**3GPP TSG- Meeting #C3-246513**

**Orlando, US, 18 – 22 November, 2024 (Revision of C3-246054)**

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| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.512** | **CR** |  | **rev** | **1** | **Current version:** | **19.0.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:***  |  |
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| ***Source to WG:*** | , Nokia |
| ***Source to TSG:*** |  CT3 |
|  |  |
| ***Work item code:*** | TEI19,  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | The CR#1421 intends to provide support for AF to request and get notified for the outcome of requested traffic routing in traffic routing requirement installation outcome event notification from NEF to AF.NEF subscribes to traffic routing requirement installation outcome event of SMF along with the traffic influence request using Npcf\_policyauthorization service of PCF.This CR proposes to add the attribute “traffRouteReqOutcomeEvent” in “TrafficControlData” which conveys the AF’s request for the traffic route requirement installation outcome event notification from SMF. |
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| ***Summary of change:*** | 1. Support for newly added data type in clause 4.2.6.2.6.2
2. Addition of new data type “TraffRouteReqOutcomeEvent” in service specific data types table 5.6.1-1
3. Addition of “traffRouteReqOutcomeEvent” attribute in “TrafficControlData” in clause 5.6.2.10
4. Addition of new data type “TraffRouteReqOutcomeEvent” in clause 5.6.2.62
5. Addition of new feature “TraffRouteReqOutcome” in the feature negotiation table in clause 5.8
6. OpenAPI changes in A.2
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| ***Consequences if not approved:*** | If not approved, the outcome of AF requested traffic routing cannot be sent to it  |
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| ***Clauses affected:*** | 4.2.6.2.6.2, 5.6.1, 5.6.2.10, 5.6.2.62(new), 5.8, 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 introduces a backward compatibility to the OpenAPI description of the Npcf\_SMPolicyControl API. This CR is to be considered together along with other CRs, CR#1421, CR#0692, CR#0303 and CR#0560 |
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| ***This CR's revision history:*** |  |

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

4.2.6.2.6.2 Steering the traffic to a local access of the data network

This procedure is only applicable in non-roaming and visited access (i.e. LBO) scenarios.

The PCF shall determine if the ongoing PDU Session is impacted by the routing of traffic to a local access to a data network as follows:

- If the AF request includes the individual IP address/ prefix allocated to a UE or the UE MAC address, the PCF shall store the received traffic routing information and perform session binding as defined in clause 6.2 of 3GPP TS 29.513 [7] to determine the impacted PDU session.

- Otherwise, the PCF fetches from the UDR, as defined in 3GPP TS 29.519 [15], the traffic routing data information applicable for a UE, any UE or one or more Internal Group Id(s) (if received in the SMF request) and/or subscriber category(ies).

NOTE 1: If the UDR provides as part of the traffic routing data information a list of Internal Group Id(s), this information applies to all the PDU sessions related to UEs that belong to every one of these groups, i.e. a single UE needs to be a member of every group in the list of Internal Group Id(s). If the list of subscriber category(ies) is part of the traffic routing data information, this information applies to all the PDU sessions related to the UEs that belong to every one of these Subscriber Categories.

Then the PCF authorizes the request for influencing SMF routing decisions. For the impacted PDU Session that corresponds to the AF request, the PCF shall take into account, if available, the local routing indication stored in the policy data subscription information in the UDR, as defined in 3GPP TS 29.519 [15], to determine whether it is allowed to generate PCC rules with traffic routing information. When allowed, the PCC rules are generated based on the AF request as follows:

- When the request is for influencing SMF routing decisions, based on traffic routing information, operator's policy, etc., the PCF determines the traffic steering policy. The traffic steering policy indicates, for each DNAI, a traffic steering policy identifier configured in the SMF and/or if the N6 routing information associated to the application is explicitly provided by the AF, the N6 routing information (as provided by the AF). The traffic steering policy identifier is derived by the PCF from the routing profile Id provided by the AF and is related to the mechanism enabling traffic steering to the DN. Then:

- The PCF shall include within each PccRule data structure the necessary information to identify the concerned traffic within either the "flowInfos" attribute or the "appId" attribute, and include within the TrafficControlData data type that the PCC rule refers to a list of locations that the traffic shall be routed to in the "routeToLocs" attribute, and, if the "AF\_latency" feature is supported, the PCF shall include the maximum allowed user plane latency within the "maxAllowedUpLat" attribute if available. If "EASIPreplacement" feature is supported, the PCF shall include the EAS IP replacement information within the "easIpReplaceInfos" attribute if available.

- Within each RouteToLocation instance, the PCF shall include a DNAI in the "dnai" attribute to indicate the location of the application towards which the traffic routing is applied, and a traffic steering policy identifier in the "routeProfId" attribute, to indicate the traffic steering policy that applies to the indicated DNAI, and/ or the explicit N6 traffic routing information in the "routeInfo" attribute.

- If the AF provides both a routing profile Id and N6 routing information for a DNAI, the PCF may include a RouteToLocation instance with the required information or may include two RouteToLocation instances with the same DNAI within the "dnai" attribute and a traffic steering policy identifier within the "routeProfId" attribute in one instance and explicit routing information within the "routeInfo" attribute in the other instance.

NOTE 2: The N6 traffic routing requirements are related to the mechanism enabling traffic steering in the local access to the DN. The routing profile ID refers to a pre-agreed policy between the AF and the 5GC. This policy may refer to different steering policy identifier(s) sent to the SMF and e.g. based on time of the day, etc.

NOTE 3: When per DNAI both, the "routeProfId" and the "routeInfo"attributes are provided, if the pre-configured traffic steering policy referenced by the "routeProfId" attribute contains information that is overlapping with the N6 traffic routing information provided in the "routeInfo" attribute, the N6 traffic routing information takes precedence.

NOTE 4: In this release of the specification, either a traffic steering policy identifier for UL or a traffic steering policy identifier for DL can be defined per DNAI.

- When the request is for subscribing to UP path change and/or traffic route outcome events of the PDU session, the PCF shall include the information on AF subscription to UP path change events and/or traffic route outcome events within the PCC rule(s) to request the SMF to create a subscription to such notifications for the AF. In order to do so, the PCF shall include within each PccRule data structure the necessary information to identify the concerned traffic within either the "flowInfos" attribute or the "appId" attribute, and include within the Traffic Control Data decision that the PCC rule refers to the information on AF subscription to events within the "upPathChgEvent" attribute and/or "traffRouteReqOutcomeEvent" attribute.

Within this "upPathChgEvent" attribute, the PCF shall include the "dnaiChgType" attribute to indicate the type of notification (i.e. early notification, late notification or both), the notification URI within the "notificationUri" attribute, the notification correlation Id within the "notifCorreId" attribute, and if the URLLC feature is supported, an indication of AF acknowledgement to be expected within the "afAckInd" attribute, attribute. In order to enable the AF to identify the AF request to which the notification corresponds when the AF receives a UP path change notification from the SMF, as defined in clause 4.2.2.2 of 3GPP TS 29.508 [12], the PCF shall set the values of the "notificationUri" attribute and "notifCorreId" attribute respectively as follows:

- If the PCF fetches the traffic routing data information from the UDR, the PCF shall set the value of the "notificationUri" attribute to the value of the "upPathChgNotifUri" attribute of the TrafficInfluData data structure and set the value of the "notifCorreId" attribute to the value of the "upPathChgNotifCorreId" attribute of the TrafficInfluData data structure as defined in 3GPP TS 29.519 [15].

- If the PCF receives the traffic routing data information from the AF via N5 interface, the PCF shall set the values of the "notificationUri" attribute and the "notifCorreId" attribute according to the "upPathChgSub" attribute within the AfRoutingRequirement data structure as defined in 3GPP TS 29.514 [17].

If the "TraffRouteReqOutcome" feature is supported, within this "traffRouteReqOutcomeEvent" attribute, the PCF shall include the notification URI within the "notificationUri" attribute, the notification correlation Id within the "notifCorreId" attribute. In order to enable the AF to identify the AF request to which the notification corresponds when the AF receives a traffic route requirements installation outcome notification from the SMF, as defined in clause 4.2.2.2 of 3GPP TS 29.508 [12], the PCF shall set the values of the "notificationUri" attribute and "notifCorreId" attribute respectively as follows:

- If the PCF fetches the traffic routing data information from the UDR, the PCF shall set the value of the "notificationUri" attribute to the value of the "traffRouteOutcomeNotifUri" attribute of the TrafficInfluData data structure and set the value of the "notifCorreId" attribute to the value of the "traffRouteOutcomeNotifCorreId" attribute of the TrafficInfluData data structure as defined in 3GPP TS 29.519 [15].

- If the PCF receives the traffic routing data information from the AF via N5 interface, the PCF shall set the values of the "notificationUri" attribute and the "notifCorreId" attribute according to the "traffRouteReqOutcomeSub" attribute within the AfRoutingRequirement data structure as defined in 3GPP TS 29.514 [17].

If the NEF/AF provided information about the feature support on Nsmf\_EventExposure service as described in 3GPP TS 29.514 [17] (AF request applies an individual UE address) or 3GPP TS 29.519[15] (AF request applies to PDU sessions not identified by a UE address), the PCF may also include this information within the "nscSuppFeats" attribute included within the PccRule data type.

- If the AF request includes an indication that application relocation is not possible, the PCF shall include within the PccRule data instance(s) the necessary information to identify the traffic within either the "flowInfos" attribute or the "appId" attribute and the "appReloc" attribute set to true. In this case, the SMF shall ensure that for the traffic related with the concerned application, no DNAI change takes place once selected initially for this application.

- If the "EASDiscovery" feature is supported and the AF request includes an indication that EAS rediscovery is required, the PCF shall include within the PccRule data instance(s) the necessary information to identify the traffic within the "appId" attribute and the "easRedisInd" attribute set to true.

- If the URLLC feature is supported and the AF request includes an indication that the UE IP address preservation should be considered, the PCF shall include within the concerned PccRule data instance(s) the "addrPreserInd" attribute set to true.

- If the AF request includes an indication that the PDU session should be correlated via a common DNAI for a given traffic, the PCF shall include within the TrafficControlData data instance provisioned for one or more PCC rule(s), the "traffCorreInd" attribute set to true.

