Nnrf_NFManagement

The Network Repository Function uses the Nnrf_NFManagement service to manage the create, update, and delete an NF.

- OpenAPI, on page 1
- Info, on page 1
- Servers, on page 1
- Security, on page 2
- Paths, on page 2
- Components, on page 19
- External Docs, on page 59

OpenAPI

OpenAPI Version: 3.0.0

Info

```
Version: '1.0.2'
Version: '1.1.4'
Title: 'NRF NFManagement Service'
Description: 'NRF NFManagement Service'
```

Servers

```
URL: '{apiRoot}/nnrf-nfm/v1'
Variables:
  API Root:
    Default: https://example.com
    Description: apiRoot as defined in subclause subclause 4.4 of 3GPP TS 29.501
    Description: apiRoot as defined in subclause clause 4.4 of 3GPP TS 29.501
```

Security

```
- {}
- oAuth2ClientCredentials:
    - nnrf-nfm
```

Paths

/nf-instances

```
  get:
    Summary: Retrieves a collection of NF Instances
    Operation ID: GetNFInstances

    Tags:
      - NF Instances (Store)

    Parameters:
      - Name: nf-type
        In: query
        Description: Type of NF
        Required/Optional: false
        Schema:
          Reference: '#/components/schemas/NFType'
      - Name: limit
        In: query
        Description: How many items to return at one time
        Required/Optional: false
        Schema:
          Type: integer

    Responses:
      '200':
        Description: Expected response to a valid request
        Content:
          application/3gppHal+json:
            Schema:
              Type: object
              Properties:
                _links:
                  Type: object
                 Description: 'List of the URI of NF instances. It has two members whose
 names are item and self. The item one contains an array of URIs.'
                  additionalProperties:
                    Reference:
'TS29571_CommonData.yaml#/components/schemas/LinksValueSchema'
              minProperties: 1
```

```
        '307':
          description: Temporary Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
        '308':
          description: Permanent Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '403':
        Reference: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        Reference: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        Reference: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        Reference: 'TS29571_CommonData.yaml#/components/responses/415'
      '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:
        Reference: 'TS29571_CommonData.yaml#/components/responses/default'
  options:
      summary: Discover communication options supported by NRF for NF Instances
      operationId: OptionsNFInstances
      tags:
```

```
    - NF Instances (Store)
  responses:
    '200':
      description: OK
      content:
        application/json:
          schema:
            Reference: '#/components/schemas/OptionsResponse'
       headers:
        Accept-Encoding:
          description: Accept-Encoding, described in IETF RFC 7694
          schema:
            type: string
    '204':
      headers:
      description: No Content
        Accept-Encoding:
          description: Accept-Encoding, described in IETF RFC 7694
          schema:
            type: string
    '307':
      description: Temporary Redirect
      content:
        application/json:
          schema:
           Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

      headers:
        Location:
          description: 'The URI pointing to the resource located on the redirect
target NRF'
          required: true
          schema:
            type: string
    '308':
      description: Permanent Redirect
      content:
        application/json:
          schema:
           Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

      headers:
        Location:
          description: 'The URI pointing to the resource located on the redirect
target NRF'
          required: true
          schema:
            type: string
  '400':
    Reference: 'TS29571_CommonData.yaml#/components/responses/400'
  '403':
    Reference: 'TS29571_CommonData.yaml#/components/responses/403'
```

```
    '404':
      Reference: 'TS29571_CommonData.yaml#/components/responses/404'
    '411':
      Reference: 'TS29571_CommonData.yaml#/components/responses/411'
    '413':
      Reference: 'TS29571_CommonData.yaml#/components/responses/413'
    '415':
      Reference: 'TS29571_CommonData.yaml#/components/responses/415'
    '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:
      Reference: 'TS29571_CommonData.yaml#/components/responses/default'
```

/nf-instances/{nfInstanceID}

```
  get:
    Summary: Read the profile of a given NF Instance
    Operation ID: GetNFInstance

    Tags:
      - NF Instance ID (Document)

    Parameters:
      - Name: nfInstanceID
        In: path
        Description: Unique ID of the NF Instance
        Required/Optional: true
        Schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
        - name: requester-features
          in: query
          description: Features supported by the NF Service Consumer
          schema:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

    Responses:
      '200':
        Description: Expected response to a valid request
          headers:
            ETag:
              description: Entity Tag containing a strong validator, described in IETF
RFC 7232, 2.3
              schema:
                type: string
        Content:
          Application/JSON:
            Schema:
```

```
            Reference: '#/components/schemas/NFProfile'
        '307':
          description: Temporary Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
        '308':
          description: Permanent Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '403':
        Reference: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        Reference: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        Reference: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        Reference: 'TS29571_CommonData.yaml#/components/responses/415'
      '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:
        Reference: 'TS29571_CommonData.yaml#/components/responses/default'
  put:
    Summary: Register a new NF Instance
    Operation ID: RegisterNFInstance
```

```
    Tags:
      - NF Instance ID (Document)

    Parameters:
      - Name: nfInstanceID
        In: path
        Required/Optional: true
        Description: Unique ID of the NF Instance to register
        Schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
      - Name: Content-Encoding
        In: header
        Required/Optional: true
        Description: Content-Encoding, described in IETF RFC 7231
        Schema:
          type: string
        #- name: Accept-Encoding
        #  in: header
        #  description: Accept-Encoding, described in IETF RFC 7231
        #  schema:
        #    type: string
    Request Body:
      Content:
        Application/JSON:
          Schema:
            Reference: '#/components/schemas/NFProfile'
      Required/Optional: true

    Responses:
      '200':
        Description: OK (Profile Replacement)
        Content:
          Application/JSON:
            Schema:
              Reference: '#/components/schemas/NFProfile'
            Content-Encoding:
              description: Content-Encoding, described in IETF RFC 7231
              schema:
                type: string
            ETag:
              description: Entity Tag containing a strong validator, described in IETF
RFC 7232, 2.3
              schema:
                type: string
      '201':
        Description: Expected response to a valid request
        Content:
          Application/JSON:
            Schema:
              Reference: '#/components/schemas/NFProfile'
        Headers:
```

```
        Location:
          description: 'Contains the URI of the newly created resource,
according to the structure': {apiRoot}/nnrf-nfm/v1/nf-instances/{nfInstanceId}'
          Required/Optional: true
          Schema:
            Type: string
          Accept-Encoding:
            description: Accept-Encoding, described in IETF RFC 7694
          Schema:
            Type: string
          Content-Encoding:
            description: Content-Encoding, described in IETF RFC 7231
            schema:
              type: string
          ETag:
            description: Entity Tag containing a strong validator, described in IETF
RFC 7232, 2.3
            schema:
              type: string
      '307':
        description: Temporary Redirect
        content:
          application/json:
            schema:
             Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

        headers:
          Location:
            description: 'The URI pointing to the resource located on the redirect
target NRF'
            required: true
            schema:
              type: string
      '308':
        description: Permanent Redirect
        content:
          application/json:
            schema:
             Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

        headers:
          Location:
            description: 'The URI pointing to the resource located on the redirect
