**3GPP TSG-CT WG3 Meeting #****125 C3-225728**

**Toulouse, France, 14th - 18th, November, 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.512** | **CR** | **0993** | **rev** | **-** | **Current version:** | **17.8.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Update of info and externalDocs fields | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2022-11-18 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | CRs modifying the Npcf\_SMControlPolicy API have been agreed and the version number of the corresponding OpenAPI file thus needs to be incremented following the rules in TS 29.501, subclause 4.3.1.  The following agreed CRs update theOpenAPI file for **Npcf\_SMPolicyControl** **API** for the present release:  + TS 29.512 CR#0984 introduces a backward compatible correction  The API version need to be updated from 1.2.1 to 1.2.2  Hence, the corresponding TS version in each externalDocs field shall be updated accordingly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Update the API version number and TS version in externalDocs field for above the API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incorrect API version number and TS version in externalDocs field. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\* First Change \*\*\*

# A.2 Npcf\_SMPolicyControl API

openapi: 3.0.0

info:

title: Npcf\_SMPolicyControl API

version: 1.2.2

description: |

Session Management Policy Control Service

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externalDocs:

description: 3GPP TS 29.512 V17.9.0; 5G System; Session Management Policy Control Service.

url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.512/'

security:

- {}

- oAuth2ClientCredentials:

- npcf-smpolicycontrol

servers:

- url: '{apiRoot}/npcf-smpolicycontrol/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

paths:

/sm-policies:

post:

summary: Create a new Individual SM Policy

operationId: CreateSMPolicy

tags:

- SM Policies (Collection)

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/SmPolicyContextData'

responses:

'201':

description: Created

content:

application/json:

schema:

$ref: '#/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':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

SmPolicyUpdateNotification:

'{$request.body#/notificationUri}/update':

post:

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/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'

minItems: 1

- type: array

items:

$ref: '#/components/schemas/PolicyDecisionFailureCode'

minItems: 1

'204':

description: No Content, Notification was succesfull

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

description: Bad Request.

content:

application/json:

schema:

$ref: '#/components/schemas/ErrorReport'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

SmPolicyControlTerminationRequestNotification:

'{$request.body#/notificationUri}/terminate':

post:

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/TerminationNotification'

responses:

'204':

description: No Content, Notification was successful

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/sm-policies/{smPolicyId}:

get:

summary: Read an Individual SM Policy

operationId: GetSMPolicy

tags:

- Individual SM Policy (Document)

parameters:

- name: smPolicyId

in: path

description: Identifier of a policy association

required: true

schema:

type: string

responses:

'200':

description: OK. Resource representation is returned

content:

application/json:

schema:

$ref: '#/components/schemas/SmPolicyControl'

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/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:

$ref: '#/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:

$ref: '#/components/schemas/SmPolicyDecision'

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/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:

$ref: '#/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':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

npcf-smpolicycontrol: Access to the Npcf\_SMPolicyControl API

schemas:

SmPolicyControl:

description: Contains the parameters used to request the SM policies and the SM policies authorized by the PCF.

type: object

properties:

context:

$ref: '#/components/schemas/SmPolicyContextData'

policy:

$ref: '#/components/schemas/SmPolicyDecision'

required:

- context

- policy

SmPolicyContextData:

description: Contains the parameters used to create an Individual SM policy resource.

type: object

properties:

accNetChId:

$ref: '#/components/schemas/AccNetChId'

chargEntityAddr:

$ref: '#/components/schemas/AccNetChargingAddress'

gpsi:

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

supi:

$ref: '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:

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

minItems: 1

pduSessionId:

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

pduSessionType:

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

chargingcharacteristics:

type: string

dnn:

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

dnnSelMode:

$ref: 'TS29502\_Nsmf\_PDUSession.yaml#/components/schemas/DnnSelectionMode'

notificationUri:

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

accessType:

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

ratType:

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

addAccessInfo:

$ref: '#/components/schemas/AdditionalAccessInfo'

servingNetwork:

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

userLocationInfo:

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

ueTimeZone:

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

pei:

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

ipv4Address:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv6AddressPrefix:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

ipDomain:

type: string

description: Indicates the IPv4 address domain

subsSessAmbr:

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

authProfIndex:

type: string

description: Indicates the DN-AAA authorization profile index

subsDefQos:

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

vplmnQos:

$ref: '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:

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

sliceInfo:

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

qosFlowUsage:

$ref: '#/components/schemas/QosFlowUsage'

servNfId:

$ref: '#/components/schemas/ServingNfIdentity'

suppFeat:

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

smfId:

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

recoveryTime:

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

maPduInd:

$ref: '#/components/schemas/MaPduIndication'

atsssCapab:

$ref: '#/components/schemas/AtsssCapability'

ipv4FrameRouteList:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4AddrMask'

minItems: 1

ipv6FrameRouteList:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

minItems: 1

satBackhaulCategory:

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

pcfUeInfo:

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

pvsInfo:

type: array

items:

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

minItems: 1

onboardInd:

type: boolean

description: If it is included and set to true, it indicates that the PDU session is used for UE Onboarding.

nwdafDatas:

type: array

items:

$ref: '#/components/schemas/NwdafData'

minItems: 1

required:

- supi

- pduSessionId

- pduSessionType

- dnn

- notificationUri

- sliceInfo

SmPolicyDecision:

description: Contains the SM policies authorized by the PCF.

type: object

properties:

sessRules:

type: object

additionalProperties:

$ref: '#/components/schemas/SessionRule'

minProperties: 1

description: >

A map of Sessionrules with the content being the SessionRule as described in

clause 5.6.2.7. The key used in this map for each entry is the sessRuleId

attribute of the corresponding SessionRule.

pccRules:

type: object

additionalProperties:

$ref: '#/components/schemas/PccRule'

minProperties: 1

description: >

A map of PCC rules with the content being the PCCRule as described in

clause 5.6.2.6. The key used in this map for each entry is the pccRuleId

attribute of the corresponding PccRule.

