methods | string | O | 0..1 | Part of CORS [10]. Supplied if the request included the Origin header.  Valid values: POST, PUT, DELETE. |
| Access-Control-Expose-Headers | string | O | 0..1 | Part of CORS [10]. Supplied if the request included the Origin header.  Valid values: Location. |

(SNIPPED)

NEXT CHANGE

## 6.3 Data model

### 6.3.1 General

Table 6.3.1-1 specifies the data types used by the Ndcaf\_DataReportingProvisioning service operations.

Table 6.3.1-1: Data types specific to Ndcaf\_DataReportingProvisioning service operations

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| DataReportingProvisioningSession | 6.3.2.1 | A session provisioned in the Data Collection AF for the purpose of collecting, reporting and exposing UE data for a particular type of Event. |
| DataReportingConfiguration | 6.3.2.2 | The provisioned configuration for one type of data collection client within the scope of a Data Reporting Provisioning Session. |
| DataReportingConfigurationPatch | 6.3.2.2A | Parameters to be modified in an existing provisioned configuration for one type of data collection client within the scope of a Data Reporting Provisioning Session. |

(SNIPPED)

#### 6.3.2.2 DataReportingConfiguration resource type

Table 6.3.2.2-1: Definition of DataReportingConfiguration resource type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Property name | Data type | Cardinality | Usage | Description |
| dataReportingConfigurationId | ResourceId | 1..1 | C: R  U: – | A unique identifier for this Data Reporting Configuration. |
| dataCollectionClientType | DataCollection‌Client‌Type | 1..1 | C: RW  U: – | The type of data collection client to which this Data Reporting Configuration pertains (see clause 5.4.3.1). |
| authorizationURL | Url | 0..1 | C: RW  U: RW | A URL that may be used to authorize the consumer entity prior to a data reporting subscription. |
| dataAccessProfiles | Array(Data‌Access‌Profile) | 1..1 | C: RW  U: RW | One or more Data Access Profile definitions, each describing a set of data processing instructions, applied by the Data Collection AF when exposing events. |

#### 6.3.2.2A DataReportingConfigurationPatch resource type

Table 6.3.2.2A-1: Definition of DataReportingConfigurationPatch resource type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Property name | Data type | Cardinality | Usage | Description |
| authorizationURL | Url | 0..1 | C: RW  U: RW | A URL that may be used to authorize the consumer entity prior to a data reporting subscription. |
| dataAccessProfiles | Array(Data‌Access‌Profile) | 0..1 | C: RW  U: RW | One or more Data Access Profile definitions, each describing a set of data processing instructions, applied by the Data Collection AF when exposing events. |

#### 6.3.2.3 DataAccessProfile type

Table 6.3.2.3-1 Definition of DataAccessProfile type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Property name | Data type | Cardinality | Usage | Description |
| dataAccessProfileId | string | 1..1 | C: RW  U: RW | A unique identifier for this Data Access Profile. |
| *targetEventConsumer‌Types* | Array(Event‌Consumer‌Type) | 1..1 | C:RW  U:RW | The set of Event consumer types (see clause 6.3.3.1) to which this Data Access Profile is targeted.  If the set is empty, this Data Access Profile applies to all types of Event consumer. |
| parameters | Array(String) | 1..1 | C:RW  U:RW | The set of UE data parameters to be collected by the data collection client, and for which the restrictions specified by this Data Access Profile apply.  The parameters are uniquely identified by a controlled vocabulary specific to the Event ID indicated by the parent Data Reporting Provisioning Session.  If the set is empty, the restrictions apply to all parameters for the Event ID of the parent Data Reporting Provisioning Session. |
| timeAccessRestrictions | Object | 0..1 | C:RW  U:RW | Configuration for access restrictions along the time dimension. |
| duration | DurationSec | 1..1 | C:RW  U:RW | The period of time over which access is to be aggregated. |
| aggregationFunctions | Array(Data‌Aggregation‌Function‌Type) | 1..1 | C:RW  U:RW | An ordered, non-empty list of aggregation functions (see clause 6.3.3.2) applied to the event data prior to exposure to event consumers. |
| userAccessRestrictions | Object | 0..1 | C:RW  U:RW | Configuration for access restrictions along the user dimension. |
| groupIds | Array(GroupId) | 1..1 | C:RW  U:RW | Identifiers of the UE groups over which access is to be aggregated. |
| userIds | Array(Gpsi) or Array(Supi) | 1..1 | C:RW  U:RW | Identifiers of the UEs comprising a group over which access is to be aggregated. |
| aggregationFunctions | Array(Data‌Aggregation‌Function‌Type) | 1..1 | C:RW  U:RW | An ordered, non-empty list of aggregation functions (see clause 6.3.3.2) applied to the event data prior to exposure to event consumers. |
| locationAccessRestrictions | Object | 0..1 | C:RW  U:RW | Configuration for access restrictions along the location dimension |
| locationAreas | Array(Location‌Area‌5G) | 1..1 | C:RW  U:RW | Identifiers of geographical areas over which access is to be aggregated. Event data is grouped by the location of the UE during the data collection. |
| aggregationFunctions | Array(Data‌Aggregation‌Function‌Type) | 1..1 | C:RW  U:RW | An ordered, non-empty list of aggregation functions (see clause 6.3.3.2) applied to the event data prior to exposure to event consumers. |
| NOTE: Data types DurationSec, GroupId, Gpsi, Supi and LocationArea5G are defined in TS29.571[13]. | | | | |