NOTE 5: The indication of traffic correlation can be provided together with the traffic routing information by the AF for all the members of the 5G VN group. Referred to clause 5.29.4 of 3GPP TS 23.501 [2].

- If the feature "SimultConnectivity" is supported and the AF request includes an indication that the simultaneous connectivity may be temporarily maintained for the target and the source PSA during the edge re-location procedure, the PCF may include within the TrafficControlData data instance provisioned for one or more PCC rule(s) the "simConnInd" attribute set to true, as indicated by the AF. If the feature "SimultConnectivity" is supported and the AF request includes the time interval to be considered for inactivity of the traffic routed through the source PSA after which the simultaneous connectivity can be terminated, the PCF may also include the received duration within the "simConnTerm" attribute.

- If the feature "CommonEASDNAI" is supported and AF includes a traffic correlation information within "tfcCorreInfo" attribute, and

- if the AF request also includes an indication that the PDU session should be correlated via a common DNAI, the PCF shall include the TrafficControlData data instance provisioned for one or more PCC rule(s), "COMMON\_DNAI" within the "corrType" attribute and the identification of a set of UEs accessing the application identified by the service data flow template within the "tfcCorrId" attribute. If the NEF has added its information in the AF request in order to be notified with information related to UE members of the set of UEs identified by traffic correlation ID, then the PCF shall include also the "notifUri" and "notifCorrId" attributes within the "tfcCorreInfo" attribute of the TrafficControlData; or

- if the AF request also includes an indication that a common EAS for the application identified by the service data flow template should be selected, the PCF shall include the TrafficControlData data instance provisioned for one or more PCC rule(s), the "COMMON\_EAS" within the "corrType" attribute, the identification of a set of UEs accessing the application identified by the service data flow template within the "tfcCorrId" attribute, the common EAS address(s) within the "comEasIpv4Addr" attribute and/or "comEasIpv6Addr" attribute and/or the FQDN range corresponding to the application within the "fqdnRange" attribute. If the NEF has added its information in the AF request in order to be notified with information related to UE members of the set of UEs identified by traffic correlation ID, then the PCF shall include also the "notifUri" and "notifCorrId" attributes within the "tfcCorreInfo" attribute of the TrafficControlData.

NOTE 6: Common EAS selection means the common DNAI is selected.

The PCF shall provide the PCC rule(s) as defined in clause 4.2.6.2.1.

If the temporal validity condition is received, the PCF shall evaluate the temporal validity condition of the AF request and inform the SMF to install or remove the corresponding PCC rule(s) according to the evaluation result. When policies specific to the PDU Session and policies general to multiple PDU Sessions exist, the PCF gives precedence to the PDU Session specific policies over the general policies.

If the spatial validity condition is received, the PCF considers the latest known UE location to determine the PCC rules provided to the SMF. In order to do that, the PCF shall request the SMF to report the notifications about change of UE location in an area of interest (i.e. Presence Reporting Area) as defined in clauses 4.2.2.13 or 4.2.3.19. The subscribed area of interest may be the same as the one provided in spatial validity condition, or may be a subset of the spatial validity condition (e.g. a list of TAs) based on the latest known UE location. When the SMF detects that the UE entered the area of interest subscribed by the PCF, the SMF notifies the PCF and the PCF provides to the SMF the PCC rule(s) described above. When the SMF becomes aware that the UE left the area subscribed by the PCF, the SMF notifies the PCF and the PCF may remove or provide updated PCC rule(s) to the SMF.

When the PCC rules are installed, the SMF may, based on local policies, take the information in the PCC rule(s) into account to:

- if the PDU Session is of IP type and the "addrPreserInd" attribute is included and set to true in the PCC rule(s), the SMF should preserve the UE IP address and, if necessary, not reselect the related PSA UPF for the traffic identified in the PCC rule once the PSA UPF is selected; otherwise, the SMF (re)selects UPF(s) as it might be required for PDU Sessions.

- activate mechanisms for traffic multi-homing or enforcement of an UL Classifier (UL CL).

- inform the AF of the (re)selection of the UP path (change of DNAI) and/or the candidate DNAI(s) for the PDU Session if the "CommonEASDNAI" feature is supported and the "candDnaiInd" attribute was set to "true".

- determine the target DNAI(s) for the current UE location, which may imply I-SMF selection or removal to be requested to the AMF as defined in 3GPP TS 29.502 [22].

- if the "traffCorreInd" attribute set to true is included in the TrafficControlData data type referenced by a set of PCC rules, based on SMF implementation and local configuration, the SMF should select a common DNAI from the list of DNAI included in the "routeToLocs" attribute for the identified traffic of the PDU session.

- if the "simConnInd" attribute set to true is included in the TrafficControlData data type referenced by a set of PCC rules, the SMF may temporarily maintain simultaneous connectivity for the source and target PSA at edge relocation procedure, and may influence the establishment of a temporary N9 forwarding tunnel between the source UL CL and target UL CL. If the "simConnTerm" attribute is also included, the SMF may consider the indicated time interval as the minimum one to be considered for inactivity for the described traffic before the connectivity over the source PSA may be removed.

- if the "maxAllowedUpLat" attribute is received, SMF may use this value to decide whether edge relocation is needed to ensure that the user plane latency does not exceed the value and whether to relocate the PSA UPF to satisfy the user plane latency.

- if the "easIpReplaceInfos" attribute is received, the SMF may instruct the local PSA UPF with the EAS IP replacement information using "Outer Header Creation" as defined in 3GPP TS 29.244 [13] clause 8.2.56 and "Outer Header Removal" as defined in 3GPP TS 29.244 [13] clause 8.2.64. The PSA UPF shall be configured by the SMF to perform one creation and one removal of the appropriate outer header(s) both in the uplink and in the downlink direction in a way that the address information indicated by the "source" attribute (within "easIpReplaceInfos") is used in the headers of the packets towards the UE and the address information indicated by the "target" attribute (within "easIpReplaceInfos") is used in the headers of the packets towards the DN.

- if the "easRedisInd" attribute set to true is included, the SMF may indicate the UE to refresh the cached EAS information as defined in clause 6.3.2 of 3GPP TS 24.501 [20].

- if the "tfcCorreInfo" attribute is received, and,

- if the "COMMON\_DNAI" is included within the "corrType" attribute in the TrafficControlData data type referenced by a set of PCC rules, based on SMF implementation and local configuration, the SMF should select a common DNAI from the list of DNAI included in the "routeToLocs" attribute for the traffic of the PDU session which have the same traffic correlation Id within the "tfcCorrId" attribute as defined in clause 6.2.3.2.6 of TS 23.548 [62]. The SMF shall use the provided DNAI as the common DNAI when only one is included in the "routeToLocs" attribute; or

- if the "COMMON\_EAS" is included within the "corrType" attribute in the TrafficControlData data type referenced by a set of PCC rules, the SMF should use the value within the "fqdnRange" if received to match the FQDN received from the EASDF via the Neasdf\_DNSContext\_Notify request. If they are matched, the SMF may indicate the UE the common EAS address(s) received within the "comEasIpv4Addr" attribute and/or "comEasIpv6Addr" attribute.

NOTE 7: In order for the SMF to initiate the EASDF-based EAS discovery procedure, the SMF will use the FQDN information received within the "fqdnRange" attribute for setting traffic route and finding DNAI. The "flowInfos" attribute or the "appId" attribute will not be considered for that purpose.

- if the "notifUri" attribute and "notifCorrId" attribute are included, the SMF shall notify the 5GC determined information for a set of UEs identified by Traffic Correlation ID.

NOTE 8: Common EAS selection means the common DNAI is selected.

If routing of traffic to a local access to a data network policy provided in the "routeToLocs" attribute is invalid, unknown or not applicable, or the enforcement of the steering of the traffic to the indicated DNAI failed, the SMF shall return a PCC Rule Error Report, as specified in clauses 4.2.3.16 and 4.2.4.15, and set the "failureCode" attribute to "DNAI\_STEERING\_ERROR".

\* \* \* Next Change \* \* \*

### 5.6.1 General

This clause specifies the application data model supported by the API.

The Npcf\_SMPolicyControl API allows the NF service consumer to retrieve the session management related policy from the PCF as defined in 3GPP TS 23.503 [6].

Table 5.6.1-1 specifies the data types defined for the Npcf\_SMPolicyControl service based interface protocol.