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:

$ref: '#/components/schemas/QosData'

minProperties: 1

description: >

Map of QoS data policy decisions. The key used in this map for each entry is the qosId

attribute of the corresponding QosData.

chgDecs:

type: object

additionalProperties:

$ref: '#/components/schemas/ChargingData'

minProperties: 1

description: >

Map of Charging data policy decisions. The key used in this map for each entry

is the chgId attribute of the corresponding ChargingData.

nullable: true

chargingInfo:

$ref: '#/components/schemas/ChargingInformation'

traffContDecs:

type: object

additionalProperties:

$ref: '#/components/schemas/TrafficControlData'

minProperties: 1

description: >

Map of Traffic Control data policy decisions. The key used in this map for each entry

is the tcId attribute of the corresponding TrafficControlData.

umDecs:

type: object

additionalProperties:

$ref: '#/components/schemas/UsageMonitoringData'

minProperties: 1

description: >

Map of Usage Monitoring data policy decisions. The key used in this map for each entry

is the umId attribute of the corresponding UsageMonitoringData.

nullable: true

qosChars:

type: object

additionalProperties:

$ref: '#/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:

$ref: '#/components/schemas/QosMonitoringData'

minProperties: 1

description: >

Map of QoS Monitoring data policy decisions. The key used in this map for each entry

is the qmId attribute of the corresponding QosMonitoringData.

nullable: true

reflectiveQoSTimer:

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

conds:

type: object

additionalProperties:

$ref: '#/components/schemas/ConditionData'

minProperties: 1

description: >

A map of condition data with the content being as described in clause 5.6.2.9. The key

used in this map for each entry is the condId attribute of the corresponding ConditionData.

nullable: true

revalidationTime:

$ref: '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.

offlineChOnly:

type: boolean

default: false

description: >

Indicates that the online charging method shall never be used for any PCC rule activated

during the lifetime of the PDU session.

policyCtrlReqTriggers:

type: array

items:

$ref: '#/components/schemas/PolicyControlRequestTrigger'

minItems: 1

description: Defines the policy control request triggers subscribed by the PCF.

nullable: true

lastReqRuleData:

type: array

items:

$ref: '#/components/schemas/RequestedRuleData'

minItems: 1

description: Defines the last list of rule control data requested by the PCF.

lastReqUsageData:

$ref: '#/components/schemas/RequestedUsageData'

praInfos:

type: object

additionalProperties:

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

minProperties: 1

description: Map of PRA information. The praId attribute within the PresenceInfo data type is the key of the map.

nullable: true

ipv4Index:

$ref: 'TS29519\_Policy\_Data.yaml#/components/schemas/IpIndex'

ipv6Index:

$ref: 'TS29519\_Policy\_Data.yaml#/components/schemas/IpIndex'

qosFlowUsage:

$ref: '#/components/schemas/QosFlowUsage'

relCause:

$ref: '#/components/schemas/SmPolicyAssociationReleaseCause'

suppFeat:

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

tsnBridgeManCont:

$ref: '#/components/schemas/BridgeManagementContainer'

tsnPortManContDstt:

$ref: '#/components/schemas/PortManagementContainer'

tsnPortManContNwtts:

type: array

items:

$ref: '#/components/schemas/PortManagementContainer'

minItems: 1

redSessIndication:

type: boolean

description: >

Indicates whether the PDU session is a redundant PDU session. If absent it means the PDU

session is not a redundant PDU session.

SmPolicyNotification:

description: Represents a notification on the update of the SM policies.

type: object

properties:

resourceUri:

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

smPolicyDecision:

$ref: '#/components/schemas/SmPolicyDecision'

PccRule:

description: Contains a PCC rule information.

type: object

properties:

flowInfos:

type: array

items:

$ref: '#/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:

$ref: '#/components/schemas/ApplicationDescriptor'

contVer:

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

pccRuleId:

type: string

description: Univocally identifies the PCC rule within a PDU session.

precedence:

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

afSigProtocol:

$ref: '#/components/schemas/AfSigProtocol'

appReloc:

type: boolean

description: Indication of application relocation possibility.

easRedisInd:

type: boolean

description: Indicates the EAS rediscovery is required.

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 clause 5.6.2.8.