target NRF'
            required: true
            schema:
              type: string
    '400':
      Reference: 'TS29571_CommonData.yaml#/components/responses/400'
    '403':
      Reference: 'TS29571_CommonData.yaml#/components/responses/403'
    '404':
```

```
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        Reference: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        Reference: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        Reference: 'TS29571_CommonData.yaml#/components/responses/415'
      '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:
        Reference: 'TS29571_CommonData.yaml#/components/responses/default'
  patch:
    Summary: Update NF Instance profile
    Operation ID: UpdateNFInstance

    Tags:
      - NF Instance ID (Document)

    Parameters:
      - Name: nfInstanceID
        In: path
        Required/Optional: true
        Description: Unique ID of the NF Instance to update
        Schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
        #- name: Content-Encoding
        #  in: header
        #  description: Content-Encoding, described in IETF RFC 7231
        #  schema:
        #    type: string
        #- name: Accept-Encoding
        #  in: header
        #  description: Accept-Encoding, described in IETF RFC 7231
        #  schema:
        #    type: string
        #- name: If-Match
        #  in: header
        #  description: Validator for conditional requests, as described in IETF RFC
7232, 3.2
        #  schema:
        #    type: string
    Request Body:
      Content:
        application/json-patch+json:
          Schema:
            Type: array
            Items:
              Reference: 'TS29571_CommonData.yaml#/components/schemas/PatchItem'
```

```
          Min Items: 1
        Required/Optional: true

      Responses:
        '200':
          Description: Expected response to a valid request
          Content:
            Application/JSON:
              Schema:
                Reference: '#/components/schemas/NFProfile'
              headers:
                Accept-Encoding:
                  description: Accept-Encoding, described in IETF RFC 7694
                Schema:
                   type: string
                ETag:
                  description: Entity Tag containing a strong validator, described in IETF
RFC 7232, 2.3
                  schema:
                    type: string
                Content-Encoding:
                  description: Content-Encoding, described in IETF RFC 7231
                  schema:
                    type: string

        '204':
          Description: Expected response with empty body
            headers:
              Accept-Encoding:
                description: Accept-Encoding, described in IETF RFC 7694
                schema:
                  type: string
          '307':
            description: Temporary Redirect
            content:
              application/json:
                schema:
                 Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

            headers:
              Location:
                description: 'The URI pointing to the resource located on the redirect
target NRF'
                required: true
                schema:
                  type: string
          '308':
            description: Permanent Redirect
            content:
              application/json:
                schema:
                 Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'
```

```
        headers:
          Location:
            description: 'The URI pointing to the resource located on the redirect
target NRF'
            required: true
            schema:
              type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '403':
        Reference: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '409':
        Reference: 'TS29571_CommonData.yaml#/components/responses/409'
      '411':
        Reference: 'TS29571_CommonData.yaml#/components/responses/411'
      '412':
        Reference: 'TS29571_CommonData.yaml#/components/responses/412'
      '413':
        Reference: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        Reference: 'TS29571_CommonData.yaml#/components/responses/415'
      '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:
        Reference: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
    Summary: Deregisters a given NF Instance
    Operation ID: DeregisterNFInstance

    Tags:
      - NF Instance ID (Document)

    Parameters:
      - Name: nfInstanceID
        In: path
        Required/Optional: true
        Description: Unique ID of the NF Instance to deregister
        Schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'

    Responses:
      '204':
        Description: Expected response to a successful deregistration
        '307':
          description: Temporary Redirect
          content:
```

```
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
        '308':
          description: Permanent Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '401':
        Reference: 'TS29571_CommonData.yaml#/components/responses/401'
      '403':
        Reference: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        Reference: 'TS29571_CommonData.yaml#/components/responses/411'
      '429':
        Reference: 'TS29571_CommonData.yaml#/components/responses/429'
      '500':
        Reference: 'TS29571_CommonData.yaml#/components/responses/500'
      '501':
        Reference: 'TS29571_CommonData.yaml#/components/responses/501'
      '503':
        Reference: 'TS29571_CommonData.yaml#/components/responses/503'
```

/subscriptions

```
  Method: Post
    Summary: Create a new subscription
    Operation ID: CreateSubscription

    Tags:
```

```
      - Subscriptions (Collection)
      parameters:
        - name: Content-Encoding
          in: header
          description: Content-Encoding, described in IETF RFC 7231
          schema:
            type: string
        - name: Accept-Encoding
          in: header
          description: Accept-Encoding, described in IETF RFC 7231
          schema:
            type: string
    Request Body:
      Content:
        Application/JSON:
          Schema:
            Reference: '#/components/schemas/SubscriptionData'
      Required/Optional: true

    Responses:
      '201':
        Description: Expected response to a valid request
        Content:
          Application/JSON:
            Schema:
              Reference: '#/components/schemas/SubscriptionData'
        Headers:
          Location:
            description: 'Contains the URI of the newly created resource,
according to the structure: {apiRoot}/nnrf-nfm/v1/subscriptions/{subscriptionId}'
      '307':
        description: Temporary Redirect
        content:
          application/json:
            schema:
              Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

        headers:
          Location:
            description: 'The URI pointing to the resource located on the redirect
target NRF'
            required: true
            schema:
              type: string
      '308':
        description: Permanent Redirect
        content:
          application/json:
            schema:
              Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

        headers:
          Location:
```

```
            description: 'The URI pointing to the resource located on the redirect
target NRF'
            required: true
            schema:
              type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '403':
        Reference: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        Reference: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        Reference: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        Reference: 'TS29571_CommonData.yaml#/components/responses/415'
      '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:
        Reference: 'TS29571_CommonData.yaml#/components/responses/default'
    Callbacks:
      onNFStatusEvent:
        '{$request.body#/nfStatusNotificationUri}':
          Post:
            parameters:
              - name: Content-Encoding
                in: header
                description: Content-Encoding, described in IETF RFC 7231
                schema:
                  type: string
            Request Body:
              Description: Notification Payload
              Content:
                Application/JSON:
                  Schema:
                    Reference: '#/components/schemas/NotificationData'

            Responses:
              '204':
                Description: Expected response to a successful callback processing
                  headers:
                    Accept-Encoding:
                      description: Accept-Encoding, described in IETF RFC 7694
                      schema:
                        type: string
          '307':
            description: Temporary Redirect
```

```
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
        '308':
          description: Permanent Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
              '400':
                Reference: 'TS29571_CommonData.yaml#/components/responses/400'