Table 5.6.1-1: Npcf\_SMPolicyControl specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| 5GSmCause | 5.6.3.2 | Indicates the 5GSM cause code value. | RAN-NAS-Cause |
| AdditionalAccessInfo | 5.6.2.43 | Indicates the combination of additional Access Type and RAT Type for MA PDU session | ATSSS |
| AccNetChargingAddress | 5.6.2.35 | Identifies the address of the network node performing charging and used for charging applications. |  |
| AccNetChId | 5.6.2.23 | Contains the access network charging identifier for the PCC rule(s) or whole PDU session. |  |
| AccuUsageReport | 5.6.2.18 | Contains the accumulated usage report information. | UMC |
| AfSigProtocol | 5.6.3.10 | Indicates the protocol used for signalling between the UE and the AF. | ProvAFsignalFlow |
| AppDetectionInfo | 5.6.2.22 | Contains the detected application's traffic information. | ADC |
| ApplicationDescriptor | 5.6.3.2 | Defines the Application Descriptor for an ATSSS rule. | ATSSS |
| AtsssCapability | 5.6.3.26 | Contains the ATSSS capability supported for the MA PDU Session. | ATSSS |
| AuthorizedDefaultQos | 5.6.2.34 | Authorized Default QoS. |  |
| BatOffsetInfoPcc | 5.6.2.60 | Contains the offset of the BAT and the optionally adjusted periodicity for the corresponding PCC rules(s). | EnTSCAC |
| BridgeManagementContainer | 5.6.2.47 | Contains the UMIC. | TimeSensitiveNetworking |
| CalleeInfo | 5.6.2.55 | Identifies the callee information. | VBCforIMS  |
| CallInfo | 5.6.2.54 | Identifies the caller and callee information. | VBCforIMS  |
| CapabilityReportRule | 5.6.2.61 | Contains information about whether a capability is not supported or supported again for one or more PCC rules. | QoSMonCapRepo |
| ChargingData | 5.6.2.11 | Contains charging related parameters. |  |
| ChargingInformation | 5.6.2.17 | Contains the addresses, and if available, the instance ID and set ID, of the charging functions. |  |
| ConditionData | 5.6.2.9 | Contains conditions for applicability of a rule. |  |
| CreditManagementStatus | 5.6.3.16 | Indicates the reason of the credit management session failure. |  |
| DownlinkDataNotificationControl | 5.6.2.48 | Contains the downlink data notification control information. | DDNEventPolicyControl |
| DownlinkDataNotificationControlRm | 5.6.2.49 | This data type is defined in the same way as the "DownlinkDataNotificationControl" data type, but with the OpenAPI "nullable: true" property. | DDNEventPolicyControl2 |
| EpsRanNasRelCause | 5.6.3.2 | Indicates the RAN or NAS release cause code information in 3GPP-EPS access type or indicates the TWAN or untrusted WLAN release cause code information in Non-3GPP-EPS access type. | RAN-NAS-Cause |
| ErrorReport | 5.6.2.36 | Contains the PCC rule and/or session rule and/or policy decision and/or condition data reports. |  |
| FailureCause | 5.6.3.14 | Indicates the cause of the failure in a Partial Success Report. |  |
| FailureCode | 5.6.3.9 | Indicates the reason of the PCC rule failure. |  |
| FlowDescription | 5.6.3.2 | Defines a packet filter for an IP flow. |  |
| FlowDirection | 5.6.3.3 | Indicates the direction of the service data flow. |  |
| FlowDirectionRm | 5.6.3.15 | This data type is defined in the same way as the "FlowDirection" data type, but allows null value. |  |
| FlowInformation | 5.6.2.14 | Contains the flow information. |  |
| IpMulticastAddressInfo | 5.6.2.46 | Contains the IP multicast addressing information | WWC |
| L4sSupportInfo | 5.6.2.57 | Indicates whether the ECN marking for L4S is available in 5GS for the indicated PCC rules. | L4S |
| MaPduIndication | 5.6.3.25 | Contains the MA PDU session indication, i.e., MA PDU Request or MA PDU Network-Upgrade Allowed. | ATSSS |
| MeteringMethod | 5.6.3.5 | Indicates the metering method. |  |
| MulticastAccessControl | 5.6.3.20 | Indicates whether the service data flow, corresponding to the service data flow template, is allowed or not allowed. | WWC |
| NetLocAccessSupport | 5.6.3.27 | Indicates the access network support of the report of the requested access network information. | NetLoc |
| NotificationControlIndication | 5.6.3.29 | Indicates the notification of DDD Status is requested and/or notification of DDN Failure is requested. | DDNEventPolicyControl |
| NwdafData | 5.6.2.53 | Indicates the list of NWDAF instance IDs used for the PDU Session and their associated Analytics ID(s) consumed by the NF service consumer. | EneNA |
| PacketFilterContent | 5.6.3.2 | Defines a packet filter for an IP flow. |  |
| PacketFilterInfo | 5.6.2.30 | Contains the information from a single packet filter sent from the NF service consumer to the PCF. |  |
| PartialSuccessReport | 5.6.2.33 | Includes the information reported by the NF service consumer when some of the PCC rules and/or session rules and/or policy decisions and/or condition data are not successfully installed/activated or stored. |  |
| PccRule | 5.6.2.6 | Contains the PCC rule information. |  |
| PduSessionRelCause | 5.6.3.24 | Contains the NF service consumer PDU Session release cause.  | PDUSessionRelCause,ImmediateTermination |
| PolicyControlRequestTrigger | 5.6.3.6 | Contains the policy control request trigger(s). |  |
| PolicyDecisionFailureCode | 5.6.3.28 | Indicates the type of the failed policy decision and/or condition data. | PolicyDecisionErrorHandling |
| PortManagementContainer | 5.6.2.45 | Contains the port management information container for a port. | TimeSensitiveNetworking |
| QosCharacteristics | 5.6.2.16 | Contains QoS characteristics for a non-standardized or non-configured 5QI. |  |
| QosData | 5.6.2.8 | Contains the QoS parameters. |  |
| QosFlowUsage | 5.6.3.13 | Indicates a QoS flow usage information. |  |
| QosMonitoringData | 5.6.2.40 | Contains QoS monitoring related control information. | QosMonitoring |
| QosMonitoringReport | 5.6.2.42 | Contains QoS monitoring reporting information. | QosMonitoring |
| QosNotificationControlInfo | 5.6.2.32 | Contains the QoS Notification Control Information. |  |
| QosMonitoringParamType | 5.6.3.32 | Contains the QoS monitoring parameter to be monitored. | EnQoSMon |
| RanNasRelCause | 5.6.2.28 | Contains the RAN/NAS release cause. | RAN-NAS-Cause |
| RedirectAddressType | 5.6.3.12 | Indicates the redirect address type. | ADC |
| RedirectInformation | 5.6.2.13 | Contains the redirect information. | ADC |
| ReportingFrequency | 5.6.3.22 | Indicates the frequency for the reporting | QosMonitoring |
| ReportingLevel | 5.6.3.4 | Indicates the reporting level. |  |
| RequestedQos | 5.6.2.31 | Contains the QoS information requested by the UE. |  |
| RequestedQosMonitoringParameter | 5.6.3.21 | Indicates the requested QoS monitoring parameters to be measured. | QosMonitoring |
| RequestedRuleData | 5.6.2.24 | Contains rule data requested by the PCF to receive information associated with PCC rules.  |  |
| RequestedRuleDataType | 5.6.3.7 | Contains the type of rule data requested by the PCF. |  |
| RequestedUsageData | 5.6.2.25 | Contains usage data requested by the PCF requesting usage reports for the corresponding usage monitoring data instances.  | UMC |
| RuleOperation | 5.6.3.11 | Indicates a UE initiated resource operation that causes a request for PCC rules. |  |
| RuleReport | 5.6.2.27 | Reports the status of PCC rule(s). |  |
| RuleStatus | 5.6.3.8 | Indicates the status of PCC or session rule. |  |
| ServingNfIdenty | 5.6.2.38 | Contains the serving Network Function identity. |  |
| SessionRule | 5.6.2.7 | Contains session level policy information. |  |
| SessionRuleFailureCode | 5.6.3.17 | Indicates the reason of the session rule failure. | SessionRuleErrorHandling |
| SessionRuleReport | 5.6.2.37 | Reports the status of session rule. | SessionRuleErrorHandling |
| SgsnAddress | 5.6.2.50 | Contains the serving SGSN address. | 2G3GIWK |
| SliceUsgCtrlInfo | 5.6.2.59 | Represents network slice usage control information. | NetSliceUsageCtrl |
| SmPolicyAssociationReleaseCause | 5.6.3.23 | Represents the cause why the PCF requests the termination of the SM policy association. |  |
| SmPolicyControl | 5.6.2.2 | Contains the parameters to request the SM policies and the SM policies authorized by the PCF. |  |
| SmPolicyContextData | 5.6.2.3 | Contains the parameters to create individual SM policy resource. |  |
| SmPolicyDecision | 5.6.2.4 | Contains the SM policies authorized by the PCF. |  |
| SmPolicyNotification | 5.6.2.5 | Contains the update of the SM policies. |  |
| SmPolicyDeleteData | 5.6.2.15 | Contains the parameters to be sent to the PCF when the individual SM policy is deleted. |  |
| SmPolicyUpdateContextData | 5.6.2.19 | Contains the met policy control request trigger(s) and corresponding new value(s) or the error report of the policy enforcement. |  |
| SteeringFunctionality | 5.6.3.18 | Indicates functionality to support traffic steering, switching and splitting determined by the PCF. | ATSSS |
| SteeringMode | 5.6.2.39 | Contains the steering mode value and parameters determined by the PCF. | ATSSS |
| SteerModeIndicator | 5.6.3.31 | Contains Autonomous load-balance indicator or UE-assistance indicator. | EnATSSS |
| SteerModeValue | 5.6.3.19 | Indicates the steering mode value determined by the PCF. | ATSSS |
| TerminationNotification | 5.6.2.21 | Termination Notification. |  |
| ThresholdValue | 5.6.2.52 | Contains the threshold value(s) for RTT and/or Packet Loss Rate. | EnATSSS |
| TrafficControlData | 5.6.2.10 | Contains parameters determining how flows associated with a PCCRule are treated (blocked, redirected, etc). |  |
| TrafficParaData | 5.6.2.56 | Contains Traffic Parameter(s) related control information. | PowerSaving |
| TrafficParameterMeas | 5.6.3.32 | Indicates the traffic parameters to be measured. | PowerSaving |
| TraffRouteReqOutcomeEvent | 5.6.2.62 | Contains the traffic routing requirement installation outcome event subscription from the AF | TraffRouteReqOutcome |
| TransportMode | 5.6.3.33 | Indicates the transport mode for MPQUIC steering functionality | EnATSSS\_v2 |
| TsnBridgeInfo | 5.6.2.41 | Contains parameters that describe and identify the TSC user plane node. | TimeSensitiveNetworking |
| TsnPortNumber | 5.6.3.2 | Contains a port number. | TimeSensitiveNetworking |
| UeCampingRep | 5.6.2.26 | Contains the current applicable values corresponding to the policy control request triggers. |  |
| UeInitiatedResourceRequest | 5.6.2.29 | Indicates a UE requests specific QoS handling for selected SDF. |  |
| UePolicyContainer | 5.6.3.2 | Contains a UE policy container | EpsUrsp |
| UeReachabilityStatus | 5.6.3.35 | Contains the UE reachability status. | UEUnreachable |
| UpPathChgEvent | 5.6.2.20 | Contains the UP path change event subscription from the AF. | TSC |
| UrspEnforcementInfo | 5.6.3.2 | Contains the report of URSP rule(s) enforcement information as received from the UE. | URSPEnforcement |
| UsageMonitoringData | 5.6.2.12 | Contains usage monitoring related control information. | UMC |

Table 5.6.1-2 specifies data types re-used by the Npcf\_SMPolicyControl service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Npcf\_SMPolicyControl service based interface.