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 clause 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 clause 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 clause 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 clause 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 clause 5.6.2.12.

nullable: true

refCondData:

type: string

description: A reference to the condition data. It is the condId described in clause 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 clause 5.6.2.40.

nullable: true

addrPreserInd:

type: boolean

nullable: true

tscaiInputDl:

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

tscaiInputUl:

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

tscaiTimeDom:

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

ddNotifCtrl:

$ref: '#/components/schemas/DownlinkDataNotificationControl'

ddNotifCtrl2:

$ref: '#/components/schemas/DownlinkDataNotificationControlRm'

disUeNotif:

type: boolean

nullable: true

packFiltAllPrec:

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

required:

- pccRuleId

nullable: true

SessionRule:

description: Contains session level policy information.

type: object

properties:

authSessAmbr:

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

authDefQos:

$ref: '#/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 clause 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 clause 5.6.2.12.

nullable: true

refCondData:

type: string

description: A reference to the condition data. It is the condId described in clause 5.6.2.9.

nullable: true

required:

- sessRuleId

nullable: true

QosData:

description: Contains the QoS parameters.

type: object

properties:

qosId:

type: string

description: Univocally identifies the QoS control policy data within a PDU session.

5qi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5Qi'

maxbrUl:

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

maxbrDl:

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

gbrUl:

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

gbrDl:

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

arp:

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

qnc:

type: boolean

description: >

Indicates whether notifications are requested from 3GPP NG-RAN when the GFBR can no longer

(or again) be guaranteed for a QoS Flow during the lifetime of the QoS Flow.

priorityLevel:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5QiPriorityLevelRm'

averWindow:

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

maxDataBurstVol:

$ref: '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:

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

maxPacketLossRateUl:

$ref: '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:

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

packetDelayBudget:

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

packetErrorRate:

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

required:

- qosId

nullable: true

ConditionData:

description: Contains conditions of applicability for a rule.

type: object

properties:

condId:

type: string

description: Uniquely identifies the condition data within a PDU session.

activationTime:

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

deactivationTime:

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

accessType:

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

ratType:

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

required:

- condId

nullable: true

TrafficControlData:

description: Contains parameters determining how flows associated with a PCC Rule are treated (e.g. blocked, redirected, etc).

type: object

properties:

tcId:

type: string

description: Univocally identifies the traffic control policy data within a PDU session.

flowStatus:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/FlowStatus'

redirectInfo:

$ref: '#/components/schemas/RedirectInformation'

addRedirectInfo:

type: array

items:

$ref: '#/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:

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

minItems: 1

description: A list of location which the traffic shall be routed to for the AF request

nullable: true

maxAllowedUpLat:

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

easIpReplaceInfos:

type: array

items:

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

minItems: 1

description: Contains EAS IP replacement information.

nullable: true

traffCorreInd:

type: boolean

simConnInd:

type: boolean

description: Indicates whether simultaneous connectivity should be temporarily maintained for the source and target PSA.

simConnTerm:

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

upPathChgEvent:

$ref: '#/components/schemas/UpPathChgEvent'

steerFun:

$ref: '#/components/schemas/SteeringFunctionality'

steerModeDl:

$ref: '#/components/schemas/SteeringMode'

steerModeUl:

$ref: '#/components/schemas/SteeringMode'

mulAccCtrl:

$ref: '#/components/schemas/MulticastAccessControl'

required:

- tcId

nullable: true

ChargingData:

description: Contains charging related parameters.

type: object

properties:

chgId:

type: string

description: Univocally identifies the charging control policy data within a PDU session.

meteringMethod:

$ref: '#/components/schemas/MeteringMethod'

offline:

type: boolean

description: Indicates the offline charging is applicable to the PCC rule when it is included and set to true.

online:

type: boolean

description: Indicates the online charging is applicable to the PCC rule when it is included and set to true.

sdfHandl:

type: boolean

description: Indicates whether the service data flow is allowed to start while the SMF is waiting for the response to the credit request.

ratingGroup:

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

reportingLevel:

$ref: '#/components/schemas/ReportingLevel'

serviceId:

$ref: '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:

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

afChargId:

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

required:

- chgId

nullable: true

UsageMonitoringData:

description: Contains usage monitoring related control information.

type: object

properties:

umId:

type: string

description: Univocally identifies the usage monitoring policy data within a PDU session.

volumeThreshold:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

volumeThresholdUplink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

volumeThresholdDownlink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

timeThreshold:

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

monitoringTime:

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

nextVolThreshold:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

nextVolThresholdUplink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

nextVolThresholdDownlink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/VolumeRm'

nextTimeThreshold:

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

inactivityTime:

$ref: '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:

description: Contains the redirect information.

type: object

properties:

redirectEnabled:

type: boolean

description: Indicates the redirect is enable.

redirectAddressType:

$ref: '#/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:

description: Contains the flow information.

type: object

properties:

flowDescription:

$ref: '#/components/schemas/FlowDescription'

ethFlowDescription:

$ref: '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:

$ref: '#/components/schemas/FlowDirectionRm'

SmPolicyDeleteData:

description: Contains the parameters to be sent to the PCF when an individual SM policy is deleted.

type: object

properties:

userLocationInfo:

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

ueTimeZone:

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

servingNetwork:

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

userLocationInfoTime:

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

ranNasRelCauses:

type: array

items:

$ref: '#/components/schemas/RanNasRelCause'

minItems: 1

description: Contains the RAN and/or NAS release cause.

accuUsageReports:

type: array

items:

$ref: '#/components/schemas/AccuUsageReport'

minItems: 1

description: Contains the usage report

pduSessRelCause:

$ref: '#/components/schemas/PduSessionRelCause'

qosMonReports:

type: array

items:

$ref: '#/components/schemas/QosMonitoringReport'

minItems: 1

QosCharacteristics:

description: Contains QoS characteristics for a non-standardized or a non-configured 5QI.

type: object

properties:

5qi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5Qi'

resourceType:

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

priorityLevel:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5QiPriorityLevel'

packetDelayBudget:

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

packetErrorRate:

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

averagingWindow:

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

maxDataBurstVol:

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

extMaxDataBurstVol:

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

required:

- 5qi

- resourceType

- priorityLevel

- packetDelayBudget

- packetErrorRate

ChargingInformation:

description: Contains the addresses of the charging functions.

type: object

properties:

primaryChfAddress:

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

secondaryChfAddress:

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

primaryChfSetId:

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

primaryChfInstanceId:

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

secondaryChfSetId:

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

secondaryChfInstanceId:

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

required:

- primaryChfAddress

AccuUsageReport:

description: Contains the accumulated usage report information.

type: object

properties:

refUmIds:

type: string

description: An id referencing UsageMonitoringData objects associated with this usage report.

volUsage:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'

volUsageUplink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'

volUsageDownlink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'

timeUsage:

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

nextVolUsage:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'

nextVolUsageUplink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'

nextVolUsageDownlink:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Volume'

nextTimeUsage:

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

required:

- refUmIds

SmPolicyUpdateContextData:

description: Contains the policy control request trigger(s) that were met and the corresponding new value(s) or the error report of the policy enforcement.

type: object

properties:

repPolicyCtrlReqTriggers:

type: array

items:

$ref: '#/components/schemas/PolicyControlRequestTrigger'

minItems: 1

description: The policy control reqeust trigges which are met.

accNetChIds:

type: array

items:

$ref: '#/components/schemas/AccNetChId'

minItems: 1

description: Indicates the access network charging identifier for the PCC rule(s) or whole PDU session.

accessType:

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

ratType:

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

addAccessInfo:

$ref: '#/components/schemas/AdditionalAccessInfo'

relAccessInfo:

$ref: '#/components/schemas/AdditionalAccessInfo'

servingNetwork:

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

userLocationInfo:

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

ueTimeZone:

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

relIpv4Address:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv4Address:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

ipDomain:

type: string

description: Indicates the IPv4 address domain

ipv6AddressPrefix:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

relIpv6AddressPrefix:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

addIpv6AddrPrefixes:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

addRelIpv6AddrPrefixes:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

relUeMac:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

ueMac:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

subsSessAmbr:

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

authProfIndex:

type: string

description: Indicates the DN-AAA authorization profile index

subsDefQos:

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

vplmnQos:

$ref: 'TS29502\_Nsmf\_PDUSession.yaml#/components/schemas/VplmnQos'

vplmnQosNotApp:

type: boolean

description: If it is included and set to true, indicates that the QoS constraints in the VPLMN are not applicable.

numOfPackFilter:

type: integer

description: Contains the number of supported packet filter for signalled QoS rules.

accuUsageReports:

type: array

items:

$ref: '#/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:

$ref: '#/components/schemas/AppDetectionInfo'

minItems: 1

description: Report the start/stop of the application traffic and detected SDF descriptions if applicable.

ruleReports:

type: array

items:

$ref: '#/components/schemas/RuleReport'

minItems: 1

description: Used to report the PCC rule failure.

sessRuleReports:

type: array

items:

$ref: '#/components/schemas/SessionRuleReport'

minItems: 1

description: Used to report the session rule failure.

qncReports:

type: array

items:

$ref: '#/components/schemas/QosNotificationControlInfo'

minItems: 1

description: QoS Notification Control information.

qosMonReports:

type: array

items:

$ref: '#/components/schemas/QosMonitoringReport'

minItems: 1

userLocationInfoTime:

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

repPraInfos:

type: object

additionalProperties:

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

minProperties: 1

description: >

Reports the changes of presence reporting area. The praId attribute within the

PresenceInfo data type is the key of the map.

ueInitResReq:

$ref: '#/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:

$ref: '#/components/schemas/QosFlowUsage'

creditManageStatus:

$ref: '#/components/schemas/CreditManagementStatus'

servNfId:

$ref: '#/components/schemas/ServingNfIdentity'

traceReq:

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

maPduInd:

$ref: '#/components/schemas/MaPduIndication'

atsssCapab:

$ref: '#/components/schemas/AtsssCapability'

tsnBridgeInfo:

$ref: '#/components/schemas/TsnBridgeInfo'

tsnBridgeManCont:

$ref: '#/components/schemas/BridgeManagementContainer'

tsnPortManContDstt:

$ref: '#/components/schemas/PortManagementContainer'

tsnPortManContNwtts:

type: array

items:

$ref: '#/components/schemas/PortManagementContainer'

minItems: 1

mulAddrInfos:

type: array

items:

$ref: '#/components/schemas/IpMulticastAddressInfo'

minItems: 1

policyDecFailureReports:

type: array

items:

$ref: '#/components/schemas/PolicyDecisionFailureCode'

minItems: 1

description: Contains the type(s) of failed policy decision and/or condition data.

invalidPolicyDecs:

type: array

items:

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

minItems: 1

description: Indicates the invalid parameters for the reported type(s) of the failed policy decision and/or condition data.

trafficDescriptors:

type: array

items:

$ref: '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.

typesOfNotif:

type: array

items:

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

minItems: 1

interGrpIds:

type: array

items:

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

minItems: 1

satBackhaulCategory:

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

pcfUeInfo:

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

nwdafDatas:

type: array

items:

$ref: '#/components/schemas/NwdafData'

minItems: 1

nullable: true

anGwStatus:

type: boolean

description: >

When it is included and set to true, it indicates that the AN-Gateway has failed and

that the PCF should refrain from sending policy decisions to the SMF until it is

informed that the AN-Gateway has been recovered.