              '403':
                Reference: 'TS29571_CommonData.yaml#/components/responses/403'
              '404':
                Reference: 'TS29571_CommonData.yaml#/components/responses/404'
              '411':
                Reference: 'TS29571_CommonData.yaml#/components/responses/411'
              '413':
                Reference: 'TS29571_CommonData.yaml#/components/responses/413'
              '415':
                Reference: 'TS29571_CommonData.yaml#/components/responses/415'
              '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:
                Reference: 'TS29571_CommonData.yaml#/components/responses/default'
```

/subscriptions/{subscriptionID}

```
  patch:
    Summary: Updates a subscription
```

```
Operation ID: UpdateSubscription

Tags:
  - Subscription ID (Document)

Parameters:
  - Name: subscriptionID
    In: path
    Required/Optional: true
    Description: Unique ID of the subscription to update
    Schema:
      Type: string
      pattern: '^([0-9]{5,6}-)?[^-]+$'
    - name: Content-Encoding
      in: header
      description: Content-Encoding, described in IETF RFC 7231
      schema:
        type: string
    - name: Accept-Encoding
      in: header
      description: Accept-Encoding, described in IETF RFC 7231
      schema:
        type: string
Request Body:
  Content:
    application/json-patch+json:
      Schema:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/PatchItem'
  Required/Optional: true

Responses:
  '200':
    Description: Expected response to a valid request
    Content:
      Application/JSON:
        Schema:
          Reference: '#/components/schemas/SubscriptionData'
      headers:
        Accept-Encoding:
          description: Accept-Encoding, described in IETF RFC 7694
          schema:
            type: string
        Content-Encoding:
          description: Content-Encoding, described in IETF RFC 7231
          schema:
            type: string
  '204':
    Description: No Content
      headers:
        Accept-Encoding:
```

```
            description: Accept-Encoding, described in IETF RFC 7694
            schema:
              type: string
        '307':
          description: Temporary Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
        '308':
          description: Permanent Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '403':
        Reference: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
        Reference: 'TS29571_CommonData.yaml#/components/responses/411'
      '413':
        Reference: 'TS29571_CommonData.yaml#/components/responses/413'
      '415':
        Reference: 'TS29571_CommonData.yaml#/components/responses/415'
      '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:
        Reference: 'TS29571_CommonData.yaml#/components/responses/default'
  delete:
```

```
    Summary: Deletes a subscription
    Operation ID: RemoveSubscription

    Tags:
      - Subscription ID (Document)

    Parameters:
      - Name: subscriptionID
        In: path
        Required/Optional: true
        Description: Unique ID of the subscription to remove
        Schema:
          Type: string
          pattern: '^([0-9]{5,6}-)?[^-]+$'

    Responses:
      '204':
        Description: Expected response to a successful subscription removal
        '307':
          description: Temporary Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
        '308':
          description: Permanent Redirect
          content:
            application/json:
              schema:
               Reference: 'TS29571_CommonData.yaml#/components/schemas/RedirectResponse'

          headers:
            Location:
              description: 'The URI pointing to the resource located on the redirect
target NRF'
              required: true
              schema:
                type: string
      '400':
        Reference: 'TS29571_CommonData.yaml#/components/responses/400'
      '403':
        Reference: 'TS29571_CommonData.yaml#/components/responses/403'
      '404':
        Reference: 'TS29571_CommonData.yaml#/components/responses/404'
      '411':
```

```
      Reference: 'TS29571_CommonData.yaml#/components/responses/411'
    '413':
      Reference: 'TS29571_CommonData.yaml#/components/responses/413'
    '415':
      Reference: 'TS29571_CommonData.yaml#/components/responses/415'
    '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:
      Reference: 'TS29571_CommonData.yaml#/components/responses/default'
```

Components

```
securitySchemes:
  oAuth2ClientCredentials:
    Type: oauth2
    Flows:
      clientCredentials:
        tokenUrl: '/oauth2/token'
        scopes:
          nnrf-nfm: Access to the Nnrf_NFManagement API

schemas:
  NFProfile:
      description: Information of an NF Instance registered in the NRF
    Type: object
    Required:
      - nfInstanceId
      - nfType
      - nfStatus
    anyOf:
      - required: [ fqdn ]
      - required: [ ipv4Addresses ]
      - required: [ ipv6Addresses ]
    Properties:
      nfInstanceId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
        nfInstanceName:
          type: string
      nfType:
        Reference: '#/components/schemas/NFType'
      nfStatus:
        Reference: '#/components/schemas/NFStatus'
      heartBeatTimer:
        Type: integer
      plmnList:
        Type: array
```

```
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    minItems: 1
    snpnList:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
    minItems: 1
  sNssais:
    Type: array
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    minItems: 1
  nsiList:
    Type: array
    Items:
      Type: string
    minItems: 1
  fqdn:
    Reference: '#/components/schemas/Fqdn'
  interPlmnFqdn:
    Reference: '#/components/schemas/Fqdn'
  ipv4Addresses:
    Type: array
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
    minItems: 1
  ipv6Addresses:
    Type: array
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
    minItems: 1
  allowedPlmns:
    Type: array
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    minItems: 1
    allowedSnpns:
    Type: array
    Items:
       Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
    minItems: 1
  allowedNfTypes:
    Type: array
    Items:
      Reference: '#/components/schemas/NFType'
    minItems: 1
  allowedNfDomains:
    Type: array
    Items:
      Type: string
```

```
    minItems: 1
  allowedNssais:
    Type: array
    Items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    minItems: 1
  priority:
    Type: integer
    Minimum: 0
    Maximum: 65535
  capacity:
    Type: integer
    Minimum: 0
    Maximum: 65535
  load:
    Type: integer
    Minimum: 0
    Maximum: 100
    loadTimeStamp:
      # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
      format: date-time
      type: string
  locality:
    Type: string
  udrInfo:
    Reference: '#/components/schemas/UdrInfo'
    udrInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/UdrInfo'
      minProperties: 1
  udmInfo:
    Reference: '#/components/schemas/UdmInfo'
    udmInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/UdmInfo'
      minProperties: 1
  ausfInfo:
    Reference: '#/components/schemas/AusfInfo'
    ausInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/AusInfo'
      minProperties: 1
  amfInfo:
    Reference: '#/components/schemas/AmfInfo'
    amfInfoList:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/AmfInfo'
```

```
    minProperties: 1
smfInfo:
  Reference: '#/components/schemas/SmfInfo'
  smfInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/SmfInfo'
    minProperties: 1
upfInfo:
  Reference: '#/components/schemas/UpfInfo'
  upfInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/UpfInfo'
    minProperties: 1
pcfInfo:
  Reference: '#/components/schemas/PcfInfo'
  pcfInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/PcfInfo'
    minProperties: 1
bsfInfo:
  Reference: '#/components/schemas/BsfInfo'
  bsfInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/BsfInfo'
    minProperties: 1
chfInfo:
  Reference: '#/components/schemas/ChfInfo'
  chfInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/SmfInfo'
    minProperties: 1
  nefInfo:
    Reference: '#/components/schemas/NefInfo'
nrfInfo:
  Reference: '#/components/schemas/NrfInfo'
udsInfo:
  Reference: '#/components/schemas/UdsInfo'
  udsInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/UdsInfo'
    minProperties: 1
  nwdafInfo:
    Reference: '#/components/schemas/NwdafInfo'
  pcscfInfoList:
    type: object
```

```
    additionalProperties:
      Reference: '#/components/schemas/PcscfInfo'
    minProperties: 1
  hssInfoList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/HssInfo'
    minProperties: 1
customInfo:
  Type: object
recoveryTime:
    format: date-time
    type: string
  # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
nfServicePersistence:
  Type: boolean
    nullable: true
  Default: false
nfServices:
    deprecated: true
  Type: array
  Items:
    Reference: '#/components/schemas/NFService'
  minItems: 1
  nfServiceList:
    type: object
    additionalProperties:
      Reference: '#/components/schemas/NFService'
    minProperties: 1
  nfProfileChangesSupportInd:
    type: boolean
    default: false
    writeOnly: true
  nfProfileChangesInd:
    type: boolean
    default: false
    readOnly: true
  defaultNotificationSubscriptions:
    type: array
    items:
      Reference: '#/components/schemas/DefaultNotificationSubscription'
  lmfInfo:
    Reference: '#/components/schemas/LmfInfo'
  gmlcInfo:
    Reference: '#/components/schemas/GmlcInfo'
  nfSetIdList:
    type: array
    items:
      $ref: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
    minItems: 1
  servingScope:
```

```
        type: array
        items:
          type: string
        minItems: 1
      lcHSupportInd:
        type: boolean
        default: false
      olcHSupportInd:
        type: boolean
        default: false
      nfSetRecoveryTimeList:
        type: object
        additionalProperties:
          format: date-time
          type: string
          # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        minProperties: 1
      serviceSetRecoveryTimeList:
        type: object
        additionalProperties:
          format: date-time
          type: string
          # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
        minProperties: 1
      scpDomains:
        type: array
        items:
          type: string
        minItems: 1
      scpInfo:
        # Reference: '#/components/schemas/ScpInfo'
 NFService:
    description: Information of a given NF Service Instance; it is part of the NFProfile
of an NF Instance
   Type: object
   Required:
     - serviceInstanceId
     - serviceName
     - versions
     - scheme
     - nfServiceStatus
   Properties:
     serviceInstanceId:
       Type: string
     serviceName:
       Reference: '#/components/schemas/ServiceName'
     versions:
       Type: array
       Items:
         Reference: '#/components/schemas/NFServiceVersion'
       minItems: 1
     scheme:
       Reference: 'TS29571_CommonData.yaml#/components/schemas/UriScheme'
```

```
nfServiceStatus:
  Reference: '#/components/schemas/NFServiceStatus'
fqdn:
  Reference: '#/components/schemas/Fqdn'
interPlmnFqdn:
  Reference: '#/components/schemas/Fqdn'
ipEndPoints:
  Type: array
  Items:
    Reference: '#/components/schemas/IpEndPoint'
  minItems: 1
apiPrefix:
  Type: string
defaultNotificationSubscriptions:
  Type: array
  Items:
    Reference: '#/components/schemas/DefaultNotificationSubscription'
  minItems: 1
allowedPlmns:
  Type: array
  Items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
  minItems: 1
  allowedSnpns:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
    minItems: 1
allowedNfTypes:
  Type: array
  Items:
    Reference: '#/components/schemas/NFType'
  minItems: 1
allowedNfDomains:
  Type: array
  Items:
    Type: string
  minItems: 1
allowedNssais:
  Type: array
  Items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
  minItems: 1
  allowedOperationsPerNfType:
    type: object
    additionalProperties:
  Type: array
  Items:
       type: string
     minItems: 1
    minProperties: 1
```

```
    allowedOperationsPerNfInstance:
      type: object
      additionalProperties:
    Type: array
    Items:
       minItems: 1
     minProperties: 1
priority:
  Type: integer
  Minimum: 0
  Maximum: 65535
capacity:
  Type: integer
  Minimum: 0
  Maximum: 65535
load:
  Type: integer
  Minimum: 0
  Maximum: 100
  loadTimeStamp:
    format: date-time
    type: string
    # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
recoveryTime:
    format: date-time
    type: string
  # Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
chfServiceInfo:
  Reference: '#/components/schemas/ChfServiceInfo'
supportedFeatures:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
  nfServiceSetIdList:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfServiceSetId'
    minItems: 1
  sNssais:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    minItems: 1
  perPlmnSnssaiList:
    type: array
    items:
      Reference: '#/components/schemas/PlmnSnssai'
    minItems: 1
  vendorId:
    Reference: '#/components/schemas/VendorId'
  supportedVendorSpecificFeatures:
    type: object
    additionalProperties:
```

```
        type: array
        items:
           Reference: '#/components/schemas/VendorSpecificFeature'
        minItems: 1
        minProperties: 1
      oauth2Required:
        type: boolean
NFType:
   description: NF types known to NRF
  anyOf:
    - type: string
      enum:
        - NRF
        - UDM
        - AMF
        - SMF
        - AUSF
        - NEF
        - PCF
        - SMSF
        - NSSF
        - UDR
        - LMF
        - GMLC
        - 5G_EIR
        - SEPP
        - UPF
        - N3IWF
        - AF
        - UDSF
        - BSF
        - CHF
        - NWDAF
        - PCSCF
        - CBCF
        - HSS
        - UCMF
        - SOR_AF
        - SPAF
        - MME
        - SCSAS
        - SCEF
        - SCP
        - NSSAAF
        - ICSCF
        - SCSCF
        - DRA
    - type: string
Fqdn:
  description: Fully Qualified Domain Name
  Type: string
  NefId:
    description: Identity of the NEF
    type: string
IpEndPoint:
  description: IP addressing information of a given NFService; it consists on, e.g. IP
address, TCP port, transport protocol...
  Type: object
  Properties:
```

```
      ipv4Address:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      ipv6Address:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
      transport:
        Reference: '#/components/schemas/TransportProtocol'
      port:
        Type: integer
        Minimum: 0
        Maximum: 65535
  SubscriptionData:
    description: Information of a subscription to notifications to NRF events, included
in subscription requests and responses
    Type: object
    Required:
      - nfStatusNotificationUri
      - subscriptionId
    Properties:
      nfStatusNotificationUri:
        Type: string
        reqNfInstanceId:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
      subscrCond:
        oneOf:
          - $ref: '#/components/schemas/NfInstanceIdCond'
          - $ref: '#/components/schemas/NfTypeCond'
          - $ref: '#/components/schemas/ServiceNameCond'
          - $ref: '#/components/schemas/AmfCond'
          - $ref: '#/components/schemas/GuamiListCond'
          - $ref: '#/components/schemas/NetworkSliceCond'
          - $ref: '#/components/schemas/NfGroupCond'
      subscriptionId:
        Type: string
        Pattern: '^([0-9]{5,6}-)?[^-]+$'
        readOnly: true
      validityTime:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
          format: date-time
          type: string
      reqNotifEvents:
        Type: array
        Items:
         Reference: '#/components/schemas/NotificationEventType'
        minItems: 1
      plmnId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
        nid:
         Reference: 'TS29571_CommonData.yaml#/components/schemas/Nid'
      notifCondition:
         Reference: '#/components/schemas/NotifCondition'
      reqNfType:
        Reference: '#/components/schemas/NFType'
      reqNfFqdn:
```

```
        Reference: '#/components/schemas/Fqdn'

        reqPerPlmnSnssais:
          type: array
          items:
            Reference: '#/components/schemas/PlmnSnssai'
          minItems: 1
        reqPlmnList:
          type: array
          items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
          minItems: 1
        reqSnpnList:
          type: array
          items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
          minItems: 1
        servingScope:
          type: array
          items:
            type: string
          minItems: 1
        requesterFeatures:
          writeOnly: true
          allOf:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
        nrfSupportedFeatures:
          readOnly: true
          allOf:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
    NfInstanceIdCond:
       description: Subscription to a given NF Instance Id
      Type: object
      Required:
        - nfInstanceId
      Properties:
        nfInstanceId:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
    NfTypeCond:
      Type: object
      Required:
        - nfType
      Properties:
        nfType:
          Reference: '#/components/schemas/NFType'
    ServiceNameCond:
       description: Subscription to a set of NFs based on their support for a given Service
    Name
      Type: object
      Required:
        - serviceName
      Properties:
```

```
      serviceName:
        Reference: '#/components/schemas/ServiceName'
    AmfCond:
      description: Subscription to a set of AMFs, based on AMF Set Id and/or AMF Region
    Id
      Type: object
      anyOf:
        - required: [ amfSetId ]
        - required: [ amfRegionId ]
      Properties:
        amfSetId:
          Type: string
        amfRegionId:
          Type: string
    GuamiListCond:
      description: Subscription to a set of AMFs, based on their GUAMIs
      Type: object
      Required:
        - guamiList
      Properties:
        guamiList:
          Type: array
          Items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'
