

Nudm_SDM

This service is used by Consumer NFs (AMF, SMF, SMSF) to retrieve the UE's individual subscription data relevant to the consumer NF from the UDM.

Reference: 3GPP TS 29.503 Unified Data Management Services, version 15.3.0

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OpenAPI

OpenAPI Version: 3.0.0

Info

```
Version: '2.1.0.alpha-4'
Title: 'Nudm_SDM'
Description: |
  Nudm Subscriber Data Management Service.
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```

Servers

```
  URL: '{apiRoot}/nudm-sdm/v2'
  Variables:
    API Root:
      Default: https://example.com
      Description: apiRoot as defined in clause clause 4.4 of 3GPP TS 29.501.
```

Security

```
- oAuth2ClientCredentials:
  - nudm-sdm
- {}
```

Paths

/{supi}

```
get:
  Summary: retrieve multiple data sets
  Operation ID: GetDataSets

  Tags:
    - Retrieval of multiple data sets

  Parameters:
    - Name: supi
      In: path
      Description: Identifier of the UE
      Required/Optional: true
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'
    - Name: dataset-names
      In: query
      Style: form
      Explode: false
      Description: List of dataset names
      Required/Optional: true
      Schema:
         Reference: '#/components/schemas/DatasetNames'
    - Name: plmn-id
      In: query
      Description: serving PLMN ID
      Content:
        Application/JSON:
          Schema:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    - Name: supported-features
      In: query
      Description: Supported Features
      Schema:
         Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    - Name: If-None-Match
      In: header
      Description: Validator for conditional requests, as described in RFC 7232, 3.2
```

```
      Schema:
        Type: string
      - Name: If-Modified-Since
        In: header
        Description: Validator for conditional requests, as described in RFC 7232, 3.3
        Schema:
          Type: string

  Responses:
    '200':
      Description: Expected response to a valid request
      Content:
        Application/JSON:
          Schema:
            Reference: '#/components/schemas/SubscriptionDataSets'
      Headers:
        Cache-Control:
          Description: Cache-Control containing max-age, as described in RFC 7234, 5.2

          Schema:
            Type: string
        ETag:
          Description: Entity Tag, containing a strong validator, as described in RFC
7232, 2.3
          Schema:
            Type: string
        Last-Modified:
          Description: Timestamp for last modification of the resource, as described
in RFC 7232, 2.2
          Schema:
            Type: string
    '400':
      Reference: 'TS29571_CommonData.yaml#/components/responses/400'
    '404':
      Reference: 'TS29571_CommonData.yaml#/components/responses/404'
    '500':
      Reference: 'TS29571_CommonData.yaml#/components/responses/500'
    '503':
      Reference: 'TS29571_CommonData.yaml#/components/responses/503'
    Default:
      Description: Unexpected error
```

/{ueId}/sdm-subscriptions

```
Method: Post
  Summary: subscribe to notifications
  Operation ID: Subscribe

  Tags:
    - Subscription Creation
```

```
    Parameters:
      - Name: ueId
        In: path
        Description: Identity of the user
        Required/Optional: true
        Schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    Request Body:
      Content:
        Application/JSON:
          Schema:
            Reference: '#/components/schemas/SdmSubscription'
      Required/Optional: true

    Responses:
      '201':
        Description: Expected response to a valid request
        Content:
          Application/JSON:
            Schema:
              Reference: '#/components/schemas/SdmSubscription'
        Headers:
          Location:
              description: 'Contains the URI of the newly created resource,
 according to the structure:
{apiRoot}/nudm-sdm/<apiVersion>/{supi}/sdm-subscriptions/{subscriptionId}'
            Required/Optional: true
            Schema:
              Type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '500':
        Reference: 'TS29571_CommonData.yaml#/components/responses/500'
      '501':
        Reference: 'TS29571_CommonData.yaml#/components/responses/501'
      '503':
        Reference: 'TS29571_CommonData.yaml#/components/responses/503'
      Default:
        Description: Unexpected error
    Callbacks:
      datachangeNotification:
        '{request.body#/callbackReference}':
          Method: Post
            Request Body:
              Required/Optional: true
              Content:
                Application/JSON:
                  Schema:
                    Reference: '#/components/schemas/ModificationNotification'
```