UpPathChgEvent:

description: Contains the UP path change event subscription from the AF.

type: object

properties:

notificationUri:

$ref: '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:

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

afAckInd:

type: boolean

required:

- notificationUri

- notifCorreId

- dnaiChgType

nullable: true

TerminationNotification:

description: Represents a Termination Notification.

type: object

properties:

resourceUri:

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

cause:

$ref: '#/components/schemas/SmPolicyAssociationReleaseCause'

required:

- resourceUri

- cause

AppDetectionInfo:

description: Contains the detected application's traffic information.

type: object

properties:

appId:

type: string

description: A reference to the application detection filter configured at the UPF

instanceId:

type: string

description: >

Identifier sent 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:

$ref: '#/components/schemas/FlowInformation'

minItems: 1

description: Contains the detected service data flow descriptions if they are deducible.

required:

- appId

AccNetChId:

description: Contains the access network charging identifier for the PCC rule(s) or for the whole PDU session.

type: object

properties:

accNetChaIdValue:

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

accNetChargId:

type: string

description: A character string containing the access network charging id.

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

oneOf:

- required: [accNetChaIdValue]

- required: [accNetChargId]

AccNetChargingAddress:

description: Describes the network entity within the access network performing charging

type: object

anyOf:

- required: [anChargIpv4Addr]

- required: [anChargIpv6Addr]

properties:

anChargIpv4Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

anChargIpv6Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

RequestedRuleData:

description: Contains rule data requested by the PCF to receive information associated with PCC rule(s).

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:

$ref: '#/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:

description: Contains usage data requested by the PCF requesting usage reports for the corresponding usage monitoring data instances.

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:

description: Contains the current applicable values corresponding to the policy control request triggers.

type: object

properties:

accessType:

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

ratType:

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

servNfId:

$ref: '#/components/schemas/ServingNfIdentity'

servingNetwork:

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

userLocationInfo:

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

ueTimeZone:

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

netLocAccSupp:

$ref: '#/components/schemas/NetLocAccessSupport'

RuleReport:

description: Reports the status of PCC.

type: object

properties:

pccRuleIds:

type: array

items:

type: string

minItems: 1

description: Contains the identifier of the affected PCC rule(s).

ruleStatus:

$ref: '#/components/schemas/RuleStatus'

contVers:

type: array

items:

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

minItems: 1

description: Indicates the version of a PCC rule.

failureCode:

$ref: '#/components/schemas/FailureCode'

finUnitAct:

$ref: 'TS32291\_Nchf\_ConvergedCharging.yaml#/components/schemas/FinalUnitAction'

ranNasRelCauses:

type: array

items:

$ref: '#/components/schemas/RanNasRelCause'

minItems: 1

description: indicates the RAN or NAS release cause code information.

altQosParamId:

type: string

required:

- pccRuleIds

- ruleStatus

RanNasRelCause:

description: Contains the RAN/NAS release cause.

type: object

properties:

ngApCause:

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

5gMmCause:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5GMmCause'

5gSmCause:

$ref: '#/components/schemas/5GSmCause'

epsCause:

$ref: '#/components/schemas/EpsRanNasRelCause'

UeInitiatedResourceRequest:

description: Indicates that a UE requests specific QoS handling for the selected SDF.

type: object

properties:

pccRuleId:

type: string

ruleOp:

$ref: '#/components/schemas/RuleOperation'

precedence:

type: integer

packFiltInfo:

type: array

items:

$ref: '#/components/schemas/PacketFilterInfo'

minItems: 1

reqQos:

$ref: '#/components/schemas/RequestedQos'

required:

- ruleOp

- packFiltInfo

PacketFilterInfo:

description: Contains the information from a single packet filter sent from the SMF to the PCF.

type: object

properties:

packFiltId:

type: string

description: An identifier of packet filter.

packFiltCont:

$ref: '#/components/schemas/PacketFilterContent'

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:

$ref: '#/components/schemas/FlowDirection'

RequestedQos:

description: Contains the QoS information requested by the UE.

type: object

properties:

5qi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5Qi'

gbrUl:

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

gbrDl:

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

required:

- 5qi

QosNotificationControlInfo:

description: Contains the QoS Notification Control Information.