(NO FURTHER CHANGES TO THIS CLAUSE)

NEXT CHANGE

# B.3 Ndcaf\_DataReportingProvisioning service API

|  |
| --- |
| openapi: 3.0.0  info:  title: Ndcaf\_DataReportingProvisioning  version: 1.1.0  description: |  Data Collection AF: Provisioning Sessions API  © 2022, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).  All rights reserved.  tags:  - name: Ndcaf\_DataReportingProvisioning  description: 'Data Collection and Reporting: Application Service Provider Provisioning (R1) APIs'  externalDocs:  description: 'TS 26.532 V17.1.0; Data Collection and Reporting; Protocols and Formats'  url: 'https://www.3gpp.org/ftp/Specs/archive/26\_series/26.532/'  servers:  - url: '{apiRoot}/3gpp-ndcaf\_data-reporting-provisioning/v1'  variables:  apiRoot:  default: https://example.com  description: See 3GPP TS 29.532 clause 5.2.  security:  - {}  - oAuth2ClientCredentials: []  paths:  /sessions:  post:  operationId: CreateSession  summary: 'Create a new Data Reporting Provisioning Session'  requestBody:  required: true  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingProvisioningSession'  responses:  '201':  description: 'Data Reporting Provisioning Session successfully created'  headers:  Location:  description: 'URL including the resource identifier of the newly created Data Reporting Provisioning Session.'  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/Url'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingProvisioningSession'  '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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  /sessions/{sessionId}:  parameters:  - name: sessionId  in: path  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  description: 'The resource identifier of an existing Data Reporting Provisioning Session.'  get:  operationId: RetrieveSession  summary: 'Retrieve an existing Data Reporting Provisioning Session'  responses:  '200':  description: 'Representation of Data Reporting Provisioning Session is returned'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingProvisioningSession'  '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'  '406':  $ref: 'TS29571\_CommonData.yaml#/components/responses/406'  '429':  $ref: 'TS29571\_CommonData.yaml#/components/responses/429'  '500':  $ref: 'TS29571\_CommonData.yaml#/components/responses/500'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  delete:  operationId: DestroySession  summary: 'Destroy an existing Data Reporting Provisioning Session'  responses:  '204':  description: 'Data Reporting Provisioning Session resource successfully destroyed'  # No Content  '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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  /sessions/{sessionId}/configurations/{configurationId}:  parameters:  - name: sessionId  in: path  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  description: 'The resource identifier of an existing Data Reporting Provisioning Session.'  - name: configurationId  in: path  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  description: 'The resource identifier of an existing Data Reporting Configuration.'  post:  operationId: CreateConfiguration  summary: 'Create a new Data Reporting Configuration subresource within the scope of an existing Data Reporting Provisioning Session'  requestBody:  required: true  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingConfiguration'  responses:  '201':  description: 'Data Reporting Configuration successfully created'  headers:  Location:  description: 'URL including the resource identifier of the newly created Data Reporting Configuration.'  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/Url'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingConfiguration'  '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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  get:  operationId: RetrieveConfiguration  summary: 'Retrieve an existing Data Reporting Configuration'  responses:  '200':  description: 'Representation of Data Reporting Configuration is returned'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingConfiguration'  '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'  '406':  $ref: 'TS29571\_CommonData.yaml#/components/responses/406'  '429':  $ref: 'TS29571\_CommonData.yaml#/components/responses/429'  '500':  $ref: 'TS29571\_CommonData.yaml#/components/responses/500'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  put:  operationId: ReplaceConfiguration  summary: 'Replace an existing Data Reporting Configuration subresource'  requestBody:  required: true  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingConfiguration'  responses:  '200':  description: 'Data Reporting Configuration successfully replaced and updated resource representation is returned'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingConfiguration'  '204':  description: 'Data Reporting Configuration successfully replaced'  # No Content.  '307':  $ref: 'TS29122\_CommonData.yaml#/components/responses/307'  '308':  $ref: 'TS29122\_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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  patch:  operationId: ModifyConfiguration  summary: 'Modify an existing Data Reporting Configuration subresource'  requestBody:  required: true  content:  application/merge-patch+json:  schema:  $ref: '#/components/schemas/DataReportingConfigurationPatch'  responses:  '200':  description: 'Data Reporting Configuration successfully replaced and updated resource representation is returned'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingConfiguration'  '204':  description: 'Data Reporting Configuration successfully replaced'  # No Content.  '307':  $ref: 'TS29122\_CommonData.yaml#/components/responses/307'  '308':  $ref: 'TS29122\_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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  delete:  operationId: DestroyConfiguration  summary: 'Destroy an existing Data Reporting Configuration'  responses:  '204':  description: 'Data Reporting Configuration resource successfully destroyed'  # No Content  '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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  components:  securitySchemes:  oAuth2ClientCredentials:  type: oauth2  flows:  clientCredentials:  tokenUrl: '{tokenUri}'  scopes: {}  description: >  For a trusted Provisioning AF, 'ndcaf-datareportingprovisioning' shall be used  as 'scopes' and '{nrfApiRoot}/oauth2/token' shall be used as 'tokenUri'.  schemas:  DataReportingProvisioningSession:  description: "A representation of a Data Reporting Provisioning Session."  type: object  properties:  provisioningSessionId:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  aspId:  $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/AspId'  externalApplicationId:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/ApplicationId'  internalApplicationId:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/ApplicationId'  eventId:  $ref: 'TS29517\_Naf\_EventExposure.yaml#/components/schemas/AfEvent'  dataReportingConfigurationIds:  type: array  items:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  minItems: 0  required:  - provisioningSessionId  - aspId  - externalApplicationId  - eventId  - dataReportingConfigurationIds  DataReportingConfiguration:  description: "A Data Reporting Configuration subresource."  type: object  properties:  dataReportingConfigurationId:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  dataCollectionClientType:  $ref: 'TS26532\_CommonData.yaml#/components/schemas/DataCollectionClientType'  authorizationURL:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/Url'  dataAccessProfiles:  type: array  items:  $ref: '#/components/schemas/DataAccessProfile'  minItems: 0  required:  - dataReportingConfigurationId  - dataCollectionClientType  - dataAccessProfiles  DataReportingConfigurationPatch:  description: "A JSON patch for a Data Reporting Configuration."  type: object  properties:  authorizationURL:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/Url'  dataAccessProfiles:  type: array  items:  $ref: '#/components/schemas/DataAccessProfile'  minItems: 0  DataAccessProfile:  description: "A data access profile."  type: object  properties:  dataAccessProfileId:  type: string  targetEventConsumerTypes:  type: array  items:  $ref: '#/components/schemas/EventConsumerType'  minItems: 0  uniqueItems: true  parameters:  type: array  items:  type: string  minItems: 0  uniqueItems: true  timeAccessRestrictions:  type: object  properties:  duration:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'  aggregationFunctions:  type: array  items:  $ref: '#/components/schemas/DataAggregationFunctionType'  minItems: 0  uniqueItems: true  required:  - duration  - aggregationFunctions  userAccessRestrictions:  type: object  properties:  groupIds:  type: array  items:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/GroupId'  minItems: 0  uniqueItems: true  userIds:  type: array  items:  anyOf:  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'  minItems: 0  uniqueItems: true  aggregationFunctions:  type: array  items:  $ref: '#/components/schemas/DataAggregationFunctionType'  minItems: 0  uniqueItems: true  required:  - groupIds  - userIds  - aggregationFunctions  locationAccessRestrictions:  type: object  properties:  locationAreas:  type: array  items:  $ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'  minItems: 1  uniqueItems: true  aggregationFunctions:  type: array  items:  $ref: '#/components/schemas/DataAggregationFunctionType'  minItems: 0  uniqueItems: true  required:  - locationAreas  - aggregationFunctions  required:  - dataAccessProfileId  - targetEventConsumerTypes  - parameters  EventConsumerType:  description: "The type of event consumer."  anyOf:  - type: string  enum: [NWDAF, EVENT\_CONSUMER\_AF, NEF]  - 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.  DataAggregationFunctionType:  description: "The type of data aggregation function."  anyOf:  - type: string  enum: ["NULL", COUNT, MEAN, MAXIMUM, MINIMUM, SUM]  - 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. |