```
          Responses:
            '204':
              Description: Successful Notification response
            '307':
              Description: Temporary Redirect
              Content:
                application/problem+json:
                  Schema:
                    Reference:
'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
              Headers:
                Location:
                  Description: 'Contains the new Callback URI of the target NF Service
 Consumer (e.g. AMF) to which the request is redirected'
                  Required/Optional: true
                  Schema:
                    Type: string
            '308':
              Description: Permanent Redirect
              Content:
                application/problem+json:
                  Schema:
                    Reference:
'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
              Headers:
                Location:
                  Description: 'Contains the new Callback URI of the target NF Service
 Consumer (e.g. AMF) to which the request is redirected'
                  Required/Optional: true
                  Schema:
                    Type: string
            '400':
              Reference: 'TS29571_CommonData.yaml#/components/responses/400'
            '404':
              Reference: 'TS29571_CommonData.yaml#/components/responses/404'
            '500':
              Reference: 'TS29571_CommonData.yaml#/components/responses/500'
            '503':
              Reference: 'TS29571_CommonData.yaml#/components/responses/503'
            Default:
              Description: Unexpected error
```

/{ueId}/sdm-subscriptions/{subscriptionId}

```
  delete:
    Summary: unsubscribe from notifications
    Operation ID: Unsubscribe

    Tags:
      - Subscription Deletion
```

```
  Parameters:
    - Name: ueId
      In: path
      Description: Identity of the user
      Required/Optional: true
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    - Name: subscriptionId
      In: path
      Description: Id of the SDM Subscription
      Required/Optional: true
      Schema:
        Type: string

  Responses:
    '204':
      Description: Successful response
    '400':
      Reference: 'TS29571_CommonData.yaml#/components/responses/400'
    '404':
      Reference: 'TS29571_CommonData.yaml#/components/responses/404'
    '500':
      Reference: 'TS29571_CommonData.yaml#/components/responses/500'
    '503':
      Reference: 'TS29571_CommonData.yaml#/components/responses/503'
    Default:
      Description: Unexpected error
patch:
  Summary: modify the subscription
  Operation ID: Modify

  Tags:
    - Subscription Modification

  Parameters:
    - Name: ueId
      In: path
      Description: Identity of the user
      Required/Optional: true
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/VarUeId'
    - Name: subscriptionId
      In: path
      Description: Id of the SDM Subscription
      Required/Optional: true
      Schema:
        Type: string
    - Name: supported-features
      In: query
      Description: Features required to be supported by the target NF
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
```

```
  Request Body:
    Content:
      application/merge-patch+json:
        Schema:
          Reference: '#/components/schemas/SdmSubsModification'
    Required/Optional: true

  Responses:
    '200':
      Description: Expected response to a valid request
      Content:
        Application/JSON:
          Schema:
            oneOf:
              - $ref: '#/components/schemas/SdmSubscription'
              - $ref: 'TS29571_CommonData.yaml#/components/schemas/PatchResult'
    '400':
      Reference: 'TS29571_CommonData.yaml#/components/responses/400'
    '403':
      Reference: 'TS29571_CommonData.yaml#/components/responses/403'
    '404':
      Reference: 'TS29571_CommonData.yaml#/components/responses/404'
    '500':
      Reference: 'TS29571_CommonData.yaml#/components/responses/500'
    '503':
      Reference: 'TS29571_CommonData.yaml#/components/responses/503'
    Default:
      Description: Unexpected error
```

/{supi}/am-data/sor-ack

```
put:
  Summary: Nudm_Sdm Info service operation
  Operation ID: SorAckInfo

  Tags:
    - Providing acknowledgement of Steering of Roaming

  Parameters:
    - Name: supi
      In: path
      Description: Identifier of the UE
      Required/Optional: true
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'
  Request Body:
    Content:
      Application/JSON:
        Schema:
          Reference: '#/components/schemas/AcknowledgeInfo'
```

```
    Responses:
      '204':
        Description: Successful acknowledgement
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '500':
        Reference: 'TS29571_CommonData.yaml#/components/responses/500'
      '503':
        Reference: 'TS29571_CommonData.yaml#/components/responses/503'
      Default:
        Description: Unexpected error
```

Components

```
securitySchemes:
  oAuth2ClientCredentials:
    Type: oauth2
    Flows:
      clientCredentials:
        tokenUrl: '{nrfApiRoot}/oauth2/token'
        scopes:
          nudm-sdm: Access to the nudm-sdm API

schemas:
# COMPLEX TYPES:
  DatasetNames:
    Type: array
    Items:
      Reference: '#/components/schemas/DataSetName'
    minItems: 2
    uniqueItems: true
  SubscriptionDataSets:
    Type: object
    Properties:
      amData:
        Reference: '#/components/schemas/AccessAndMobilitySubscriptionData'
      smfSelData:
        Reference: '#/components/schemas/SmfSelectionSubscriptionData'
      uecSmfData:
        Reference: '#/components/schemas/UeContextInSmfData'
      uecSmsfData:
        Reference: '#/components/schemas/UeContextInSmsfData'
      smsSubsData:
        Reference: '#/components/schemas/SmsSubscriptionData'
      smData:
        Type: array
        Items:
          Reference: '#/components/schemas/SessionManagementSubscriptionData'
        minItems: 1
```

