



# Npcf\_SMPolicyControl

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The Policy Control Function (PCF) uses the Npcf\_SMPolicyControl service to create, update, and delete requests on the SMF.

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## OpenAPI

OpenAPI Version: 3.0.0

## Info

**Description:** Session Management Policy Control Service

**Version:** "1.1.5"

**Title:** Npcf\_SMPolicyControl API

## Servers

**URL:** '{apiRoot}/npcf-smpolicycontrol/v1'

**Variables:**

**API Root:**

**Default:** https://example.com

**Description:** apiRoot as defined in subclause 4.4 of 3GPP TS 29.501

# Security

```
- {}
- oAuth2Clientcredentials:
  - npcf-smpolicycontrol
```

## Paths

### /sm-policies

```
post:
  summary: Create a new Individual SM Policy
  operationId: Create SM Policy
  tags:
    - SM Policies (Collection)
  requestBody:
    required: true
    content:
      application/json:
        schema:
          Reference: '#/components/schemas/SmPolicyContextData'

  responses:
    '201':
      description: Created
      content:
        application/json:
          schema:
            Reference: '#/components/schemas/SmPolicyDecision'
      headers:
        location:
          description: 'Contains the URI of the newly created resource'
          required: true
          schema:
            type: string
    '308':
      description: Permanent Redirect
      headers:
        location:
          description: 'Contains the URI of the PCF within the existing PCF binding information stored in the BSF for the same UE ID, S-NSSAI and DNN combination '
          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':
    Description: Not Found
  '411':
    Reference: 'TS29571_CommonData.yaml#/components/responses/411'
  '413':
    Reference: 'TS29571_CommonData.yaml#/components/responses/413'
  '415':
    Reference: 'TS29571_CommonData.yaml#/components/responses/415'
  '429':
    Reference: 'TS29571_CommonData.yaml#/components/responses/429'
  '500':
    Reference: 'TS29571_CommonData.yaml#/components/responses/500'
  '503':
    Reference: 'TS29571_CommonData.yaml#/components/responses/503'
  Default:
    Reference: 'TS29571_CommonData.yaml#/components/responses/default'
  callbacks:
    SmPolicyUpdateNotification:
      '{$request.body#/notificationUri}/update':
        post:
          request Body:
            required: true
            content:
              application/json:
                schema:
                  Reference: '#/components/schemas/SmPolicyNotification'

          responses:
            '200':
              description: OK. The current applicable values corresponding to the policy
                control request trigger is reported
              content:
                application/json:
                  schema:
                    oneOf:
                      - $ref: '#/components/schemas/UeCampingRep'
                      - type: array
                        items:
                          $ref: '#/components/schemas/PartialSuccessReport'
                        Min Items: 1
                      - type: array
                        items:
                          $ref: '#/components/schemas/PolicyDecisionFailureCode'
                        Min Items: 1
            '204':
              description: No Content, Notification was successful
            '307':
              Reference: 'TS29571_CommonData.yaml#/components/responses/307'
            '308':

```

```

    Reference: 'TS29571_CommonData.yaml#/components/responses/308'
  '400':
    description: Bad Request.
    content:
      application/json:
        schema:
          Reference: '#/components/schemas/ErrorReport'
  '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'
  '413':
    Reference: 'TS29571_CommonData.yaml#/components/responses/413'
  '415':
    Reference: 'TS29571_CommonData.yaml#/components/responses/415'
  '429':
    Reference: 'TS29571_CommonData.yaml#/components/responses/429'
  '500':
    Reference: 'TS29571_CommonData.yaml#/components/responses/500'
  '503':
    Reference: 'TS29571_CommonData.yaml#/components/responses/503'
  Default:
    Reference: 'TS29571_CommonData.yaml#/components/responses/default'
SmPolicyControlTerminationRequestNotification:
  '{$request.body#/notificationUri}/terminate':
    post:
      request Body:
        required: true
        content:
          application/json:
            Schema:
              Reference: '#/components/schemas/TerminationNotification'

  responses:
    '204':
      description: No Content, Notification was succesful
    '307':
      Reference: 'TS29571_CommonData.yaml#/components/responses/307'
    '308':
      Reference: 'TS29571_CommonData.yaml#/components/responses/308'
    '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'
'413':
  Reference: 'TS29571_CommonData.yaml#/components/responses/413'
'415':
  Reference: 'TS29571_CommonData.yaml#/components/responses/415'
'429':
  Reference: 'TS29571_CommonData.yaml#/components/responses/429'
'500':
  Reference: 'TS29571_CommonData.yaml#/components/responses/500'
'503':
  Reference: 'TS29571_CommonData.yaml#/components/responses/503'
default:
  Reference: 'TS29571_CommonData.yaml#/components/responses/default'

```

## /sm-policies/{smPolicyId}

```

get:
  summary: Read an Individual SM Policy
  operationId: GetSMPolicy
  tags:
    - GetSMPolicy
    - Individual SM Policy (Document)
  parameters:
    - name: smPolicyId
      in: path
      description: Identifier of a policy association
      required: true
      schema:
        type: string
  responses:
    - GetSMPolicy
    - '200':
        description: OK. Resource representation is returned
        content:
          application/json:
            schema:
              Reference: '#/components/schemas/SmPolicyControl'
    - '307':
        Reference: 'TS29571_CommonData.yaml#/components/responses/307'
    - '308':
        Reference: 'TS29571_CommonData.yaml#/components/responses/308'
    - '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'
    - '406':
        Reference: 'TS29571_CommonData.yaml#/components/responses/406'

```

```

'429':
  Reference: 'TS29571_CommonData.yaml#/components/responses/429'
'500':
  Reference: 'TS29571_CommonData.yaml#/components/responses/500'
'503':
  Reference: 'TS29571_CommonData.yaml#/components/responses/503'
Default:
  Reference: 'TS29571_CommonData.yaml#/components/responses/default'

```

## /sm-policies/{smPolicyId}/update

```

post:
  summary: Update an existing Individual SM Policy
  operationId: UpdateSMPolicy
  tags:
    - Individual SM Policy (Document)
  requestBody:
    required: true
    content:
      application/json:
        schema:
          reference: '#/components/schemas/SmPolicyUpdateContextData'
  parameters:
    - name: smPolicyId
      in: path
      description: Identifier of a policy association
      required: true
      schema:
        type: string
  responses:
    '200':
      description: OK. Updated policies are returned
      content:
        application/json:
          schema:
            Reference: '#/components/schemas/SmPolicyDecision'
    '307':
      Reference: 'TS29571_CommonData.yaml#/components/responses/307'
    '308':
      Reference: 'TS29571_CommonData.yaml#/components/responses/308'
    '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'

```

```

'413':
  Reference: 'TS29571_CommonData.yaml#/components/responses/413'
'415':
  Reference: 'TS29571_CommonData.yaml#/components/responses/415'
'429':
  Reference: 'TS29571_CommonData.yaml#/components/responses/429'
'500':
  Reference: 'TS29571_CommonData.yaml#/components/responses/500'
'503':
  Reference: 'TS29571_CommonData.yaml#/components/responses/503'
Default:
  Reference: 'TS29571_CommonData.yaml#/components/responses/default'

```

## /sm-policies/{smPolicyId}/delete

```

post:
  summary: Delete an existing Individual SM Policy
  operationId: DeleteSMPolicy
  tags:
    - Individual SM Policy (Document)
  requestBody:
    required: true
  content:
    application/json:
      schema:
        Reference: '#/components/schemas/SmPolicyDeleteData'
  parameters:
    - name: smPolicyId
      in: path
      description: Identifier of a policy association
      required: true
      schema:
        type: string
  responses:
    '204':
      description: No content
    '307':
      Reference: 'TS29571_CommonData.yaml#/components/responses/307'
    '308':
      Reference: 'TS29571_CommonData.yaml#/components/responses/308'
    '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'

```

```

'413':
  Reference: 'TS29571_CommonData.yaml#/components/responses/413'
'415':
  Reference: 'TS29571_CommonData.yaml#/components/responses/415'
'429':
  Reference: 'TS29571_CommonData.yaml#/components/responses/429'
'500':
  Reference: 'TS29571_CommonData.yaml#/components/responses/500'
'503':
  Reference: 'TS29571_CommonData.yaml#/components/responses/503'
Default:
  Reference: 'TS29571_CommonData.yaml#/components/responses/default'

```

## Components

### securitySchemes:

#### oAuth2ClientCredentials:

**Type:** oauth2

#### Flows:

##### clientCredentials:

**tokenUrl:** '{nrfApiRoot}/oauth2/token'

##### scopes:

**npcf-smpolicycontrol:** Access to the Npcf\_SMPolicyControl API

### schemas:

SmPolicyControl :

**Type:** object

#### Properties:

##### context:

**Reference:** '#/components/schemas/SmPolicyContextData'

##### policy:

**Reference:** '#/components/schemas/SmPolicyDecision'

#### Required:

- context
- policy

#### SmPolicyContextData:

**Type:** object

#### Properties:

##### accNetChId:

**Reference:** '#/components/schemas/AccNetChId'

##### chargEntityAddr:

**Reference:** '#/components/schemas/AccNetChargingAddress'

##### gpsi:

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

##### supi:

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Supi'

##### invalidSupi:

**Type:** boolean

**Description:** When this attribute is included and set to true, it indicates that the supi attribute contains an invalid value. This attribute shall be present if the SUPI



is not available in the SMF or the SUPI is unauthenticated. When present it shall be set to true for an invalid SUPI and false (default) for a valid SUPI.

