**3GPP TSG-CT WG3 Meeting #108-eC3-201435**

**E-Meeting, 19th – 28th February 2020 *(revision of C3-201191)***

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| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.514** | **CR** | **0184** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | TSCAI input container and TSN QoS container |
|  |  |
| ***Source to WG:*** | Ericsson, Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | C3 |
|  |  |
| ***Work item code:*** | Vertical\_LAN |  | ***Date:*** | 2020-02-16 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | As defined in 23.501, clause 5.27.2, the TSC assistance information is provided from the SMF to 5G-AN upon QoS flow establishment, where the TSCAI parameters are set according to corresponding parameters obtained from the AF.23.503, clause 6.3.1 specifies in table 6.3.1 the TSN AF container, which contains the Burst Arrival Time, Periodicity and Flow direction. This container defines the parameters provided by TSN AF and is included within a PCC rule.23.503 clause 6.2.1.2 specifies that the TSN AF parameters received by the PCF are: Burst Arrival time, Periodicity, flow direction and delay requirement. Clause 6.1.3.23 specifes that “The PCF receives a request from the TSN AF that includes … TSN QoS parameters, i.e. priority and delay. Burst Arrival Time, Periodicity and Flow direction are defined in this specification under the TSN QoS container concept. This is a bit confussing, because none of the attributes represent QoS profile data. It is proposed to rename it by TSCAI input container.In addition, this specification is missing:* the equivalence between the TSN AF parameter called “priority” in 23.503 and the corresponding attribute in the Npcf\_PolicyAuthorization service;
* the equivalence between the TSN AF parameter called “delay” in 23.503 and the corresponding attribute in the Npcf\_PolicyAuthorization service;
* the equivalence between the TSC Burst size defined in 23.501 in relation to the Support for TSC QoS flows and the corresponding attribute in the Npcf\_PolicyAuthorization service.

These parameters will later map in the appropriate 5QI, and thus more appropriate for the data type named TSN QoS container. |
|  |  |
| ***Summary of change:*** | Definition of a TscaiInputContainer that contains the periodicity and burst arrival time in reference to the TSN GM for the UL and/or DL flow direction. TscaiInputContainer UL and/or DL are included at media subcomponent level.Update of the TsnQosContainer to contain only the QoS related parameters maximum burst size, packet delay and priority.Update of the OpenAPI file accordingly. |
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| ***Consequences if not approved:*** | Incomplete and incorrect ethernet port management detection functionality |
|  |  |
| ***Clauses affected:*** | 3.2, 4.2.2.1, 4.2.2.24, 4.2.3.1, 4.2.3.24, 5.6.1, 5.6.2.7, 5.6.2.8, 5.6.2.26, 5.6.2.27, 5.6.2.35, 5.6.2.x1 (new), 5.6.2.x2 (new), 5.6.3.2, 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 impacts the OpenAPI file with a backwards compatible feature.DurationSec is introduced in table 5.6.1 to indicate only its applicability to “TimeSensitiveNetworking” feature. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):W**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

5G-RG 5G Residential Gateway

AF Application Function

ARP Allocation and Retention Priority

BBF Broadband Forum

BSSID Basic Service Set IDentifier

CHEM Coverage and Handoff Enhancements using Multimedia error robustness feature

CHF Charging Function

DEI Drop Eligible Indicator

DNAI DN Access Identifier

DNN Data Network Name

DS-TT Device-side TSN translator

E-UTRA Evolved Universal Terrestrial Radio Access

FN-RG Fixed Network Residential Gateway

GPSI Generic Public Subscription Identifier

HFC Hybrid Fiber-Coaxial

H-PCF PCF in the HPLMN

IMS IP-Multimedia Subsystem

JSON JavaScript Object Notation

MCPTT Mission Critical Push to Talk Service

MCVideo Mission Critical Video

MPS Multimedia Priority Service

NEF Network Exposure Function

NR New Radio

NRF Network Repository Function

NWDAF Network Data Analytics Function

NW-TT Network-side TSN translator

PCC Policy and Charging Control

PCF Policy Control Function

PCP Priority Code Point

P-CSCF Proxy Call Session Control Function

PEI Permanent Equipment Identifier

PRA Presence Reporting Area

QoS Quality of Service

RFSP RAT Frequency Selection Priority

RTCP Real Time Control Protocol

RTP Real Time Protocol

SDF Service Data Flow

SDP Session Description Protocol

SIP Session Initiation Protocol

SMF Session Management Function

S-NSSAI Single Network Slice Selection Assistance Information

SSID Service Set IDentifier

SUPI Subscription Permanent Identifier

TNAP Trusted Non-3GPP Access Point

TSC Time Sensitive Communication

TSCAI Time Sensitive Communication Assistance Information

TSN Time Sensitive Networking

UDR Unified Data Repository

UPF User Plane Function

URSP UE Route Selection Policy

VID VLAN Identifier

VLAN Virtual Local Area Network

V-PCF PCF in the VPLMN

W-5GAN Wireline 5G Access Network

W-5GBAN Wireline 5G BBF Access Network

W-5GCAN Wireline 5G Cable Access Network

W-AGF Wireline Access Gateway Function

\*\*\* 2nd Change \*\*\*

#### 4.2.2.1 General

The Npcf\_PolicyAuthorization\_Create service operation authorizes the request from the NF service consumer, and optionally communicates with Npcf\_SMPolicyControl service to determine and install the policy according to the information provided by the NF service consumer.

The Npcf\_PolicyAuthorization\_Create service operation creates an application session context in the PCF.

The following procedures using the Npcf\_PolicyAuthorization\_Create service operation are supported:

- Initial provisioning of service information.

- Gate control.

- Initial Background Data Transfer policy indication.

- Initial provisioning of sponsored connectivity information.

- Subscription to Service Data Flow QoS notification control.

- Subscription to Service Data Flow Deactivation.

- Initial provisioning of traffic routing information.

- Subscription to resources allocation outcome.

- Invocation of Multimedia Priority Services.

- Support of content versioning.

- Request of access network information.

- Initial provisioning of service information status.

- Provisioning of signalling flow information.

- Support of resource sharing.

- Indication of Emergency traffic.

- Invocation of MCPTT.

- Invocation of MCVideo.

- Priority sharing indication.

- Subscription to out of credit notification.

- Subscription to Service Data Flow QoS Monitoring information.

- Provisioning of TSCAI input information and TSC QoS related data.

- Provisioning of port management information.

- P-CSCF restoration enhancements.

- Support of CHEM feature.

\*\*\* 3rd Change \*\*\*

#### 4.2.2.24 Provisioning of TSCAI input Information and QoS related data

If the "TimeSensitiveNetworking" feature is supported the AF may provide TSCAI input information and QoS related data to the PCF by the Npcf\_PolicyAuthorization\_Create service operation to describe the TSC traffic pattern and QoS characteristics for use in the 5G System.

To indicate the TSCAI input information of a TSN stream or aggregated set of TSN streams, the AF may include for the uplink flow direction (egress interface of the UE) in the "tscaiInputUl" attribute and/or for the downlink flow direction (ingress interface of the RAN) the "tscaiInputDl" attribute included in a media subcomponent entry of the "medSubComps" attribute included within a media component:

- the time period between the start of two bursts in reference to the TSN GM encoded in the "periodicity" attribute; and

- the arrival time of the first data burst in reference to the TSN GM encoded in the "burstArrivalTime" attribute.

The uplink and/or downlink flow direction of the TSN stream or aggregated set of TSN streams shall be encoded within the corresponding "MediaSubComponent" entries of the "medSubComps" attribute, in the "ethfDescs" attribute.

To indicate the TSC QoS related data of a TSN stream or aggregated set of TSN streams, the AF may include in the "tsnQos" attribute included in a media component entry of the "medComponents" attribute:

- the maximum burst size encoded in the "maxTscBurstSize" attribute;

- the maximum time a packet may be delayed encoded in the "tscPackDelay" attribute;

- the TSC traffic priority in scheduling resources among other TSN streams encoded in the "tscPrioLevel" attribute.

When all the TSN streams or aggregated set of TSN streams gathered in the same media component share the same TSCAI input information, the AF may include the "tscaiInputUl" attribute and/or the "tscaiInputDl" attribute at media component level. When "tscaiInputUl" attribute and/or the "tscaiInputDl" attribute are included at media component level and media subcomponent level, the value at media subcomponent level takes precedence.

The PCF shall reply to the AF as described in subclause 4.2.2.2.

The PCF shall check whether the received TSCAI input container and TSC QoS related data require to create PCC rules to provide the SMF with derived QoS characteristics and the received TSCAI input container. Provisioning of PCC rule(s) to the SMF shall be carried out as specified in 3GPP TS 29.512 [8].