```
    traceData:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
    smsMngData:
      Reference: '#/components/schemas/SmsManagementSubscriptionData'
    lcsPrivacyData:
      Reference: '#/components/schemas/LcsPrivacyData'
    lcsMoData:
      Reference: '#/components/schemas/LcsMoData'
UeContextInSmsfData:
  Type: object
  Properties:
    smsfInfo3GppAccess:
      Reference: '#/components/schemas/SmsfInfo'
    smsfInfoNon3GppAccess:
      Reference: '#/components/schemas/SmsfInfo'
SmsfInfo:
  Type: object
  Required:
    - smsfInstanceId
    - plmnId
  Properties:
    smsfInstanceId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
    plmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
AccessAndMobilitySubscriptionData:
  Type: object
  Properties:
    supportedFeatures:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    gpsis:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'
    internalGroupIds:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
      minItems: 1
    vnGroupInfo:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/VnGroupData'
      minProperties: 1
    sharedVnGroupDataIds:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/SharedDataId'
      minProperties: 1
    subscribedUeAmbr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/AmbrRm'
    nssai:
```

```
      Reference: '#/components/schemas/Nssai'
    ratRestrictions:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
    forbiddenAreas:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Area'
    serviceAreaRestriction:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/ServiceAreaRestriction'
    coreNetworkTypeRestrictions:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/CoreNetworkType'
    rfspIndex:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/RfspIndexRm'
    subsRegTimer:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'
    ueUsageType:
      Reference: '#/components/schemas/UeUsageType'
    mpsPriority:
      Reference: '#/components/schemas/MpsPriorityIndicator'
    mcsPriority:
      Reference: '#/components/schemas/McsPriorityIndicator'
    activeTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'
    dlPacketCount:
      Reference: '#/components/schemas/DlPacketCount'
    sorInfo:
      Reference: '#/components/schemas/SorInfo'
    sorInfoExpectInd:
      Type: boolean
    sorafRetrieval:
      Type: boolean
      Default: false
    sorUpdateIndicatorList:
      Type: array
      Items:
        Reference: '#/components/schemas/SorUpdateIndicator'
      minItems: 1
    upuInfo:
      Reference: '#/components/schemas/UpuInfo'
    micoAllowed:
      Reference: '#/components/schemas/MicoAllowed'
    sharedAmDataIds:
      Type: array
      Items:
        Reference: '#/components/schemas/SharedDataId'
      minItems: 1
    odbPacketServices:
```

```
    Reference: 'TS29571_CommonData.yaml#/components/schemas/OdbPacketServices'
  subscribedDnnList:
    Type: array
    Items:
      anyOf:
        - $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        - $ref: 'TS29571_CommonData.yaml#/components/schemas/WildcardDnn'
  serviceGapTime:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
  traceData:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
  cagData:
    Reference: '#/components/schemas/CagData'
  stnSr:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/StnSr'
  cMsisdn:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/CMsisdn'
  nbIoTUePriority:
    Reference: '#/components/schemas/NbIoTUePriority'
  nssaiInclusionAllowed:
    Type: boolean
    Default: false
  rgWirelineCharacteristics:
   Reference: 'TS29571_CommonData.yaml#/components/schemas/RgWirelineCharacteristics'

  rgTMBR:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Tmbr'
  ecRestrictionData:
    Reference: '#/components/schemas/EcRestrictionData'
  expectedUeBehaviourList:
    Reference: '#/components/schemas/ExpectedUeBehaviourData'
  maximumResponseTimeList:
    Type: array
    Items:
      Reference: '#/components/schemas/MaximumResponseTime'
    minItems: 1
  maximumLatencyList:
    Type: array
    Items:
      Reference: '#/components/schemas/MaximumLatency'
    minItems: 1
  primaryRatRestrictions:
    Type: array
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
  secondaryRatRestrictions:
    Type: array
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
  edrxParametersList:
    Type: array
    Items:
```

```
        Reference: '#/components/schemas/EdrxParameters'
      minItems: 1
    ptwParametersList:
      Type: array
      Items:
        Reference: '#/components/schemas/PtwParameters'
      minItems: 1
    iabOperationAllowed:
      Type: boolean
      Default: false
    nrV2xServicesAuth:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NrV2xAuth'
    lteV2xServicesAuth:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/LteV2xAuth'
    nrUePc5Ambr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
    ltePc5Ambr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRate'
CagData:
  Type: object
  Required:
    - cagInfos
  Properties:
    cagInfos:
     Description: A map (list of key-value pairs where PlmnId serves as key) of CagInfo

