**3GPP TSG- Meeting #**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **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 |  | Radio Access Network |  | Core Network |  |

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| ***Title:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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 can be 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Fulfill objective 12 of the WID. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add data reporting for ANBR-based network assistance. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | An objective of the work item is not fulfilled. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.3.2.3, 7.3.3.1, B.4. | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 26.512 CR 0040 | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev -: Initial version for MBS ad hocs on 27th July and 10th August.  Rev 1: Revision for SA4 #125. | | | | | | | | |

#### 7.3.2.3 DataReport type

Table 7.3.2.3-1: Definition of DataReport type

|  |  |  |  |
| --- | --- | --- | --- |
| Property name | Data type | Cardinality | Description |
| externalApplicationId | ApplicationID | 1 | External application identifier. |
| serviceExperienceRecords | array(ServiceExperienceRecord) | 0..1 (see NOTE) | See clause A.2. |
| locationRecords | array(LocationRecord) | See clause A.3. |
| communicationRecords | array(CommunicationRecord) | See clause A.4. |
| performanceDataRecords | array(PerformanceDataRecord) | See clause A.5. |
| applicationSpecificRecords | array(ApplicationSpecificRecord) | See clause A.6. |
| tripPlanRecords | array(TripPlanRecord) | See clause A.7. |
| mediaStreaming‌Access‌Records | array(MediaStreaming‌AccessRecord) | See TS 26.512 [13] clause 17.2. |
| aNBR‌NetworkAssistance‌Invocation‌Records | array(NetworkAssistanceInvocationRecord) | See TS 26.512 [13] clause 17A.2. |
| NOTE: Exactly one of these properties must be present in a DataReport. | | | |

### 7.3.3 Simple data types and enumerations

#### 7.3.3.1 DataDomain enumeration

Table 7.3.3.1-1: DataDomain enumeration

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability (refer to Table 7.3.2.3-1) |
| SERVICE\_EXPERIENCE | Service Experience data. | serviceExperienceRecords |
| LOCATION | Location data. | locationRecords |
| COMMUNICATION | Communication data. | communicationRecords |
| PERFORMANCE | Performance data. | performanceDataRecords |
| APPLICATION\_SPECIFIC | Combination of QoE metrics and application service-specific data. | applicationSpecificRecords |
| MS\_ANBR\_NETWORK\_ASSISTANCE | ANBR-based Network Assistance invocation data. | aNBRNetworkAssistanceInvocationRecords |
| MS\_ACCESS\_ACTIVITY | 5GMS access activity data. | mediaStreamingAccessRecords |
| PLANNED\_TRIPS | Data related to planned trips. | tripPlanRecords |

# B.4 Ndcaf\_DataReporting service API

For the purpose of referencing entities defined in this clause, it shall be assumed that the OpenAPI definitions below are contained in a physical file named "TS26532\_Ndcaf\_DataReporting.yaml".

|  |
| --- |
| openapi: 3.0.0  info:  title: Ndcaf\_DataReporting  version: 1.2.1  description: |  Data Collection AF: Data Collection and Reporting Configuration API and Data Reporting API  © 2023, 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 V17.3.0; 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  samplingRules:  type: array  items:  type: object  required:  - dataDomain  - rules  properties:  dataDomain:  $ref: '#/components/schemas/DataDomain'  rules:  type: array  items:  $ref: 'TS26532\_CommonData.yaml#/components/schemas/DataSamplingRule'  minItems: 0  reportingConditions:  type: array  items:  type: object  required:  - dataDomain  - conditions  properties:  dataDomain:  $ref: '#/components/schemas/DataDomain'  conditions:  type: array  items:  $ref: '#/components/schemas/ReportingCondition'  minItems: 0  reportingRules:  type: array  items:  type: object  required:  - dataDomain  - rules  properties:  dataDomain:  $ref: '#/components/schemas/DataDomain'  rules:  type: array  items:  $ref: 'TS26532\_CommonData.yaml#/components/schemas/DataReportingRule'  minItems: 0  required:  - externalApplicationId  - supportedDomains  - reportingConditions  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  aNBRNetworkAssistanceInvocationRecords:  type: array  items:  $ref: 'TS26512\_R2\_DataReporting.yaml#/components/schemas/ANBRNetworkAssistanceInvocationRecord'  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\_ANBR\_NETWORK\_ASSISTANCE, 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:  description: "Abstract base data type for UE data reporting records."  type: object  properties:  timestamp:  $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'  required:  - timestamp  ServiceExperienceRecord:  description: "A data reporting record for UE service experience."  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  serviceExperienceInfos:  type: array  items:  $ref: '#/components/schemas/PerFlowServiceExperienceInfo'  required:  - serviceExperienceInfos    PerFlowServiceExperienceInfo:  description: "Information about the service experience of a single flow."  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:  description: "A data reporting record for UE location."  allOf:  - $ref: '#/components/schemas/BaseRecord'  - type: object  properties:  location:  $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocationData'  required:  - location    CommunicationRecord:  description: "A data reporting record for UE communication."  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:  description: "A data reporting record for UE performance."  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:  description: "A typed application-specific UE data reporting record."  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:  description: "A data reporting record for UE performance."  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 |