\*\*\* 4th Change \*\*\*

#### 4.2.3.1 General

The Npcf\_PolicyAuthorization\_Update service operation provides updated application level information from the NF service consumer and optionally communicates with the Npcf\_SMPolicyControl service to determine and install the policy according to the information provided by the NF service consumer.

The Npcf\_PolicyAuthorization\_Update service operation updates an application session context in the PCF.

The following procedures using the Npcf\_PolicyAuthorization\_Update service operation are supported:

- Modification of service information.

- Gate control.

- Background Data Transfer policy indication at policy authorization update.

- Modification of sponsored connectivity information.

- Modification of Subscription to Service Data Flow QoS notification control.

- Modification of Subscription to Service Data Flow Deactivation.

- Update of traffic routing information.

- Modification of subscription to resources allocation outcome.

- Modification of Multimedia Priority Services.

- Support of content versioning.

- Request of access network information.

- Modification of service information status.

- Support of SIP forking.

- Provisioning of signalling flow information.

- Support of resource sharing.

- Modification of MCPTT.

- Modification of MCVideo.

- Priority sharing indication.

- Modification of subscription to out of credit notification.

- Modification of Subscription to Service Data Flow QoS Monitoring Information.

- Update of TSCAI Input Information and TSC QoS related data.

- Provisioning of port management information.

- Support of CHEM feature.

\*\*\* 5th Change \*\*\*

#### 4.2.3.24 Update of TSCAI Input Information and TSC QoS related data

If the "TimeSensitiveNetworking" feature is supported the AF may update the TSCAI Input container and the TSC QoS related data held in an "Individual Application Session Context" resource using the Npcf\_PolicyAuthorization\_Update service operation to modify the TSCAI input information and QoS characteristics delivered to the SMF for use in the 5G System.

The AF shall use the HTTP PATCH method as described in subclause 4.2.3.2 to modify TSCAI input container and the TSC QoS related information.

The AF may indicate TSCAI input information and/or TSC QoS related information for new TSN streams by adding one or more media component entries within the "medComponents" attribute including the the "tsnQos" attribute and per each media component, one or more media subcomponent entries within the "medSubComps" including the "tscaiInputUl" attribute and/or the "tscaiInputDl" attribute as described in subclause 4.2.2.24.

The AF may update the TSCAI input information and/or the TSC QoS related information for existing TSC traffic by including the updated values in the "tscaiInputUl" and/or "tscaiInputDl"attribute in an entry of the "medSubComps" attribute and/orupdated values in the "tsnQos" attribute included in a media component entry of the "medComponents" attribute.

The AF may delete the TSCAI input information and TSC QoS related information of removed TSC traffic by removing the corresponding media component entries within the "medComponents" attribute.

The PCF shall reply to the AF as described in subclause 4.2.3.2.

The PCF shall check whether ther received TSCAI input information and TSC QoS related information require to modifiy or to remove PCC rules in the SMF. Provisioning of PCC rule(s) to the SMF shall be carried out as specified in 3GPP TS 29.512 [8].

\*\*\* 6th Change \*\*\*

### 5.6.1 General

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

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

Table 5.6.1-1: Npcf\_PolicyAuthorization specific Data Types

| Data type | Section defined | Description | Applicability |
| --- | --- | --- | --- |
| AcceptableServiceInfo | 5.6.2.30 | Acceptable maximum requested bandwidth. |  |
| AccessNetChargingIdentifier | 5.6.2.32 | Contains the access network charging identifier. | IMS\_SBI |
| AfEvent | 5.6.3.7 | Represents an event to notify to the AF. |  |
| AfEventNotification | 5.6.2.11 | Represents the notification of an event. |  |
| AfEventSubscription | 5.6.2.10 | Represents the subscription to events. |  |
| AfNotifMethod | 5.6.3.8 | Represents the notification methods that can be subscribed for an event. |  |
| AfRequestedData | 5.6.3.18 | Represents the information the AF requested to be exposed. | IMS\_SBI |
| AfRoutingRequirement | 5.6.2.13 | Describes the routing requirements for the application traffic flows. | InfluenceOnTrafficRouting |
| AfRoutingRequirementRm | 5.6.2.24 | This data type is defined in the same way as the "AfRoutingRequirement" data type, but with the OpenAPI "nullable: true" property. | InfluenceOnTrafficRouting |
| AnGwAddress | 5.6.2.20 | Carries the control plane address of the access network gateway. |  |
| AppSessionContext | 5.6.2.2 | Represents an Individual Application Session Context resource. |  |
| AppSessionContextReqData | 5.6.2.3 | Represents the Individual Application Session Context resource data received in an HTTP POST request message. |  |
| AppSessionContextRespData | 5.6.2.4 | Represents the Individual Application Session Context resource data produced by the server and returned in an HTTP response message. |  |
| AppSessionContextUpdateData | 5.6.2.5 | Describes the modifications to an Individual Application Session Context resource. |  |
| ContentVersion | 5.6.3.2 | Represents the version of a media component. | MediaComponentVersioning |
| EthFlowDescription | 5.6.2.17 | Defines a packet filter for an Ethernet flow. |  |
| EventsNotification | 5.6.2.9 | Describes the notification about the events occurred within an Individual Application Session Context resource. |  |
| EventsSubscReqData | 5.6.2.6 | Identifies the events the application subscribes to within an Individual Application Session Context resource. |  |
| EventsSubscReqDataRm | 5.6.2.6.25 | This data type is defined in the same way as the "EventsSubscReqData" data type, but with the OpenAPI "nullable: true" property. |  |
| ExtendedProblemDetails | 5.6.2.29 | Data type that extends ProblemDetails. |  |
| FlowDescription | 5.6.3.2 | Defines a packet filter for an IP flow. |  |
| Flows | 5.6.2.21 | Identifies the flows related to a media component. |  |
| FlowStatus | 5.6.3.12 | Describes whether the IP flow(s) are enabled or disabled. |  |
| FlowUsage | 5.6.3.14 | Describes the flow usage of the flows described by a media subcomponent. |  |
| MediaComponent | 5.6.2.7 | Contains service information for a media component of an AF session. |  |
| MediaComponentRm | 5.6.2.6.26 | This data type is defined in the same way as the "MediaComponent" data type, but with the OpenAPI "nullable: true" property. |  |
| MediaComponentResourcesStatus | 5.6.3.13 | Indicates whether the media component is active or inactive. |  |
| MediaSubComponent | 5.6.2.8 | Contains the requested bitrate and filters for the set of IP flows identified by their common flow identifier. |  |
| MediaSubComponentRm | 5.6.2.27 | This data type is defined in the same way as the "MediaSubComponent" data type, but with the OpenAPI "nullable: true" property. |  |
| OutOfCreditInformation | 5.6.2.33 | Indicates the service data flows without available credit and the corresponding termination action. | IMS\_SBI |
| PcscfRestorationRequestData | 5.6.2.36 | Indicates P-CSCF restoration. | PCSCF-Restoration-Enhancement |
| PreemptionControlInformation | 5.6.3.19 | Pre-emption control information. | MCPTT-Preemption |
| PreemptionControlInformationRm | 5.6.3.21 | This data type is defined in the same way as the "PreemptionControlInformation" data type, but with the OpenAPI "nullable: true" property. | MCPTT-Preemption |
| PrioritySharingIndicator | 5.6.3.20 | Priority sharing indicator. | PrioritySharing |
| QosMonitoringInformation | 5.6.2.34 | QoS monitoring for UL, DL or round trip delay. | QoSMonitoring |
| QosNotificationControlInfo | 5.6.2.15 | Indicates whether the QoS targets related to certain media component are not guaranteed or are guaranteed again. |  |
| QosNotifType | 5.6.3.9 | Indicates type of notification for QoS Notification Control. |  |
| RequiredAccessInfo | 5.6.3.15 | Indicates the access network information required for an AF session. | NetLoc |
| ResourcesAllocationInfo | 5.6.2.14 | Indicates the status of the PCC rule(s) related to certain media component. |  |
| ServAuthInfo | 5.6.3.5 | Indicates the result of the Policy Authorization service request from the AF. |  |
| ServiceInfoStatus | 5.6.3.16 | Preliminary or final service information status. | IMS\_SBI |
| ServiceUrn | 5.6.3.2 | Service URN. | IMS\_SBI |
| SipForkingIndication | 5.6.3.17 | Describes if several SIP dialogues are related to an "Individual Application Session Context" resource. | IMS\_SBI |
| SpatialValidity | 5.6.2.16 | Describes the spatial validity of an AF request for influencing traffic routing. | InfluenceOnTrafficRouting |
| SpatialValidityRm | 5.6.2.28 | This data type is defined in the same way as the "SpatialValidity" data type, but with the OpenAPI "nullable: true" property. | InfluenceOnTrafficRouting |
| SponId | 5.6.3.2 | Contains an Identity of a sponsor. | SponsoredConnectivity |
| SponsoringStatus | 5.6.3.6 | Represents whether sponsored data connectivity is enabled or disabled/not enabled. | SponsoredConnectivity |
| TemporalValidity | 5.6.2.22 | Indicates the time interval during which the AF request is to be applied. | InfluenceOnTrafficRouting |
| TerminationCause | 5.6.3.10 | Indicates the cause for requesting the deletion of the Individual Application Session Context resource. |  |
| TerminationInfo | 5.6.2.12 | Includes information related to the termination of the Individual Application Session Context resource. |  |
| TosTrafficClass | 5.6.3.2 | Contains the IPv4 Type-of-Service or the IPv6 Traffic-Class field and the ToS/Traffic Class mask field. |  |
| TosTrafficClassRm | 5.6.3.2 | This data type is defined in the same way as the "TosTrafficClass" data type, but with the OpenAPI "nullable: true" property. |  |
| TscPriorityLevel | 5.6.3.2 | Priority of TSC Flows | TimeSensitiveNetworking |
| TscPriorityLevelRm | 5.6.3.2 | This data type is defined in the same way as the "TscPriorityLevel" data type, but with the OpenAPI "nullable: true" property | TimeSensitiveNetworking |
| TscaiInputContainer | 5.6.2.x2 | TSCAI Input information container. | TimeSensitiveNetworking |
| TsnQosContainer | 5.6.2.35 | TSC traffic QoS parameters. | TimeSensitiveNetworking |
| TsnQosContainerRm | 5.6.2.x1 | This data type is defined in the same way as the "TsnQosContainer" data type, but with the OpenAPI "nullable: true" property. | TimeSensitiveNetworking |
| UeIdentityInfo | 5.6.2.31 | Represents 5GS-Level UE Identities. | IMS\_SBI |