      Type: object
      additionalProperties:
        Reference: '#/components/schemas/CagInfo'
    provisioningTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
CagInfo:
  Type: object
  Required:
    - allowedCagList
  Properties:
    allowedCagList:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/CagId'
    cagOnlyIndicator:
      Type: boolean
SmfSelectionSubscriptionData:
  Type: object
  Properties:
    supportedFeatures:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    subscribedSnssaiInfos:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/SnssaiInfo'
    sharedSnssaiInfosId:
```

```
      Reference: '#/components/schemas/SharedDataId'
SnssaiInfo:
  Type: object
  Required:
    - dnnInfos
  Properties:
    dnnInfos:
      Type: array
      Items:
        Reference: '#/components/schemas/DnnInfo'
      minItems: 1
DnnInfo:
  Type: object
  Required:
    - dnn
  Properties:
    dnn:
      anyOf:
        - $ref: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
        - $ref: 'TS29571_CommonData.yaml#/components/schemas/WildcardDnn'
    defaultDnnIndicator:
      Reference: '#/components/schemas/DnnIndicator'
    lboRoamingAllowed:
      Reference: '#/components/schemas/LboRoamingAllowed'
    iwkEpsInd:
      Reference: '#/components/schemas/IwkEpsInd'
    dnnBarred:
      Type: boolean
Nssai:
  Type: object
  Required:
   - defaultSingleNssais
  Properties:
    supportedFeatures:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    defaultSingleNssais:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      minItems: 1
    singleNssais:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      minItems: 1
    provisioningTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
    additionalSnssaiData:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/AdditionalSnssaiData'
      minProperties: 1
```

```
    nullable: true
  UeContextInSmfData:
    Type: object
    Properties:
      pduSessions:
        Description: A map (list of key-value pairs where PduSessionId serves as key) of
PduSessions
        Type: object
        additionalProperties:
          Reference: '#/components/schemas/PduSession'
      pgwInfo:
        Type: array
        Items:
          Reference: '#/components/schemas/PgwInfo'
        minItems: 1
      emergencyInfo:
        Reference: '#/components/schemas/EmergencyInfo'
  EmergencyInfo:
    Type: object
    oneOf:
      - required:
        - pgwFqdn
      - required:
        - pgwIpAddress
    Properties:
      pgwFqdn:
        Type: string
      pgwIpAddress:
        Reference: '#/components/schemas/IpAddress'
      smfInstanceId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
  PduSession:
    Type: object
    Required:
      - dnn
      - smfInstanceId
      - plmnId
    Properties:
      dnn:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      smfInstanceId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
      plmnId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
  PgwInfo:
    Type: object
    Required:
      - dnn
      - pgwFqdn
    Properties:
      dnn:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      pgwFqdn:
```

```
      Type: string
    plmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
SessionManagementSubscriptionData:
  Type: object
  Required:
    - singleNssai
  Properties:
    singleNssai:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    dnnConfigurations:
     Description: A map (list of key-value pairs where Dnn, or optionally the Wildcard
DNN, serves as key) of DnnConfigurations
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/DnnConfiguration'
    internalGroupIds:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
      minItems: 1
    vnGroupInfo:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/VnGroupData'
      minProperties: 1
    sharedVnGroupDataIds:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/SharedDataId'
      minProperties: 1
    sharedDnnConfigurationsId:
      Reference: '#/components/schemas/SharedDataId'
    odbPacketServices:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/OdbPacketServices'
    traceData:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
    sharedTraceDataId:
      Reference: '#/components/schemas/SharedDataId'
    expectedUeBehavioursList:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/ExpectedUeBehaviourData'
      minProperties: 1
    suggestedPacketNumDlList:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/SuggestedPacketNumDl'
      minProperties: 1
    3gppChargingCharacteristics:
      Reference: '#/components/schemas/3GppChargingCharacteristics'
DnnConfiguration:
```

```
    Type: object
    Required:
      - pduSessionTypes
      - sscModes
    Properties:
      pduSessionTypes:
        Reference: '#/components/schemas/PduSessionTypes'
      sscModes:
        Reference: '#/components/schemas/SscModes'
      iwkEpsInd:
        Reference: '#/components/schemas/IwkEpsInd'
      5gQosProfile:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/SubscribedDefaultQos'
      sessionAmbr:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ambr'
      3gppChargingCharacteristics:
        Reference: '#/components/schemas/3GppChargingCharacteristics'
      staticIpAddress:
        Type: array
        Items:
          Reference: '#/components/schemas/IpAddress'
        minItems: 1
        maxItems: 2
      upSecurity:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/UpSecurity'
      pduSessionContinuityInd:
        Reference: '#/components/schemas/PduSessionContinuityInd'
      invokeNefSelection:
        Type: boolean
      niddNefId:
        Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/NefId'
      niddInfo:
        Reference: '#/components/schemas/NiddInformation'
      redundantSessionAllowed:
        Type: boolean
      acsInfo:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/AcsInfo'
      ipv4FrameRouteList:
        Type: array
        Items:
          Reference: '#/components/schemas/FrameRouteInfo'
        minItems: 1
      ipv6FrameRouteList:
        Type: array
        Items:
          Reference: '#/components/schemas/FrameRouteInfo'
        minItems: 1
      atsssAllowed:
        Type: boolean
        Default: false
  NiddInformation:
    Type: object
```