NEXT CHANGE

# B.4 Ndcaf\_DataReporting service API

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| openapi: 3.0.0  info:  title: Ndcaf\_DataReporting  version: 1.1.0  description: |  Data Collection AF: Data Collection and Reporting Configuration API and Data Reporting API  © 2022, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).  All rights reserved.  tags:  - name: Ndcaf\_DataReporting  description: 'Data Collection and Reporting: Client Configuration and Data Reporting (R2/R3/R4) APIs'  externalDocs:  description: 'TS 26.532 V17.1.0; Data Collection and Reporting; Protocols and Formats'  url: 'https://www.3gpp.org/ftp/Specs/archive/26\_series/26.532/'  servers:  - url: '{apiRoot}/3gpp-ndcaf\_data-reporting/v1'  variables:  apiRoot:  default: https://example.com  description: See 3GPP TS 29.532 clause 5.2.  security:  - {}  - oAuth2ClientCredentials: []  paths:  /sessions:  post:  operationId: CreateSession  summary: 'Create a new Data Reporting Session'  requestBody:  required: true  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingSession'  responses:  '201':  description: 'Data Reporting Session successfully created'  headers:  Location:  description: 'URL including the resource identifier of the newly created Data Reporting Session.'  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/Url'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingSession'  '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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  /sessions/{sessionId}:  parameters:  - name: sessionId  in: path  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  description: 'The resource identifier of an existing Data Reporting Session.'  get:  operationId: RetrieveSession  summary: 'Retrieve an existing Data Reporting Session'  responses:  '200':  description: 'Representation of Data Reporting Session is returned'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingSession'  '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'  '406':  $ref: 'TS29571\_CommonData.yaml#/components/responses/406'  '429':  $ref: 'TS29571\_CommonData.yaml#/components/responses/429'  '500':  $ref: 'TS29571\_CommonData.yaml#/components/responses/500'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  delete:  operationId: DestroySession  summary: 'Destroy an existing Data Reporting Session'  responses:  '204':  description: 'Data Reporting Session resource successfully destroyed'  # No Content  '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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  /sessions/{sessionId}/report:  parameters:  - name: sessionId  in: path  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  description: 'The resource identifier of an existing Data Reporting Session.'  post:  operationId: Report  summary: 'Report UE data in the context of an existing Data Reporting Session'  requestBody:  required: true  content:  application/json:  schema:  $ref: '#/components/schemas/DataReport'  responses:  '200':  description: 'Data Report accepted and updated Data Reporting Session is returned'  headers:  Location:  description: 'URL including the resource identifier of the returned Data Reporting Session.'  required: true  schema:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/Url'  content:  application/json:  schema:  $ref: '#/components/schemas/DataReportingSession'  '204':  description: 'Data Report accepted'  # No Content  '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'  '503':  $ref: 'TS29571\_CommonData.yaml#/components/responses/503'  default:  $ref: 'TS29571\_CommonData.yaml#/components/responses/default'  components:  securitySchemes:  oAuth2ClientCredentials:  type: oauth2  flows:  clientCredentials:  tokenUrl: '{tokenUri}'  scopes: {}  description: >  For a trusted data collection client, 'ndcaf-datareporting' shall be used  as 'scopes' and '{nrfApiRoot}/oauth2/token' shall be used as 'tokenUri'.  schemas:  DataReportingSession:  description: "A representation of a Data Reporting Session."  type: object  properties:  sessionId:  $ref: 'TS26512\_CommonData.yaml#/components/schemas/ResourceId'  validUntil:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  externalApplicationId:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/ApplicationId'  supportedDomains:  type: array  items:  $ref: '#/components/schemas/DataDomain'  minItems: 0  reportingConditions:  type: object  # Check that the following is the correct syntax to constrain the type of the dictionary keys  properties:  default:  $ref: '#/components/schemas/DataDomain'  required:  - default  additionalProperties:  $ref: '#/components/schemas/ReportingCondition'  required:  - externalApplicationId  - supportedDomains  ReportingCondition:  description: "A condition that triggers data reporting by a data collection client to the Data Collection AF."  type: object  properties:  type:  $ref: '#/components/schemas/ReportingConditionType'  period:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'  parameter:  type: string  threshold:  anyOf:  