Table 5.6.1-2: Npcf\_SMPolicyControl re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| 5GMmCause | 3GPP TS 29.571 [11] | Contains the cause value of 5GMM protocol. | RAN-NAS-Cause |
| 5Qi | 3GPP TS 29.571 [11] | Unsigned integer representing a 5G QoS Identifier (see clause 5.7.2.1 of 3GPP TS 23.501 [2]), within the range 0 to 255. |  |
| 5QiPriorityLevel | 3GPP TS 29.571 [11] | Unsigned integer indicating the 5QI Priority Level (see clauses 5.7.3.3 and 5.7.4 of 3GPP TS 23.501 [2]), within the range 1 to 127.Values are ordered in decreasing order of priority, i.e. with 1 as the highest priority and 127 as the lowest priority. |  |
| 5QiPriorityLevelRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "5QiPriorityLevel" data type, but with the OpenAPI "nullable: true" property. |  |
| AccessType | 3GPP TS 29.571 [11] | The identification of the type of access network. |  |
| AccessTypeRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "AccessType" data type, but with the OpenAPI "nullable: true" property. | ATSSS |
| Ambr | 3GPP TS 29.571 [11] | Session-AMBR. |  |
| AnGwAddress | 3GPP TS 29.514 [17] | Carries the control plane address of the access network gateway. |  |
| ApplicationChargingId | 3GPP TS 29.571 [11] | Application provided charging identifier allowing correlation of charging information. | AF\_Charging\_Identifier |
| ApplicationId | 3GPP TS 29.571 [11] | Application Identifier | UPEAS |
| Arp | 3GPP TS 29.571 [11] | ARP. |  |
| AverWindow | 3GPP TS 29.571 [11] | Averaging Window. |  |
| AverWindowRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "AverWindow" data type, but with the OpenAPI "nullable: true" property. |  |
| BitRate | 3GPP TS 29.571 [11] | String representing a bit rate that shall be formatted as follows:pattern: "^\d+(\.\d+)? (bps|Kbps|Mbps|Gbps|Tbps)$"Examples: "125 Mbps", "0.125 Gbps", "125000 Kbps". |  |
| BitRateRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "BitRate" data type, but with the OpenAPI "nullable: true" property. |  |
| Bytes | 3GPP TS 29.571 [11] | String with format "byte". | TimeSensitiveNetworking |
| ChargingId | 3GPP TS 29.571 [11] | Charging identifier allowing correlation of charging information. |  |
| ContentVersion | 3GPP TS 29.514 [17] | Indicates the content version of a PCC rule. It uniquely identifies a version of the PCC rule as defined in clause 4.2.6.2.14. | RuleVersioning |
| DateTime | 3GPP TS 29.571 [11] | String with format "date-time" as defined in OpenAPI Specification [10]. |  |
| DateTimeRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "DateTime" data type, but with the OpenAPI "nullable: true" property. |  |
| DddTrafficDescriptor | 3GPP TS 29.571 [11] | Traffic Descriptor | DDNEventPolicyControl |
| DlDataDeliveryStatus | 3GPP TS 29.571 [11] | Downlink data delivery status. | DDNEventPolicyControl |
| DnaiChangeType | 3GPP TS 29.571 [11] | Describes the types of DNAI change. |  |
| Dnn | 3GPP TS 29.571 [11] | The DNN the user is connected to. |  |
| DnnSelectionMode | 3GPP TS 29.502 [22] | DNN selection mode. | DNNSelectionMode |
| DurationSec | 3GPP TS 29.571 [11] | Identifies a period of time in units of seconds. |  |
| DurationSecRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "DurationSec" data type, but with the OpenAPI "nullable: true" property. |  |
| DurationMilliSec | 3GPP TS 29.514 [17] | Indicates the time interval in units of milliseconds. | PowerSaving |
| DurationMilliSecRm | 3GPP TS 29.514 [17] | This data type is defined in the same way as the "DurationMilliSec" data type, but with the OpenAPI "nullable: true" property. | PowerSaving |
| EasIpReplacementInfo | 3GPP TS 29.571 [11] | Contains EAS IP replacement information for a Source and a Target EAS. | EASIPreplacement |
| EthFlowDescription | 3GPP TS 29.514 [17] | Defines a packet filter for an Ethernet flow. (NOTE 2) |  |
| ExtMaxDataBurstVol | 3GPP TS 29.571 [11] | Maximum Data Burst Volume. | EMDBV |
| ExtMaxDataBurstVolRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "ExtMaxDataBurstVol" data type, but with the OpenAPI "nullable: true" property. | EMDBV |
| Metadata | 3GPP TS 29.571 [11] | This datatype contains opaque information for the service functions in the N6-LAN that is provided by AF and transparently sent to UPF. | SFC |
| FinalUnitAction | 3GPP TS 32.291 [19] | Indicates the action to be taken when the user's account cannot cover the service cost. |  |
| FlowStatus | 3GPP TS 29.514 [17] | Describes whether the IP flow(s) are enabled or disabled. The value "REMOVED" is not applicable to Npcf\_SMPolicyControl service. |  |
| FqdnPatternMatchingRule | 3GPP TS 29.571 [11] | Identifies the FQDN pattern matching rule. | HR-SBO |
| Gpsi | 3GPP TS 29.571 [11] | Identifies a GPSI. |  |
| GroupId | 3GPP TS 29.571 [11] | Identifies a group of internal globally unique ID. |  |
| Guami | 3GPP TS 29.571 [11] | Globally Unique AMF Identifier. |  |
| InvalidParam | 3GPP TS 29.571 [11] | Invalid Parameters for the reported failed policy decisions | ExtPolicyDecisionErrorHandling |
| IpIndex | 3GPP TS 29.519 [15] | Information that identifies which IP pool or external server is used to allocate the IP address. |  |
| IpAddr | 3GPP TS 29.571 [11] | Identifes an IP address. | HR-SBO |
| Ipv4Addr | 3GPP TS 29.571 [11]  | Identifies an Ipv4 address. |  |
| Ipv4AddrMask | 3GPP TS 29.571 [11] | String identifying an IPv4 address mask. |  |
| Ipv6Addr | 3GPP TS 29.571 [11] | Identifies an IPv6 address. |  |
| Ipv6Prefix | 3GPP TS 29.571 [11] | The Ipv6 prefix allocated for the user. |  |
| L4sNotifType | 3GPP TS 29.514 [17] | Indicates whether the ECN marking for L4S support for the indicated SDFs is "NOT\_AVAILABLE" or "AVAILABLE" again. | L4S |
| MacAddr48 | 3GPP TS 29.571 [11] | MAC Address. |  |
| MaxDataBurstVol | 3GPP TS 29.571 [11] | Maximum Data Burst Volume. |  |
| MaxDataBurstVolRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "MaxDataBurstVol" data type, but with the OpenAPI "nullable: true" property. |  |
| NfInstanceId | 3GPP TS 29.571 [11] | The NF instance identifier. |  |
| NfSetId | 3GPP TS 29.571 [11] | The NF set identifier. |  |
| NgApCause | 3GPP TS 29.571 [11] | Contains the cause value of NgAP protocol. | RAN-NAS-Cause |
| NotifCap | 3GPP TS 29.514 [17] | Contains the notification capability. | QoSMonCapRepo |
| NullValue | 3GPP TS 29.571 [11] | JSON's null value, used as an explicit value of an enumeration. |  |
| NwdafEvent | 3GPP TS 29.520 [51] | Analytics ID consumed by the NF service consumer. | EneNA |
| PacketDelBudget | 3GPP TS 29.571 [11] | Packet Delay Budget. |  |
| PacketErrRate | 3GPP TS 29.571 [11] | Packet Error Rate. |  |
| PacketLossRateRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "PacketLossRate" data type, but with the OpenAPI "nullable: true" property. |  |
| PcfUeCallbackInfo | 3GPP TS 29.571 [11] | Contains the PCF for the UE callback URI and SBA binding information, if available | AMInfluence  |
| PduSessionId | 3GPP TS 29.571 [11] | The identification of the PDU session. |  |
| PduSessionType | 3GPP TS 29.571 [11] | Indicate the type of a PDU session. |  |
| PduSetQosParaRm | 3GPP TS 29.571 [11] | Represents the PDU Set level QoS parameters to be modified. | PDUSetHandling |
| Pei | 3GPP TS 29.571 [11] | The Identification of a Permanent Equipment. |  |
| PlmnIdNid | 3GPP TS 29.571 [11] | The identification of the Network: The PLMN Identifier (the mobile country code and the mobile network code) or the SNPN Identifier (the PLMN Identifier and the NID). |  |
| PresenceInfo  | 3GPP TS 29.571 [11] | Contains the information which describes a Presence Reporting Area. | PRA |
| PresenceInfoRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "PresenceInfo" data type, but with the OpenAPI "nullable: true" property. | PRA |
| ProblemDetails | 3GPP TS 29.571 [11] | Contains a detailed information about an error. |  |
| ProtocolDescription | 3GPP TS 29.571 [11] | Represents Protocol description of the media flow | PDUSetHandling,PowerSaving |
| QosNotifType | 3GPP TS 29.514 [17] | Indicates whether the GBR targets for the indicated SDFs are "NOT\_GUARANTEED" or "GUARANTEED" again. |  |
| QosResourceType | 3GPP TS 29.571 [11] | Indicates whether the resource type is GBR, delay critical GBR, or non-GBR. |  |
| RatingGroup | 3GPP TS 29.571 [11] | Identifier of a rating group. |  |
| RatType | 3GPP TS 29.571 [11] | The identification of the RAT type. |  |
| RedirectResponse | 3GPP TS 29.571 [11] | Contains redirection related information. | ES3XX |
| RouteToLocation | 3GPP TS 29.571 [11] | A traffic routes to applications location. | TSC |
| SatelliteBackhaulCategory | 3GPP TS 29.571 [11] | Indicates the satellite backhaul category or non-satellite backhaul. | SatBackhaulCategoryChg |
| ServerAddressingInfo | 3GPP TS 29.571 [11] | Contains the Provisioning Server information that provisions the UE with credentials and other data to enable SNPN access. | PvsSupport |
| ServiceId | 3GPP TS 29.571 [11] | Identifier of a service. |  |
| Snssai | 3GPP TS 29.571 [11] | Identifies the S-NSSAI. |  |
| SscMode | 3GPP TS 29.571 [11] | Represents the service and session continuity mode. | URSPEnforcement |
| SubscribedDefaultQos | 3GPP TS 29.571 [11] | Subscribed Default QoS. |  |
| Supi | 3GPP TS 29.571 [11] | The identification of the user (i.e. IMSI, NAI). |  |
| SupportedFeatures | 3GPP TS 29.571 [11] | Used to negotiate the applicability of the optional features defined in table 5.8-1. |  |
| TraceData | 3GPP TS 29.571 [11] |  |  |
| TimeZone | 3GPP TS 29.571 [11] | Contains the user time zone information. |  |
| TscaiInputContainer | 3GPP TS 29.514 [17] | TSCAI Input information. | TimeSensitiveNetworking |
| TrafficCorrelationInfo | 3GPP TS 29.519 [15] | Contains the information for traffic correlation. | CommonEASDNAI |
| UePolicyTransferFailureCause | 3GPP TS 29.525 [57] | UE Policy Transfer Failure Cause. | EpsUrsp |
| Uinteger | 3GPP TS 29.571 [11] | Unsigned Integer. |  |
| UintegerRm | 3GPP TS 29.571 [11] | This data type is defined in the same way as the "Uinteger" data type, but with the OpenAPI "nullable: true" property. | EnATSSS,AF\_latency,EnQoSMon |
| Uint16 | 3GPP TS 29.571 [11] | Unsigned 16-bit integers. | MTU\_Size |
| Uint32 | 3GPP TS 29.571 [11] | Unsigned 32-bit integers. | MTU\_Size |
| Uint64 | 3GPP TS 29.571 [11] | Unsigned 64-bit integers. | TimeSensitiveNetworking |
| UplinkDownlinkSupport | 3GPP TS 29.514 [17] | Represents whether a capability is supported for the UL, the DL or both UL and DL service data flows | L4S |
| Uri | 3GPP TS 29.571 [11] | URI. |  |
| UserLocation | 3GPP TS 29.571 [11] | Contains the user location(s). |  |
| Volume | 3GPP TS 29.122 [32] | Unsigned integer identifying a volume in units of bytes. |  |
| VolumeRm | 3GPP TS 29.122 [32] | This data type is defined in the same way as the "Volume" data type, but with the OpenAPI "nullable: true" property. |  |
| VplmnDlAmbr | 3GPP TS 29.571 [11] | VPLMN Specific DL AMBR. | HR-SBO |
| VplmnOffloadingInfo | 3GPP TS 29.571 [11] | VPLMN Specific Offloading Information. | HR-SBO |
| VplmnQos | 3GPP TS 29.502 [22] | QoS constraints in the VPLMN. | VPLMN-QoS-Control |
| NOTE 1: VoidNOTE 2: In order to support a set of MAC addresses with a specific range in the traffic filter, feature MacAddressRange as specified in clause 5.8 shall be supported. |