    NetworkSliceCond:
      description: Subscription to a set of NFs, based on the slices (S-NSSAI and NSI)
    they support
      Type: object
      Required:
        - snssaiList
      Properties:
        snssaiList:
          Type: array
          Items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        nsiList:
          Type: array
          Items:
            Type: string
    NfGroupCond:
      description: Subscription to a set of NFs based on their Group Id
      Type: object
      Required:
        - nfType
        - nfGroupId
      Properties:
        nfType:
          Type: string
          enum:
            - UDM
            - AUSF
            - UDR
            - PCF
            - CHF
```

```
    nfGroupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
 NotifCondition:
    description: Condition (list of attributes in the NF Profile) to determine whether
 a notification must be sent by NRF
   Type: object
   not:
     Required: [ monitoredAttributes, unmonitoredAttributes ]
   Properties:
     monitoredAttributes:
       Type: array
       Items:
         Type: string
       minItems: 1
     unmonitoredAttributes:
       Type: array
       Items:
         Type: string
       minItems: 1
 UdrInfo:
    description: Information of an UDR NF Instance
  Type: object
  Properties:
    groupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
    supiRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/SupiRange'
      minItems: 1
    gpsiRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
    externalGroupIdentifiersRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
    supportedDataSets:
      Type: array
      Items:
        Reference: '#/components/schemas/DataSetId'
      minItems: 1
 SupiRange:
    description: A range of SUPIs (subscriber identities), either based on a numeric
range, or based on regular-expression matching
   Type: object
   Properties:
     start:
       Type: string
```

```
        Pattern: '^[0-9]+$'
      end:
        Type: string
        Pattern: '^[0-9]+$'
      Pattern:
        Type: string
  IdentityRange:
      description: A range of GPSIs (subscriber identities), either based on a numeric
range, or based on regular-expression matching
    Type: object
    Properties:
      start:
        Type: string
        Pattern: '^[0-9]+$'
      end:
        Type: string
        Pattern: '^[0-9]+$'
      Pattern:
        Type: string
    InternalGroupIdRange:
      description: A range of Group IDs (internal group identities), either based on a
numeric range, or based on regular-expression matching
      type: object
      properties:
        start:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        end:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/GroupId'
        pattern:
          type: string
  DataSetId:
    description: Types of data sets stored in UDR
    anyOf:
      - type: string
        enum:
          - SUBSCRIPTION
          - POLICY
          - EXPOSURE
          - APPLICATION
      - type: string
  UdmInfo:
      description: Information of an UDM NF Instance
    Type: object
    Properties:
      groupId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
      supiRanges:
        Type: array
        Items:
          Reference: '#/components/schemas/SupiRange'
        minItems: 1
      gpsiRanges:
        Type: array
```

```
      Items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
    externalGroupIdentifiersRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/IdentityRange'
      minItems: 1
    routingIndicators:
      Type: array
      Items:
        Type: string
        Pattern: '^[0-9]{1,4}$'
      minItems: 1
      internalGroupIdentifiersRanges:
      Type: array
      Items:
          Reference: '#/components/schemas/InternalGroupIdRange'
        minItems: 1
AusfInfo:
    description: Information of an AUSF NF Instance
  Type: object
  Properties:
    groupId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
    supiRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/SupiRange'
      minItems: 1
    routingIndicators:
      Type: array
      Items:
        Type: string
        Pattern: '^[0-9]{1,4}$'
      minItems: 1
AmfInfo:
    description: Information of an AMF NF Instance
  Type: object
  Required:
    - amfSetId
    - amfRegionId
    - guamiList
  Properties:
    amfSetId:
      Type: string
    amfRegionId:
      Type: string
    guamiList:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'
```

```
      minItems: 1
    taiList:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
      minItems: 1
    taiRangeList:
      Type: array
      Items:
        Reference: '#/components/schemas/TaiRange'
      minItems: 1
    backupInfoAmfFailure:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'
      minItems: 1
    backupInfoAmfRemoval:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'
      minItems: 1
    n2InterfaceAmfInfo:
      Reference: '#/components/schemas/N2InterfaceAmfInfo'
SmfInfo:
    description: Information of an SMF NF Instance
  Type: object
  Required:
    - sNssaiSmfInfoList
  Properties:
    sNssaiSmfInfoList:
      Type: array
      Items:
        Reference: '#/components/schemas/SnssaiSmfInfoItem'
      minItems: 1
    taiList:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
      minItems: 1
    taiRangeList:
      Type: array
      Items:
        Reference: '#/components/schemas/TaiRange'
      minItems: 1
    pgwFqdn:
      Reference: '#/components/schemas/Fqdn'
    accessType:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
      minItems: 1
      priority:
```

```
        type: integer
        minimum: 0
        maximum: 65535
      vsmfSupportInd:
        type: boolean
        default: false
SnssaiSmfInfoItem:
    description: Set of parameters supported by SMF for a given S-NSSAI
  Type: object
  Required:
    - sNssai
    - dnnSmfInfoList
  Properties:
    sNssai:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    dnnSmfInfoList:
      Type: array
      Items:
        Reference: '#/components/schemas/DnnSmfInfoItem'
      minItems: 1
DnnSmfInfoItem:
  description: Set of parameters supported by SMF for a given DNN
  Type: object
  Required:
    - dnn
  Properties:
    dnn:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
UpfInfo:
  description: Information of an UPF NF Instance
  Type: object
  Required:
    - sNssaiUpfInfoList
  Properties:
    sNssaiUpfInfoList:
      Type: array
      Items:
        Reference: '#/components/schemas/SnssaiUpfInfoItem'
      minItems: 1
    smfServingArea:
      Type: array
      Items:
        Type: string
      minItems: 1
    interfaceUpfInfoList:
      Type: array
      Items:
        Reference: '#/components/schemas/InterfaceUpfInfoItem'
      minItems: 1
    iwkEpsInd:
      Type: boolean
      Default: false
```

```
      pduSessionTypes:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
        minItems: 1
      atsssCapability:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/AtsssCapability'
      ueIpAddrInd:
        type: boolean
        default: false
      taiList:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
        minItems: 1
      wAgfInfo:
        Reference: '#/components/schemas/WAgfInfo'
      tngfInfo:
        Reference: '#/components/schemas/TngfInfo'
      twifInfo:
        Reference: '#/components/schemas/TwifInfo'
      priority:
        type: integer
        minimum: 0
        maximum: 65535
      redundantGtpu:
        type: boolean
        default: false
      ipups:
        type: boolean
        default: false
      dataForwarding:
        type: boolean
        default: false
SnssaiUpfInfoItem:
    description: Set of parameters supported by UPF for a given S-NSSAI
  Type: object
  Required:
    - sNssai
    - dnnUpfInfoList
  Properties:
    sNssai:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
    dnnUpfInfoList:
      Type: array
      Items:
        Reference: '#/components/schemas/DnnUpfInfoItem'
      minItems: 1
      redundantTransport:
        type: boolean
        default: false
DnnUpfInfoItem:
```

```
      description: Set of parameters supported by UPF for a given DNN
    Type: object
    Required:
      - dnn
    Properties:
      dnn:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      dnaiList:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnai'
        minItems: 1
        pduSessionTypes:
          type: array
          items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/PduSessionType'
          minItems: 1
        ipv4AddressRanges:
          type: array
          items:
            Reference: '#/components/schemas/Ipv4AddressRange'
          minItems: 1
        ipv6PrefixRanges:
          type: array
          items:
            Reference: '#/components/schemas/Ipv6PrefixRange'
          minItems: 1
        dnaiNwInstanceList:
          description: Map of network instance per DNAI for the DNN, where the key of
the map is the DNAI. When present, the value of each entry of the map shall contain a N6
network instance that is configured for the DNAI indicated by the key.