```
    Required:
      - afId
    Properties:
      afId:
        Type: string
      gpsi:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'
      extGroupId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/ExternalGroupId'
  IpAddress:
    Type: object
    oneOf:
      - required:
        - ipv4Addr
      - required:
        - ipv6Addr
      - required:
        - ipv6Prefix
    Properties:
      ipv4Addr:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      ipv6Addr:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
      ipv6Prefix:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
  PduSessionTypes:
    Type: object
    Required:
      - defaultSessionType
    Properties:
      defaultSessionType:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
      allowedSessionTypes:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
        minItems: 1
  SscModes:
    Type: object
    Required:
      - defaultSscMode
    Properties:
      defaultSscMode:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/SscMode'
      allowedSscModes:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/SscMode'
        minItems: 1
        maxItems: 2
  SmsSubscriptionData:
    Type: object
    Properties:
```

```
    smsSubscribed:
      Reference: '#/components/schemas/SmsSubscribed'
    sharedSmsSubsDataId:
      Reference: '#/components/schemas/SharedDataId'
SmsManagementSubscriptionData:
  Type: object
  Properties:
    supportedFeatures:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    mtSmsSubscribed:
      Type: boolean
    mtSmsBarringAll:
      Type: boolean
    mtSmsBarringRoaming:
      Type: boolean
    moSmsSubscribed:
      Type: boolean
    moSmsBarringAll:
      Type: boolean
    moSmsBarringRoaming:
      Type: boolean
    sharedSmsMngDataIds:
      Type: array
      Items:
        Reference: '#/components/schemas/SharedDataId'
      minItems: 1
    traceData:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
SdmSubscription:
  Type: object
  Required:
    - nfInstanceId
    - callbackReference
    - monitoredResourceUris
  Properties:
    nfInstanceId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
    implicitUnsubscribe:
      Type: boolean
    expires:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
    callbackReference:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
    amfServiceName:
      Reference: 'TS29510_Nnrf_NFManagement.yaml#/components/schemas/ServiceName'
    monitoredResourceUris:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      minItems: 1
    singleNssai:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
```

```
    dnn:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
    subscriptionId:
      Type: string
    plmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    immediateReport:
      Type: boolean
      Default: false
    report:
      Reference: '#/components/schemas/SubscriptionDataSets'
SdmSubsModification:
  Type: object
  Properties:
    expires:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
    monitoredResourceUris:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      minItems: 1
ModificationNotification:
  Type: object
  Required:
    - notifyItems
  Properties:
    notifyItems:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NotifyItem'
      minItems: 1
IdTranslationResult:
  Type: object
  Required:
    - supi
  Properties:
    supportedFeatures:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    supi:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'
    gpsi:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'
AcknowledgeInfo:
  Type: object
  Required:
    - provisioningTime
  Properties:
    sorMacIue:
      Reference: 'TS29509_Nausf_SoRProtection.yaml#/components/schemas/SorMac'
    upuMacIue:
      Reference: 'TS29509_Nausf_UPUProtection.yaml#/components/schemas/UpuMac'
    securedPacket:
```

```
      Reference: '#/components/schemas/SecuredPacket'
    provisioningTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
SorInfo:
  Type: object
  Properties:
    steeringContainer:
      Reference: '#/components/schemas/SteeringContainer'
    ackInd:
      Reference: 'TS29509_Nausf_SoRProtection.yaml#/components/schemas/AckInd'
    sorMacIausf:
      Reference: 'TS29509_Nausf_SoRProtection.yaml#/components/schemas/SorMac'
    countersor:
      Reference: 'TS29509_Nausf_SoRProtection.yaml#/components/schemas/CounterSor'
    provisioningTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
  Required:
    - ackInd
    - provisioningTime
SharedDataIds:
  Type: array
  Items:
    Reference: '#/components/schemas/SharedDataId'
  minItems: 1
  uniqueItems: true
UpuInfo:
  Type: object
  Properties:
    upuDataList:
      Type: array
      Items:
        Reference: 'TS29509_Nausf_UPUProtection.yaml#/components/schemas/UpuData'
      minItems: 1
    upuRegInd:
      Reference: '#/components/schemas/UpuRegInd'
    upuAckInd:
      Reference: 'TS29509_Nausf_UPUProtection.yaml#/components/schemas/UpuAckInd'
    upuMacIausf:
      Reference: 'TS29509_Nausf_UPUProtection.yaml#/components/schemas/UpuMac'
    counterUpu:
      Reference: 'TS29509_Nausf_UPUProtection.yaml#/components/schemas/CounterUpu'
    provisioningTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
  Required:
    - upuDataList
    - upuAckInd
    - upuRegInd
    - provisioningTime
SharedData:
  Type: object
  Required:
    - sharedDataId
  Properties:
```