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:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/QosNotifType'

contVer:

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

altQosParamId:

type: string

required:

- refPccRuleIds

- notifType

PartialSuccessReport:

description: Includes the information reported by the SMF when some of the PCC rules and/or session rules are not successfully installed/activated.

type: object

properties:

failureCause:

$ref: '#/components/schemas/FailureCause'

ruleReports:

type: array

items:

$ref: '#/components/schemas/RuleReport'

minItems: 1

description: Information about the PCC rules provisioned by the PCF not successfully installed/activated.

sessRuleReports:

type: array

items:

$ref: '#/components/schemas/SessionRuleReport'

minItems: 1

description: Information about the session rules provisioned by the PCF not successfully installed.

ueCampingRep:

$ref: '#/components/schemas/UeCampingRep'

policyDecFailureReports:

type: array

items:

$ref: '#/components/schemas/PolicyDecisionFailureCode'

minItems: 1

description: Contains the type(s) of failed policy decision and/or condition data.

invalidPolicyDecs:

type: array

items:

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

minItems: 1

description: Indicates the invalid parameters for the reported type(s) of the failed policy decision and/or condition data.

required:

- failureCause

AuthorizedDefaultQos:

description: Represents the Authorized Default QoS.

type: object

properties:

5qi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5Qi'

arp:

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

priorityLevel:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/5QiPriorityLevelRm'

averWindow:

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

maxDataBurstVol:

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

maxbrUl:

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

maxbrDl:

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

gbrUl:

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

gbrDl:

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

extMaxDataBurstVol:

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

ErrorReport:

description: Contains the rule error reports.

type: object

properties:

error:

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

ruleReports:

type: array

items:

$ref: '#/components/schemas/RuleReport'

minItems: 1

description: Used to report the PCC rule failure.

sessRuleReports:

type: array

items:

$ref: '#/components/schemas/SessionRuleReport'

minItems: 1

description: Used to report the session rule failure.

polDecFailureReports:

type: array

items:

$ref: '#/components/schemas/PolicyDecisionFailureCode'

minItems: 1

description: Used to report failure of the policy decision and/or condition data.

invalidPolicyDecs:

type: array

items:

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

minItems: 1

description: Indicates the invalid parameters for the reported type(s) of the failed policy decision and/or condition data.

SessionRuleReport:

description: Represents reporting of the status of a session rule.

type: object

properties:

ruleIds:

type: array

items:

type: string

minItems: 1

description: Contains the identifier of the affected session rule(s).

ruleStatus:

$ref: '#/components/schemas/RuleStatus'

sessRuleFailureCode:

$ref: '#/components/schemas/SessionRuleFailureCode'

policyDecFailureReports:

type: array

items:

$ref: '#/components/schemas/PolicyDecisionFailureCode'

minItems: 1

description: Contains the type(s) of failed policy decision and/or condition data.

required:

- ruleIds

- ruleStatus

ServingNfIdentity:

description: Contains the serving Network Function identity.

type: object

properties:

servNfInstId:

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

guami:

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

anGwAddr:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/AnGwAddress'

sgsnAddr:

$ref: '#/components/schemas/SgsnAddress'

SteeringMode:

description: Contains the steering mode value and parameters determined by the PCF.

type: object

properties:

steerModeValue:

$ref: '#/components/schemas/SteerModeValue'

active:

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

standby:

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

3gLoad:

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

prioAcc:

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

thresValue:

$ref: '#/components/schemas/ThresholdValue'

steerModeInd:

$ref: '#/components/schemas/SteerModeIndicator'

required:

- steerModeValue

AdditionalAccessInfo:

description: Indicates the combination of additional Access Type and RAT Type for a MA PDU session.

type: object

properties:

accessType:

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

ratType:

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

required:

- accessType

QosMonitoringData:

description: Contains QoS monitoring related control information.

type: object

properties:

qmId:

type: string

description: Univocally identifies the QoS monitoring policy data within a PDU session.

reqQosMonParams:

type: array

items:

$ref: '#/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:

$ref: '#/components/schemas/ReportingFrequency'

minItems: 1

repThreshDl:

type: integer

description: Indicates the period of time in units of miliiseconds for DL packet delay.

nullable: true

repThreshUl:

type: integer

description: Indicates the period of time in units of miliiseconds for UL packet delay.

nullable: true

repThreshRp:

type: integer

description: Indicates the period of time in units of miliiseconds for round trip packet delay.

nullable: true

waitTime:

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

repPeriod:

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

notifyUri:

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

notifyCorreId:

type: string

nullable: true

directNotifInd:

type: boolean

description: Indicates that the direct event notification sent by UPF to the Local NEF or AF is requested if it is included and set to true.

required:

- qmId

- reqQosMonParams

- repFreqs

nullable: true

QosMonitoringReport:

description: Contains reporting information on QoS monitoring.

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:

description: Contains parameters that describe and identify the TSC user plane node.

type: object

properties:

bridgeId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

dsttAddr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

dsttPortNum:

$ref: '#/components/schemas/TsnPortNumber'

dsttResidTime:

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

#

PortManagementContainer:

description: Contains the port management information container for a port.

type: object

properties:

portManCont:

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

portNum:

$ref: '#/components/schemas/TsnPortNumber'

required:

- portManCont

- portNum

BridgeManagementContainer:

description: Contains the UMIC.

type: object

properties:

bridgeManCont:

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

required:

- bridgeManCont

IpMulticastAddressInfo:

description: Contains the IP multicast addressing information.

type: object

properties:

srcIpv4Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv4MulAddr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

srcIpv6Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

ipv6MulAddr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

DownlinkDataNotificationControl:

description: Contains the downlink data notification control information.

