**3GPP TSG CT WG3 Meeting #142 C3-253439**

**Goteborg, Sweden, 25 – 29 August, 2025 (Revision of C3-253xxx)**

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| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.122** | **CR** | **0969** | **rev** | **-** | **Current version:** | **19.3.0** |  |
|  |
| *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:***  | Support of reporting the QoS notification event with direction information |
|  |  |
| ***Source to WG:*** | Huawei, Nokia |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | XRM\_Ph2 |  | ***Date:*** | 2025-08-08 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *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:*** | As defined in clause 6.1.3.18 TS 23.503, if the PCF receives a direction information together with the notification from the SMF, the PCF shall also forward the direction information to the AF. This CR proposes to support the reporting of direction information together with the QoS notification control. |
|  |  |
| ***Summary of change:*** | * Define QoSNotification and Direction data types and update UserPlaneEventReport data type to support the reporting of direction information together with the QoS notification control.
* Updaet the ExtQoS\_v2 feature and update the OpenAPI file accordingly.
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| ***Consequences if not approved:*** | The stage 2 requirement is not supported in stage 3. |
|  |  |
| ***Clauses affected:*** | 5.14.2.1.1, 5.14.2.1.2, 5.14.2.1.3, 5.14.2.1.5, 5.14.2.2.3, 5.14.4, A.14 |
|  |  |
|  | **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 compatible feature to the following API:- TS29122\_AsSessionWithQoS.yaml  |
|  |  |
| ***This CR's revision history:*** |  |

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

##### 5.14.2.1.1 Introduction

This clause defines data structures to be used in resource representations, including subscription resources.

Table 5.14.2.1.1-1 specifies data types re-used by the AsSessionWithQoS API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the AsSessionWithQoS API.