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Double'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Float'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Int32'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Int64'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint16'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'  - $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uinteger'  reportWhenBelow:  type: boolean  eventTrigger:  $ref: '#/components/schemas/ReportingEventTrigger'  required:  - type  DataReport:  description: "A data report sent by a data collection client to the Data Collection AF."  type: object  properties:  externalApplicationId:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/ApplicationId'  serviceExperienceRecords:  type: array  items:  $ref: '#/components/schemas/ServiceExperienceRecord'  minItems: 1  locationRecords:  type: array  items:  $ref: '#/components/schemas/LocationRecord'  minItems: 1  communicationRecords:  type: array  items:  $ref: '#/components/schemas/CommunicationRecord'  minItems: 1  performanceDataRecords:  type: array  items:  $ref: '#/components/schemas/PerformanceDataRecord'  minItems: 1  applicationSpecificRecords:  type: array  items:  $ref: '#/components/schemas/ApplicationSpecificRecord'  minItems: 1  tripPlanRecords:  type: array  items:  $ref: '#/components/schemas/TripPlanRecord'  minItems: 1  mediaStreamingAccessRecords:  type: array  items:  $ref: 'TS26512\_R4\_DataReporting.yaml#/components/schemas/MediaStreamingAccessRecord'  minItems: 1  required:  - externalApplicationId  DataDomain:  description: "A data reporting domain."  anyOf:  - type: string  enum: [SERVICE\_EXPERIENCE, LOCATION, COMMUNICATION, PERFORMANCE, APPLICATION\_SPECIFIC, MS\_ACCESS\_ACTIVITY, PLANNED\_TRIPS]  - 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.  ReportingConditionType:  description: "The type of condition that triggers reporting by a data collection client to the Data Collection AF."  anyOf:  - type: string  enum: [INTERVAL, THRESHOLD, EVENT]  - 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.  ReportingEventTrigger:  description: "The type of event that triggers reporting by a data collection client to the Data Collection AF."  anyOf:  - type: string  enum: [LOCATION, DESTINATION]  - 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.  BaseRecord:  type: object  properties:  timestamp:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  required:  - timestamp  ServiceExperienceRecord:  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  serviceExperienceInfos:  $ref: '#/components/schemas/PerFlowServiceExperienceInfo'  required:  - serviceExperienceInfos    PerFlowServiceExperienceInfo:  type: object  properties:  serviceExperience:  $ref: 'TS29517\_Naf\_EventExposure.yaml#/components/schemas/SvcExperience'  timeInterval:  $ref: 'TS29122\_CommonData.yaml#/components/schemas/TimeWindow'  remoteEndpoint:  $ref: 'TS29517\_Naf\_EventExposure.yaml#/components/schemas/AddrFqdn'  required:  - serviceExperience  - timeInterval  - remoteEndpoint  LocationRecord:  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  location:  $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocationData'  required:  - location    CommunicationRecord:  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  timeInterval:  $ref: 'TS29122\_CommonData.yaml#/components/schemas/TimeWindow'  uplinkVolume:  $ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'  downlinkVolume:  $ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'  required:  - timeInterval    PerformanceDataRecord:  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  timeInterval:  $ref: 'TS29122\_CommonData.yaml#/components/schemas/TimeWindow'  location:  $ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'  remoteEndpoint:  $ref: 'TS29517\_Naf\_EventExposure.yaml#/components/schemas/AddrFqdn'  packetDelayBudget:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/PacketDelBudget'  packetLossRate:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/PacketLossRate'  uplinkThroughput:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/BitRate'  downlinkThrougput:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/BitRate'  required:  - timeInterval    ApplicationSpecificRecord:  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  recordType:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'  recordContainer:  {}  # (Syntax determined by recordType.)  required:  - recordType  - recordContainer    TripPlanRecord:  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  startingPoint:  $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocationData'  waypoints:  type: array  items:  $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocationData'  minItems: 1  destination:  $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocationData'  estimatedAverageSpeed:  $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/HorizontalSpeed'  estimatedArrivalTime:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  required:  - startingPoint  - destination |

END OF CHANGES