\* \* \* Next Change \* \* \*

#### 5.6.2.10 Type TrafficControlData

Table 5.6.2.10-1: Definition of type TrafficControlData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| tcId | string | M | 1 | Univocally identifies the traffic control policy data within a PDU session. |  |
| l4sInd | UplinkDownlinkSupport | O | 0..1 | When provided, it represents an explicit indication of whether ECN marking for L4S support is supported for the UL, the DL or both, UL and DL. | L4S |
| flowStatus | FlowStatus | O | 0..1 | Enum determining what action to perform on traffic. Possible values are: [enable, disable, enable\_uplink, enable\_downlink]. The default value "ENABLED" shall apply, if the attribute is not present and has not been supplied previously.(NOTE 3) |  |
| redirectInfo | RedirectInformation | O | 0..1 | It indicates whether the detected application traffic should be redirected to another controlled address. | ADC |
| addRedirectInfo | array(RedirectInformation) | O | 1..N | Additional redirection information.Each element indicates whether the detected application traffic should be redirected to another controlled address. | ADCmultiRedirection |
| muteNotif | boolean | O | 0..1 | Indicates whether application's start or stop notifications are to be muted. It shall be set to true to indicate application’s start or stop notifications are muted. When it is set to false, it indicates application’s start or stop notifications are not muted. The default value false shall apply, if the attribute is not present and has not been supplied previously. | ADC |
| trafficSteeringPolIdDl(NOTE 1) | string | O | 0..1 | Reference to a pre-configured traffic steering policy for downlink traffic at the SMF. | TSC |
| trafficSteeringPolIdUl(NOTE 1) | string | O | 0..1 | Reference to a pre-configured traffic steering policy for uplink traffic at the SMF. | TSC |
| metadata | Metadata | O | 0..1 | This datatype contains opaque information for the service functions in the N6-LAN that is provided by AF and transparently sent to UPF. May be only provided when "trafficSteeringPolIdDl" and/or "trafficSteeringPolIdUl" are provided for the first time. | SFC |
| routeToLocs(NOTE 1) | array(RouteToLocation) | O | 1..N | A list of location(s) to which the traffic shall be routed for the AF request. | TSC |
| maxAllowedUpLat | UintegerRm | O | 0..1 | Indicates the target user plane latency in units of milliseconds. The SMF may use this value to decide whether edge relocation is needed to ensure that the user plane latency does not exceed the value. | AF\_latency |
| easIpReplaceInfos | array(EasIpReplacementInfo) | O | 1..N | Contains EAS IP replacement information. | EASIPreplacement |
| traffCorreInd | boolean | O | 0..1 | Indication of traffic correlation. If it is included and set to "true", traffic should be correlated; The default value "false" applies, if the attribute is not present and has not been supplied previously. (NOTE 2) |  |
| tfcCorreInfo | TrafficCorrelationInfo | O | 0..1 | Contains the information for traffic correlation. | CommonEASDNAI |
| simConnInd | boolean | O | 0..1 | Indication of simultaneous connectivity temporarily maintained for the source and target PSA. If it is included and set to "true", temporary simultaneous connectivity should be kept. The default value "false" applies, if the attribute is not present and has not been supplied previously. | SimultConnectivity |
| simConnTerm | DurationSec | C | 0..1 | Indication of the minimum time interval to be considered for inactivity of the traffic routed via the source PSA during the edge re-location procedure. It may be included when the "simConnInd" attribute is set to true.  | SimultConnectivity |
| upPathChgEvent | UpPathChgEvent | O | 0..1 | Contains the information about the AF subscription to UP path change events. | TSC |
| traffRouteReqOutcomeEvent | TraffRouteReqOutcomeEvent | O | 0..1 | Contains the information about the AF subscription to traffic routing requirement installation outcome event. | TraffRouteReqOutcome |
| steerFun | SteeringFunctionality | O | 0..1 | Indicates the applicable traffic steering functionality. | ATSSS |
| transMode | TransportMode | C | 0..1 | It identifies the transport mode for transmitting a UDP flow between the UE and the UPF. The transport mode shall be included if the steering functionality indicated in the "steerFun" attribute is MPQUIC. Otherwise, if the steering functionality is not MPQUIC, the transport mode shall not be included.  | EnATSSS\_v2 |
| steerModeDl | SteeringMode | O | 0..1 | Determines the traffic distribution rule across 3GPP and Non-3GPP accesses to apply for downlink traffic. | ATSSS |
| steerModeUl | SteeringMode | O | 0..1 | Determines the traffic distribution rule across 3GPP and Non-3GPP accesses to apply for uplink traffic. | ATSSS |
| mulAccCtrl | MulticastAccessControl | O | 0..1 | Indicates whether the service data flow, corresponding to the service data flow template, is allowed or not allowed. The default value "NOT\_ALLOWED" applies, if the attribute is not present and has not been supplied previously. | WWC |
| candDnaiInd | boolean | O | 0..1 | Indication of reporting candidate DNAI(s). If it is included and set to "true", the candidate DNAI(s) for the PDU session need to be reported. Otherwise set to "false" or omitted. | CommonEASDNAI |
| datEndMarkInd | boolean | O | 0..1 | The data burst end marking is enabled if it is set to "true". Default value is "false" if omitted. | PowerSaving |
| NOTE 1: If SFC feature is not supported, traffic steering policy identifier(s) (i.e. "trafficSteeringPolIdDl" attribute and/or "trafficSteeringPolIdUl" attribute) and N6 traffic routing requirements (i.e. "routeToLocs" attribute) are mutually exclusive; otherwise, they can be provided simultaneously.NOTE 2: The TSC feature shall be supported in order to support this attribute. The Indication of traffic correlation shall be provided only when all the PDU sessions related to the 5G VN group member UEs should be correlated by a common DNAI in the user plane for the traffic as described in 3GPP TS 23.501 [2], clause 5.6.7.1 and clause 5.29.NOTE 3: The "flowStatus" attribute and the "mulAccCtrl" attribute are mutually exclusive. |

\* \* \* Next Change \* \* \*

#### 5.6.2.62 Type TraffRouteReqOutcomeEvent

Table 5.6.2.62-1: Definition of type TraffRouteReqOutcomeEvent

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| notificationUri | Uri | M | 1 | Notification address of AF receiving the event notification. | TSC |
| notifCorreId | string | M | 1 | It is used to set the value of Notification Correlation ID in the notification sent by the NF service consumer. | TSC |

\* \* \* Next Change \* \* \*

## 5.8 Feature negotiation

The optional features in table 5.8-1 are defined for the Npcf\_SMPolicyControl API. They shall be negotiated using the extensibility mechanism defined in clause 6.6 of 3GPP TS 29.500 [4].