Table 5.6.1-2 specifies data types re-used by the Npcf\_PolicyAuthorization 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\_PolicyAuthorization service based interface.

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

| Data type | Reference | Comments | Applicability |
| --- | --- | --- | --- |
| AccNetChargingAddress | 3GPP TS 29.512 [8] | Indicates the IP address of the network entity within the access network performing charging. | IMS\_SBI |
| AccessType | 3GPP TS 29.571 [12] | The identification of the type of access network. |  |
| AccumulatedUsage | 3GPP TS 29.122 [15] | Accumulated Usage. | SponsoredConnectivity |
| AfSigProtocol | 3GPP TS 29.512 [8] | Represents the protocol used for signalling between the UE and the AF. | ProvAFsignalFlow |
| ApplicationChargingId | 3GPP TS 29.571 [12] | Application provided charging identifier allowing correlation of charging information. | IMS\_SBI |
| BdtReferenceId | 3GPP TS 29.122 [15] | Identifies transfer policies. |  |
| BitRate | 3GPP TS 29.571 [12] | Specifies bitrate in kbits per second. |  |
| BitRateRm | 3GPP TS 29.571 [12] | 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 [12] | String with format "byte". |  |
| ChargingId | 3GPP TS 29.571 [12] | Charging identifier allowing correlation of charging information. | IMS\_SBI |
| DateTime | 3GPP TS 29.571 [12] | String with format "date-time" as defined in OpenAPI Specification [11]. | InfluenceOnTrafficRouting, TimeSensitiveNetworking |
| Dnai | 3GPP TS 29.571 [12] | Data network access identifier. | InfluenceOnTrafficRouting |
| Dnn | 3GPP TS 29.571 [12] | Data Network Name. |  |
| DurationSec | 3GPP TS 29.571 [12] | Identifies a period of time in units of seconds. | TimeSensitiveNetworking |
| FinalUnitAction | 3GPP TS 32.291 [22] | Indicates the action to be taken when the user's account cannot cover the service cost. |  |
| FlowDirection | 3GPP TS 29.512 [8] | Flow Direction. |  |
| ExtMaxDataBurstVol | 3GPP TS 29.571 [12] | Maximum Burst Size. | TimeSensitiveNetworking |
| ExtMaxDataBurstVolRm | 3GPP TS 29.571 [12] | This data type is defined in the same way as the "ExtMaxDataBurstVol" data type, but with the OpenAPI "nullable: true" property | TimeSensitiveNetworking |
| Gpsi | 3GPP TS 29.571 [12] | Identifies the GPSI. |  |
| Ipv4Addr | 3GPP TS 29.571 [12] | Identifies an IPv4 address. |  |
| Ipv6Addr | 3GPP TS 29.571 [12] | Identifies an IPv6 address. |  |
| MacAddr48 | 3GPP TS 29.571 [12] | MAC Address. |  |
| PacketDelBudget | 3GPP TS 29.571 [12] | Packet Delay Budget. | TimeSensitiveNetworking |
| PacketDelBudgetRm | 3GPP TS 29.571 [12] | This data type is defined in the same way as the "PacketDelBudget" data type, but with the OpenAPI "nullable: true" property | TimeSensitiveNetworking |
| PacketLossRateRm | 3GPP TS 29.571 [12] | This data type is defined in the same way as the "PacketLossRate" data type, but with the OpenAPI "nullable: true" property. | CHEM |
| Pei | 3GPP TS 29.571 [12] | Identifies the PEI. | IMS\_SBI |
| PlmnId | 3GPP TS 29.571 [12] | PLMN mobile country code and mobile network code. |  |
| PreemptionCapability | 3GPP TS 29.571 [12] | Pre-emption capability. | MCPTT-Preemption |
| PreemptionVulnerability | 3GPP TS 29.571 [12] | Pre-emption vulnerability. | MCPTT-Preemption |
| PreemptionCapabilityRm | 3GPP TS 29.571 [12] | It is defined in the same way as the "PreemptionCapability" data type, but with the OpenAPI "nullable: true" property. | MCPTT-Preemption |
| PreemptionVulnerabilityRm | 3GPP TS 29.571 [12] | It is defined in the same way as the "PreemptionVulnerability" data type, but with the OpenAPI "nullable: true" property. | MCPTT-Preemption |
| PresenceInfo | 3GPP TS 29.571 [12] | Represents an area of interest, e.g. a Presence Reporting Area. | InfluenceOnTrafficRouting |
| RanNasRelCause | 3GPP TS 29.512 [8] | Indicates RAN and/or NAS release cause code information. | RAN-NAS-Cause |
| RatType | 3GPP TS 29.571 [12] | RAT Type. |  |
| Snssai | 3GPP TS 29.571 [12] | Identifies the S-NSSAI. |  |
| Supi | 3GPP TS 29.571 [12] | Identifies the SUPI. |  |
| SupportedFeatures | 3GPP TS 29.571 [12] | Used to negotiate the applicability of the optional features defined in table 5.8-1. |  |
| TimeZone | 3GPP TS 29.571 [12] | Time Zone. | NetLoc |
| TsnBridgeInfo | 3GPP TS 29.512 [8] | TSN bridge information. | TimeSensitiveNetworking |
| Uinteger | 3GPP TS 29.571 [12] | Unsigned Integer, i.e. only value 0 and integers above 0 are permissible. In an OpenAPI Specification [11] schema, the format shall be designated as "Uinteger". |  |
| Uint32 | 3GPP TS 29.571 [12] | Unsigned 32-bit integers, i.e. only value 0 and 32-bit integers above 0 are permissible. | ResourceSharing |
| Uint32Rm | 3GPP TS 29.571 [12] | This data type is defined in the same way as the "Uint32" data type, but with the OpenAPI "nullable: true" property. | ResourceSharing |
| UpPathChgEvent | 3GPP TS 29.512 [8] | Contains the subscription information to be delivered to SMF for the UP path management events. | InfluenceOnTrafficRouting |
| Uri | 3GPP TS 29.571 [12] | String providing an URI. |  |
| UsageThreshold | 3GPP TS 29.122 [15] | Usage Thresholds. | SponsoredConnectivity |
| UsageThresholdRm | 3GPP TS 29.122 [15] | This data type is defined in the same way as the "UsageThreshold" data type, but with the OpenAPI "nullable: true" property. | SponsoredConnectivity |
| UserLocation | 3GPP TS 29.571 [12] | User Location. | NetLoc |