Table 5.14.2.1.1-1: AsSessionWithQoS API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| AcceptableServiceInfo | 3GPP TS 29.514 [52] | Acceptable service information. |  |
| AlternativeServiceRequirementsData | 3GPP TS 29.514 [52] | Contains alternative QoS related parameters and a reference to them. | AltQosWithIndParams\_5G, MultiMedia |
| AverWindow | 3GPP TS 29.571 [45] | Averaging Window. | EnQoSMon, GMEC |
| AverWindowRm | 3GPP TS 29.571 [45] | This data type is defined in the same way as the "AverWindow" data type, but with the OpenAPI "nullable: true" property. | EnQoSMon, GMEC |
| BatOffsetInfo | 3GPP TS 29.514 [52] | Contains the offset of the BAT and the optionally adjusted periodicity. | EnTSCAC |
| BitRate | 3GPP TS 29.571 [45] | 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" | EnQoSMon, ListUE\_5G, MultiMedia |
| BitRateRm | 3GPP TS 29.571 [45] | This data type is defined in the same way as the "BitRate" data type, but with the OpenAPI "nullable: true" property. | EnQoSMon, ListUE\_5G, MultiMedia |
| CapabilityReport | 3GPP TS 29.514 [52] | Indicates the capability is supported or not for the corresponding capability type. | QoSMonCapRepo |
| Dnn | 3GPP TS 29.571 [45] | Identifies a DNN. |  |
| DurationMilliSec | 3GPP TS 29.514 [52] | Indicates the time interval in units of milliseconds. | PowerSaving |
| DurationMilliSecRm | 3GPP TS 29.514 [52] | This data type is defined in the same way as the "DurationMilliSec" data type, but with the OpenAPI "nullable: true" property. | PowerSaving |
| EthFlowDescription | 3GPP TS 29.514 [52] | Defines a packet filter for an Ethernet flow.(NOTE 1) | EthAsSessionQoS\_5G, GMEC |
| EventsSubscReqData | 3GPP TS 29.514 [52] | Identifies the events the application subscribes to. | EnQoSMon |
| EventsSubscReqDataRm | 3GPP TS 29.514 [52] | This data type is defined in the same way as the "EventsSubscReqData" data type, but with the OpenAPI "nullable: true" property | EnQoSMon |
| ExtMaxDataBurstVol | 3GPP TS 29.571 [45] | Unsigned integer indicating Maximum Data Burst Volume (see clauses 5.7.3.7 and 5.7.4 of 3GPP TS 23.501 [8]), expressed in Bytes.Minimum = 4096. Maximum = 2000000. |  |
| ExtMaxDataBurstVolRm | 3GPP TS 29.571 [45] | This data type is defined in the same way as the "ExtMaxDataBurstVol" data type, but with the OpenAPI "nullable: true" property. |  |
| Gpsi | 3GPP TS 29.571 [45] | Represents a GPSI. | GMEC |
| IpAddr | 3GPP TS 29.571 [45] | UE IP Address. | ListUE\_5G |
| MacAddr48 | 3GPP TS 29.571 [45] | MAC Address. | EthAsSessionQoS\_5G, enNB |
| MediaType | 3GPP TS 29.514 [52] | Indicates the media type of a single-modal data flow of a multi-modal service. | MultiMedia |
| MultiModalId | 3GPP TS 29.514 [52] | Represents multi-modal service identifier.  | MultiMedia |
| MpxMediaInfo | 3GPP TS 29.514 [52] | Provides Multiplexed Media Information. | MpxMedia |
| NotifCapType | 3GPP TS 29.514 [52] | Indicates which QoS Monitoring capability report is applied. | QoSMonCapRepo |
| OnPathN6SigInfo | 3GPP TS 29.514 [52] | Represents the on-path N6 signaling information, with the OpenAPI "nullable: true" property. | OnPathN6MediaInfo |
| PacketDelBudget | 3GPP TS 29.571 [45] | Unsigned integer indicating Packet Delay Budget (see clauses 5.7.3.4 and 5.7.4 of 3GPP TS 23.501 [8])), expressed in milliseconds.Minimum = 1. | TSC\_5G, RTLatency |
| PacketDelBudgetRm | 3GPP TS 29.571 [45] | This data type is defined in the same way as the "PacketDelBudget" data type, but with the OpenAPI "nullable: true" property. | TSC\_5G, RTLatency |
| PacketErrRate | 3GPP TS 29.571 [45] | String representing Packet Error Rate (see clauses 5.7.3.5 and 5.7.4 of 3GPP TS 23.501 [8]), expressed as a "*scalar* x 10-k" where the scalar and the *exponent k are each encoded as one decimal digit*.Pattern: '^([0-9]E-[0-9])$'Examples:Packer Error Rate 4x10-6 shall be encoded as "4E-6".Packer Error Rate 10-2 shall be encoded as "1E-2". | ExtQoS\_5G |
| PacketErrRateRm | 3GPP TS 29.571 [45] | This data type is defined in the same way as the "PacketErrRate" data type, but with the OpenAPI "nullable: true" property. | ExtQoS\_5G |
| PdvMonitoringReport | 3GPP TS 29.514 [52] | Represents a PDV monitoring report. | EnQoSMon |
| PeriodicityInfo | 3GPP TS 29.514 [52] | Indicates the time period between the start of the two data bursts in Uplink and/or Downlink direction. | PowerSaving |
| PduSetQosPara | 3GPP TS 29.571 [45] | Represents the PDU Set level QoS parameters. | PDUSetHandling |
| PduSetQosParaRm | 3GPP TS 29.571 [45] | Represents the PDU Set level QoS parameters to be modified. | PDUSetHandling |
| PlmnIdNid | 3GPP TS 29.571 [45] | Identifies the network: the PLMN Identifier (the mobile country code and the mobile network code) or the SNPN Identifier (the PLMN Identifier and the NID). | enNB\_5G |
| ProtocolDescription | 3GPP TS 29.571 [45] | Represents Protocol description of the media flow | PDUSetHandling, PowerSavingTrafficCharChange |
| ProtocolDescriptionRm | 3GPP TS 29.571 [45] | Represents the same as the "ProtocolDescription" data type, but with the OpenAPI "nullable: true" property. | PDUSetHandling, PowerSavingTrafficCharChange |
| RateLimitRepo | 3GPP TS 29.514 [52] | Indicates the uplink/downlink data rate limitation information for the Non-GBR data flows. | RateLimitReport |
| RatType | 3GPP TS 29.571 [45] | Identifies the RAT Type. | enNB\_5G |
| ReportingFrequency | 3GPP TS 29.512 [8] | Indicates the frequency for the reporting, such as event triggered and/or periodic. (NOTE 2) |  |
| RequestedQosMonitoringParameter | 3GPP TS 29.512 [8] | Indicates the QoS information to be measured, e.g.UL packet delay, DL packet delay or round trip packet delay between the UE and the UPF is to be monitored when the QoS Monitoring for packet delay is enabled for the service data flow. (NOTE 2) |  |
| RttFlowReference | 3GPP TS 29.514 [52] | Identifies which Application Session Media Components contribute to the RT Latency requirement for two service data flows. | RTLatency |
| RttFlowReferenceRm | 3GPP TS 29.514 [52] | This data type is defined in the same way as the "RttFlowReference" data type, but with the OpenAPI "nullable: true" property. | RTLatency |
| ServAuthInfo | 3GPP TS 29.514 [52] | The authorization result of a request for QoS / QoS monitoring. | EnQoSMon |
| Snssai | 3GPP TS 29.571 [45] | Identifies the S-NSSAI. |  |
| SupportedFeatures | 3GPP TS 29.571 [45] | Used to negotiate the applicability of the optional features defined in table 5.14.4-1. |  |
| TemporalInValidity | 3GPP TS 29.565 [72] | Represents the temporal invalidity related information. | GMEC |
| TscaiInputContainer | 3GPP TS 29.514 [52] | TSCAI Input information container. | TSC\_5G, MultiMedia, GMEC |
| TscPriorityLevel | 3GPP TS 29.514 [52] | Represents priority of TSC Flows. | TSC\_5G |
| TscPriorityLevelRm | 3GPP TS 29.514 [52] | Represents the same as the TscPriorityLevel data type, but with the OpenAPI "nullable: true" property. | TSC\_5G |
| Uinteger | 3GPP TS 29.571 [45] | Unsigned Integer, i.e. only value 0 and integers above 0 are permissible.Minimum = 0. |  |
| UintegerRm | 3GPP TS 29.571 [45] | This data type is defined in the same way as the "Uinteger" data type, but with the OpenAPI "nullable: true" property. |  |
| UplinkDownlinkSupport | 3GPP TS 29.514 [52] | Provides L4S support information. | L4S, GMEC |
| NOTE 1: In order to support a set of MAC addresses with a specific range in the traffic filter, feature MacAddressRange\_5G as specified in clause 5.14.4 shall be supported.NOTE 2: In order to support QoS Monitoring, feature QoSMonitoring\_5G as specified in clause 5.14.4 shall be supported. |  |