Table 5.8-1: Supported Features

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | TSC | This feature indicates support for traffic steering control in the (S)Gi-LAN, steering the 5G-LAN type of services or routing of the user traffic to a local Data Network identified by the DNAI per AF request. If the NF service consumer supports this feature, the PCF shall behave as described in clause 4.2.6.2.6. |
| 2 | ResShare | This feature indicates the support of service data flows that share resources. If the NF service consumer supports this feature, the PCF shall behave as described in clause 4.2.6.2.8. |
| 3 | 3GPP-PS-Data-Off | This feature indicates the support of 3GPP PS Data off status change reporting. |
| 4 | ADC | This feature indicates the support of application detection and control. |
| 5 | UMC | Indicates that the usage monitoring control is supported. |
| 6 | NetLoc | This feature indicates the support of the Access Network Information Reporting for 5GS. |
| 7 | RAN-NAS-Cause | This feature indicates the support for the detailed release cause code information from the access network.(NOTE) |
| 8 | ProvAFsignalFlow | This feature indicates support for the feature of IMS Restoration as described in clause 4.2.3.17. If NF service consumer supports this feature the PCF may provision AF signalling IP flow information. |
| 9 | PCSCF-Restoration-Enhancement | This feature indicates support of P-CSCF Restoration Enhancement. It is used for the NF service consumer to indicate if it supports P-CSCF Restoration Enhancement. |
| 10 | PRA | This feature indicates the support of presence reporting area change reporting. The support of the update of a UE Dedicated Presence Reporting Area is unspecified. |
| 11 | RuleVersioning | This feature indicates the support of PCC rule versioning as defined in clause 4.2.6.2.14. |
| 12 | SponsoredConnectivity | This feature indicates support for sponsored data connectivity feature. If the NF service consumer supports this feature, the PCF may authorize sponsored data connectivity to the subscriber. |
| 13 | RAN-Support-Info | This feature indicates the support of maximum packet loss rate value(s) for uplink and/or downlink voice service data flow(s). |
| 14 | PolicyUpdateWhenUESuspends | This feature indicates the support of report when the UE is suspended and then resumed from suspend state. Only applicable to the interworking scenario as defined in Annex B. |
| 15 | AccessTypeCondition | This feature indicates the support of access type conditioned authorized Session-AMBR as defined in clause 4.2.6.3.2.4. |
| 16 | MultiIpv6AddrPrefix | This feature indicates the support of additional new/removed (up to two) Ipv6 address prefixes reporting. |
| 17 | SessionRuleErrorHandling | This feature indicates the support of session rule error handling. |
| 18 | AF\_Charging\_Identifier | This feature indicates the support of long character strings as charging identifiers. |
| 19 | ATSSS | This feature indicates the support of the access traffic switching, steering and splitting functionality as defined in clauses 4.2.6.2.17 and 4.2.6.3.4. |
| 20 | PendingTransaction | This feature indicates support for the race condition handling as defined in 3GPP TS 29.513 [7]. |
| 21 | URLLC | This feature indicates support of Ultra-Reliable Low-Latency Communication (URLLC) requirements, i.e. AF application relocation acknowledgement requirement and UE address(es) preservation. The TSC feature shall be supported in order to support this feature. |
| 22 | MacAddressRange | Indicates the support of a set of MAC addresses with a specific range in the traffic filter. |
| 23 | WWC | Indicates support of wireless and wireline convergence access as defined in annex C. |
| 24 | QosMonitoring | Indicates support of QoS monitoring as defined in clause 4.2.3.25 and 4.2.4.24. Reporting of monitoring data applies to packet delay information when only this feature is supported. |
| 25 | AuthorizationWithRequiredQoS | Indicates support of policy authorization for the AF session with required QoS as defined in clause 4.2.3.22. |
| 26 | EnhancedBackgroundDataTransfer | Indicates the support of applying the Background Data Transfer Policy to a future PDU session. |
| 27 | DN-Authorization | This feature indicates the support of DN-AAA authorization data for policy control. |
| 28 | PDUSessionRelCause | Indicates the support of "PS\_TO\_CS\_HO" PDU session release cause. |
| 29 | SamePcf | This feature indicates the support of same PCF selection for the parameter's combination. |
| 30 | ADCmultiRedirection | This feature indicates support for multiple redirection information in application detection and control. It requires the support of ADC feature. |
| 31 | RespBasedSessionRel | Indicates support of handling PDU session termination functionality as defined in clause 4.2.4.22. |
| 32 | TimeSensitiveNetworking | Indicates that the 5G System is integrated within the external network as a TSN bridge. |
| 33 | EMDBV | This feature indicates the support of the ExtMaxDataBurstVol data type defined in 3GPP TS 29.571 [11]. The use of this data type is specified in clause 4.2.2.1. |
| 34 | DNNSelectionMode | This feature indicates the support of DNN selection mode. |
| 35 | EPSFallbackReport | This feature indicates the support of the report of EPS Fallback as defined in clauses B.3.3.2 and B.3.4.6. |
| 36 | PolicyDecisionErrorHandling | This feature indicates the support of the error report of the policy decision and/or condition data which is not referred by any PCC rule or session rule as defined in clause 4.2.3.26 and 4.2.4.26. |
| 37 | DDNEventPolicyControl | This feature indicates the support for policy control in the case of DDN Failure and Delivery Status events as defined in clause 4.2.4.27. |
| 38 | ReallocationOfCredit | This feature indicates the support of notifications of reallocation of credit. |
| 39 | BDTPolicyRenegotiation | This feature indicates the support of the BDT policy re-negotiation. |
| 40 | ExtPolicyDecisionErrorHandling | This feature indicates the support of the error report of a faulty SM policy decision parameter as defined in clause 4.2.3.26 and 4.2.4.26. It requires the support of PolicyDecisionErrorHandling feature. |
| 41 | ImmediateTermination | This feature indicates the support of the termination the PDU session when the NF service consumer cannot ensure the UE, RAN, AMF, or UPF can revert to the status before the PDU session modification occurred, as defined in clause 4.2.4.21. |
| 42 | AggregatedUELocChanges | This feature indicates the support of notifications of serving area (i.e. tracking area) and/or serving cell changes. |
| 43 | ES3XX | Extended Support for 3xx redirections. This feature indicates the support of redirection for any service operation, according to Stateless NF procedures as specified in clauses 6.5.3.2 and 6.5.3.3 of 3GPP TS 29.500 [4] and according to HTTP redirection principles for indirect communication, as specified in clause 6.10.9 of 3GPP TS 29.500 [4].  |
| 44 | GroupIdListChange | This feature indicates the support for the notification of changes in the list of internal group identifiers. |
| 45 | DisableUENotification | Indicates the support of disabling QoS flow parameters signalling to the UE when the SMF is notified by the NG-RAN of changes in the fulfilled QoS situation. This feature requires that the AuthorizationWithRequiredQoS featute is also supported. |
| 46 | OfflineChOnly | This feature enables the PCF to signal the "PDU Session with offline charging only" indication as defined in clause 4.2.2.3.3. |
| 47 | Dual-Connectivity-redundant-UP-paths | Indicates the support of policy authorization of end to end redundant user plane path using dual connectivity as described in clause 4.2.2.20. |
| 48 | DDNEventPolicyControl2 | This feature indicates the support for the policy control removal in the case of DDN Failure and/or Delivery Status event(s) is cancelled as defined in clause 4.2.4.27. The DDNEventPolicyControl feature shall be supported in order to support this feature. |
| 49 | VPLMN-QoS-Control | Indicates the support of QoS constraints from the VPLMN for the derivation of the authorized Session-AMBR and authorized default QoS. |
| 50 | 2G3GIWK | This feature indicates the support of GERAN and UTRAN access over N7 interface. |
| 51 | TimeSensitiveCommunication | Indicates that the 5G System is integrated within the external network as a TSC user plane node to enable the Time Sensitive Communications and Time Synchronization. This feature requires that the TimeSensitiveNetworking feature is also supported. |
| 52 | AF\_latency | This feature indicates the support of Edge relocation considering user plane latency. This feature requires that the TSC feature is also supported. |
| 53 | SatBackhaulCategoryChg | This feature indicates the support of notification of a change between different satellite backhaul categories, or between satellite backhaul and non-satellite backhaul. |
| 54 | CHFsetSupport | Indicates the support of CHF redundancy and failover mechanisms based on CHF instance availability within a CHF Set, as described in clause 4.2.2.3.1. |
| 55 | EnATSSS | Indicates the support of ATSSS enhancement. It requires the support of ATSSS feature. |
| 56 | MPSforDTS | Indicates support of the MPSfor DTS feature as described in clause 4.2.6.2.12.4. |
| 57 | RoutingInfoRemoval | Indicates the support of the removal of the "routeToLocs" attribute from the TrafficControlData instance. |
| 58 | ePRA | This feature indicates the support of presence reporting area change reporting. It additionally supports the update of the elements of a UE Dedicated Presence Reporting Area by the full replacement of the previously provided one comparing with the PRA feature.  |
| 59 | AMInfluence | Indicates the support of the delivery of the PCF for the UE request to be notified by the PCF for the PDU session about PDU session established/terminated events. |
| 60 | PvsSupport | This feature indicates the support of SNPN UE Remote Provisioning via User Plane as described in clause 4.2.2.21. |
| 61 | EneNA | This feature indicates the support of NWDAF data reporting. |
| 62 | BIUMR | This feature bit indicates whether the NF Service Consumer (e.g. SMF) and PCF supports Binding Indication Update for multiple resource contexts specified in clauses 6.12.1 and 5.2.3.2.6 of 3GPP TS 29.500 [4]. |
| 63 | EASIPreplacement | This feature indicates the support of EAS IP replacement. This feature requires that the TSC feature is also supported. |
| 64 | ExposureToEAS | This feature indicates the support of exposure of QoS monitoring results to local AF. This feature requires that QosMonitoring feature is also supported. |
| 65 | SimultConnectivity | This feature indicates the support of temporary simultaneously connectivity at edge relocation. This feature requires that the TSC feature is also supported.  |
| 66 | SGWRest | This feature indicates the support of SGW Restoration procedures. Only applicable to the interworking scenario as defined in Annex B. |
| 67 | ReleaseToReactivate | This feature indicates that the PCF can request the SMF for reactivation of a PDU session based on an SM Policy Association release cause. |
| 68 | EASDiscovery | This feature indicates the support of EAS (re)discovery. |
| 69 | AccNetChargId\_String | This feature indicates the support of long character strings as access network charging identifier. |
| 70 | WLAN\_Location | This feature indicates the support of the report of the WLAN location information received from the ePDG/EPC, if available. It is only applicable to EPS interworking scenarios as specified in Annex B. |
| 71 | PackFiltAllocPrecedence | This feature indicates the support of the control of the maximum number of packet filters in the EPS network in the EPS interworking scenarios as described in Annex B. |
| 72 | SatBackhaulCategoryChg\_v2 | This feature indicates the support of the indication of satellite backhaul categories, or the indication of non-satellite backhaul during the response to the update notify request. |
| 73 | PacketDelayFailureReport | Indicates the support of packet delay failure report as part of QoS Monitoring procedures. This feature requires that QosMonitoring feature is supported. |
| 74 | AltQoSProfilesSupportReport | This feature indicates the support of the report of whether Alternative QoS parameters are supported by NG-RAN. This feature requires that AuthorizationWithRequiredQoS feature is also supported. |
| 75 | Ext2PolicyDecisionErrorHandling | This feature indicates the support of the error report of the policy decision and/or condition data which is not referred by any PCC rule or session rule when no PCC rules and no session rules are provided and the handling of partial errors.It requires the support of ExtPolicyDecisionErrorHandling feature. |
| 76 | UEUnreachable | This feature indicates the support for the reporting of UE temporarily unavailable. |
| 77 | EnTSCAC | Indicates the support of extensions to TSCAC and the RAN feedback for BAT offset and adjusted periodicity.This feature requires that TimeSensitiveCommunication feature is also supported. |
| 78 | MTU\_Size | This feature indicates the support of the report of the MTU size of the device side port. This feature requires that the TimeSensitiveCommunication feature is also supported. |
| 79 | EnSatBackhaulCatChg | This feature indicates the support of notification of dynamic satellite backhaul categories.It requires the support of SatBackhaulCategoryChg and SatBackhaulCategoryChg\_v2 features. |
| 80 | SFC | This feature indicates support for application function influence on service function chaining(s).It requires the support of TSC feature. |
| 81 | EpsUrsp | This feature indicates the support of URSP provisioning in EPS. Only applicable to the interworking scenario as defined in Annex B. |
| 82 | CommonEASDNAI | This feature controls the support of the common EAS/DNAI selection. It requires the support of TSC feature. |
| 83 | UnlimitedMultiIpv6Prefix | This feature indicates the support of multiple Ipv6 address prefixes reporting. |
| 84 | NscSupportedFeatures | This feature indicates the support of provisioning of the Network Function Service Consumer features supported in Nsmf\_EventExposure service as described in 3GPP TS 29.508 [12]. |
| 85 | URSPEnforcement | This feature indicates the support of awareness of URSP rule enforcement |
| 86 | VBCforIMS | This feature indicates the support of provisioning of the caller and callee informations in volume based charging for IMS as defined in clause A.16 of 3GPP TS 29.214 [18] (replacing PCRF with PCF). |
| 87 | ExposureToTSC | This feature indicates the support of the direct event notification of TSC management information from the UPF to the TSCTSF or TSN AF in 5GC.This feature requires that TimeSensitiveCommunication feature is also supported. |
| 88 | NetSliceRepl | This feature indicates the support of the network slice replacement functionality introduced in this specification as part of the end-to-end network slicing functionality.The following functionalities are supported:- Support the reporting of the network slice replacement information to the PCF. |
| 89 | SessQoSModEnforcementFailure | This feature indicates the support of the report PDU session modification failure because the enforcement of the default QoS modification or session-AMBR modification of the active session rule failed. |
| 90 | HR-SBO | This feature indicates the support of VPLMN specific Offloading policy in Home Routed deployments with Session Breakout (HR-SBO). |
| 91 | EnATSSS\_v2 | Indicates the support of ATSSS enhancements which includes REDUNDANT steering mode, MPQUIC steering functionality and MA PDU session interworking enhancements. It requires the support of the EnATSSS features. |
| 92 | NetSliceUsageCtrl | This feature indicates the support of the network slice usage control functionality introduced in this specification as part of the end-to-end network slicing functionality.The following functionalities are supported:- Support the provisioning by the PCF of the network slice usage control information (e.g., slice PDU session inactivity timer value). |
| 93 | VPLMN-5QIPrioLevel | Indicates the support of the indication of the VPLMN supported 5QI priority level when the required 5QI Priority Level is different from the standardized Default Priority Level value in the QoS characteristics Table 5.7.4-1 in 3GPP TS 23.501 [2].This feature requires that VPLMN-QoS-Control feature is also supported. |
| 94 | PDUSetHandling | This feature indicates the support of PDU Set handling. This feature may be used for eXtended Reality (XR) and interactive media services. |
| 95 | EnQoSMon | This feature indicates the support of enhanced QoS monitoring functionality, i.e. the report of the congestion information, and/or, the data rate information monitoring.This feature requires that QosMonitoring feature is supported. |
| 96 | PowerSaving | This feature indicates the PCC support for UE Power Saving management.The following functionalities are supported:- Policy provisioning of Periodicity and N6 Traffic Parameters to be measured.- End of Data Burst Handling. |
| 97 | L4S | This feature indicates the support of the PCF indication of ECN marking for L4S support. |
| 98 | UPEAS | This feature indicates the support of UPF enhancements for exposure related to the identification of QoS monitoring event exposure subscription. |
| 99 | QoSMonCapRepo | This feature indicates the support QoS Monitoring Capability Report.This feature requires that QosMonitoring feature is supported. |
| 100 | TraffRouteReqOutcome | This feature indicates the support in PCF for the indication of AF requesting the installation outcome of requested traffic routing in the traffic route requirement installation outcome event notification.This feature requires that TSC is supported. |
| NOTE: 5GS and EPS release cause code information is supported. The EPS release cause code information from the access network is only applicable to EPS interworking scenarios as specified in Annex B. |