\*\*\* 7th Change \*\*\*

#### 5.6.2.7 Type MediaComponent

Table 5.6.2.7-1: Definition of type MediaComponent

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| afAppId | AfAppId | O | 0..1 | Contains information that identifies the particular service the AF session belongs to. |  |
| afRoutReq | AfRoutingRequirement | O | 0..1 | Indicates the AF traffic routing requirements. | InfluenceOnTrafficRouting |
| qosReference | string | O | 0..1 | Identifies a pre-defined QoS information. | AuthorizationWithRequiredQoS |
| altSerReqs | array(string) | O | 1..N | Ordered list of alternative service requirements. The lower the index of the array for a given entry, the higher the priority. | AuthorizationWithRequiredQoS |
| contVer | ContentVersion | O | 0..1 | Represents the content version of a media component. | MediaComponentVersioning |
| medCompN | integer | M | 1 | Identifies the media component number, and it contains the ordinal number of the media component. |  |
| medSubComps | map(MediaSubComponent) | O | 1..N | Contains the requested bitrate and filters for the set of service data flows identified by their common flow identifier. The key of the map is the attribute "fNum". |  |
| medType | MediaType | O | 0..1 | Indicates the media type of the service. |  |
| marBwUl | BitRate | O | 0..1 | Maximum requested bandwidth for the Uplink. |  |
| marBwDl | BitRate | O | 0..1 | Maximum requested bandwidth for the Downlink. |  |
| maxPacketLossRateDl | PacketLossRateRm | O | 0..1 | Indicates the downlink maximum rate for lost packets that can be tolerated for the service data flow. | CHEM |
| maxPacketLossRateUl | PacketLossRateRm | O | 0..1 | Indicates the uplink maximum rate for lost packets that can be tolerated for the service data flow. | CHEM |
| maxSuppBwDl | BitRate | O | 0..1 | Maximum supported bandwidth for the Downlink. | IMS\_SBI |
| maxSuppBwUl | BitRate | O | 0..1 | Maximum supported bandwidth for the Uplink. | IMS\_SBI |
| minDesBwDl | BitRate | O | 0..1 | Minimum desired bandwidth for the Downlink. | IMS\_SBI |
| minDesBwUl | BitRate | O | 0..1 | Minimum desired bandwidth for the Uplink. | IMS\_SBI |
| mirBwUl | BitRate | O | 0..1 | Minimum requested bandwidth for the Uplink. |  |
| mirBwDl | BitRate | O | 0..1 | Minimum requested bandwidth for the Downlink. |  |
| fStatus | FlowStatus | O | 0..1 | Indicates whether the status of the service data flows is enabled, or disabled. |  |
| preemptCap | PreemptionCapability | O | 0..1 | Defines whether the media flow may get resources that were already assigned to another media flow with a lower priority level. It may be included together with "prioSharingInd" for ARP decision. | MCPTT-Preemption |
| preemptVuln | PreemptionVulnerability | O | 0..1 | Defines whether the media flow may lose the resources assigned to it in order to admit a media flow with higher priority level. It may be included together with "prioSharingInd" for ARP decision. | MCPTT-Preemption |
| prioSharingInd | PrioritySharingIndicator | O | 0..1 | Indicates that the media flow is allowed to use the same ARP as media flows belonging to other "Individual Application Session Context" resources bound to the same PDU session. | PrioritySharing |
| resPrio | ReservPriority | O | 0..1 | Indicates the reservation priority. |  |
| rrBw | BitRate | O | 0..1 | Indicates the maximum required bandwidth in bits per second for RTCP receiver reports within the session component as specified in IETF RFC 3556 [37]. The bandwidth contains all the overhead coming from the IP-layer and the layers above, i.e. IP, UDP and RTCP. | IMS\_SBI |
| rsBw | BitRate | O | 0..1 | Indicates the maximum required bandwidth in bits per second for RTCP sender reports within the session component as specified in IETF RFC 3556 [37]. The bandwidth contains all the overhead coming from the IP-layer and the layers above, i.e. IP, UDP and RTCP. | IMS\_SBI |
| sharingKeyDl | Uint32 | O | 0..1 | Identifies which media components share resources in the downlink direction.If resource sharing applies between media components across "Individual Application Session Context" resources for the same PDU session, the same value of the "sharingKeyDl" attribute shall be used. If resource sharing does not apply among media components across "Individual Application Session Context" resources for the same PDU session, a different value for the "sharingKeyDl" attribute shall be used. | ResourceSharing |
| sharingKeyUl | Uint32 | O | 0..1 | Identifies which media components share resources in the uplink direction.If resource sharing applies between media components across "Individual Application Session Context" resources for the same PDU session, the same value of the "sharingKeyUl" attribute shall be used. If resource sharing does not apply among media components across "Individual Application Session Context" resources for the same PDU session, a different value for the "sharingKeyUl" attribute shall be used. | ResourceSharing |
| codecs | array(CodecData) | O | 1..2 | Indicates the codec data. |  |
| tsnQos | TsnQoSContainer | O | 0..1 | Transports QoS parameters for TSC traffic. | TimeSensitiveNetworking |
| tscaiInputUl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress interface of the DS-TT/UE (uplink flow direction). | TimeSensitiveNetworking |
| tscaiInputDl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress of the NW-TT (downlink flow direction). | TimeSensitiveNetworking |

All IP flows within a "MediaSubComponent" data type are permanently disabled by supplying "FlowStatus" data type with a deletion indication.

Bandwidth information and the "fStatus" attribute provided within the MediaComponent applies to all those IP flows within the media component, for which no corresponding information is being provided within the "medSubComps" attribute. As defined in 3GPP TS 29.513 [7], the bandwidth information within the media component level "marBwUl" and "marBwDl" attributes applies separately to each media subcomponent except for media subcomponents with a "flowUsage" attribute with the value "RTCP". The mapping of bandwidth information for RTCP media subcomponent is defined in 3GPP TS 29.513 [7] subclause 7.3.3.

\*\*\* 8th Change \*\*\*

#### 5.6.2.8 Type MediaSubComponent

Table 5.6.2.8-1: Definition of type MediaSubComponent

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| afSigProtocol | AfSigProtocol | O | 0..1 | Indicates the protocol used for signalling between the UE and the AF. It may be included only if the "flowUsage" attribute is set to the value "AF\_SIGNALLING". | ProvAFsignalFlow |
| ethfDescs | array(EthFlowDescription) | O | 1..2 | Contains the flow description for the Uplink and/or Downlink Ethernet flows. |  |
| fNum | integer | M | 1 | Identifies the ordinal number of the service data flow. |  |
| fDescs | array(FlowDescription) | O | 1..2 | Contains the flow description for the Uplink and/or Downlink IP flows. |  |
| fStatus | FlowStatus | O | 0..1 | Indicates whether the status of the service data flows is enabled or disabled. |  |
| flowUsage | FlowUsage | O | 0..1 | Flow usage of the flows (e.g. RTCP, AF signalling). |  |
| marBwUl | BitRate | O | 0..1 | Maximum requested bandwidth for the Uplink. |  |
| marBwDl | BitRate | O | 0..1 | Maximum requested bandwidth for the Downlink. |  |
| tosTrCl | TosTrafficClass | O | 0..1 | Type of Service or Traffic Class. |  |
| tscaiInputUl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress interface of the DS-TT/UE (uplink flow direction). | TimeSensitiveNetworking |
| tscaiInputDl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress of the NW-TT (downlink flow direction). | TimeSensitiveNetworking |

The bit rate information and flow status information provided within the "MediaSubComponent" data type takes precedence over information provided within "MediaComponent" data type.

All service data flows within a "MediaSubComponent" data type are permanently disabled by supplying "FlowStatus" data type with a deletion indication.

\*\*\* 9th Change \*\*\*

#### 5.6.2.26 Type MediaComponentRm

This data type is defined in the same way as the "MediaComponent" data type, but:

- with the OpenAPI "nullable: true" property; and

- the removable attributes "afRoutReq", "maxPacketLossRateDl", "maxPacketLossRateUl", "medSubComps", "preemptCap", "preemptVuln", "marBwDl", "marBwUl", "mirBwDl", "rrBw", "rsBw", "mirBwUl", "sharingKeyDl", "sharingKeyUl", and "tsnQos" are defined with the removable data types "AfRoutingRequirementRm", "MediaSubComponentRm", "PreemptionCapabilityRm", "PreemptionVulnerabilityRm", "BitRateRm", "Uint32Rm" and "TsnQosContainerRm".