type: object

properties:

notifCtrlInds:

type: array

items:

$ref: '#/components/schemas/NotificationControlIndication'

minItems: 1

typesOfNotif:

type: array

items:

$ref: '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 nullable:true property.

type: object

properties:

notifCtrlInds:

type: array

items:

$ref: '#/components/schemas/NotificationControlIndication'

minItems: 1

nullable: true

typesOfNotif:

type: array

items:

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

minItems: 1

nullable: true

nullable: true

ThresholdValue:

description: Indicates the threshold value(s) for RTT and/or Packet Loss Rate.

type: object

properties:

rttThres:

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

plrThres:

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

nullable: true

NwdafData:

description: Indicates the list of Analytic ID(s) per NWDAF instance ID used for the PDU Session consumed by the SMF.

type: object

properties:

nwdafInstanceId:

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

nwdafEvents:

type: array

items:

$ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/NwdafEvent'

minItems: 1

required:

- nwdafInstanceId

5GSmCause:

$ref: '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.

FlowDescription:

type: string

description: Defines a packet filter for an IP flow.

TsnPortNumber:

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

ApplicationDescriptor:

$ref: '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:

description: This data type is defined in the same way as the "FlowDirection" data type, with the only difference that it allows null value.

anyOf:

- $ref: '#/components/schemas/FlowDirection'

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

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

- RAI\_CH

- RAT\_TY\_CH

- REF\_QOS\_IND\_CH

- NUM\_OF\_PACKET\_FILTER

- UE\_STATUS\_RESUME

- UE\_TZ\_CH

- AUTH\_PROF\_CH

- QOS\_MONITORING

- SCELL\_CH

- USER\_LOCATION\_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

- SUCC\_QOS\_UPDATE

- SAT\_CATEGORY\_CHG

- PCF\_UE\_NOTIF\_IND

- NWDAF\_DATA\_CHG

- 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 guranteed or gurateed 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.

- RAI\_CH: Location Change with respect to the RAI of GERAN and UTRAN.

- 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.

- USER\_LOCATION\_CH: Indicate that user location has been changed, applicable to serving area change and serving cell change.

- 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: TSC user plane node 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.

- SUCC\_QOS\_UPDATE: Indicates that the requested MPS Action is successful.

- SAT\_CATEGORY\_CHG: Indicates that the SMF has detected a change between different satellite backhaul categories, or between a satellite backhaul and a non-satellite backhaul.

- PCF\_UE\_NOTIF\_IND: Indicates the SMF has detected the AMF forwarded the PCF for the UE indication to receive/stop receiving notifications of SM Policy association established/terminated events.

- NWDAF\_DATA\_CHG: Indicates that the NWDAF instance IDs used for the PDU session and/or associated Analytics IDs used for the PDU session and available in the SMF have changed.

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

- UE\_STA\_SUSP

- UNKNOWN\_REF\_ID

- INCORRECT\_COND\_DATA

- REF\_ID\_COLLISION

- TRAFFIC\_STEERING\_ERROR

- DNAI\_STEERING\_ERROR

- AN\_GW\_FAILE

- MAX\_NR\_PACKET\_FILTERS\_EXCEEDED

- PACKET\_FILTER\_TFT\_ALLOCATION\_EXCEEDED

- MUTE\_CHG\_NOT\_ALLOWED

- 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 neither the "flowInfos" attribute nor the "appId" attribute is specified within the PccRule data structure 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 clause 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.

- UE\_STA\_SUSP: Indicates that the UE is in suspend state.

- UNKNOWN\_REF\_ID: Indicates that the PCC rule could not be successfully installed/modified because the referenced identifier to a Policy Decision Data or to a Condition Data is unknown to the SMF.

- INCORRECT\_COND\_DATA: Indicates that the PCC rule could not be successfully installed/modified because the referenced Condition data are incorrect.

- REF\_ID\_COLLISION: Indicates that PCC rule could not be successfully installed/modified because the same Policy Decision is referenced by a session rule (e.g. the session rule and the PCC rule refer to the same Usage Monitoring decision data).

- TRAFFIC\_STEERING\_ERROR: Indicates that enforcement of the steering of traffic to the N6-LAN or 5G-LAN failed; or the dynamic PCC rule could not be successfully installed or modified at the NF service consumer because there are invalid traffic steering policy identifier(s) within the provided Traffic Control Data policy decision to which the PCC rule refers.

- DNAI\_STEERING\_ERROR: Indicates that the enforcement of the steering of traffic to the indicated DNAI failed; or the dynamic PCC rule could not be successfully installed or modified at the NF service consumer because there is invalid route information for a DNAI(s) (e.g. routing profile id is not configured) within the provided Traffic Control Data policy decision to which the PCC rule refers.

- AN\_GW\_FAILED: This value is used to indicate that the AN-Gateway has failed and that the PCF should refrain from sending policy decisions to the SMF until it is informed that the S-GW has been recovered. This value shall not be used if the SM Policy association modification procedure is initiated for PCC rule removal only.

- MAX\_NR\_PACKET\_FILTERS\_EXCEEDED: This value is used to indicate that the PCC rule could not be successfully installed, modified or enforced at the NF service consumer because the number of supported packet filters for signalled QoS rules for the PDU session has been reached.