\* \* \* Next Change \* \* \*

A.2 Npcf\_SMPolicyControl API

openapi: 3.0.0

info:

 title: Npcf\_SMPolicyControl API

 version: 1.4.0-alpha

 description: |

 Session Management Policy Control Service

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externalDocs:

 description: 3GPP TS 29.512 V19.0.0; 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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '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'

 altSliceInfo:

 $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

 urspEnfInfo:

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

 sscMode:

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

 ueReqDnn:

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

 ueReqPduSessionType:

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

 hrsboInd:

 type: boolean

 description: >

 HR-SBO support indication. If present and set to "true", it indicates that the HR-SBO is

 supported. Default value is "false" if omitted.

 uePolFailReport:

 $ref: 'TS29525\_Npcf\_UEPolicyControl.yaml#/components/schemas/UePolicyTransferFailureCause'

 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

 tscNotifUri:

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

 tscNotifCorreId:

 type: string

 description: >

 Correlation identifier for TSC management information notifications.

 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.

 uePolCont:

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

 sliceUsgCtrlInfo:

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

 vplmnOffloadInfos:

 type: array

 items:

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

 minItems: 1

 description: List of VPLMN Specific offloading information.

 nullable: true

 vplmnDlAmbr:

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

 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'

 protoDescDl:

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

 protoDescUl:

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

 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

 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'

 capBatAdaptation:

 type: boolean

 description: >

 Indicates the capability for AF to adjust the burst sending time, when it is provided

 and set to "true". The default value is "false" if omitted.

 ddNotifCtrl:

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

 ddNotifCtrl2:

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

 disUeNotif:

 type: boolean

 nullable: true

 packFiltAllPrec:

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

 nscSuppFeats:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies a list of Network Function Service Consumer supported per service. The key

 used in this map for each entry is the ServiceName value as defined in

 3GPP TS 29.510[29].

 callInfo:

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

 traffParaData:

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

 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'

 pduSetQosDl:

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

 pduSetQosUl:

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

 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.

 l4sInd:

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

 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

 metadata:

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

 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

 tfcCorreInfo:

 $ref: 'TS29519\_Application\_Data.yaml#/components/schemas/TrafficCorrelationInfo'

 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'

 traffRouteReqOutcomeEvent:

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

 steerFun:

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

 transMode:

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

 steerModeDl:

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

 steerModeUl:

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

 mulAccCtrl:

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

 candDnaiInd:

 type: boolean

 description: >

 Indication of reporting candidate DNAI(s). If it is included and set to "true", the

 candidate DNAI(s) for the PDU session need to be reported. Otherwise set to "false" or

 omitted.

 datEndMarkInd:

 type: boolean

 description: >

 The data burst end marking is enabled if it is set to "true". Default value is "false" if

 omitted.

 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'

 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'

 multiIpv6Prefixes:

 type: array

 items:

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

 minItems: 1

 description: The multiple allocated IPv6 prefixes of the served UE.

 multiRelIpv6Prefixes:

 type: array

 items:

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

 minItems: 1

 description: The multiple released IPv6 prefixes of the served UE.

 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

 description: QoS Monitoring reporting information.

 qosMonDatRateReps:

 type: array

 items:

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

 minItems: 1

 qosMonCongReps:

 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

 tscNotifUri:

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

 tscNotifCorreId:

 type: string

 description: >

 Correlation identifier for TSC management information notifications.

 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.

 uePolCont:

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

 uePolFailReport:

 $ref: 'TS29525\_Npcf\_UEPolicyControl.yaml#/components/schemas/UePolicyTransferFailureCause'

 urspEnfInfo:

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

 sscMode:

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

 ueReqDnn:

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

 ueReqPduSessionType:

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

 l4sReports:

 type: array

 items:

 $ref: '#/components/schemas/L4sSupportInfo'

 minItems: 1

 description: ECN marking for L4S support availability in 5GS.

 altSliceInfo:

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

 batOffsetInfo:

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

 hrsboInd:

 type: boolean

 description: >

 HR-SBO support indication. If present and set to "true", it indicates that the HR-SBO is

 supported. If present and set to "false", it indicates that the HR-SBO is not supported.

 ueReachStatus:

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

 retryAfter:

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

 qosMonCapRepos:

 type: array

 items:

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

 minItems: 1

 description: QoS monitoring is supported or not for the indicated PCC rule(s).

 allOf:

 - not:

 required: [multiIpv6Prefixes, ipv6AddressPrefix]

 - not:

 required: [multiIpv6Prefixes, addIpv6AddrPrefixes]

 - not:

 required: [multiRelIpv6Prefixes, relIpv6AddressPrefix]

 - not:

 required: [multiRelIpv6Prefixes, relAddIpv6AddrPrefixes]

 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'

 satBackhaulCategory:

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

 urspEnfInfo:

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

 sscMode:

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

 ueReqDnn:

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

 ueReqPduSessionType:

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

 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'

 retryAfter:

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

 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

 description: >

 Indicates the alternative QoS parameter set that the NG-RAN can guarantee. It is

 included during the report of successfull resource allocation and indicates that NG-RAN

 used an alternative QoS profile because the requested QoS could not be allocated..