Table 5.6.2.26-1: Definition of type MediaComponentRm

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| afAppId | AfAppId | O | 0..1 | Contains information that identifies the particular service the AF session belongs to. |  |
| afRoutReq | AfRoutingRequirementRm | O | 0..1 | Indicates the AF traffic routing requirements. | InfluenceOnTrafficRouting |
| contVer | ContentVersion | O | 0..1 | Represents the content version of a media component. | MediaComponentVersioning |
| maxPacketLossRateDl | PacketLossRateRm | O | 0..1 | Indicates the downlink maximum rate for lost packets that can be tolerated for the service data flow. | CHEM |
| maxPacketLossRateUl | PacketLossRateRm | O | 0..1 | Indicates the uplink maximum rate for lost packets that can be tolerated for the service data flow. | CHEM |
| medCompN | integer | M | 1 | Identifies the media component number, and it contains the ordinal number of the media component. |  |
| medSubComps | map(MediaSubComponentRm) | O | 1..N | Contains the requested bitrate and filters for the set of service data flows identified by their common flow identifier. The key of the map is the attribute "fNum". |  |
| medType | MediaType | O | 0..1 | Indicates the media type of the service. |  |
| marBwUl | BitRateRm | O | 0..1 | Maximum requested bandwidth for the Uplink. |  |
| marBwDl | BitRateRm | O | 0..1 | Maximum requested bandwidth for the Downlink. |  |
| maxSuppBwDl | BitRateRm | O | 0..1 | Maximum supported bandwidth for the Downlink. | IMS\_SBI |
| maxSuppBwUl | BitRateRm | O | 0..1 | Maximum supported bandwidth for the Uplink. | IMS\_SBI |
| minDesBwDl | BitRateRm | O | 0..1 | Minimum desired bandwidth for the Downlink. | IMS\_SBI |
| minDesBwUl | BitRateRm | O | 0..1 | Minimum desired bandwidth for the Uplink. | IMS\_SBI |
| mirBwUl | BitRateRm | O | 0..1 | Minimum requested bandwidth for the Uplink. |  |
| mirBwDl | BitRateRm | O | 0..1 | Minimum requested bandwidth for the Downlink. |  |
| fStatus | FlowStatus | O | 0..1 | Indicates whether the status of the service data flows is enabled, or disabled. |  |
| preemptCap | PreemptionCapabilityRm | O | 0..1 | Defines whether the media flow may get resources that were already assigned to another media flow with a lower priority level. | MCPTT-Preemption |
| preemptVuln | PreemptionVulnerabilityRm | O | 0..1 | Defines whether the media flow may lose the resources assigned to it in order to admit a media flow with higher priority level. | MCPTT-Preemption |
| prioSharingInd | PrioritySharingIndicator | O | 0..1 | Indicates that the media flow is allowed to use the same ARP as media flows belonging to other "Individual Application Session Context" resources bound to the same PDU session. | PrioritySharing |
| resPrio | ReservPriority | O | 0..1 | Indicates the reservation priority. |  |
| rrBw | BitRateRm | O | 0..1 | Indicates the maximum required bandwidth in bits per second for RTCP receiver reports within the session component as specified in IETF RFC 3556 [37]. The bandwidth contains all the overhead coming from the IP-layer and the layers above, i.e. IP, UDP and RTCP. | IMS\_SBI |
| rsBw | BitRateRm | O | 0..1 | Indicates the maximum required bandwidth in bits per second for RTCP sender reports within the session component as specified in IETF RFC 3556 [37]. The bandwidth contains all the overhead coming from the IP-layer and the layers above, i.e. IP, UDP and RTCP. | IMS\_SBI |
| codecs | array(CodecData) | O | 1..2 | Indicates the codec data. |  |
| sharingKeyDl | Uint32Rm | O | 0..1 | Identifies which media components share resources in the downlink direction.If resource sharing applies between media components across "Individual Application Session Context" resources for the same PDU session, the same value of the "sharingKeyDl" attribute shall be used. If resource sharing does not apply among media components across "Individual Application Session Context" resources for the same PDU session, a different value for the "sharingKeyDl" attribute shall be used.If resource sharing does no longer apply for this media component, the "sharingKeyDl" attribute shall be set to "null". | ResourceSharing |
| sharingKeyUl | Uint32Rm | O | 0..1 | Identifies which media components share resources in the uplink direction.If resource sharing applies between media components across "Individual Application Session Context" resources for the same PDU session, the same value of the "sharingKeyUl" attribute shall be used. If resource sharing does not apply among media components across "Individual Application Session Context" resources for the same PDU session, a different value for the "sharingKeyUl" attribute shall be used.If resource sharing does no longer apply for this media component, the "sharingKeyUl" attribute shall be set to "null". | ResourceSharing |
| tsnQos | TsnQoSContainerRm | O | 0..1 | Transports QoS parameters for TSC traffic. | TimeSensitiveNetworking |
| tscaiInputUl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress interface of the DS-TT/UE (uplink flow direction). | TimeSensitiveNetworking |
| tscaiInputDl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress of the NW-TT (downlink flow direction). | TimeSensitiveNetworking |

\*\*\* 10th Change \*\*\*

#### 5.6.2.27 Type MediaSubComponentRm

This data type is defined in the same way as the "MediaSubComponent" data type, but:

- with the OpenAPI "nullable: true" property; and

- the removable attributes "marBwDl", "marBwUl", defined with the removable data type "BitRateRm".

Table 5.6.2.27-1: Definition of type MediaSubComponentRm

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| afSigProtocol | AfSigProtocol | O | 0..1 | Indicates the protocol used for signalling between the UE and the AF. It may be included only if the "flowUsage" attribute is set to the value "AF\_SIGNALLING". | ProvAFsignalFlow |
| ethfDescs | array(EthFlowDescription) | O | 1..2 | Contains the flow description for the Uplink and/or Downlink Ethernet flows. |  |
| fNum | integer | M | 1 | Identifies the ordinal number of the IP flow. |  |
| fDescs | array(FlowDescription) | O | 1..2 | Contains the flow description for the Uplink and/or Downlink IP flows. |  |
| fStatus | FlowStatus | O | 0..1 | Indicates whether the status of the service data flows is enabled or disabled. |  |
| flowUsage | FlowUsage | O | 0..1 | Flow usage of the flows (e.g. RTCP, AF signalling). |  |
| marBwUl | BitRateRm | O | 0..1 | Maximum requested bandwidth for the Uplink. |  |
| marBwDl | BitRateRm | O | 0..1 | Maximum requested bandwidth for the Downlink. |  |
| tosTrCl | TosTrafficClassRm | O | 0..1 | Type of Service or Traffic Class. |  |
| tscaiInputUl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress interface of the DS-TT/UE (uplink flow direction). | TimeSensitiveNetworking |
| tscaiInputDl | TscaiInputContainer | O | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress of the NW-TT (downlink flow direction). | TimeSensitiveNetworking |

\*\*\* 11th Change \*\*\*

#### 5.6.2.35 Type TsnQosContainer

Table 5.6.2.35-1: Definition of type TsnQosContainer

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| maxTscBurstSize | ExtMaxDataBurstVol | O | 0..1 | Maximum burst size of the TSC traffic in units of Bytes.Minimum = 4096, Maximum = 2000000. |  |
| tscPackDelay | PacketDelBudget | O | 0..1 | Delay of the TSC traffic. |  |
| tscPrioLevel | TscPriorityLevel | O | 0..1 | Unsigned integer indicating the TSC traffic priority in relation to other TSC and non-TSC traffic. |  |
| NOTE: At least one of the attributes shall be present in an instance of the TsnQosContainer. |

\*\*\* 12th Change \*\*\*

#### 5.6.2.x1 Type TsnQosContainerRm

This data type is defined in the same way as the "TsnQoSContainer" data type, but with the OpenAPI "nullable: true" property.

\*\*\* 13th Change \*\*\*

#### 5.6.2.x2 Type TscaiInputContainer

Table 5.6.2.x2-1: Definition of type TscaiInputContainer

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| periodicity | DurationSec | O | 0..1 | Identifications of the time period between the start of two bursts in reference to the TSN GM. |  |
| burstArrivalTime | DateTime | O | 0..1 | Indicates the arrival time of the data burst in reference to the TSN GM. |  |

\*\*\* 14th Change \*\*\*

#### 5.6.3.2 Simple data types

The simple data types defined in table 5.6.3.2-1 shall be supported.

Table 5.6.3.2-1: Simple data types

| Type Name | Type Definition | Description | Applicability |
| --- | --- | --- | --- |
| AfAppId | string | Contains an AF application identifier. |  |
| AspId | string | Contains an identity of an application service provider. | SponsoredConnectivity |
| CodecData | string | Contains codec related information.Refer to subclause 5.3.7 of 3GPP TS 29.214 [20] for encoding. |  |
| ContentVersion | integer | Unsigned 64-bit integer that indicates the version of some content, as e.g. the content of a media component. The content version shall be unique for the content and for the lifetime of that content. (NOTE) | MediaComponentVersioning |
| FlowDescription | string | Defines a packet filter for an IP flow.Refer to subclause 5.3.8 of 3GPP TS 29.214 [20] for encoding. |  |
| SponId | string | Contains an identity of a sponsor. | SponsoredConnectivity |
| ServiceUrn | string | Indicates that an AF session is used for Emergency traffic.It contains values of the service URN and it may include subservices, as defined in IETF RFC 5031 [34] or registered at IANA. The string "urn:service:" in the beginning of the URN shall be omitted and all subsequent text shall be included. Examples of valid values of the ServiceUrn data structure are "sos", "sos.fire", "sos.police" and "sos.ambulance". | IMS\_SBI |
| TosTrafficClass | string | 2-octet string, where each octet is encoded in hexadecimal representation. The first octet contains the IPv4 Type-of-Service or the IPv6 Traffic-Class field and the second octet contains the ToS/Traffic Class mask field. |  |
| TosTrafficClassRm | string | This data type is defined in the same way as the "TosTrafficClass" data type, but with the OpenAPI "nullable: true" property. |  |
| TscPriorityLevel | integer | Unsigned integer indicating the TSC traffic Priority Level, within the range 1 to 8.Values are ordered in decreasing order of priority, i.e. with 1 as the highest priority and 8 as the lowest priority. |  |
| TscPriorityLevelRm | integer | This data type is defined in the same way as the "TscPriorityLevel" data type, but with the OpenAPI "nullable: true" property. |  |
| NOTE: The method of assigning content versions is implementation specific. |

\*\*\* 15th Change \*\*\*

# A.2 Npcf\_PolicyAuthorization API

openapi: 3.0.0

info:

 title: Npcf\_PolicyAuthorization Service API

 version: 1.1.0.alpha-4

 description: |

 PCF Policy Authorization Service.