**interGrpIds:**  
**Type:** array  
**Items:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/GroupId'  
**minItems:** 1

**pduSessionId:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

**pduSessionType:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PduSessionType'

**chargingcharacteristics:**  
**Type:** string

**dnn:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

**dnnSelMode:**  
**Reference:** 'TS29502\_Nsmf\_PDUSession.yaml#/components/schemas/DnnSelectionMode'

**notificationUri:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Uri'

**accessType:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

**ratType:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/RatType'

**addAccessInfo:**  
**Reference:** '#/components/schemas/AdditionalAccessInfo'

**servingNetwork:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'

**userLocationInfo:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

**ueTimeZone:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

**pei:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Pei'

**ipv4Address:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

**ipv6AddressPrefix:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

**ipDomain:**  
**Type:** string  
**Description:** Indicates the IPv4 address domain

**subsSessAmbr:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ambr'

**authProfIndex:**  
**Type:** string  
**Description:** Indicates the DN-AAA authorization profile index

**subsDefQos:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/SubscribedDefaultQos'

**vplmnQos:**  
**Reference:** 'TS29502\_Nsmf\_PDUSession.yaml#/components/schemas/VplmnQos'

**numOfPackFilter:**  
**Type:** integer  
**Description:** Contains the number of supported packet filter for signalled QoS

rules.

- online:**
  - Type:** boolean
  - Description:** If it is included and set to true, the online charging is applied to the PDU session.
- offline:**
  - Type:** boolean
  - Description:** If it is included and set to true, the offline charging is applied to the PDU session.
- 3gppPsDataOffStatus:**
  - Type:** boolean
  - Description:** If it is included and set to true, the 3GPP PS Data Off is activated by the UE.
- refQosIndication:**
  - Type:** boolean
  - Description:** If it is included and set to true, the reflective QoS is supported by the UE.
- traceReq:**
  - Reference:** 'TS29571\_CommonData.yaml#/components/schemas/TraceData'
- sliceInfo:**
  - Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Snssai'
- qosFlowUsage:**
  - Reference:** '#/components/schemas/QosFlowUsage'
- servNfId:**
  - Reference:** '#/components/schemas/ServingNfIdentity'
- suppFeat:**
  - Reference:** 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'
- smfId:**
  - Reference:** 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'
- recoveryTime:**
  - Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DateTime'
- maPduInd:**
  - Reference:** '#/components/schemas/MaPduIndication'
- atsssCapab:**
  - Reference:** '#/components/schemas/AtsssCapability'
- ipv4FrameRouteList:**
  - type:** array
  - items:**
    - Reference:** '#/components/schemas/Ipv4AddrMask'
  - minItems:** 1
- ipv6FrameRouteList:**
  - type:** array
  - items:**
    - Reference:** '#/components/schemas/Ipv6Prefix'
  - minItems:** 1
- Required:**
  - pduSessionId
  - pduSessionType
  - dnn
  - notificationUri
  - sliceInfo
- SmPolicyDecision:**
  - Type:** object

**Properties:**

- sessRules:**
  - Type:** object
  - additionalProperties:**
    - Reference:** '#/components/schemas/SessionRule'
  - minProperties:** 1
  - Description:** A map of Sessionrules with the content being the SessionRule as described in subclause 5.6.2.7.
- pccRules:**
  - Type:** object
  - additionalProperties:**
    - Reference:** '#/components/schemas/PccRule'
  - minProperties:** 1
  - Description:** A map of PCC rules with the content being the PCCRule as described in subclause 5.6.2.6.
  - nullable:** true
- pcscfRestIndication:**
  - Type:** boolean
  - Description:** If it is included and set to true, it indicates the P-CSCF Restoration is requested.
- qosDecs:**
  - Type:** object
  - additionalProperties:**
    - Reference:** '#/components/schemas/QosData'
  - minProperties:** 1
  - Description:** Map of QoS data policy decisions.
- chgDecs:**
  - Type:** object
  - additionalProperties:**
    - Reference:** '#/components/schemas/ChargingData'
  - minProperties:** 1
  - Description:** Map of Charging data policy decisions.
  - nullable:** true
- chargingInfo:**
  - Reference:** '#/components/schemas/ChargingInformation'
- traffContDecs:**
  - Type:** object
  - additionalProperties:**
    - Reference:** '#/components/schemas/TrafficControlData'
  - minProperties:** 1
  - Description:** Map of Traffic Control data policy decisions.
- umDecs:**
  - Type:** object
  - additionalProperties:**
    - Reference:** '#/components/schemas/UsageMonitoringData'
  - minProperties:** 1
  - Description:** Map of Usage Monitoring data policy decisions.
  - nullable:** true
- qosChars:**
  - Type:** object
  - additionalProperties:**
    - Reference:** '#/components/schemas/QosCharacteristics'

**minProperties:** 1  
**Description:** Map of QoS characteristics for non standard 5QIs. This map uses the 5QI values as keys.

**qosMonDecs:**  
**Type:** object  
**additionalProperties:**  
**Reference:** '#/components/schemas/QosMonitoringData'  
**minProperties:** 1  
**Description:** Map of QoS Monitoring data policy decisions.  
**nullable:** true

**reflectiveQoSTimer:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

**conds:**  
**Type:** object  
**additionalProperties:**  
**Reference:** '#/components/schemas/ConditionData'  
**minProperties:** 1  
**Description:** A map of condition data with the content being as described in subclause 5.6.2.9.  
**nullable:** true

**revalidationTime:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

**offline:**  
**Type:** boolean  
**Description:** Indicates the offline charging is applicable to the PDU session when it is included and set to true.

**online:**  
**Type:** boolean  
**Description:** Indicates the online charging is applicable to the PDU session when it is included and set to true.

**policyCtrlReqTriggers:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/PolicyControlRequestTrigger'  
**minItems:** 1  
**Description:** Defines the policy control request triggers subscribed by the PCF.  
**nullable:** true

**lastReqRuleData:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/RequestedRuleData'  
**minItems:** 1  
**Description:** Defines the last list of rule control data requested by the PCF.

**lastReqUsageData:**  
**Reference:** '#/components/schemas/RequestedUsageData'

**praInfos:**  
**Type:** object  
**additionalProperties:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfoRm'  
**minProperties:** 1  
**Description:** Map of PRA information.  
**nullable:** true

```

ipv4Index:
  Reference: 'TS29519_Policy_Data.yaml#/components/schemas/IpIndex'
ipv6Index:
  Reference: 'TS29519_Policy_Data.yaml#/components/schemas/IpIndex'
qosFlowUsage:
  Reference: '#/components/schemas/QosFlowUsage'
relCause:
  Reference: '#/components/schemas/SmPolicyAssociationReleaseCause'
suppFeat:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/SupportedFeatures'
tsnBridgeManCont:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/BridgeManagementContainer'

tsnPortManContDstt:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/PortManagementContainer'

tsnPortManContDstt:
  type: array
  items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PortManagementContainer'

  minItems: 1
SmPolicyNotification:
  Type: object
  Properties:
    resourceUri:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
    smPolicyDecision:
      Reference: '#/components/schemas/SmPolicyDecision'
PccRule:
  Type: object
  Properties:
    flowInfos:
      Type: array
      Items:
        Reference: '#/components/schemas/FlowInformation'
      minItems: 1
      Description: An array of IP flow packet filter information.
    appId:
      Type: string
      Description: A reference to the application detection filter configured at the
UPF.
    appDescriptor:
      Reference: '#/components/schemas/ApplicationDescriptor'
    contVer:
      Reference:
'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/ContentVersion'
    pccRuleId:
      Type: string
      Description: Univocally identifies the PCC rule within a PDU session.
    precedence:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/UInteger'

```

**afSigProtocol:**  
**Reference:** '#/components/schemas/AfSigProtocol'

**appReloc:**  
**Type:** boolean  
**Description:** Indication of application relocation possibility.

**refQosData:**  
**Type:** array  
**Items:**  
**Type:** string  
**minItems:** 1  
**maxItems:** 1  
**Description:** A reference to the QoSData policy decision type. It is the qosId described in subclause 5.6.2.8. (NOTE)

**refAltQosParams:**  
**Type:** array  
**Items:**  
**Type:** string  
**minItems:** 1  
**Description:** A Reference to the QoSData policy decision type for the Alternative QoS parameter sets of the service data flow.