```
    sharedDataId:
      Reference: '#/components/schemas/SharedDataId'
    sharedAmData:
      Reference: '#/components/schemas/AccessAndMobilitySubscriptionData'
    sharedSmsSubsData:
      Reference: '#/components/schemas/SmsSubscriptionData'
    sharedSmsMngSubsData:
      Reference: '#/components/schemas/SmsManagementSubscriptionData'
    sharedDnnConfigurations:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/DnnConfiguration'
    sharedTraceData:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
    sharedSnssaiInfos:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/SnssaiInfo'
    sharedVnGroupDatas:
      Type: object
      additionalProperties:
        Reference: '#/components/schemas/VnGroupData'
      minProperties: 1
TraceDataResponse:
  Type: object
  Properties:
    traceData:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
    sharedTraceDataId:
      Reference: '#/components/schemas/SharedDataId'
SteeringContainer:
  oneOf:
    - type: array
      Items:
        Reference: 'TS29509_Nausf_SoRProtection.yaml#/components/schemas/SteeringInfo'

      minItems: 1
    - $ref: '#/components/schemas/SecuredPacket'
GroupIdentifiers:
  Type: object
  Properties:
    extGroupId:
      Reference: '#/components/schemas/ExtGroupId'
    intGroupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
    ueIdList:
      Type: array
      Items:
        Reference: '#/components/schemas/UeId'
      minItems: 1
VnGroupData:
  Type: object
```

```
    Properties:
      pduSessionTypes:
        Reference: '#/components/schemas/PduSessionTypes'
      dnn:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      singleNssai:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      appDescriptors:
        Type: array
        Items:
          Reference: '#/components/schemas/AppDescriptor'
        minItems: 1
  AppDescriptor:
    Type: object
    Properties:
      osId:
        Reference: 'TS29519_Policy_Data.yaml#/components/schemas/OsId'
      appId:
        Type: string
  AdditionalSnssaiData:
    Type: object
    Properties:
      requiredAuthnAuthz:
        Type: boolean
  AppPortId:
    Type: object
    Properties:
      destinationPort:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Uint16'
      originatorPort:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Uint16'
  LcsPrivacyData:
    Type: object
    Properties:
      lpi:
        Reference: '#/components/schemas/Lpi'
      unrelatedClasses:
        Type: array
        Items:
          Reference: '#/components/schemas/UnrelatedClass'
        minItems: 1
      plmnOperatorClasses:
        Type: array
        Items:
          Reference: '#/components/schemas/PlmnOperatorClass'
        minItems: 1
  Lpi:
    Type: object
    Required:
      - locationPrivacyInd
    Properties:
      locationPrivacyInd:
```

```
      Reference: '#/components/schemas/LocationPrivacyInd'
    validTimePeriod:
      Reference: '#/components/schemas/ValidTimePeriod'
UnrelatedClass:
  Type: object
  Required:
    - nonExternalUnrelatedClass
  Properties:
    nonExternalUnrelatedClass:
      Reference: '#/components/schemas/NonExternalUnrelatedClass'
    externalUnrelatedClass:
      Reference: '#/components/schemas/ExternalUnrelatedClass'
    serviceTypeUnrelatedClasses:
      Type: array
      Items:
        Reference: '#/components/schemas/ServiceTypeUnrelatedClass'
      minItems: 1
PlmnOperatorClass:
  Type: object
  Required:
    - lcsClientClass
    - lcsClientIds
  Properties:
    lcsClientClass:
      Reference: '#/components/schemas/LcsClientClass'
    lcsClientIds:
      Type: array
      Items:
        Reference: '#/components/schemas/LcsClientId'
      minItems: 1
ValidTimePeriod:
  Type: object
  Properties:
    startTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
    endTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
NonExternalUnrelatedClass:
  Properties:
    lcsClientNonExternals:
      Type: array
      Items:
        Reference: '#/components/schemas/LcsClientNonExternal'
      minItems: 1
    afNonExternals:
      Type: array
      Items:
        Reference: '#/components/schemas/AfNonExternal'
      minItems: 1
LcsClientNonExternal:
  Type: object
  Required:
```