 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

 description: >

 Indicates the alternative QoS parameter set the NG-RAN can guarantee. When it is omitted

 and the notifType attribute is set to NOT\_GUAARANTEED it indicates that the lowest

 priority alternative QoS profile could not be fulfilled.

 altQosNotSuppInd:

 type: boolean

 description: >

 When present and set to true it indicates that the Alternative QoS profiles are not

 supported by NG-RAN.

 required:

 - refPccRuleIds

 - notifType

 PartialSuccessReport:

 description: >

 Includes the information reported by the SMF when some of the PCC rules and/or session rules

 and/or policy decision and/or condition data are not successfully installed/activated or

 stored.

 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,policy decision and/or condition data 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'

 primary:

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

 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.

 qosMonParamType:

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

 reqQosMonParams:

 type: array

 items:

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

 minItems: 1

 description: >

 Indicates the QoS information to be monitored when the QoS Monitoring is enabled for

 the service data flow.

 repFreqs:

 type: array

 items:

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

 minItems: 1

 description: >

 Indicates the frequency for the reporting, such as event triggered and/or periodic.

 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

 conThreshDl:

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

 conThreshUl:

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

 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.

 avrgWndw:

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

 repThreshDatRateUl:

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

 repThreshDatRateDl:

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

 dataCollAppId:

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

 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

 pdmf:

 type: boolean

 description: Represents the packet delay measurement failure indicator.

 ulDataRate:

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

 dlDataRate:

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

 ulCongInfo:

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

 dlCongInfo:

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

 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'

 mtuIpv4:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint16'

 mtuIpv6:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

#

 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

 CallInfo:

 description: Identifies the caller and callee information.

 type: object

 properties:

 callingPartyAddrs:

 type: array

 items:

 type: string

 minItems: 1

 calleeInfo:

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

 nullable: true

 CalleeInfo:

 description: Identifies the callee information.

 type: object

 properties:

 calledPartyAddr:

 type: string

 requestPartyAddrs:

 type: array

 items:

 type: string

 minItems: 1

 calledAssertIds:

 type: array

 items:

 type: string

 minItems: 1

 nullable: true

#

 TrafficParaData:

 description: Contains Traffic Parameter(s) related control information.

 type: object

 properties:

 periodUl:

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

 periodDl:

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

 reqTrafficParas:

 type: array

 items:

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

 minItems: 1

 description: Indicates the traffic parameters to be measured.

 repFreqs:

 type: array

 items:

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

 minItems: 1

 description: Represents the notification method (periodic or on event detection).

 dlN6JitterThr:

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

 repPeriod:

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

 L4sSupportInfo:

 description: Contains the ECN marking for L4S support in 5GS 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 ECN marking

 for L4S support info.

 notifType:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/L4sNotifType'

 required:

 - refPccRuleIds

 - notifType

 SliceUsgCtrlInfo:

 description: Represents network slice usage control information.

 type: object

 properties:

 pduSessInactivTimer:

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

 anyOf:

 - required: [pduSessInactivTimer]

 BatOffsetInfoPcc:

 description: >

 Indicates the offset of the BAT and the optionally adjusted periodicity.

 type: object

 required:

 - ranBatOffsetNotif

 - refPccRuleIds

 properties:

 ranBatOffsetNotif:

 type: integer

 description: >

 Indicates the BAT offset of the arrival time of the data burst in units

 of milliseconds.

 adjPeriod:

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

 refPccRuleIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identification of the PCC rules associated with the BAT offset and the optionally

 adjusted periodicity.

 CapabilityReportRule:

 description: >

 Contains information about whether a capability is supported or

 not for one or more PCC rules.

 type: object

 properties:

 refPccRuleIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Contains the identifier of the PCC rule(s) which are affected of QoS Monitoring

 Capability Report.

 capReport:

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

 required:

 - refPccRuleIds

 - capReport

 TraffRouteReqOutcomeEvent:

 description: >

 Contains the traffic routing requirement installation outcome 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.

 required:

 - notificationUri

 - notifCorreId

 nullable: true

 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'

 UePolicyContainer:

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

 UrspEnforcementInfo:

 $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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the direction of the service data flow.

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the reporting level.

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the metering method.

 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

 - QOS\_MON\_CAP\_REPO

 - 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

 - UE\_POL\_CONT\_IND

 - URSP\_ENFORCEMENT\_INFO

 - HR\_SBO\_IND\_CHG

 - L4S\_SUPP

 - NET\_SLICE\_REPL

 - BAT\_OFFSET\_INFO

 - UE\_REACH\_STATUS\_CH

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the policy control request trigger(s).

 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.

 - QOS\_MON\_CAP\_REPO: Indicates that the NF service consumer notifies the PCF about the

 support of QoS Monitoring Capability Report.

 - 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.

 - UE\_POL\_CONT\_IND: Indicates that a UE policy container or failure delivery report is

 received from the UE in EPC over a PDN connection.

 - URSP\_ENFORCEMENT\_INFO: Indicates a report of URSP rule enforcement information.

 - HR\_SBO\_IND\_CHG: Indicates the HR-SBO support indication has changed.

 - L4S\_SUPP: Indicates whether ECN marking for L4S is not available or available again

 in 5GS.

 - NET\_SLICE\_REPL: Indicates network slice replacement, i.e., a change between the initial

 S-NSSAI of the PDU Session and the Alternative S-NSSAI

 - BAT\_OFFSET\_INFO: Indicates that the SMF has detected the BAT offset and optionally

 adjusted periodicity.

 - UE\_REACH\_STATUS\_CH: Indicates that there is a change in the UE reachability status.

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the type of rule data requested by the PCF.

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the status of PCC or session rule.

 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

 - UE\_TEMPORARILY\_UNAVAILABLE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the reason of the PCC rule failure.

 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.

 - UE\_TEMPORARILY\_UNAVAILABLE: Indicates that the PCC rule could not be successfully

 installed or modified because the SMF was informed that the UE was not reachable.

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the protocol used for signalling between the UE and the AF.

 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: |

 Indicates a UE initiated resource operation that causes a request for PCC rules.

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the redirect address type.

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates a QoS flow usage information.

 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

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 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

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 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

 - DEFAULT\_QOS\_MODIFICATION\_FAILURE

 - SESSION\_AMBR\_MODIFICATION\_FAILURE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the reason of the session rule failure.

 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.

 - DEFAULT\_QOS\_MODIFICATION\_FAILURE: Indicates that the enforcement of the default QoS

 modification failed. The SMF shall use this value to indicate to the PCF that the default

 QoS modification has failed.

 - SESSION\_AMBR\_MODIFICATION\_FAILURE: Indicates that the enforcement of the session-AMBR

 modification failed. The SMF shall use this value to indicate to the PCF that the

 session-AMBR modification has failed.

 SteeringFunctionality:

 anyOf:

 - type: string

 enum:

 - MPTCP

 - MPQUIC

 - ATSSS\_LL

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates functionality to support traffic steering, switching and splitting determined

 by the PCF.

 Possible values are

 - MPTCP: Indicates that PCF authorizes the MPTCP functionality to support traffic

 steering, switching and splitting.

 - MPQUIC: Indicates that PCF authorizes the MPQUIC 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

 - REDUNDANT

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 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

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 RequestedQosMonitoringParameter:

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

 anyOf:

 - type: string

 enum:

 - DOWNLINK

 - UPLINK

 - ROUND\_TRIP

 - DOWNLINK\_DATA\_RATE

 - UPLINK\_DATA\_RATE

 - DOWNLINK\_CONGESTION

 - UPLINK\_CONGESTION

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 ReportingFrequency:

 description: Indicates the frequency for the reporting.

 anyOf:

 - type: string

 enum:

 - EVENT\_TRIGGERED

 - PERIODIC

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 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

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 PduSessionRelCause:

 description: Contains the SMF PDU Session release cause.

 anyOf:

 - type: string

 enum:

 - PS\_TO\_CS\_HO

 - RULE\_ERROR

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 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

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 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

 - MPQUIC\_ATSSS\_LL\_WITH\_ASMODE\_UL

 - MPQUIC\_ATSSS\_LL\_WITH\_EXSDMODE\_DL\_ASMODE\_UL

 - MPQUIC\_ATSSS\_LL\_WITH\_ASMODE\_DLUL

 - MPQUIC\_ATSSS\_LL

 - MPTCP\_MPQUIC\_ATSSS\_LL\_WITH\_ASMODE\_UL

 - MPTCP\_MPQUIC\_ATSSS\_LL\_WITH\_EXSDMODE\_DL\_ASMODE\_UL

 - MPTCP\_MPQUIC\_ATSSS\_LL\_WITH\_ASMODE\_DLUL

 - MPTCP\_MPQUIC\_ATSSS\_LL

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

#

 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 and is not used to encode

 content defined in the present version of this API.

 description: |

 Indicates the access network support of the report of the requested access network

 information.

 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

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

#

 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

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

#

 SteerModeIndicator:

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

 anyOf:

 - type: string

 enum:

 - AUTO\_LOAD\_BALANCE

 - UE\_ASSISTANCE

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

#

 TrafficParameterMeas:

 description: Indicates the traffic parameters to be measured.

 anyOf:

 - type: string

 enum:

 - DL\_N6\_JITTER

 - DL\_PERIOD

 - UL\_PERIOD

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 QosMonitoringParamType:

 anyOf:

 - type: string

 enum:

 - PACKET\_DELAY

 - CONGESTION

 - DATA\_RATE

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Indicates the QoS monitoring parameter type.

 Possible values are:

 - PACKET\_DELAY: Indicates that the QoS monitoring parameter to be measured is packet delay.

 - CONGESTION: Indicates that the QoS monitoring parameter to be measured is congestion.

 - DATA\_RATE: Indicates that the QoS monitoring parameter to be measured is data rate.

 TransportMode:

 description: >

 Indicates the Transport Mode when the steering functionality is MPQUIC functionality.

 anyOf:

 - type: string

 enum:

 - DATAGRAM\_MODE\_1

 - DATAGRAM\_MODE\_2

 - STREAM\_MODE

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 UeReachabilityStatus:

 anyOf:

 - type: string

 enum:

 - REACHABLE

 - UNREACHABLE

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Indicates the UE rechability status.

 Possible values are:

 - REACHABLE: Indicates that the UE is reachable.

 - UNREACHABLE: Indicates that the UE is unreachable.

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