**refTcData:**  
**Type:** array  
**Items:**  
**Type:** string  
**minItems:** 1  
**maxItems:** 1  
**Description:** A reference to the TrafficControlData policy decision type. It is the tcId described in subclause 5.6.2.10.

**refChgData:**  
**Type:** array  
**Items:**  
**Type:** string  
**minItems:** 1  
**maxItems:** 1  
**Description:** A reference to the ChargingData policy decision type. It is the chgId described in subclause 5.6.2.11.  
**nullable:** true

**refChgN3gData:**  
**Type:** array  
**Items:**  
**Type:** string  
**minItems:** 1  
**maxItems:** 1  
**Description:** A reference to the ChargingData policy decision type only applicable to Non-3GPP access if "ATSSS" feature is supported. It is the chgId described in subclause 5.6.2.11.  
**nullable:** true

**refUmData:**  
**Type:** array  
**Items:**  
**Type:** string  
**minItems:** 1  
**maxItems:** 1

**Description:** A reference to UsageMonitoringData policy decision type. It is the umId described in subclause 5.6.2.12.

**nullable:** true

**refUmN3gData:**

**Type:** array

**Items:**

**Type:** string

**minItems:** 1

**maxItems:** 1

**Description:** A reference to UsageMonitoringData policy decision type only applicable to Non-3GPP access if "ATSSS" feature is supported. It is the umId described in subclause 5.6.2.12.

**nullable:** true

**refCondData:**

**Type:** string

**Description:** A reference to the condition data. It is the condId described in subclause 5.6.2.9.

**nullable:** true

**refQosMon:**

**Type:** array

**Items:**

**Type:** string

**minItems:** 1

**maxItems:** 1

**Description:** A reference to the QosMonitoringData policy decision type. It is the qmId described in subclause 5.6.2.40.

**nullable:** true

**addrPreserInd:**

**Type:** boolean

**nullable:** true

**tscaiInputDl:**

**Reference:**

'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/TscaiInputContainer'

**tscaiInputUl:**

**Reference:**

'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/TscaiInputContainer'

**ddNotifCtrl:**

**Reference:** '#/components/schemas/DownlinkDataNotificationControl'

**ddNotifCtrl2:**

**Reference:** '#/components/schemas/DownlinkDataNotificationControlRm'

**disUeNotif:**

**Type:** boolean

**nullable:** true

**Required:**

- pccRuleId

**nullable:** true

**SessionRule:**

**Type:** object

**Properties:**

**authSessAmbr:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ambr'

**authDefQos:**

**Reference:** '#/components/schemas/AuthorizedDefaultQos'

**sessRuleId:**  
**Type:** string  
**Description:** Univocally identifies the session rule within a PDU session.

**refUmData:**  
**Type:** string  
**Description:** A reference to UsageMonitoringData policy decision type. It is the umId described in subclause 5.6.2.12.  
**nullable:** true

**refUmN3gData:**  
**Type:** string  
**Description:** A reference to UsageMonitoringData policy decision type to apply for Non-3GPP access. It is the umId described in subclause 5.6.2.  
**nullable:** true

**refCondData:**  
**Type:** string  
**Description:** A reference to the condition data. It is the condId described in subclause 5.6.2.9.  
**nullable:** true

**Required:**  
- sessRuleId

**nullable:** true

**QosData:**  
**Type:** object  
**Properties:**

**qosId:**  
**Type:** string  
**Description:** Univocally identifies the QoS control policy data within a PDU session.

**5qi:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/5Qi'

**maxbrUl:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/BitRateRm'

**maxbrDl:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/BitRateRm'

**gbrUl:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/BitRateRm'

**gbrDl:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/BitRateRm'

**arp:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Arp'

**qnc:**  
**Type:** boolean  
**Description:** Indicates whether notifications are requested from 3GPP NG-RAN when the GBR can no longer (or again) be guaranteed for a QoS Flow during the lifetime of the QoS Flow.

**priorityLevel:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/5QiPriorityLevelRm'

**averWindow:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/AverWindowRm'

**maxDataBurstVol:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/MaxDataBurstVolRm'

**reflectiveQos:**  
**Type:** boolean



**Description:** Indicates whether the QoS information is reflective for the corresponding service data flow.

**sharingKeyDl:**  
**Type:** string  
**Description:** Indicates, by containing the same value, what PCC rules may share resource in downlink direction.

**sharingKeyUl:**  
**Type:** string  
**Description:** Indicates, by containing the same value, what PCC rules may share resource in uplink direction.

**maxPacketLossRateDl:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PacketLossRateRm'

**maxPacketLossRateUl:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PacketLossRateRm'

**defQosFlowIndication:**  
**Type:** boolean  
**Description:** Indicates that the dynamic PCC rule shall always have its binding with the QoS Flow associated with the default QoS rule

**extMaxDataBurstVol:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/ExtMaxDataBurstVolRm'

**packetDelayBudget:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PacketDelBudget'

**packetErrorRate:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PacketErrRate'

**Required:**  
- qosId

**nullable:** true

**ConditionData:**  
**Type:** object  
**Properties:**  
**condId:**  
**Type:** string  
**Description:** Uniquely identifies the condition data within a PDU session.

**activationTime:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DateTimeRm'

**deactivationTime:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DateTimeRm'

**accessType:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

**ratType:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/RatType'

**Required:**  
- condId

**nullable:** true

**TrafficControlData:**  
**Type:** object  
**Properties:**  
**tcId:**  
**Type:** string  
**Description:** Univocally identifies the traffic control policy data within a PDU session.

**flowStatus:**  
**Reference:** 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/FlowStatus'

```

redirectInfo:
  Reference: '#/components/schemas/RedirectInformation'
addRedirectInfo:
  Type: array
  Items:
    Reference: '#/components/schemas/RedirectInformation'
    minItems: 1
muteNotif:
  Type: boolean
  Description: Indicates whether applicat'on's start or stop notification is to be
muted.
trafficSteeringPolIdDl:
  Type: string
  Description: Reference to a pre-configured traffic steering policy for downlink
traffic at the SMF.
  nullable: true
trafficSteeringPolIdUl:
  Type: string
  Description: Reference to a pre-configured traffic steering policy for uplink
traffic at the SMF.
  nullable: true
routeToLocs:
  Type: array
  Items:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/RouteToLocation'
  minItems: 1
  Description: A list of location which the traffic shall be routed to for the AF
request
traffCorreInd:
  Type: boolean
upPathChgEvent:
  Reference: '#/components/schemas/UpPathChgEvent'
steerFun:
  Reference: '#/components/schemas/SteeringFunctionality'
:
  Reference: '#/components/schemas/SteeringMode'
:
  Reference: '#/components/schemas/SteeringMode'
:
  Reference: '#/components/schemas/MulticastAccessControl'
Required:
- tcId
nullable: true
ChargingData:
Type: object
Properties:
  chgId:
    Type: string
    Description: Univocally identifies the charging control policy data within a PDU
session.
  meteringMethod:
    Reference: '#/components/schemas/MeteringMethod'

```

**offline:**  
**Type:** boolean  
**Description:** Indicates the offline charging is applicable to the PDU session when it is included and set to true..

**online:**  
**Type:** boolean  
**Description:** Indicates the online charging is applicable to the PDU session when it is included and set to true..

**ratingGroup:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/RatingGroup'

**reportingLevel:**  
**Reference:** '#/components/schemas/ReportingLevel'

**serviceId:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/ServiceId'

**sponsorId:**  
**Type:** string  
**Description:** Indicates the sponsor identity.

**appSvcProvId:**  
**Type:** string  
**Description:** Indicates the application service provider identity.

**afChargingIdentifier:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/ChargingId'

**afChargId:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/ApplicationChargingId'

**Required:**  
- chgId

**nullable:** true

**UsageMonitoringData:**  
**Type:** object  
**Properties:**  
**umId:**  
**Type:** string  
**Description:** Univocally identifies the usage monitoring policy data within a PDU session.