```
    - lcsClientId
  Properties:
    lcsClientId:
      Reference: '#/components/schemas/LcsClientId'
    allowedGeographicArea:
      Type: array
      Items:
        Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/GeographicArea'
      minItems: 1
    privacyCheckRelatedAction:
      Reference: '#/components/schemas/PrivacyCheckRelatedAction'
    codeWordInd:
      Reference: '#/components/schemas/CodeWordInd'
    validTimePeriod:
      Reference: '#/components/schemas/ValidTimePeriod'
AfNonExternal:
  Type: object
  Required:
    - afId
  Properties:
    afId:
      Type: string
    allowedGeographicArea:
      Type: array
      Items:
        Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/GeographicArea'
      minItems: 1
    privacyCheckRelatedAction:
      Reference: '#/components/schemas/PrivacyCheckRelatedAction'
    codeWordInd:
      Reference: '#/components/schemas/CodeWordInd'
    validTimePeriod:
      Reference: '#/components/schemas/ValidTimePeriod'
ExternalUnrelatedClass:
  Properties:
    lcsClientExternals:
      Type: array
      Items:
        Reference: '#/components/schemas/LcsClientExternal'
      minItems: 1
    afExternals:
      Type: array
      Items:
        Reference: '#/components/schemas/AfExternal'
      minItems: 1
    lcsClientGroupExternals:
      Type: array
      Items:
        Reference: '#/components/schemas/LcsClientGroupExternal'
      minItems: 1
AfExternal:
  Type: object
```

```
    Properties:
      afId:
        Type: string
      allowedGeographicArea:
        Type: array
        Items:
          Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/GeographicArea'
        minItems: 1
      privacyCheckRelatedAction:
        Reference: '#/components/schemas/PrivacyCheckRelatedAction'
      validTimePeriod:
        Reference: '#/components/schemas/ValidTimePeriod'
  LcsClientExternal:
    Type: object
    Properties:
      allowedGeographicArea:
        Type: array
        Items:
          Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/GeographicArea'
        minItems: 1
      privacyCheckRelatedAction:
        Reference: '#/components/schemas/PrivacyCheckRelatedAction'
      validTimePeriod:
        Reference: '#/components/schemas/ValidTimePeriod'
  LcsClientGroupExternal:
    Type: object
    Properties:
      lcsClientGroupId:
        Reference: '#/components/schemas/ExtGroupId'
      allowedGeographicArea:
        Type: array
        Items:
          Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/GeographicArea'
        minItems: 1
      privacyCheckRelatedAction:
        Reference: '#/components/schemas/PrivacyCheckRelatedAction'
      validTimePeriod:
        Reference: '#/components/schemas/ValidTimePeriod'
  ServiceTypeUnrelatedClass:
    Type: object
    Required:
      - serviceType
    Properties:
      serviceType:
        Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/LcsServiceType'
      allowedGeographicArea:
        Type: array
        Items:
          Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/GeographicArea'
        minItems: 1
      privacyCheckRelatedAction:
        Reference: '#/components/schemas/PrivacyCheckRelatedAction'
```

```
      codeWordInd:
        Reference: '#/components/schemas/CodeWordInd'
      validTimePeriod:
        Reference: '#/components/schemas/ValidTimePeriod'
  LcsMoData:
    Type: object
    Required:
      - allowedServiceClasses
    Properties:
      allowedServiceClasses:
        Type: array
        Items:
          Reference: '#/components/schemas/LcsMoServiceClass'
        minItems: 1
  EcRestrictionData:
    Type: object
    Properties:
      ecModeARestricted:
        Type: boolean
      ecModeBRestricted:
        Type: boolean
  ExpectedUeBehaviourData:
    Type: object
    Properties:
      stationaryIndication:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/StationaryIndication'
      communicationDurationTime:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
      periodicTime:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
      scheduledCommunicationTime:
       Reference: 'TS29571_CommonData.yaml#/components/schemas/ScheduledCommunicationTime'

      scheduledCommunicationType:
       Reference: 'TS29571_CommonData.yaml#/components/schemas/ScheduledCommunicationType'

      expectedUmts:
        Type: array
        Items:
          Reference: 'TS29503_Nudm_PP.yaml#/components/schemas/LocationArea'
        minItems: 1
        Description: Identifies the UE's expected geographical movement. The attribute
is only applicable in 5G.
      trafficProfile:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/TrafficProfile'
      batteryIndication:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/BatteryIndication'
      validityTime:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
  MaximumResponseTime:
    Type: object
    Required:
```