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externalDocs:

 description: 3GPP TS 29.514 V16.3.0; 5G System; Policy Authorization Service;Stage 3.

 url: 'http://www.3gpp.org/ftp/Specs/archive/29\_series/29.514/'

#

servers:

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

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - {}

 - oAuth2ClientCredentials:

 - npcf-policyauthorization

paths:

 /app-sessions:

 post:

 summary: Creates a new Individual Application Session Context resource

 operationId: PostAppSessions

 tags:

 - Application Sessions (Collection)

 requestBody:

 description: Contains the information for the creation the resource

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Successful creation of the resource

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the created individual application session context resource, according to the structure: {apiRoot}/npcf-policyauthorization/v1/app-sessions/{appSessionId} or the URI of the created events subscription sub-resource, according to the structure: {apiRoot}/npcf-policyauthorization/v1/app-sessions/{appSessionId}/events-subscription}'

 required: true

 schema:

 type: string

 '303':

 description: See Other. The result of the HTTP POST request would be equivalent to the existing Application Session Context. The HTTP response shall contain a Location header field set to the URI of the existing individual Application Session Context resource

 '400':

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

 '401':

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

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

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

 headers:

 Retry-After:

 description: 'Indicates the time the AF has to wait before making a new request. It can be a non-negative integer (decimal number) indicating the number of seconds the AF has to wait before making a new request or an HTTP-date after which the AF can retry a new request. '

 schema:

 anyOf:

 - type: integer

 - type: string

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 terminationRequest:

 '{$request.body#/ascReqData/notifUri}/terminate':

 post:

 requestBody:

 description: Request of the termination of the Individual Application Session Context

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: The receipt of the notification is acknowledged.

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 eventNotification:

 '{$request.body#/ascReqData/evSubsc/notifUri}/notify':

 post:

 requestBody:

 description: Notification of an event occurrence in the PCF.

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: The receipt of the notification is acknowledged

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 /app-sessions/pcscf-restoration:

 post:

 summary: "Indicates P-CSCF restoration and does not create an Individual Application Session Context"

 operationId: PcscfRestoration

 tags:

 - PCSCF Restoration Indication

 requestBody:

 description: PCSCF Restoration Indication

 required: false

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: The deletion is confirmed without returning additional data.

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

#

 /app-sessions/{appSessionId}:

 get:

 summary: "Reads an existing Individual Application Session Context"

 operationId: GetAppSession

 tags:

 - Individual Application Session Context (Document)

 parameters:

 - name: appSessionId

 description: string identifying the resource

 in: path

 required: true

 schema:

 type: string

 responses:

 '200':

 description: A representation of the resource is returned.

 content:

 application/json:

 schema:

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

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '406':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 patch:

 summary: "Modifies an existing Individual Application Session Context"

 operationId: ModAppSession

 tags:

 - Individual Application Session Context (Document)

 parameters:

 - name: appSessionId

 description: string identifying the resource

 in: path

 required: true

 schema:

 type: string

 requestBody:

 description: modification of the resource.

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: successful modification of the resource and a representation of that resource is returned

 content:

 application/json:

 schema:

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

 '204':

 description: The successful modification

 '400':

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

 '401':

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

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

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

 headers:

 Retry-After:

 description: 'Indicates the time the AF has to wait before making a new request. It can be a non-negative integer (decimal number) indicating the number of seconds the AF has to wait before making a new request or an HTTP-date after which the AF can retry a new request. '

 schema:

 anyOf:

 - type: integer

 - type: string

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 eventNotification:

 '{$request.body#/evSubsc/notifUri}/notify':

 post:

 requestBody:

 description: Notification of an event occurrence in the PCF.

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: The receipt of the notification is acknowledged

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

#

#

 /app-sessions/{appSessionId}/delete:

 post:

 summary: "Deletes an existing Individual Application Session Context"

 operationId: DeleteAppSession

 tags:

 - Individual Application Session Context (Document)

 parameters:

 - name: appSessionId

 description: string identifying the Individual Application Session Context resource

 in: path

 required: true

 schema:

 type: string

 requestBody:

 description: deletion of the Individual Application Session Context resource, req notification

 required: false

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: The deletion of the resource is confirmed and a resource is returned

 content:

 application/json:

 schema:

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

 '204':

 description: The deletion is confirmed without returning additional data.

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

#

 /app-sessions/{appSessionId}/events-subscription:

 put:

 summary: "creates or modifies an Events Subscription subresource"

 operationId: updateEventsSubsc

 tags:

 - Events Subscription (Document)

 parameters:

 - name: appSessionId

 description: string identifying the Events Subscription resource

 in: path

 required: true

 schema:

 type: string

 requestBody:

 description: Creation or modification of an Events Subscription resource.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: The creation of the Events Subscription resource is confirmed and its representation is returned.

 content:

 application/json:

 schema:

 anyOf:

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

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

 headers:

 Location:

 description: 'Contains the URI of the created Events Subscription resource, according to the structure: {apiRoot}/npcf-policyauthorization/v1/app-sessions/{appSessionId}/events-subscription}'

 required: true

 schema:

 type: string

 '200':

 description: The modification of the of the Events Subscription resource is confirmed its representation is returned.

 content:

 application/json:

 schema:

 anyOf:

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

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

 '204':

 description: The modification of the Events Subscription subresource is confirmed without returning additional data.

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 callbacks:

 eventNotification:

 '{$request.body#/notifUri}/notify':

 post:

 requestBody:

 description: Contains the information for the notification of an event occurrence in the PCF.

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: The receipt of the notification is acknowledged.

 '400':

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

 '401':

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

 '403':

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

 '404':

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

 '411':

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

 '413':

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

 '415':

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

 '429':

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

 '500':

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

 '503':

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

 default:

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

 delete:

 summary: deletes the Events Subscription subresource

 operationId: DeleteEventsSubsc

 tags:

 - Events Subscription (Document)

 parameters:

 - name: appSessionId

 description: string identifying the Individual Application Session Context resource

 in: path

 required: true

 schema:

 type: string

 responses:

 '204':

 description: The deletion of the of the Events Subscription sub-resource is confirmed without returning additional data.

 '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'

 '429':

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

 '500':

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

 '503':

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

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 npcf-policyauthorization: Access to the Npcf\_PolicyAuthorization API

 schemas:

 AppSessionContext:

 description: Represents an Individual Application Session Context resource.

 type: object

 properties:

 ascReqData:

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

 ascRespData:

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

 evsNotif:

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

 AppSessionContextReqData:

 description: Identifies the service requirements of an Individual Application Session Context.

 type: object

 required:

 - notifUri

 - suppFeat

 oneOf:

 - required: [ueIpv4]

 - required: [ueIpv6]

 - required: [ueMac]

 properties:

 afAppId:

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

 afChargId:

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

 afReqData:

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

 afRoutReq:

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

 aspId:

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

 bdtRefId:

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

 dnn:

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

 evSubsc:

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

 mcpttId:

 description: indication of MCPTT service request

 type: string

 mcVideoId:

 description: indication of MCVideo service request

 type: string

 medComponents:

 type: object

 additionalProperties:

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

 minProperties: 1

 ipDomain:

 type: string

 mpsId:

 description: indication of MPS service request

 type: string

 mcsId:

 description: indication of MCS service request

 type: string

 preemptControlinfo:

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

 resPrio:

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

 servInfStatus:

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

 notifUri:

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

 servUrn:

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

 sliceInfo:

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

 sponId:

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

 sponStatus:

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

 supi:

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

 gpsi:

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

 suppFeat:

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

 ueIpv4:

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

 ueIpv6:

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

 ueMac:

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

 AppSessionContextRespData:

 description: Describes the authorization data of an Individual Application Session Context created by the PCF.