**volumeThreshold:**  
**Reference:** 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

**volumeThresholdUplink:**  
**Reference:** 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

**volumeThresholdDownlink:**  
**Reference:** 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

**timeThreshold:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DurationSecRm'

**monitoringTime:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DateTimeRm'

**nextVolThreshold:**  
**Reference:** 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

**nextVolThresholdUplink:**  
**Reference:** 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

**nextVolThresholdDownlink:**  
**Reference:** 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

**nextTimeThreshold:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DurationSecRm'

**inactivityTime:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DurationSecRm'

**exUsagePccRuleIds:**  
**Type:** array  
**Items:**  
**Type:** string  
**minItems:** 1  
**Description:** Contains the PCC rule identifier(s) which corresponding service data flow(s) shall be excluded from PDU Session usage monitoring. It is only included in the UsageMonitoringData instance for session level usage monitoring.  
**nullable:** true

**Required:**  
- umId  
**nullable:** true

**RedirectInformation:**  
**Type:** object  
**Properties:**  
**redirectEnabled:**  
**Type:** boolean  
**Description:** Indicates the redirect is enable.  
**redirectAddressType:**  
**Reference:** '#/components/schemas/RedirectAddressType'  
**redirectServerAddress:**  
**Type:** string  
**Description:** Indicates the address of the redirect server. If "redirectAddressType" attribute indicates the IPV4\_ADDR, the encoding is the same as the Ipv4Addr data type defined in 3GPP TS 29.571. If "redirectAddressType" attribute indicates the IPV6\_ADDR, the encoding is the same as the Ipv6Addr data type defined in 3GPP TS 29.571. If "redirectAddressType" attribute indicates the URL or SIP\_URI, the encoding is the same as the Uri data type defined in 3GPP TS 29.571.

**FlowInformation:**  
**Type:** object  
**Properties:**  
**flowDescription:**  
**Reference:** '#/components/schemas/FlowDescription'  
**ethFlowDescription:**  
**Reference:**  
'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

**packFiltId:**  
**Type:** string  
**Description:** An identifier of packet filter.

**packetFilterUsage:**  
**Type:** boolean  
**Description:** The packet shall be sent to the UE.

**tosTrafficClass:**  
**Type:** string  
**Description:** Contains the Ipv4 Type-of-Service and mask field or the Ipv6 Traffic-Class field and mask field.  
**nullable:** true

**spi:**  
**Type:** string  
**Description:** the security parameter index of the IPsec packet.  
**nullable:** true

```

flowLabel:
  Type: string
  Description: the Ipv6 flow label header field.
  nullable: true
flowDirection:
  Reference: '#/components/schemas/FlowDirectionRm'
SmPolicyDeleteData:
Type: object
Properties:
  userLocationInfo:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'
  ueTimeZone:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'
  servingNetwork:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PlmnIdNid'
  userLocationInfoTime:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/DateTime'
  ranNasRelCauses:
    Type: array
    Items:
      Reference: '#/components/schemas/RanNasRelCause'
    minItems: 1
    Description: Contains the RAN and/or NAS release cause.
  accuUsageReports:
    Type: array
    Items:
      Reference: '#/components/schemas/AccuUsageReport'
    minItems: 1
    Description: Contains the usage report
  pduSessRelCause:
    Reference: '#/components/schemas/PduSessionRelCause'
  qosMonReports:
    Type: array
    Items:
      Reference: '#/components/schemas/QosMonitoringReport'
    minItems: 1
QosCharacteristics:
Type: object
Properties:
  5qi:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/5Qi'
  resourceType:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/QosResourceType'
  priorityLevel:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/5QiPriorityLevel'
  packetDelayBudget:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PacketDelBudget'
  packetErrorRate:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/PacketErrRate'
  averagingWindow:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/AverWindow'

```

```

maxDataBurstVol:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/MaxDataBurstVol'
extMaxDataBurstVol:
  Reference: 'TS29571_CommonData.yaml#/components/schemas/ExtMaxDataBurstVol'
Required:
- 5qi
- resourceType
- priorityLevel
- packetDelayBudget
- packetErrorRate
ChargingInformation:
Type: object
Properties:
  primaryChfAddress:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
  secondaryChfAddress:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
  primaryChfAddress:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
  primaryChfAddress:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
  secondaryChfAddress:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfSetId'
  secondaryChfAddress:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
Required:
- primaryChfAddress
- secondaryChfAddress
AccuUsageReport:
Type: object
Properties:
  refUmIds:
    Type: string
    Description: An id referencing UsageMonitoringData objects associated with this
usage report.
  volUsage:
    Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'
  volUsageUplink:
    Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'
  volUsageDownlink:
    Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'
  timeUsage:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
  nextVolUsage:
    Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'
  nextVolUsageUplink:
    Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'
  nextVolUsageDownlink:
    Reference: 'TS29122_CommonData.yaml#/components/schemas/Volume'
  nextTimeUsage:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSec'
Required:
- refUmIds

```

**SmPolicyUpdateContextData:****Type:** object**Properties:****repPolicyCtrlReqTriggers:****Type:** array**Items:****Reference:** '#/components/schemas/PolicyControlRequestTrigger'**minItems:** 1**Description:** The policy control request triggers which are met.**accNetChIds:****Type:** array**Items:****Reference:** '#/components/schemas/AccNetChId'**minItems:** 1**Description:** Indicates the access network charging identifier for the PCC rule(s) or whole PDU session.**accessType:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/AccessType'**ratType:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/RatType'**addAccessInfo:****Reference:** '#/components/schemas/AdditionalAccessInfo'**relAccessInfo:****Reference:** '#/components/schemas/AdditionalAccessInfo'**servingNetwork:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'**userLocationInfo:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'**ueTimeZone:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'**relIpv4Address:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'**ipv4Address:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'**ipDomain:****Type:** string**Description:** Indicates the IPv4 address domain**ipv6AddressPrefix:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'**relIpv6AddressPrefix:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'**addIpv6AddressPrefix:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'**addrelIpv6AddressPrefix:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'**relUeMac:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'**ueMac:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'**subsSessAmbr:****Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ambr'**authProfIndex:**

**Type:** string  
**Description:** Indicates the DN-AAA authorization profile index  
**subsDefQos:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/SubscribedDefaultQos'  
**vplmnQos:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/VplmnQos'  
**numOfPackFilter:**  
**Type:** integer  
**Description:** Contains the number of supported packet filter for signalled QoS rules.

**accuUsageReports:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/AccuUsageReport'  
**minItems:** 1  
**Description:** Contains the usage report  
**3gppPsDataOffStatus:**  
**Type:** boolean  
**Description:** If it is included and set to true, the 3GPP PS Data Off is activated by the UE.

**appDetectionInfos:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/AppDetectionInfo'  
**minItems:** 1  
**Description:** Report the start/stop of the application traffic and detected SDF descriptions if applicable.

**ruleReports:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/RuleReport'  
**minItems:** 1  
**Description:** Used to report the PCC rule failure.

**qncReports:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/QosNotificationControlInfo'  
**minItems:** 1  
**Description:** QoS Notification Control information.

**qosMonReports:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/QosMonitoringReport'  
**minItems:** 1

**userLocationInfoTime:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

**repPraInfos:**  
**Type:** object  
**additionalProperties:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'  
**minProperties:** 1  
**Description:** Reports the changes of presence reporting area.



**ueInitResReq:**  
**Reference:** '#/components/schemas/UeInitiatedResourceRequest'

**refQosIndication:**  
**Type:** boolean  
**Description:** If it is included and set to true, the reflective QoS is supported by the UE. If it is included and set to false, the reflective QoS is revoked by the UE.

**qosFlowUsage:**  
**Reference:** '#/components/schemas/QosFlowUsage'

**creditManageStatus:**  
**Reference:** '#/components/schemas/CreditManagementStatus'

**servNfId:**  
**Reference:** '#/components/schemas/ServingNfIdentity'

**traceReq:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/TraceData'

**maPduInd:**  
**Reference:** '#/components/schemas/MapduIndication'

**atsssCapab:**  
**Reference:** '#/components/schemas/AtsssCapability'

**tsnBridgeInfo:**  
**Reference:** '#/components/schemas/TsnBridgeInfo'

**tsnBridgeManCont:**  
**Reference:** '#/components/schemas/BridgeManagementContainer'

**tsnPortManContDstt:**  
**Reference:** '#/components/schemas/PortManagementContainer'

**tsnPortManContNwtts:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/PortManagementContainer'  
**minItems:** 1

**mulAddrInfos:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/IpMulticastAddressInfo'  
**minItems:** 1

**policyDecFailureReports:**  
**Type:** array  
**Items:**  
**Reference:** '#/components/schemas/PolicyDecisionFailureCode'  
**minItems:** 1

**trafficDescriptors:**  
**Type:** array  
**Items:**  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/DddTrafficDescriptor'  
**minItems:** 1

**pccRuleId:**  
**Type:** string  
**Description:** Contains the identifier of the PCC rule which is used for traffic detection of event.