```
    - maximumResponseTime
  Properties:
    maximumResponseTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
    snssai:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    dnn:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
    validityTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
MaximumLatency:
  Type: object
  Required:
    - maximumLatency
  Properties:
    maximumLatency:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
    snssai:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    dnn:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
    validityTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
SuggestedPacketNumDl:
  Type: object
  Required:
    - suggestedPacketNumDl
  Properties:
    suggestedPacketNumDl:
      Type: integer
      Minimum: 1
    validityTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
FrameRouteInfo:
  Type: object
  Properties:
    ipv4Mask:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4AddrMask'
    ipv6Prefix:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
SorUpdateInfo:
  Type: object
  Required:
    - vplmnId
  Properties:
    vplmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
EnhancedCoverageRestrictionData:
  Type: object
  Properties:
    plmnEcInfoList:
      Type: array
```

```
      Items:
        Reference: 'TS29503_Nudm_PP.yaml#/components/schemas/PlmnEcInfo'
      minItems: 1
  EdrxParameters:
    Type: object
    Required:
      - ratType
      - edrxValue
    Properties:
      ratType:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
      edrxValue:
        Type: string
        Pattern: '^([0-1]{4})$'
  PtwParameters:
    Type: object
    Required:
      - operationMode
      - ptwValue
    Properties:
      operationMode:
        Reference: '#/components/schemas/OperationMode'
      ptwValue:
        Type: string
        Pattern: '^([0-1]{4})$'
  UeId:
    Type: object
    Required:
      - supi
    Properties:
      supi:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'
      gpsiList:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Gpsi'
        minItems: 1
# SIMPLE TYPES:
  UeUsageType:
    Type: integer
  MpsPriorityIndicator:
    Type: boolean
  McsPriorityIndicator:
    Type: boolean
  DnnIndicator:
    Type: boolean
  LboRoamingAllowed:
    Type: boolean
  SmsSubscribed:
    Type: boolean
  3GppChargingCharacteristics:
    Type: string
  DlPacketCount:
```

```
      Type: integer
      Minimum: -1
    MicoAllowed:
      Type: boolean
    SharedDataId:
      Type: string
      Pattern: '^[0-9]{5,6}-.+$'
    IwkEpsInd:
      Type: boolean
    SecuredPacket:
      Type: string
      format: base64
    UpuRegInd:
      Type: boolean
    ExtGroupId:
      Type: string
      Pattern: '^extgroupid-[^@]+@[^@]+$'
    NbIoTUePriority:
      Type: integer
    CodeWord:
      Type: string
    AfId:
      Type: string
    LcsClientId:
      Type: string
  # ENUMS:
    DataSetName:
      anyOf:
        - type: string
          enum:
          - AM
          - SMF_SEL
          - UEC_SMF
          - UEC_SMSF
          - SMS_SUB
          - SM
          - TRACE
          - SMS_MNG
          - LCS_PRIVACY
          - LCS_MO
        - type: string
    PduSessionContinuityInd:
      anyOf:
        - type: string
          enum:
          - MAINTAIN_PDUSESSION
          - RECONNECT_PDUSESSION
          - RELEASE_PDUSESSION
        - type: string
    LocationPrivacyInd:
      anyOf:
        - type: string
          enum:
          - LOCATION_DISALLOWED
          - LOCATION_ALLOWED
        - type: string
```

```
PrivacyCheckRelatedAction:
  anyOf:
    - type: string
      enum:
      - LOCATION_NOT_ALLOWED
      - LOCATION_ALLOWED_WITH_NOTIFICATION
      - LOCATION_ALLOWED_WITHOUT_NOTIFICATION
      - LOCATION_ALLOWED_WITHOUT_RESPONSE
      - LOCATION_RESTRICTED_WITHOUT_RESPONSE
    - type: string
LcsClientClass:
  anyOf:
    - type: string
      enum:
      - BROADCAST_SERVICE
      - OM_IN_HPLMN
      - OM_IN_VPLMN
      - ANONYMOUS_LOCATION_SERVICE
      - SPECIFIC_SERVICE
    - type: string
LcsMoServiceClass:
  anyOf:
    - type: string
      enum:
      - BASIC_SELF_LOCATION
      - AUTONOMOUS_SELF_LOCATION
      - TRANSFER_TO_THIRD_PARTY
    - type: string
OperationMode:
  anyOf:
    - type: string
      enum:
      - WB_S1
      - NB_S1
      - WB_N1
      - NB_N1
    - type: string
SorUpdateIndicator:
  anyOf:
    - type: string
      enum:
      - INITIAL_REGISTRATION
      - EMERGENCY_REGISTRATION
    - type: string
CodeWordInd:
  anyOf:
    - type: string
      enum:
      - CODEWORD_CHECK_IN_UE
      - CODEWORD_CHECK_IN_GMLC
    - type: string
```

External Docs

```
Description: 3GPP TS 29.503 Unified Data Management Services, version 16.3.0
URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.503/'
```