 type: object

 properties:

 servAuthInfo:

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

 ueIds:

 type: array

 items:

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

 minItems: 1

 suppFeat:

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

 AppSessionContextUpdateData:

 description: Identifies the modifications to an Individual Application Session Context and may include the modifications to the sub-resource Events Subscription.

 type: object

 properties:

 afAppId:

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

 afRoutReq:

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

 aspId:

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

 bdtRefId:

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

 evSubsc:

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

 mcpttId:

 description: indication of MCPTT service request

 type: string

 mcVideoId:

 description: indication of modification of MCVideo service

 type: string

 medComponents:

 type: object

 additionalProperties:

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

 minProperties: 1

 mpsId:

 description: indication of MPS service request

 type: string

 mcsId:

 description: indication of MCS service request

 type: string

 preemptControlinfo:

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

 resPrio:

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

 servInfStatus:

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

 sipForkInd:

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

 sponId:

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

 sponStatus:

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

 EventsSubscReqData:

 description: Identifies the events the application subscribes to.

 type: object

 required:

 - events

 properties:

 events:

 type: array

 items:

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

 minItems: 1

 notifUri:

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

 qosMon:

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

 reqAni:

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

 usgThres:

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

 EventsSubscReqDataRm:

 description: this data type is defined in the same way as the EventsSubscReqData data type, but with the OpenAPI nullable property set to true.

 type: object

 required:

 - events

 properties:

 events:

 type: array

 items:

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

 notifUri:

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

 reqAni:

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

 usgThres:

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

 nullable: true

 MediaComponent:

 description: Identifies a media component.

 type: object

 required:

 - medCompN

 properties:

 afAppId:

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

 afRoutReq:

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

 qosReference:

 type: string

 altSerReqs:

 type: array

 items:

 type: string

 minItems: 1

 contVer:

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

 codecs:

 type: array

 items:

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

 minItems: 1

 maxItems: 2

 fStatus:

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

 marBwDl:

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

 marBwUl:

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

 maxPacketLossRateDl:

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

 maxPacketLossRateUl:

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

 maxSuppBwDl:

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

 maxSuppBwUl:

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

 medCompN:

 type: integer

 medSubComps:

 type: object

 additionalProperties:

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

 minProperties: 1

 medType:

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

 minDesBwDl:

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

 minDesBwUl:

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

 mirBwDl:

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

 mirBwUl:

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

 preemptCap:

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

 preemptVuln:

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

 prioSharingInd:

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

 resPrio:

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

 rrBw:

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

 rsBw:

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

 sharingKeyDl:

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

 sharingKeyUl:

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

 tsnQos:

 $ref: '#/components/schemas/TsnQosContainer

 tscaiInputDl:

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

 tscaiInputUl:

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

 MediaComponentRm:

 description: This data type is defined in the same way as the MediaComponent data type, but with the OpenAPI nullable property set to true

 type: object

 required:

 - medCompN

 properties:

 afAppId:

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

 afRoutReq:

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

 contVer:

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

 codecs:

 type: array

 items:

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

 minItems: 1

 maxItems: 2

 fStatus:

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

 marBwDl:

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

 marBwUl:

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

 maxPacketLossRateDl:

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

 maxPacketLossRateUl:

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

 maxSuppBwDl:

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

 maxSuppBwUl:

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

 medCompN:

 type: integer

 medSubComps:

 type: object

 additionalProperties:

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

 minProperties: 1

 medType:

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

 minDesBwDl:

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

 minDesBwUl:

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

 mirBwDl:

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

 mirBwUl:

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

 preemptCap:

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

 preemptVuln:

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

 prioSharingInd:

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

 resPrio:

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

 rrBw:

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

 rsBw:

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

 sharingKeyDl:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32Rm'

 sharingKeyUl:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32Rm'

 tsnQos:

 $ref: '#/components/schemas/TsnQosContainerRm

 tscaiInputDl:

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

 tscaiInputUl:

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

 nullable: true

 MediaSubComponent:

 description: Identifies a media subcomponent

 type: object

 required:

 - fNum

 properties:

 afSigProtocol:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/AfSigProtocol'

 ethfDescs:

 type: array

 items:

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

 minItems: 1

 maxItems: 2

 fNum:

 type: integer

 fDescs:

 type: array

 items:

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

 minItems: 1

 maxItems: 2

 fStatus:

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

 marBwDl:

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

 marBwUl:

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

 tosTrCl:

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

 flowUsage:

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

 tscaiInputDl:

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

 tscaiInputUl:

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

 MediaSubComponentRm:

 description: This data type is defined in the same way as the MediaSubComponent data type, but with the OpenAPI nullable property set to true. Removable attributes marBwDl and marBwUl are defined with the corresponding removable data type.

 type: object

 required:

 - fNum

 properties:

 afSigProtocol:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/AfSigProtocol'

 ethfDescs:

 type: array

 items:

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

 minItems: 1

 maxItems: 2

 nullable: true

 fNum:

 type: integer

 fDescs:

 type: array

 items:

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

 minItems: 1

 maxItems: 2

 nullable: true

 fStatus:

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

 marBwDl:

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

 marBwUl:

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

 tosTrCl:

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

 flowUsage:

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

 tscaiInputDl:

 $ref: '#/components/schemas/TscaiInputContainer

 tscaiInputUl:

 $ref: '#/components/schemas/TscaiInputContainer

 nullable: true

 EventsNotification:

 description: describes the notification of a matched event

 type: object

 required:

 - evSubsUri

 - evNotifs

 properties:

 accessType:

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

 anChargAddr:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/AccNetChargingAddress'

 anChargIds:

 type: array

 items:

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

 minItems: 1

 anGwAddr:

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

 evSubsUri:

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

 evNotifs:

 type: array

 items:

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

 minItems: 1

 failedResourcAllocReports:

 type: array

 items:

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

 minItems: 1

 noNetLocSupp:

 type: boolean

 outOfCredReports:

 type: array

 items:

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

 minItems: 1

 plmnId:

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

 qncReports:

 type: array

 items:

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

 minItems: 1

 ranNasRelCauses:

 type: array

 items:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/RanNasRelCause'

 minItems: 1

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

 ratType:

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

 ueLoc:

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

 ueTimeZone:

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

 usgRep:

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

 AfEventSubscription:

 description: describes the event information delivered in the subscription

 type: object

 required:

 - event

 properties:

 event:

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

 notifMethod:

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

 repPeriod:

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

 waitTime:

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

 pduSessRel:

 type: boolean

 notifCorreId:

 type: string

 AfEventNotification:

 description: describes the event information delivered in the notification

 type: object

 required:

 - event

 properties:

 event:

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

 flows:

 type: array

 items:

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

 minItems: 1

 TerminationInfo:

 description: indicates the cause for requesting the deletion of the Individual Application Session Context resource

 type: object

 required:

 - termCause

 - resUri

 properties:

 termCause:

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

 resUri:

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

 AfRoutingRequirement:

 description: describes the event information delivered in the subscription

 type: object

 properties:

 appReloc:

 type: boolean

 routeToLocs:

 type: array

 items:

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

 minItems: 1

 spVal:

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

 tempVals:

 type: array

 items:

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

 minItems: 1

 upPathChgSub:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/UpPathChgEvent'

 addrPreserInd:

 type: boolean

 SpatialValidity:

 description: describes explicitly the route to an Application location

 type: object

 required:

 - presenceInfoList

 properties:

 presenceInfoList:

 type: object

 additionalProperties:

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

 minProperties: 1

 SpatialValidityRm:

 description: this data type is defined in the same way as the SpatialValidity data type, but with the OpenAPI nullable property set to true

 type: object

 required:

 - presenceInfoList

 properties:

 presenceInfoList:

 type: object

 additionalProperties:

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

 minProperties: 1

 nullable: true

 AfRoutingRequirementRm:

 description: this data type is defined in the same way as the AfRoutingRequirement data type, but with the OpenAPI nullable property set to true and the spVal and tempVals attributes defined as removable.

 type: object

 properties:

 appReloc:

 type: boolean

 routeToLocs:

 type: array

 items:

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

 minItems: 1

 nullable: true

 spVal:

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

 tempVals:

 type: array

 items:

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

 minItems: 1

 nullable: true

 upPathChgSub:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/UpPathChgEvent'

 addrPreserInd:

 type: boolean

 nullable: true

 nullable: true

 AnGwAddress:

 description: describes the address of the access network gateway control node

 type: object

 anyOf:

 - required: [anGwIpv4Addr]

 - required: [anGwIpv6Addr]

 properties:

 anGwIpv4Addr:

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

 anGwIpv6Addr:

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

 Flows:

 description: Identifies the flows

 type: object

 required:

 - medCompN

 properties:

 contVers:

 type: array

 items:

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

 minItems: 1

 fNums:

 type: array

 items:

 type: integer

 minItems: 1

 medCompN:

 type: integer

 EthFlowDescription:

 description: Identifies an Ethernet flow

 type: object

 required:

 - ethType

 properties:

 destMacAddr:

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

 ethType:

 type: string

 fDesc:

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

 fDir:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/FlowDirection'

 sourceMacAddr:

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

 vlanTags:

 type: array

 items:

 type: string

 minItems: 1

 maxItems: 2

 srcMacAddrEnd:

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

 destMacAddrEnd:

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

 ResourcesAllocationInfo:

 description: describes the status of the PCC rule(s) related to certain media components.

 type: object

 required:

 - mcResourcStatus

 properties:

 mcResourcStatus:

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

 flows:

 type: array

 items:

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

 minItems: 1

 TemporalValidity:

 description: Indicates the time interval(s) during which the AF request is to be applied

 type: object

 properties:

 startTime:

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

 stopTime:

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

#

 QosNotificationControlInfo:

 description: Indicates whether the QoS targets for a GRB flow are not guaranteed or guaranteed again

 type: object

 required:

 - notifType

 properties:

 notifType:

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

 flows:

 type: array

 items:

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

 minItems: 1

 gfbrUl:

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

 gfbrDl:

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

 altSerReq:

 type: string

#

 AcceptableServiceInfo:

 description: Indicates the maximum bandwidth that shall be authorized by the PCF.

 type: object

 properties:

 accBwMedComps:

 type: object

 additionalProperties:

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

 marBwUl:

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

 marBwDl:

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

 UeIdentityInfo:

 description: Represents 5GS-Level UE identities.

 type: object

 anyOf:

 - required: [gpsi]

 - required: [pei]

 - required: [supi]

 properties:

 gpsi:

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

 pei:

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

 supi:

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

#

 AccessNetChargingIdentifier:

 description: Describes the access network charging identifier.

 type: object

 required:

 - accNetChaIdValue

 properties:

 accNetChaIdValue:

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

 flows:

 type: array

 items:

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

 minItems: 1

#

 OutOfCreditInformation:

 description: Indicates the SDFs without available credit and the corresponding termination action.

 type: object

 required:

 - finUnitAct

 properties:

 finUnitAct:

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

 flows:

 type: array

 items:

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

 minItems: 1

#

 QosMonitoringInformation:

 description: Indicates the QoS Monitoring information to report, i.e. UL and/or DL and or round trip delay.

 type: object

 properties:

 repThreshDl:

 type: integer

 repThreshUl:

 type: integer

 repThreshRp:

 type: integer

#

#

 PcscfRestorationRequestData:

 description: Indicates P-CSCF restoration.

 type: object

 oneOf:

 - required: [ueIpv4]

 - required: [ueIpv6]

 properties:

 dnn:

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

 ipDomain:

 type: string

 sliceInfo:

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

 supi:

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

 ueIpv4:

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

 ueIpv6:

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

#

 TsnQosContainer:

 description: Indicates TSC Traffic QoS.

 type: object

 properties:

 maxTscBurstSize:

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

 tscPackDelay:

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

 tscPrioLevel:

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

#

#

 TsnQosContainerRm:

 description: Indicates removable TSC Traffic QoS.

 type: object

 properties:

 maxTscBurstSize:

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

 tscPackDelay:

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

 tscPrioLevel:

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

 nullable: true

#

 TscaiInputContainer:

 description: Indicates TSC Traffic pattern.

 type: object

 properties:

 periodicity:

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

 burstArrivalTime:

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

 nullable: true

#

# EXTENDED PROBLEMDETAILS

#

 ExtendedProblemDetails:

 description: Extends ProblemDetails to also include the acceptable service info.

 allOf:

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

 - type: object

 properties:

 acceptableServInfo:

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

#

# SIMPLE DATA TYPES

#

 AfAppId:

 description: Contains an AF application identifier.

 type: string

 AspId:

 description: Contains an identity of an application service provider.

 type: string

 CodecData:

 description: Contains codec related information.

 type: string

 ContentVersion:

 description: Represents the content version of some content.

 type: integer

 FlowDescription:

 description: Defines a packet filter of an IP flow.

 type: string

 SponId:

 description: Contains an identity of a sponsor.

 type: string

 ServiceUrn:

 description: Contains values of the service URN and may include subservices.

 type: string

 TosTrafficClass:

 description: 2-octet string, where each octet is encoded in hexadecimal representation. The first octet contains the IPv4 Type-of-Service or the IPv6 Traffic-Class field and the second octet contains the ToS/Traffic Class mask field.

 type: string

 TosTrafficClassRm:

 description: this data type is defined in the same way as the TosTrafficClass data type, but with the OpenAPI nullable property set to true

 type: string

 nullable: true

 TscPriorityLevel:

 type: integer

 minimum: 1

 maximum: 8

 TscPriorityLevelRm:

 type: integer

 minimum: 1

 maximum: 8

 nullable: true

#

# ENUMERATIONS DATA TYPES

#

 MediaType:

 anyOf:

 - type: string

 enum:

 - AUDIO

 - VIDEO

 - DATA

 - APPLICATION

 - CONTROL

 - TEXT

 - MESSAGE

 - OTHER

 - type: string

#

 ReservPriority:

 anyOf:

 - type: string

 enum:

 - PRIO\_1

 - PRIO\_2

 - PRIO\_3

 - PRIO\_4

 - PRIO\_5

 - PRIO\_6

 - PRIO\_7

 - PRIO\_8

 - PRIO\_9

 - PRIO\_10

 - PRIO\_11

 - PRIO\_12

 - PRIO\_13

 - PRIO\_14

 - PRIO\_15

 - PRIO\_16

 - type: string

#

 ServAuthInfo:

 anyOf:

 - type: string

 enum:

 - TP\_NOT\_KNOWN

 - TP\_EXPIRED

 - TP\_NOT\_YET\_OCURRED

 - type: string

#

 SponsoringStatus:

 anyOf:

 - type: string

 enum:

 - SPONSOR\_DISABLED

 - SPONSOR\_ENABLED

 - type: string

#

 AfEvent:

 anyOf:

 - type: string

 enum:

 - ACCESS\_TYPE\_CHANGE

 - ANI\_REPORT

 - CHARGING\_CORRELATION

 - FAILED\_RESOURCES\_ALLOCATION

 - OUT\_OF\_CREDIT

 - PLMN\_CHG

 - QOS\_MONITORING

 - QOS\_NOTIF

 - RAN\_NAS\_CAUSE

 - SUCCESSFUL\_RESOURCES\_ALLOCATION

 - USAGE\_REPORT

 - type: string

#

 AfNotifMethod:

 anyOf:

 - type: string

 enum:

 - EVENT\_DETECTION

 - ONE\_TIME

 - PERIODIC

 - type: string

#

 QosNotifType:

 anyOf:

 - type: string

 enum:

 - GUARANTEED

 - NOT\_GUARANTEED

 - type: string

#

 TerminationCause:

 anyOf:

 - type: string

 enum:

 - ALL\_SDF\_DEACTIVATION

 - PDU\_SESSION\_TERMINATION

 - PS\_TO\_CS\_HO

 - type: string

#

 MediaComponentResourcesStatus:

 anyOf:

 - type: string

 enum:

 - ACTIVE

 - INACTIVE

 - type: string

#

#

 FlowUsage:

 anyOf:

 - type: string

 enum:

 - NO\_INFO

 - RTCP

 - AF\_SIGNALLING

 - type: string

 FlowStatus:

 anyOf:

 - type: string

 enum:

 - ENABLED-UPLINK

 - ENABLED-DOWNLINK

 - ENABLED

 - DISABLED

 - REMOVED

 - type: string

#

 RequiredAccessInfo:

 anyOf:

 - type: string

 enum:

 - USER\_LOCATION

 - UE\_TIME\_ZONE

 - type: string

#

 SipForkingIndication:

 anyOf:

 - type: string

 enum:

 - SINGLE\_DIALOGUE

 - SEVERAL\_DIALOGUES

 - type: string

#

 AfRequestedData:

 anyOf:

 - type: string

 enum:

 - UE\_IDENTITY

 - type: string

#

 ServiceInfoStatus:

 anyOf:

 - type: string

 enum:

 - FINAL

 - PRELIMINARY

 - type: string

#

 PreemptionControlInformation:

 anyOf:

 - type: string

 enum:

 - MOST\_RECENT

 - LEAST\_RECENT

 - HIGHEST\_BW

 - type: string

#

 PrioritySharingIndicator:

 anyOf:

 - type: string

 enum:

 - ENABLED

 - DISABLED

 - type: string

#

 PreemptionControlInformationRm:

 anyOf:

 - type: string

 enum:

 - MOST\_RECENT

 - LEAST\_RECENT

 - HIGHEST\_BW

 - type: string

 nullable: true

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