**interGrpIds:**  
**Type:** array  
**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/GroupId'  
**minItems:** 1

```

    typesOfNotif:
      Type: array
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DlDataDeliveryStatus'
      minItems: 1
  UpPathChgEvent:
    Type: object
    Properties:
      notificationUri:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      notifCorreId:
        Type: string
        Description: It is used to set the value of Notification Correlation ID in the
notification sent by the SMF.
      dnaiChgType:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DnaiChangeType'
      afAckInd:
        Type: boolean
      Required:
        - notificationUri
        - notifCorreId
        - dnaiChgType
      nullable: true
  TerminationNotification:
    Type: object
    Properties:
      resourceUri:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
      cause:
        Reference: '#/components/schemas/SmPolicyAssociationReleaseCause'
      Required:
        - resourceUri
        - cause
  AppDetectionInfo :
    Type: object
    Properties:
      appId:
        Type: string
        Description: A reference to the application detection filter configured at the
UPF
      instanceId:
        Type: string
        Description: Identifier dynamically assigned by the SMF in order to allow
correlation of application Start and Stop events to the specific service data flow
description, if service data flow descriptions are deducible.
      sdfDescriptions:
        Type: array
        Items:
          Reference: '#/components/schemas/FlowInformation'
        minItems: 1
        Description: Contains the detected service data flow descriptions if they are
deducible.
      Required:
        - appId
  AccNetChId:

```

**Type:** object

**Properties:**

**accNetChaIdValue:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/ChargingId'

**refPccRuleIds:**

**Type:** array

**Items:**

**Type:** string

**minItems:** 1

**Description:** Contains the identifier of the PCC rule(s) associated to the provided Access Network Charging Identifier.

**sessionChScope:**

**Type:** boolean

**Description:** When it is included and set to true, indicates the Access Network Charging Identifier applies to the whole PDU Session

**Required:**

- accNetChaIdValue

**AccNetChargingAddress:**

**Description:** Describes the network entity within the access network performing charging

**Type:** object

**anyOf:**

- required: [anChargIpv4Addr]
- required: [anChargIpv6Addr]

**Properties:**

**anChargIpv4Addr:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

**anChargIpv6Addr:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

**RequestedRuleData:**

**Type:** object

**Properties:**

**refPccRuleIds:**

**Type:** array

**Items:**

**Type:** string

**minItems:** 1

**Description:** An array of PCC rule id references to the PCC rules associated with the control data.

**reqData:**

**Type:** array

**Items:**

**Reference:** '#/components/schemas/RequestedRuleDataType'

**minItems:** 1

**Description:** Array of requested rule data type elements indicating what type of rule data is requested for the corresponding referenced PCC rules.

**Required:**

- refPccRuleIds
- reqData

**RequestedUsageData:**

**Type:** object

**Properties:**

**refUmIds:**

```

    Type: array
    Items:
      Type: string
    minItems: 1
    Description: An array of usage monitoring data id references to the usage
    monitoring data instances for which the PCF is requesting a usage report. This attribute
    shall only be provided when allUmIds is not set to true.
    allUmIds:
      Type: boolean
      Description: This boolean indicates whether requested usage data applies to
      all usage monitoring data instances. When it's not included, it means requested usage data
      shall only apply to the usage monitoring data instances referenced by the refUmIds attribute.

UeCampingRep:
  Type: object
  Properties:
    accessType:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
    ratType:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
    servingNetwork:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/NetworkId'
    userLocationInfo:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/UserLocation'
    ueTimeZone:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/TimeZone'
    netLocAccSupp:
      Reference: '#/components/schemas/NetLocAccessSupport'

RuleReport:
  Type: object
  Properties:
    pccRuleIds:
      Type: array
      Items:
        Type: string
      minItems: 1
      Description: Contains the identifier of the affected PCC rule(s).
    ruleStatus:
      Reference: '#/components/schemas/RuleStatus'
    contVers:
      Type: array
      Items:
        Reference:
        'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/ContentVersion'
      minItems: 1
      Description: Indicates the version of a PCC rule.
    failureCode:
      Reference: '#/components/schemas/FailureCode'
    finUnitAct:
      Reference: 'TS32291_Nchf_ConvergedCharging.yaml#/components/schemas/FinalUnitAction'

    ranNasRelCauses:
      Type: array

```

```

    Items:
      Reference: '#/components/schemas/RanNasRelCause'
    minItems: 1
    Description: indicates the RAN or NAS release cause code information.
Required:
  - pccRuleIds
  - ruleStatus
  - failureCode
RanNasRelCause:
Type: object
Properties:
  ngApCause:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/NgApCause'
  5gMmCause:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/5GMmCause'
  5gSmCause:
    Reference: '#/components/schemas/5GSmCause'
  epsCause:
    Reference: '#/components/schemas/EpsRanNasRelCause'
UeInitiatedResourceRequest:
Type: object
Properties:
  packFiltOp:
    Reference: '#/components/schemas/PacketFilterOperation'
    Description: Indicates a UE requests specific QoS handling for selected SDF.
  packFiltInfo:
    Type: array
    Items:
      Reference: '#/components/schemas/PacketFilterInfo'
    minItems: 1
  reqQos:
    Reference: '#/components/schemas/RequestedQos'
    Description: Contains the QoS information requested by the UE.
Required:
  - packFiltOp
  - packFiltInfo
PacketFilterInfo:
Type: object
Properties:
  packFiltId:
    Type: string
    Description: An identifier of packet filter.
  precedence:
    Type: integer
    Description: The requested order for the PCC rule generated fromt the packet
    fitler information.
  packFiltCont:
    Reference: '#/components/schemas/PacketFilterContent'
    Description: Contains the content of the packet filter as requested by the UE
    and required by the PCF to create the PCC rules.
  tosTrafficClass:
    Type: string
    Description: Contains the Ipv4 Type-of-Service and mask field or the Ipv6

```

Traffic-Class field and mask field.

**spi:**

**Type:** string

**Description:** The security parameter index of the IPSec packet.

**flowLabel:**

**Type:** string

**Description:** The Ipv6 flow label header field.

**flowDirection:**

**Reference:** '#/components/schemas/FlowDirection'

**Description:** Indicates the direction/directions that a filter is applicable, downlink only, uplink only or both down- and uplink (bidirectional).

**RequestedQos:**

**Type:** object

**Properties:**

**5qi:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/5Qi'

**gbrUl:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/BitRate'

**gbrDl:**

**Reference:** 'TS29571\_CommonData.yaml#/components/schemas/BitRate'

**Required:**

- 5qi

**QosNotificationControlInfo:**

**Type:** object

**Properties:**

**refPccRuleIds:**

**Type:** array

**Items:**

**Type:** string

**minItems:** 1

**Description:** An array of PCC rule id references to the PCC rules associated with the QoS notification control info.

**notifType:**

**Reference:** 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/QosNotifType'

**contVer:**

**Reference:**

'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/ContentVersion'

**altQosParamId:**

**Type:** string

**Required:**

- refPccRuleIds  
- notifType

**PartialSuccessReport:**

**Type:** object

**Properties:**

**failureCause:**

**Type:** string

**Description:** Application error cause specific to this report.

**ruleReports:**

**Type:** array

**Items:**

**Reference:** '#/components/schemas/RuleReport'

```

    minItems: 1
    Description: Information about the PCC rules provisioned by the PCF not
successfully installed/activated.
    ueCampingRep:
      Reference: '#/components/schemas/UeCampingRep'
    policyDecFailureReports:
      Type: array
      Items:
        Reference: '#/components/schemas/PolicyDecisionFailureCode'
        minItems: 1
      Description: Contains the type(s) of failed policy decision and/or condition
data.
    Required:
      - failureCause
      - ruleReports
    AuthorizedDefaultQos:
      Type: object
      Properties:
        5qi:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/5Qi'
        arp:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/Arp'
        priorityLevel:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/5QiPriorityLevelRm'
        averWindow:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/AverWindowRm'
        maxDataBurstVol:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/MaxDataBurstVolRm'
        maxbrUl:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'
        maxbrDl:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'
        gbrUl:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'
        gbrDl:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/BitRateRm'
        extMaxDataBurstVol:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/ExtMaxDataBurstVolRm'
    ErrorReport:
      Type: object
      Properties:
        error:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
        ruleReports:
          Type: array
          Items:
            Reference: '#/components/schemas/RuleReport'
          minItems: 1
          Description: Used to report the PCC rule failure.
        sessRuleReports:
          Type: array
          Items:

```

```

      Reference: '#/components/schemas/SessionRuleReport'
      minItems: 1      Description: Used to report the PCC rule failure.
    polDecFailureReports:
      Type: array
      Items:
        Reference: '#/components/schemas/PolicyDecisionFailureCode'
        minItems: 1
      Description: Used to report failure of the policy decision and/or condition data.

    altQosParamId:
      Type: string
  SessionRuleReport:
    Type: object
    Properties:
      ruleIds:
        Type: array
        Items:
          Type: string
          minItems: 1
        Description: Contains the identifier of the affected session rule(s).
      rulestatus:
        Reference: '#/components/schemas/RuleStatus'
      SessionFailureCode:
        Reference: '#/components/schemas/SessionRuleFailureCode'
      policyDecFailureReports:
        Type: array
        Items:
          Reference: '#/components/schemas/PolicyDecisionFailureCode'
          minItems: 1
        Description: Contains the type(s) of failed policy decision and/or condition
data.
    required:
      - ruleIds
      - ruleStatus
  ServingNfIdentity:
    type: object
    properties:
      servNfInstId:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/NfInstanceId'
      guami:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/Guami'
      anGwAddr:
        Reference: 'TS29514_Npcf_PolicyAuthorization.yaml#/components/schemas/AnGwAddress'

  SteeringMode:
    type: object
    properties:
      SteeringModeValue:
        Reference: '#/components/schemas/SteerModeValue'
      active:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
      standby:

```



```

Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessTypeRm'
3gLoad:
Reference: 'TS29571_CommonData.yaml#/components/schemas/UInteger'
prioAcc:
Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
required::
- steerModeValue
AdditionalAccessInfo:
type: object
properties:
accessType:
Reference: 'TS29571_CommonData.yaml#/components/schemas/AccessType'
ratType:
Reference: 'TS29571_CommonData.yaml#/components/schemas/RatType'
required::
- accessType
QosMonitoringData:
type: object
properties:
qmId:
type: string
description: Univocally identifies the QoS monitoring policy data within a PDU
session.
reqQosMonParams:
type: array
items:
Reference: '#/components/schemas/RequestedQosMonitoringParameter'
minItems: 1
description: indicates the UL packet delay, DL packet delay and/or round trip
packet delay between the UE and the UPF is to be monitored when the QoS Monitoring for
URLLC is enabled for the service data flow.
repFreqs:
type: array
items:
Reference: '#/components/schemas/ReportingFrequency'
minItems: 1
repThreshDl:
type: integer
description: Unsigned integer identifying a period of time in units of
milliseconds for DL packet delay.
nullable: true
repThreshUl:
type: integer
description: Unsigned integer identifying a period of time in units of
milliseconds for UL packet delay.
nullable: true
repThreshRp:
type: integer
description: Unsigned integer identifying a period of time in units of
milliseconds for round trip packet delay.
nullable: true
waitTime:
Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'

```

```

    repPeriod:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/DurationSecRm'
    notifyUri:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Uri'
    notifyCorreId:
      type: string
  required:
    - qmId
    - reqQosMonParams
    - repFreqs
  nullable: true
QosMonitoringReport:
  type: object
  properties:
    refPccRuleIds:
      type: array
      items:
        type: string
      minItems: 1
      description: An array of PCC rule id references to the PCC rules associated
with the QoS monitoring report.
    ulDelays:
      type: array
      items:
        type: integer
      minItems: 1
    dlDelays:
      type: array
      items:
        type: integer
      minItems: 1
    rtDelays:
      type: array
      items:
        type: integer
      minItems: 1
  required:
    - refPccRuleIds
#
TsnBridgeInfo:
  type: object
  properties:
    bridgeId:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Uint64'
    dsttAddr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/MacAddr48'
    dsttPortNum:
      Reference: '#/components/schemas/TsnPortNumber'
    dsttResidTime:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/UInteger'
#
PortManagementContainer:
  type: object

```

```

properties:
  portManCont:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Bytes'
  portNum:
    Reference: '#/components/schemas/TsnPortNumber'
required:
  - portManCont
  - portNum
BridgeManagementContainer:
  type: object
  properties:
    bridgeManCont:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Bytes'
  required:
    - bridgeManCont
IpMulticastAddressInfo:
  type: object
  properties:
    srcIpv4Addr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
    ipv4MulAddr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv4Addr'
    srcIpv6Addr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
    ipv6MulAddr:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Ipv6Addr'
DownlinkDataNotificationControl:
  description: Contains the downlink data notification control information.
  type: object
  properties:
    notifCtrlInds:
      type: array
      items:
        Reference: '#/components/schemas/NotificationControlIndication'
      minItems: 1
    typesOfNotif:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DlDataDeliveryStatus'
      minItems: 1
DownlinkDataNotificationControlRm:
  description: this data type is defined in the same way as the
DownlinkDataNotificationControl data type, but with the OpenAPI nullable property set to
true.
  type: object
  properties:
    notifCtrlInds:
      type: array
      items:
        Reference: '#/components/schemas/NotificationControlIndication'
      minItems: 1
    nullable: true

```

```

    typesOfNotif:
      type: array
      items:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/DlDataDeliveryStatus'

      minItems: 1
      nullable: true
    nullable: true
  5GSmCause:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/UInteger'
  EpsRanNasRelCause:
    type: string
    Description: Defines the EPS RAN/NAS release cause.
  PacketFilterContent:
    Type: string
    Description: Defines a packet filter for an IP flow.Refer to subclause 5.3.54 of 3GPP
    TS 29.212 [23] for encoding.
  FlowDescription:
    Type: string
    Description: Defines a packet filter for an IP flow.Refer to subclause 5.4.2 of 3GPP
    TS 29.212 [23] for encoding.
  TsnPortNumber:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/UInteger'
  ApplicationDescriptor:
    Reference: 'TS29571_CommonData.yaml#/components/schemas/Bytes'
  FlowDirection:
    anyOf:
      - type: string
      enum:
        - DOWNLINK
        - UPLINK
        - BIDIRECTIONAL
        - UNSPECIFIED
      - type: string
      Description:
        This string provides forward-compatibility with future
        extensions to the enumeration but is not used to encode
        content defined in the present version of this API.
      Description:
        Possible values are
        - DOWNLINK: The corresponding filter applies for traffic to the UE.
        - UPLINK: The corresponding filter applies for traffic from the UE.
        - BIDIRECTIONAL: The corresponding filter applies for traffic both to and from the
    UE.
      - UNSPECIFIED: The corresponding filter applies for traffic to the UE (downlink), but
      has no specific direction declared. The service data flow detection shall apply the filter
      for uplink traffic as if the filter was bidirectional. The PCF shall not use the value
      UNSPECIFIED in filters created by the network in NW-initiated procedures. The PCF shall
      only include the value UNSPECIFIED in filters in UE-initiated procedures if the same value
      is received from the SMF.
  FlowDirectionRm:
    - type: string
      enum:
        - DOWNLINK
        - UPLINK
        - BIDIRECTIONAL
        - UNSPECIFIED

```

- NULL

**ReportingLevel:**

**anyOf:**

- type: string

**enum:**

- SER\_ID\_LEVEL  
- RAT\_GR\_LEVEL  
- SPON\_CON\_LEVEL

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

- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- SER\_ID\_LEVEL: Indicates that the usage shall be reported on service id and rating group combination level.
- RAT\_GR\_LEVEL: Indicates that the usage shall be reported on rating group level.
- SPON\_CON\_LEVEL: Indicates that the usage shall be reported on sponsor identity and rating group combination level.

**MeteringMethod:**

**anyOf:**

- type: string

**enum:**

- DURATION  
- VOLUME  
- DURATION\_VOLUME  
- EVENT

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

- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- DURATION: Indicates that the duration of the service data flow traffic shall be metered.
- VOLUME: Indicates that volume of the service data flow traffic shall be metered.
- DURATION\_VOLUME: Indicates that the duration and the volume of the service data flow traffic shall be metered.
- EVENT: Indicates that events of the service data flow traffic shall be metered.

**PolicyControlRequestTrigger:**

**anyOf:**

- type: string

**enum:**

- PLMN\_CH  
- RES\_MO\_RE  
- AC\_TY\_CH  
- UE\_IP\_CH  
- UE\_MAC\_CH  
- AN\_CH\_COR  
- US\_RE  
- APP\_STA  
- APP\_STO  
- AN\_INFO  
- CM\_SES\_FAIL  
- PS\_DA\_OFF  
- DEF\_QOS\_CH  
- SE\_AMBR\_CH

- QOS\_NOTIF
- NO\_CREDIT
- REALLO\_OF\_CREDIT
- PRA\_CH
- SAREA\_CH
- SCNN\_CH
- RE\_TIMEOUT
- RES\_RELEASE
- SUCC\_RES\_ALLO
- RAT\_TY\_CH
- REF\_QOS\_IND\_CH
- AUTH\_PROF\_CH
- QOS\_MONITORING
- SCELL\_CH
- EPS\_FALLBACK
- MA\_PDU
- TSN\_BRIDGE\_INFO
- 5G\_RG\_JOIN
- 5G\_RG\_LEAVE
- DDN\_FAILURE
- DDN\_DELIVERY\_STATUS
- GROUP\_ID\_LIST\_CHG
- DDN\_FAILURE\_CANCELLATION
- DDN\_DELIVERY\_STATUS\_CANCELLATION
- VPLMN\_QOS\_CH

- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- PLMN\_CH: PLMN Change
- RES\_MO\_RE: A request for resource modification has been received by the SMF. The SMF always reports to the PCF.
- AC\_TY\_CH: Access Type Change
- UE\_IP\_CH: UE IP address change. The SMF always reports to the PCF.
- UE\_MAC\_CH: A new UE MAC address is detected or a used UE MAC address is inactive for a specific period
- AN\_CH\_COR: Access Network Charging Correlation Information
- US\_RE: The PDU Session or the Monitoring key specific resources consumed by a UE either reached the threshold or needs to be reported for other reasons.
- APP\_STA: The start of application traffic has been detected.
- APP\_STO: The stop of application traffic has been detected.
- AN\_INFO: Access Network Information report
- CM\_SES\_FAIL: Credit management session failure
- PS\_DA\_OFF: The SMF reports when the 3GPP PS Data Off status changes. The SMF always reports to the PCF.
- DEF\_QOS\_CH: Default QoS Change. The SMF always reports to the PCF.
- SE\_AMBR\_CH: Session AMBR Change. The SMF always reports to the PCF.
- QOS\_NOTIF: The SMF notify the PCF when receiving notification from RAN that QoS targets of the QoS Flow cannot be guaranteed or guranteed again.
- NO\_CREDIT: Out of credit
- REALLO\_OF\_CREDIT: Reallocation of credit
- PRA\_CH: Change of UE presence in Presence Reporting Area
- SAREA\_CH: Location Change with respect to the Serving Area
- SCNN\_CH: Location Change with respect to the Serving CN node
- RE\_TIMEOUT: Indicates the SMF generated the request because there has been a PCC revalidation timeout
- RES\_RELEASE: Indicate that the SMF can inform the PCF of the outcome of the release of resources for those rules that require so.
- SUCC\_RES\_ALLO: Indicates that the requested rule data is the successful resource allocation.
- RAT\_TY\_CH: RAT Type Change.

- REF\_QOS\_IND\_CH: Reflective QoS indication Change
- NUM\_OF\_PACKET\_FILTER: Indicates that the SMF shall report the number of supported packet filter for signalled QoS rules
- UE\_STATUS\_RESUME: Indicates that the UE's status is resumed.
- UE\_TZ\_CH: UE Time Zone Change
- AUTH\_PROF\_CH: The DN-AAA authorization profile index has changed
- QOS\_MONITORING: Indicate that the SMF notifies the PCF of the QoS Monitoring information.
- SCELL\_CH: Location Change with respect to the Serving Cell.
- EPS\_FALLBACK: EPS Fallback report is enabled in the SMF.
- MA\_PDU: UE Indicates that the SMF notifies the PCF of the MA PDU session request
- TSN\_BRIDGE\_INFO: 5GS Bridge information available
- 5G\_RG\_JOIN: The 5G-RG has joined to an IP Multicast Group.
- 5G\_RG\_LEAVE: The 5G-RG has left an IP Multicast Group.
- DDN\_FAILURE: Event subscription for DDN Failure event received.
- DDN\_DELIVERY\_STATUS: Event subscription for DDN Delivery Status received.
- GROUP\_ID\_LIST\_CHG: UE Internal Group Identifier(s) has changed: the SMF reports that UDM provided list of group Ids has changed.
- DDN\_FAILURE\_CANCELLATION: The event subscription for DDN Failure event is cancelled.
- DDN\_DELIVERY\_STATUS\_CANCELLATION: The event subscription for DDD STATUS is cancelled.
- VPLMN\_QOS\_CH: Change of the QoS supported in the VPLMN.

**RequestedRuleDataType:****anyOf:**

- type: string

**enum:**

- CH\_ID
- MS\_TIME\_ZONE
- USER\_LOC\_INFO
- RES\_RELEASE
- SUCC\_RES\_ALLO
- EPS\_FALLBACK

- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- CH\_ID: Indicates that the requested rule data is the charging identifier.
- MS\_TIME\_ZONE: Indicates that the requested access network info type is the UE's timezone.
- USER\_LOC\_INFO: Indicates that the requested access network info type is the UE's location.
- RES\_RELEASE: Indicates that the requested rule data is the result of the release of resource.
- SUCC\_RES\_ALLO: Indicates that the requested rule data is the successful resource allocation.
- EPS\_FALLBACK: Indicates that the requested rule data is the report of QoS flow rejection due to EPS fallback.

**RuleStatus:****anyOf:**

- type: string

**enum:**

- ACTIVE
- INACTIVE

- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- ACTIVE: Indicates that the PCC rule(s) are successfully installed (for those provisioned from PCF) or activated (for those pre-defined in SMF), or the session rule(s) are successfully installed
- INACTIVE: Indicates that the PCC rule(s) are removed (for those provisioned from PCF) or inactive (for those pre-defined in SMF) or the session rule(s) are removed.

**FailureCode:****anyOf:**

- type: string

**enum:**

- UNK\_RULE\_ID
  - RA\_GR\_ERR
  - SER\_ID\_ERR
  - NF\_MAL
  - RES\_LIM
  - MAX\_NR\_QoS\_FLOW
  - MISS\_FLOW\_INFO
  - RES\_ALLO\_FAIL
  - UNSUCC\_QOS\_VAL
  - INCOR\_FLOW\_INFO
  - PS\_TO\_CS\_HAN
  - APP\_ID\_ERR
  - NO\_QOS\_FLOW\_BOUND
  - FILTER\_RES
  - MISS\_REDI\_SER\_ADDR
  - CM\_END\_USER\_SER\_DENIED
  - CM\_CREDIT\_CON\_NOT\_APP
  - CM\_AUTH\_REJ
  - CM\_USER\_UNK
  - CM\_RAT\_FAILED
  - SESS\_AMBR\_FAILURE
  - DEF\_QOS\_FAILURL
- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- UNK\_RULE\_ID: Indicates that the pre-provisioned PCC rule could not be successfully activated because the PCC rule identifier is unknown to the SMF.
- RA\_GR\_ERR: Indicate that the PCC rule could not be successfully installed or enforced because the Rating Group specified within the Charging Data policy decision which the PCC rule refers to is unknown or, invalid.
- SER\_ID\_ERR: Indicate that the PCC rule could not be successfully installed or enforced because the Service Identifier specified within the Charging Data policy decision which the PCC rule refers to is invalid, unknown, or not applicable to the service being charged.
- NF\_MAL: Indicate that the PCC rule could not be successfully installed (for those provisioned from the PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to SMF/UPF malfunction.
- RES\_LIM: Indicate that the PCC rule could not be successfully installed (for those provisioned from PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to a limitation of resources at the SMF/UPF.
- MAX\_NR\_QoS\_FLOW: Indicate that the PCC rule could not be successfully installed (for those provisioned from PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to the fact that the maximum number of QoS flows has been reached for the PDU session.
- MISS\_FLOW\_INFO: Indicate that the PCC rule could not be successfully installed or enforced because the Flow Information AVP is not specified within the "pccRule" attribute by the PCF during the first install request of the PCC rule.
- RES\_ALLO\_FAIL: Indicate that the PCC rule could not be successfully installed or



maintained since the QoS flow establishment/modification failed, or the QoS flow was released.

- UNSUCC\_QOS\_VAL: indicate that the QoS validation has failed or when Guaranteed Bandwidth > Max-Requested-Bandwidth.
- INCOR\_FLOW\_INFO: Indicate that the PCC rule could not be successfully installed or modified at the SMF because the provided flow information is not supported by the network (e.g. the provided IP address(es) or Ipv6 prefix(es) do not correspond to an IP version applicable for the PDU session).
- PS\_TO\_CS\_HAN: Indicate that the PCC rule could not be maintained because of PS to CS handover.
- APP\_ID\_ERR: Indicate that the rule could not be successfully installed or enforced because the Application Identifier is invalid, unknown, or not applicable to the application required for detection.
- NO\_QOS\_FLOW\_BOUND: Indicate that there is no QoS flow which the SMF can bind the PCC rule(s) to.
- FILTER\_RES: Indicate that the Flow Information within the "flowInfos" attribute cannot be handled by the SMF because any of the restrictions defined in subclause 5.4.2 of 3GPP TS 29.212 was not met.
- MISS\_REDI\_SER\_ADDR: Indicate that the PCC rule could not be successfully installed or enforced at the SMF because there is no valid Redirect Server Address within the Traffic Control Data policy decision which the PCC rule refers to provided by the PCF and no preconfigured redirection address for this PCC rule at the SMF.
- CM\_END\_USER\_SER\_DENIED: Indicate that the charging system denied the service request due to service restrictions (e.g. terminate rating group) or limitations related to the end-user, for example the end-user's account could not cover the requested service.
- CM\_CREDIT\_CON\_NOT\_APP: Indicate that the charging system determined that the service can be granted to the end user but no further credit control is needed for the service (e.g. service is free of charge or is treated for offline charging).
- CM\_AUTH\_REJ: Indicate that the charging system denied the service request in order to terminate the service for which credit is requested.
- CM\_USER\_UNK: Indicate that the specified end user could not be found in the charging system.
- CM\_RAT\_FAILED: Indicate that the charging system cannot rate the service request due to insufficient rating input, incorrect AVP combination or due to an attribute or an attribute value that is not recognized or supported in the rating.
- SESS\_AMBR\_FAILURE: Indicate that the session AMBR update is failure.
- DEF\_QOS\_FAILURL: Indicate that the default QoS update is failure.