- PACKET\_FILTER\_TFT\_ALLOCATION\_EXCEEDED: This value is used to indicate that the PCC rule is removed at 5GS to EPS mobility because TFT allocation was not possible since the number of active packet filters in the EPC bearer is exceeded.

- MUTE\_CHG\_NOT\_ALLOWED: Indicates that the PCC rule could not be successfully modified because the mute condition for application detection report cannot be changed. Applicable when the functionality introduced with the ADC feature applies.

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.

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:

description: Indicates the cause of the failure in a Partial Success Report.

anyOf:

- type: string

enum:

- PCC\_RULE\_EVENT

- PCC\_QOS\_FLOW\_EVENT

- RULE\_PERMANENT\_ERROR

- RULE\_TEMPORARY\_ERROR

- POL\_DEC\_ERROR

- type: string

CreditManagementStatus:

description: Indicates the reason of the credit management session failure.

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

- SESSION\_RESOURCE\_ALLOCATION\_FAILURE

- UNSUCC\_QOS\_VAL

- INCORRECT\_UM

- UE\_STA\_SUSP

- UNKNOWN\_REF\_ID

- INCORRECT\_COND\_DATA

- REF\_ID\_COLLISION

- AN\_GW\_FAILED

- 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: Indicates 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: Indicates 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.

- SESSION\_RESOURCE\_ALLOCATION\_FAILURE: Indicates the session rule could not be successfully enforced due to failure during the allocation of resources for the PDU session in the UE, RAN or AMF.

- UNSUCC\_QOS\_VAL: indicates that the QoS validation has failed.

- INCORRECT\_UM: The usage monitoring data of the enforced session rule is not the same for all the provisioned session rule(s).

- UE\_STA\_SUSP: Indicates that the UE is in suspend state.

- UNKNOWN\_REF\_ID: Indicates that the session rule could not be successfully installed/modified because the referenced identifier to a Policy Decision Data or to a Condition Data is unknown to the SMF.

- INCORRECT\_COND\_DATA: Indicates that the session rule could not be successfully installed/modified because the referenced Condition data are incorrect.

- REF\_ID\_COLLISION: Indicates that the session rule could not be successfully installed/modified because the same Policy Decision is referenced by a PCC rule (e.g. the session rule and the PCC rule refer to the same Usage Monitoring decision data).

- AN\_GW\_FAILED: Indicates that the AN-Gateway has failed and that the PCF should refrain from sending policy decisions to the SMF until it is informed that the S-GW has been recovered. This value shall not be used if the SM Policy association modification procedure is initiated for session rule removal only.

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:

description: Indicates the steering mode value determined by the PCF.

anyOf:

- type: string

enum:

- ACTIVE\_STANDBY

- LOAD\_BALANCING

- SMALLEST\_DELAY

- PRIORITY\_BASED

- type: string

MulticastAccessControl:

description: Indicates whether the service data flow, corresponding to the service data flow template, is allowed or not allowed.

anyOf:

- type: string

enum:

- ALLOWED

- NOT\_ALLOWED

- type: string

RequestedQosMonitoringParameter:

description: Indicates the requested QoS monitoring parameters to be measured.

anyOf:

- type: string

enum:

- DOWNLINK

- UPLINK

- ROUND\_TRIP

- type: string

ReportingFrequency:

description: Indicates the frequency for the reporting.

anyOf:

- type: string

enum:

- EVENT\_TRIGGERED

- PERIODIC

- SESSION\_RELEASE

- type: string

SgsnAddress:

description: describes the address of the SGSN

type: object

anyOf:

- required: [sgsnIpv4Addr]

- required: [sgsnIpv6Addr]

properties:

sgsnIpv4Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

sgsnIpv6Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

SmPolicyAssociationReleaseCause:

description: Represents the cause due to which the PCF requests the termination of the SM policy association.

anyOf:

- type: string

enum:

- UNSPECIFIED

- UE\_SUBSCRIPTION

- INSUFFICIENT\_RES

- VALIDATION\_CONDITION\_NOT\_MET

- REACTIVATION\_REQUESTED

- type: string

PduSessionRelCause:

description: Contains the SMF PDU Session release cause.

anyOf:

- type: string

enum:

- PS\_TO\_CS\_HO

- RULE\_ERROR

- type: string

MaPduIndication:

description: Contains the MA PDU session indication, i.e., MA PDU Request or MA PDU Network-Upgrade Allowed.

anyOf:

- type: string

enum:

- MA\_PDU\_REQUEST

- MA\_PDU\_NETWORK\_UPGRADE\_ALLOWED

- type: string

AtsssCapability:

description: Contains the ATSSS capability supported for the MA PDU Session.

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:

description: Indicates the type of the failed policy decision and/or condition data.

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

- POLICY\_PARAM\_ERR

- type: string

#

NotificationControlIndication:

description: Indicates that the notification of DDD Status is requested and/or that the notification of DDN Failure is requested.

anyOf:

- type: string

enum:

- DDN\_FAILURE

- DDD\_STATUS

- type: string

#

SteerModeIndicator:

description: Contains Autonomous load-balance indicator or UE-assistance indicator.

anyOf:

- type: string

enum:

- AUTO\_LOAD\_BALANCE

- UE\_ASSISTANCE

- type: string

#

\*\*\* End of Changes \*\*\*