          type: object
          additionalProperties:
            type: string
          minProperties: 1
  InterfaceUpfInfoItem:
    description: Information of a given IP interface of an UPF
    Type: object
    Required:
      - interfaceType
    Properties:
      interfaceType:
        Reference: '#/components/schemas/UPInterfaceType'
      ipv4EndpointAddresses:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
        minItems: 1
      ipv6EndpointAddresses:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
```

```
      minItems: 1
    endpointFqdn:
       Reference: '#/components/schemas/Fqdn'
    networkInstance:
      Type: string
UPInterfaceType:
  description: Types of User-Plane interfaces of the UPF
  anyOf:
    - type: string
      enum:
        - N3
        - N6
        - N9
        - DATA_FORWARDING
    - type: string
  WAgfInfo:
    description: Information of the W-AGF end-points
    type: object
    properties:
      ipv4EndpointAddresses:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
        minItems: 1
      ipv6EndpointAddresses:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
        minItems: 1
      endpointFqdn:
        Reference: '#/components/schemas/Fqdn'
  TngfInfo:
    description: Infomation of the TNGF endpoints
    type: object
    properties:
      ipv4EndpointAddresses:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
        minItems: 1
      ipv6EndpointAddresses:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
        minItems: 1
      endpointFqdn:
        Reference: '#/components/schemas/Fqdn'
PcfInfo:
    description: Information of a PCF NF Instance
  Type: object
  Properties:
      groupId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
```

```
    dnnList:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      minItems: 1
    supiRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/SupiRange'
      minItems: 1
      gpsiRanges:
        type: array
        items:
          Reference: '#/components/schemas/IdentityRange'
        minItems: 1
    rxDiamHost:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DiameterIdentity'
    rxDiamRealm:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DiameterIdentity'
      v2xSupportInd:
        type: boolean
        default: false
BsfInfo:
    description: Information of a BSF NF Instance
  Type: object
  Properties:
    dnnList:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      minItems: 1
    ipDomainList:
      Type: array
      Items:
        Type: string
      minItems: 1
    ipv4AddressRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/Ipv4AddressRange'
      minItems: 1
    ipv6PrefixRanges:
      Type: array
      Items:
        Reference: '#/components/schemas/Ipv6PrefixRange'
      minItems: 1
ChfInfo:
    description: Information of a CHF NF Instance
  Type: object
    not:
      required: [ primaryChfInstance, secondaryChfInstance ]
```

```
    Properties:
      supiRangeList:
        Type: array
        Items:
          Reference: '#/components/schemas/SupiRange'
        minItems: 1
      gpsiRangeList:
        Type: array
        Items:
          Reference: '#/components/schemas/IdentityRange'
        minItems: 1
      plmnRangeList:
        Type: array
        Items:
          Reference: '#/components/schemas/PlmnRange'
        minItems: 1
        groupId:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
        primaryChfInstance:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
        secondaryChfInstance:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
  Ipv4AddressRange:
      description: Range of IPv4 addresses
    Type: object
    Properties:
      start:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      end:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
  Ipv6PrefixRange:
    description: Range of IPv6 prefixes
    Type: object
    Properties:
      start:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
      end:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
  DefaultNotificationSubscription:
    description: Data structure for specifying the notifications the NF service subscribes
by default along with callback URI
    Type: object
    Required:
      - notificationType
      - callbackUri
    Properties:
      notificationType:
        Reference: '#/components/schemas/NotificationType'
      callbackUri:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      n1MessageClass:
        Reference: 'TS29518_Namf_Communication.yaml#/components/schemas/N1MessageClass'
```

```
      n2InformationClass:
       Reference: 'TS29518_Namf_Communication.yaml#/components/schemas/N2InformationClass'


        versions:
          type: array
          items:
            type: string
          minItems: 1
        binding:
          type: string
    NfSetCond:
      description: Subscription to a set of NFs based on their Set Id
      type: object
      required:
        - nfSetId
      properties:
        nfSetId:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
    NfServiceSetCond:
      description: Subscription to a set of NFs based on their Service Set Id
      type: object
      required:
        - nfServiceSetId
      properties:
        nfServiceSetId:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfServiceSetId'
    UpfCond:
      description: Subscription to a set of NF Instances (UPFs), able to serve a certain
service area (i.e. SMF serving area or TAI list)
      type: object
      required:
        - conditionType
      properties:
        conditionType:
          type: string
          enum: [ UPF_COND ]
        smfServingArea:
          type: array
          items:
            type: string
          minItems: 1
        taiList:
          type: array
          items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
          minItems: 1
    NwdafCond:
      description: Subscription to a set of NF Instances (NWDAFs), identified by Analytics
ID(s), S-NSSAI(s) or NWDAF Serving Area information, i.e. list of TAIs for which the NWDAF
can provide analytics.
      type: object
      required:
```

```
      - conditionType
    properties:
      conditionType:
        type: string
        enum: [ NWDAF_COND ]
      analyticsIds:
        type: array
        items:
          type: string
        minItems: 1
      snssaiList:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        minItems: 1
      taiList:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
        minItems: 1
      taiRangeList:
        type: array
        items:
          Reference: '#/components/schemas/TaiRange'
        minItems: 1
  NefCond:
    description: Subscription to a set of NF Instances (NEFs), identified by Event ID(s)
 provided by AF, S-NSSAI(s), AF Instance ID, Application Identifier, External Identifier,
External Group Identifier, or domain name.
    type: object
    required:
      - conditionType
    properties:
      conditionType:
        type: string
        enum: [ NEF_COND ]
      afEvents:
        type: array
        items:
          Reference: 'TS29517_Naf_EventExposure.yaml#/components/schemas/AfEvent'
        minItems: 1
      snssaiList:
        type: array
        items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
        minItems: 1
      pfdData:
        Reference: '#/components/schemas/PfdData'
      gpsiRanges:
        type: array
        items:
          Reference: '#/components/schemas/IdentityRange'
```

```
        minItems: 1
      externalGroupIdentifiersRanges:
        type: array
        items:
          Reference: '#/components/schemas/IdentityRange'
        minItems: 1
      servedFqdnList:
        type: array
        items:
          type: string
        minItems: 1
  NotificationType:
     description: Types of notifications used in Default Notification URIs in the NF
Profile of an NF Instance
    anyOf:
      - type: string
        enum:
          - N1_MESSAGES
          - N2_INFORMATION
          - LOCATION_NOTIFICATION
          - DATA_REMOVAL_NOTIFICATION
          - DATA_CHANGE_NOTIFICATION
          - LOCATION_UPDATE_NOTIFICATION
          - NSSAA_REAUTH_NOTIFICATION
          - NSSAA_REVOC_NOTIFICATION
      - type: string
  TransportProtocol:
    description: Types of transport protocol used in a given IP endpoint of an NF Service
 Instance
    anyOf:
      - type: string
        enum:
          - TCP
      - type: string
  NotificationEventType:
    description: Types of events sent in notifications from NRF to subscribed NF Instances

    anyOf:
      - type: string
        enum:
          - NF_REGISTERED
          - NF_DEREGISTERED
          - NF_PROFILE_CHANGED
      - type: string
  NotificationData:
     description: Data sent in notifications from NRF to subscribed NF Instances
    Type: object
    Required:
      - event
      - nfInstanceUri
    allOf:
       #
       # Condition: If 'event' takes value 'NF_PROFILE_CHANGED',
       # then either 'nfProfile' or 'profileChanges' (but not both) must be present
       #
      - anyOf:
        - not:
```

```
        Properties:
          event:
            Type: string
            enum:
              - NF_PROFILE_CHANGED
    - oneOf:
        - required: [ nfProfile ]
        - required: [ profileChanges ]
    #
    # Condition: If 'event' takes value 'NF_REGISTERED',
    # then 'nfProfile' must be present
    #
  - anyOf:
    - not:
        Properties:
          event:
            Type: string
            enum:
              - NF_REGISTERED
    - required: [ nfProfile ]
Properties:
  event:
    Reference: '#/components/schemas/NotificationEventType'
  nfInstanceUri:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
  nfProfile:
    allOf:
      - $ref: '#/components/schemas/NFProfile'
      - not:
          Required: [ interPlmnFqdn ]
      - not:
          Required: [ allowedPlmns ]
      - not:
          Required: [ allowedSnpns ]
      - not:
          Required: [ allowedNfTypes ]
      - not:
          Required: [ allowedNfDomains ]
      - not:
          Required: [ allowedNssais ]
      - properties:
          nfServices:
            Type: array
            Items:
              allOf:
                - $ref: '#/components/schemas/NFService'
                - not:
                    Required: [ interPlmnFqdn ]
                - not:
                    Required: [ allowedPlmns ]
                - not:
                    Required: [ allowedNfTypes ]
                - not:
                    Required: [ allowedNfDomains ]
                - not:
                    Required: [ allowedNssais ]
```

```
    profileChanges:
      Type: array
      Items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/ChangeItem'
      minItems: 1
      conditionEvent:
        Reference: '#/components/schemas/ConditionEventType'
NFStatus:
    description: Status of a given NF Instance stored in NRF
  anyOf:
    - type: string
      enum:
        - REGISTERED
        - SUSPENDED
        - UNDISCOVERABLE
    - type: string
NFServiceVersion:
    description: Contains the version details of an NF service
  Type: object
  Required:
    - apiVersionInUri
    - apiFullVersion
  Properties:
    apiVersionInUri:
      Type: string
    apiFullVersion:
      Type: string
    expiry:
        format: date-time
        type: string
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
ServiceName:
  description: Service names known to NRF
  anyOf:
    - type: string
      enum:
        - nnrf-nfm
        - nnrf-disc
        - nnrf-oauth2
        - nudm-sdm
        - nudm-uecm
        - nudm-ueau
        - nudm-ee
        - nudm-pp
        - nudm-niddau
        - nudm-mt
        - namf-comm
        - namf-evts
        - namf-mt
        - namf-loc
        - nsmf-pdusession
        - nsmf-event-exposure
        - nsmf-nidd
        - nausf-auth
        - nausf-sorprotection
        - nnef-pfdmanagement
        - nnef-smcontext
```

```
          - nnef-eventexposure
          - npcf-am-policy-control
          - npcf-smpolicycontrol
          - npcf-policyauthorization
          - npcf-bdtpolicycontrol
          - npcf-eventexposure
          - npcf-ue-policy-control
          - nsmsf-sms
          - nnssf-nsselection
          - nnssf-nssaiavailability
          - nudr-dr
          - nudr-group-id-map
          - nlmf-loc
          - n5g-eir-eic
          - nbsf-management
          - nchf-spendinglimitcontrol
          - nchf-convergedcharging
          - nchf-offlineonlycharging
          - nnwdaf-eventssubscription
          - nnwdaf-analyticsinfo
          - nucmf-provisioning
          - nucmf-uecapabilitymanagement
          - nhss-sdm
          - nhss-uecm
          - nhss-ueau
          - nhss-ee
          - nhss-ims-sdm
          - nhss-ims-uecm
          - nhss-ims-ueau
          - nsepp-telescopic
          - nsoraf-sor
          - nspaf-secured-packet
          - nudsf-dr
          - nnssaaf-nssaa
      - type: string
  N2InterfaceAmfInfo:
      description: AMF N2 interface information
    Type: object
    Properties:
      ipv4EndpointAddress:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
        minItems: 1
      ipv6EndpointAddress:
        Type: array
        Items:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
        minItems: 1
      amfName:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/AmfName'
  NFServiceStatus:
     description: Status of a given NF Service Instance of an NF Instance stored in NRF

    anyOf:
      - type: string
        enum:
          - REGISTERED
          - SUSPENDED
```

```
    - type: string
TaiRange:
    description: Range of TAIs (Tracking Area Identities)
  Type: object
  Required:
    - plmnId
    - tacRangeList
  Properties:
    plmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    tacRangeList:
      Type: array
      Items:
        Reference: '#/components/schemas/TacRange'
      minItems: 1
      nid:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Nid'
TacRange:
    description: Range of TACs (Tracking Area Codes)
  Type: object
  Properties:
    start:
      Type: string
      Pattern: '^([A-Fa-f0-9]{4}|[A-Fa-f0-9]{6})$'
    end:
      Type: string
      Pattern: '^([A-Fa-f0-9]{4}|[A-Fa-f0-9]{6})$'
    Pattern:
      Type: string
ChfServiceInfo:
  Type: object
  not:
    Required: [ primaryChfServiceInstance, secondaryChfServiceInstance ]
  Properties:
    primaryChfServiceInstance:
      Type: string
    secondaryChfServiceInstance:
      Type: string
PlmnRange:
    description: Range of PLMN IDs
  Type: object
  Properties:
    start:
      Type: string
      Pattern: '^[0-9]{3}[0-9]{2,3}$'
    end:
      Type: string
      Pattern: '^[0-9]{3}[0-9]{2,3}$'
    Pattern:
      Type: string
NrfInfo:
   description: Information of an NRF NF Instance, used in hierarchical NRF deployments
```

```
Type: object
Properties:
  servedUdrInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/UdrInfo'
    minProperties: 1
    servedUdrInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/UdrInfo'
    minProperties: 1
      minProperties: 1
  servedUdmInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/UdmInfo'
    minProperties: 1
    servedUdmInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/UdmInfo'
    minProperties: 1
      minProperties: 1
  servedAusfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/AusfInfo'
    minProperties: 1
    servedAusInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/AusInfo'
    minProperties: 1
      minProperties: 1
  servedAmfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/AmfInfo'
    minProperties: 1
    servedAmfInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
```

```
        Reference: '#/components/schemas/AmfInfo'
    minProperties: 1
      minProperties: 1
  servedSmfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/SmfInfo'
    minProperties: 1
    servedSmfInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
        Reference: '#/components/schemas/SmfInfo'
    minProperties: 1
      minProperties: 1
  servedUpfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/UpfInfo'
    minProperties: 1
    servedUpfInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
        Reference: '#/components/schemas/UpfInfo'
    minProperties: 1
      minProperties: 1
  servedPcfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/PcfInfo'
    minProperties: 1
    servedPcfInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
        Reference: '#/components/schemas/PcfInfo'
    minProperties: 1
      minProperties: 1
  servedBsfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/BsfInfo'
    minProperties: 1
    servedBsfInfoList:
    Type: object
    additionalProperties:
    Type: object
```

```
    additionalProperties:
         Reference: '#/components/schemas/BsfInfo'
    minProperties: 1
      minProperties: 1
  servedChfInfo:
    Type: object
    additionalProperties:
      Reference: '#/components/schemas/ChfInfo'
    minProperties: 1
    servedChfInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/ChfInfo'
    minProperties: 1
      minProperties: 1
    servedNefInfo:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/NefInfo'
      minProperties: 1
    servedNwdafInfo:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/NwdafInfo'
      minProperties: 1
    servedPcscfInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/PcscfInfo'
    minProperties: 1
      minProperties: 1
    servedGmlcInfo:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/GmlcInfo'
      minProperties: 1
    servedLmfcInfo:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/LmfcInfo'
      minProperties: 1
    servedNfInfo:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/NfInfo'
      minProperties: 1
    servedHssInfoList:
```

```
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/HssInfo'
    minProperties: 1
      minProperties: 1
    servedUdsfInfo:
      type: object
      additionalProperties:
        Reference: '#/components/schemas/UdsfInfo'
      minProperties: 1
    servedUdsfInfoList:
    Type: object
    additionalProperties:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/UdsfInfo'
    minProperties: 1
      minProperties: 1
    servedScpInfoList:
    Type: object
    additionalProperties:
         Reference: '#/components/schemas/ScpInfo'
    minProperties: 1
PlmnSnssai:
  description: List of network slices (S-NSSAIs) for a given PLMN ID
    Type: object
  required:
    - plmnId
    - sNssaiList
  properties:
    plmnId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    sNssaiList:
    Type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Snssai'
      minItems: 1
    nid:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Nid'
NefInfo:
  description: Information of an NEF NF Instance
    Type: object
  properties:
    nefId:
      Reference: '#/components/schemas/NefId'
    pfdData:
      Reference: '#/components/schemas/PfdData'
    afEeData:
      Reference: '#/components/schemas/AfEventExposureData'
    gpsiRanges:
```

```
          type: array
          items:
            Reference: '#/components/schemas/IdentityRange'
          minItems: 1
        externalGroupIdentifiersRanges:
          type: array
          items:
            Reference: '#/components/schemas/IdentityRange'
          minItems: 1
        servedFqdnList:
          type: array
          items:
            type: string
          minItems: 1
    PfdData:
      description: List of Application IDs and/or AF IDs managed by a given NEF Instance

        Type: object
      properties:
        appIds:
          type: array
          items:
            type: string
          minItems: 1
        afIds:
          type: array
          items:
            type: string
          minItems: 1
    NwdafInfo:
      description: Information of a NWDAF NF Instance
        Type: object
      properties:
        eventIds:
          type: array
          items:
            Reference: 'TS29520_Nnwdaf_AnalyticsInfo.yaml#/components/schemas/EventId'
          minItems: 1
        nwdafEvents:
          type: array
          items:
            Reference:
'TS29520_Nnwdaf_EventsSubscription.yaml#/components/schemas/NwdafEvent'
          minItems: 1
        taiList:
          type: array
          items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/Tai'
          minItems: 1
        taiRangeList:
          type: array
          items:
```

```
            Reference: '#/components/schemas/TaiRange'
          minItems: 1
      LmfInfo:
        description: Information of an LMF NF Instance
          Type: object
        properties:
          servingClientTypes:
            type: array
            items:
             Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/ExternalClientType'

            minItems: 1
          lmfId:
            Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/LMFIdentification'
          servingAccessTypes:
            type: array
            items:
              Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
            minItems: 1
          servingAnNodeTypes:
            type: array
            items:
              Reference: '#/components/schemas/AnNodeType'
            minItems: 1
          servingRatTypes:
            type: array
            items:
              Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
            minItems: 1
      GmlcInfo:
        description: Information of a GMLC NF Instance
          Type: object
        properties:
          servingClientTypes:
            type: array
            items:
             Reference: 'TS29572_Nlmf_Location.yaml#/components/schemas/ExternalClientType'

            minItems: 1
  externalDocs:
      AfEventExposureData:
        description: AF Event Exposure data managed by a given NEF Instance
          Type: object
        required:
          - afEvents
        properties:
          afEvents:
            type: array
            items:
              Reference: 'TS29517_Naf_EventExposure.yaml#/components/schemas/AfEvent'
            minItems: 1
          afIds:
```

```
      type: array
      items:
      type: string
      minItems: 1
    appIds:
      type: array
      items:
      type: string
      minItems: 1
PcscfInfo:
  description: Information of a P-CSCF NF Instance
    Type: object
  properties:
    accessType:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
      minItems: 1
    dnnList:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Dnn'
      minItems: 1
    gmFqdn:
      Reference: '#/components/schemas/Fqdn'
    gmIpv4Addresses:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
      minItems: 1
    gmIpv6Addresses:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
      minItems: 1
    servedIpv4AddressRanges:
      type: array
      items:
        Reference: '#/components/schemas/Ipv4AddressRange'
      minItems: 1
    servedIpv6PrefixRanges:
      type: array
      items:
        Reference: '#/components/schemas/Ipv6PrefixRange'
      minItems: 1
NfInfo:
  description: Information of a generic NF Instance
    Type: object
  properties:
    nfType:
      Reference: '#/components/schemas/NFType'
```

```
    HssInfo:
      description: Information of an HSS NF Instance
        Type: object
      properties:
        groupId:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
        imsiRanges:
          type: array
          items:
            Reference: '#/components/schemas/ImsiRange'
          minItems: 1
        imsPrivateIdentityRanges:
          type: array
          items:
            Reference: '#/components/schemas/IdentityRange'
          minItems: 1
        imsPublicIdentityRanges:
          type: array
          items:
            Reference: '#/components/schemas/IdentityRange'
          minItems: 1
        msisdnRanges:
          type: array
          items:
            Reference: '#/components/schemas/IdentityRange'
          minItems: 1
    ImsiRange:
      description: A range of IMSIs (subscriber identities), either based on a numeric
range, or based on regular-expression matching
        Type: object
      properties:
        start:
          type: string
          pattern: '^[0-9]+$'
        end:
          type: string
          pattern: '^[0-9]+$'
          pattern:
          type: string
    TwifInfo:
      description: Addressing information (IP addresses, FQDN) of the TWIF
        Type: object
      properties:
        ipv4EndpointAddresses:
          type: array
          items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
          minItems: 1
        ipv6EndpointAddresses:
          type: array
          items:
            Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
```

```
        minItems: 1
      endpointFqdn:
        Reference: '#/components/schemas/Fqdn'
  VendorId:
   description: Vendor ID of the NF Service instance (Private Enterprise Number assigned
by IANA)
      type: string
    pattern: '^[0-9]{6}$'
  VendorSpecificFeature:
    description: Information about a vendor-specific feature
      Type: object
    required:
      - featureName
      - featureVersion
    properties:
      featureName:
        type: string
      featureVersion:
        type: string
  AnNodeType:
    description: Access Network Node Type (gNB, ng-eNB...)
    anyOf:
      - type: string
        enum:
          - GNB
          - NG_ENB
      - type: string
  UdsfInfo:
    description: Information related to UDSF
      Type: object
    properties:
      groupId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfGroupId'
      supiRanges:
        type: array
        items:
          Reference: '#/components/schemas/SupiRange'
        minItems: 1
      storageIdRanges:
        description: A map (list of key-value pairs) where realmId serves as key and
each value in the map is an array of IdentityRanges. Each IdentityRange is a range of
storageIds.
      Type: object
    additionalproperties:
        type: array
        items:
            Reference: '#/components/schemas/IdentityRange'
        minItems: 1
        minProperties: 1
  ScpInfo:
    description: Information of an SCP Instance
      Type: object
    properties:
```

```
  scpDomainInfoList:
  Type: object
additionalproperties:
    items:
        Reference: '#/components/schemas/ScpDomainInfo'
    minProperties: 1
  scpPrefix:
    type: string
  scpPorts:
  Type: object
additionalproperties:
     type: integer
     minimum: 0
     maximum: 65535
    minProperties: 1
  addressDomains:
    type: array
    items:
    type: string
    minItems: 1
  ipv4Addresses:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
    minItems: 1
  ipv6Prefixes:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Prefix'
    minItems: 1
  ipv4AddrRanges:
    type: array
    items:
      Reference: '#/components/schemas/Ipv4AddressRange'
    minItems: 1
  ipv6PrefixRanges:
    type: array
    items:
      Reference: '#/components/schemas/Ipv6PrefixRange'
    minItems: 1
  servedNfSetIdList:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
    minItems: 1
  remotePlmnList:
    type: array
    items:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnId'
    minItems: 1
  ipReachability:
```

```
          Reference: '#/components/schemas/IpReachability'

    ScpDomainInfo:
      description: SCP Domain specific information
        Type: object
      properties:
        scpFqdn:
          Reference: '#/components/schemas/Fqdn'
        scpIpEndPoints:
          type: array
          items:
            Reference: '#/components/schemas/IpEndPoint'
          minItems: 1
        scpPrefix:
          type: string
        scpPorts:
          type: object
      additionalproperties:
           type: integer
           minimum: 0
           maximum: 65535
          minProperties: 1

description: 3GPP TS 29.510 V15.3.0; 5G System; Network Function Repository Services;
Stage 3
  url: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.510/'
    ScpDomainCond:
      description: Subscription to a set of NF or SCP instances belonging to certain SCP
 domains
          type: object
      additionalproperties:
    ScpDomains:
          type: array
          items:
          type: string
          minItems: 1

    OptionsResponse:
      description: Communication options of the NRF sent in response payload of OPTIONS
 method
          type: object
      additionalproperties:
        supportedFeatures:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'

    ConditionEventType:
      description: Indicates whether a notification is due to the NF Instance to start
or stop being part of a condition for a subscription to a set of NFs
      anyOf:
        - type: string
          enum:
            - NF_ADDED
            - NF_REMOVED
        - type: string
```

```
IpReachability:
  description: Indicates the type(s) of IP addresses reachable via an SCP
  anyOf:
    - type: string
      enum:
        - IPV4
        - IPV6
        - IPV4V6
    - type: string
```

External Docs

```
Description: 3GPP TS 29.510 V15.2.0; 5G System; Network Function Repository Services;
Stage 3
URL: 'http://www.3gpp.org/ftp/Specs/archive/29_series/29.510/'
```