#### **AfSigProtocol:**

##### **anyOf:**

- type: string

##### **enum:**

- NO\_INFORMATION

- SIP

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

- type: string

##### **Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

##### **Description:**

Possible values are

- NO\_INFORMATION: Indicate that no information about the AF signalling protocol is being provided.

- SIP: Indicate that the signalling protocol is Session Initiation Protocol.

##### **RuleOperation:**

##### **anyOf:**

- type: string

##### **enum:**

- CREATE\_PCC\_RULE

- DELETE\_PCC\_RULE

- MODIFY\_PCC\_RULE\_AND\_ADD\_PACKET\_FILTERS

- MODIFY\_PCC\_RULE\_AND\_REPLACE\_PACKET\_FILTERS

- MODIFY\_PCC\_RULE\_AND\_DELETE\_PACKET\_FILTERS
- MODIFY\_PCC\_RULE\_WITHOUT\_MODIFY\_PACKET\_FILTERS
- type: string

**description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**description:**

- Possible values are
- CREATE\_PCC\_RULE: Indicates to create a new PCC rule to reserve the resource requested by the UE.
  - DELETE\_PCC\_RULE: Indicates to delete a PCC rule corresponding to reserve the resource requested by the UE.
  - MODIFY\_PCC\_RULE\_AND\_ADD\_PACKET\_FILTERS: Indicates to modify the PCC rule by adding new packet filter(s).
  - MODIFY\_PCC\_RULE\_AND\_REPLACE\_PACKET\_FILTERS: Indicates to modify the PCC rule by replacing the existing packet filter(s).
  - MODIFY\_PCC\_RULE\_AND\_DELETE\_PACKET\_FILTERS: Indicates to modify the PCC rule by deleting the existing packet filter(s).
  - MODIFY\_PCC\_RULE\_WITHOUT\_MODIFY\_PACKET\_FILTERS: Indicates to modify the PCC rule by modifying the QoS of the PCC rule.

**RedirectAddressType:****anyOf:**

- type: string
- enum:
  - IPV4\_ADDR
  - IPV6\_ADDR
  - URL
  - SIP\_URI
- type: string

**description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**description:**

- Possible values are
- IPV4\_ADDR: Indicates that the address type is in the form of "dotted-decimal" IPv4 address.
  - IPV6\_ADDR: Indicates that the address type is in the form of IPv6 address.
  - URL: Indicates that the address type is in the form of Uniform Resource Locator.
  - SIP\_URI: Indicates that the address type is in the form of SIP Uniform Resource Identifier.

**PacketFilterOperation:****anyOf:**

- type: string
- enum:
  - DELETION
  - ADDITION
  - MODIFICATION
- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

- Possible values are
- DELETION: Indicates that the resources reserved for the provided packet filter identifiers are to be deleted and are no longer used by the UE.
  - ADDITION: Indicates that the UE requests resources allocated for the provided packet filters.
  - MODIFICATION: Indicates that the reserved QoS, the filter, the precedence, or any of the fields for the provided packet filter identifiers are being modified.

**RedirectAddressType:****anyOf:**

- type: string

**enum:**

- IPV4\_ADDR
- IPV6\_ADDR
- URL
- SIP\_URI

- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- IPV4\_ADDR: Indicates that the address type is in the form of "dotted-decimal" IPv4 address.
- IPV6\_ADDR: Indicates that the address type is in the form of IPv6 address.
- URL: Indicates that the address type is in the form of Uniform Resource Locator.
- SIP\_URI: Indicates that the address type is in the form of SIP Uniform Resource Identifier.

**QosFlowUsage:****anyOf:**

- type: string

**enum:**

- GENERAL
- IMS\_SIG

- type: string

**Description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**Description:**

Possible values are

- GENERAL: Indicate no specific QoS flow usage information is available.
- IMS\_SIG: Indicate that the QoS flow is used for IMS signalling only.

**FailureCause:****anyOf:**

- type: string

**enum:**

- PCC\_RULE\_EVENT
- PCC\_QOS\_FLOW\_EVENT
- RULE\_PERMANENT\_ERROR
- RULE\_TEMPORARY\_ERROR
- POL\_DEC\_ERROR

- type: string

**CreditManagementStatus:****anyOf:**

- type: string

**enum:**

- END\_USER\_SER\_DENIED
- CREDIT\_CTRL\_NOT\_APP
- AUTH\_REJECTED
- USER\_UNKNOWN
- RATING\_FAILED

- type: string

**SessionRuleFailureCode:****anyOf:**

- type: string

**enum:**

- NF\_MAL
- RES\_LIM
- UNSUCC\_QOS\_VAL
- UE\_STA\_SUSP
- type: string

**description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**description:**

Possible values are

- NF\_MAL: Indicate that the PCC rule could not be successfully installed (for those provisioned from the PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to SMF/UPF malfunction.
- RES\_LIM: Indicate that the PCC rule could not be successfully installed (for those provisioned from PCF) or activated (for those pre-defined in SMF) or enforced (for those already successfully installed) due to a limitation of resources at the SMF/UPF.
- UNSUCC\_QOS\_VAL: indicate that the QoS validation has failed.
- UE\_STA\_SUSP: Indicates that the UE is in suspend state.

**SteeringFunctionality:****anyOf:**

- type: string

**enum:**

- MPTCP
- ATSSS\_LL

- type: string

**description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**description:**

Possible values are

- MPTCP: Indicates that PCF authorizes the MPTCP functionality to support traffic steering, switching and splitting.
- ATSSS\_LL: Indicates that PCF authorizes the ATSSS-LL functionality to support traffic steering, switching and splitting.

**SteerModeValue:****anyOf:**

- type: string

**enum:**

- ACTIVE\_STANDBY
- LOAD\_BALANCING
- SMALLEST\_DELAY
- PRIORITY\_BASED

- type: string

**MulticastAccessControl:****anyOf:**

- type: string

**enum:**

- ALLOWED
- NOT\_ALLOWED

- type: string

**RequestedQosMonitoringParameter:****anyOf:**

- type: string

**enum:**

- DOWNLINK
- UPLINK
- ROUND\_TRIP

- type: string

**ReportingFrequency:**

```

anyOf:
- type: string
  enum:
    - EVENT_TRIGGERED
    - PERIODIC
    - SESSION_RELEASE
- type: string

```

**SmPolicyAssociationReleaseCause:**

```

anyOf:
- type: string
  enum:
    - UNSPECIFIED
    - UE_SUBSCRIPTION
    - INSUFFICIENT_RES
    - VALIDATION_CONDITION_NOT_MET
- type: string

```

**PduSessionRelCause:**

```

anyOf:
- type: string
  enum:
    - PS_TO_CS_HO
- type: string

```

**MaPduIndication:**

```

anyOf:
- type: string
  enum:
    - MA_PDU_REQUEST
    - MA_PDU_NETWORK_UPGRADE_ALLOWED
- type: string

```

**AtsssCapability:**

```

anyOf:
- type: string
  enum:
    - MPTCP_ATSSS_LL_WITH_ASMODE_UL
    - MPTCP_ATSSS_LL_WITH_EXSDMODE_DL_ASMODE_UL
    - MPTCP_ATSSS_LL_WITH_ASMODE_DLUL
    - ATSSS_LL
    - MPTCP_ATSSS_LL
- type: string

```

#

**NetLocAccessSupport:**

```

anyOf:
- type: string
  enum:
    - ANR_NOT_SUPPORTED
    - TZR_NOT_SUPPORTED
    - LOC_NOT_SUPPORTED
- type: string

```

**description:**

This string provides forward-compatibility with future extensions to the enumeration but is not used to encode content defined in the present version of this API.

**description:**

Possible values are

- ANR\_NOT\_SUPPORTED: Indicates that the access network does not support the report of access network information.
- TZR\_NOT\_SUPPORTED: Indicates that the access network does not support the report of UE time zone.
- LOC\_NOT\_SUPPORTED: Indicates that the access network does not support the report

```
of UE Location (or PLMN Id).
  PolicyDecisionFailureCode:
    anyOf:
      - type: string
        enum:
          - TRA_CTRL_DECS_ERR
          - QOS_DECS_ERR
          - CHG_DECS_ERR
          - USA_MON_DECS_ERR
          - QOS_MON_DECS_ERR
          - CON_DATA_ERR
      - type: string
#
  NotificationControlIndication:
    anyOf:
      - type: string
        enum:
          - DDN_FAILURE
          - DDD_STATUS
      - type: string
#
```

## External Docs

**Description:** 3GPP TS 29.512 V16.9.0; 5G System; Session Management Policy Control Service.  
**URL:** '[http://www.3gpp.org/ftp/Specs/archive/29\\_series/29.512/](http://www.3gpp.org/ftp/Specs/archive/29_series/29.512/)'