Table 5.14.2.1.1-2 specifies the data types defined for the AsSessionWithQoS API.

Table 5.14.2.1.1-2: AsSessionWithQoS API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| AdditionInfoAsSessionWithQos | 5.14.2.1.11 | Describes additional error information specific for this API. |  |
| AsSessionWithQoSSubscription | 5.14.2.1.2 | Represents an individual AS session with required QoS subscription resource. |  |
| AsSessionWithQoSSubscriptionPatch | 5.14.2.1.3 | Represents parameters to modify an AS session with specific QoS subscription. |  |
| AsSessionMediaComponent | 5.14.2.1.13 | Represents media component data for a multi-modal service. It contains service data flow information for a single modal data flow of a multi-modal service. | MultiMedia |
| AsSessionMediaComponentRm | 5.14.2.1.14 | Represents the same as the AsSessionMediaComponent data type but with the "nullable: true" property. | MultiMedia |
| MultiModalFlows | 5.14.2.1.15 | Represents flow information within a single-modal data flow for a multi-modal service. | MultiMedia |
| ProblemDetailsAsSessionWithQos | 5.14.2.1.12 | ProblemDetails as defined in clause 5.2.12.12 extended with specific error information for this API, as described in AdditionInfoAsSessionWithQos. |  |
| QosMonitoringInformation | 5.14.2.1.6 | Represents QoS monitoring information. | QoSMonitoring\_5G, ListUE\_5G |
| QosMonitoringInformationRm | 5.14.2.1.7 | Represents the same as the QosMonitoringInformation data type but with the "nullable: true" property.The "nullable: true" property is applicable only if the "EnQoSMon" feature is supported. | QoSMonitoring\_5G, ListUE\_5G |
| QosMonitoringReport | 5.14.2.1.8 | Represents a QoS monitoring report. | QoSMonitoring\_5G, ListUE\_5G |
| TscQosRequirement | 5.14.2.1.9 | Represents QoS requirements for time sensitive communication. | TSC\_5G, GMEC |
| TscQosRequirementRm | 5.14.2.1.10 | Represents the same as the TscQosRequirement data type but with the "nullable: true" property. | TSC\_5G, GMEC |
| UserPlaneEvent | 5.14.2.2.3 | Represents the user plane event. | enNB, GMEC |
| UserPlaneEventReport | 5.14.2.1.5 | Represents an event report for user plane. | enNB, GMEC |
| UserPlaneNotificationData | 5.14.2.1.4 | Represents the parameters to be conveyed in a user plane event(s) notification. | enNB, GMEC |
| UeAddInfo | 5.14.2.1.16 | Represents the UE address information. | ListUE\_5G |

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

##### 5.14.2.1.2 Type: AsSessionWithQoSSubscription

This type represents an AS session request with specific QoS for the service provided by the SCS/AS to the SCEF via T8 interface. The structure is used for subscription request and response.

Table 5.14.2.1.2-1: Definition of type AsSessionWithQoSSubscription

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability (NOTE 1) |
| self | Link | 0..1 | Link to the resource "Individual AS Session with Required QoS Subscription".This parameter shall be supplied by the SCEF in HTTP responses. |  |
| dnn | Dnn | 0..1 | Identifies a DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. (NOTE 3) |  |
| snssai | Snssai | 0..1 | Identifies an S-NSSAI. (NOTE 3)  |  |
| supportedFeatures | SupportedFeatures | 0..1 | Used to negotiate the supported optional features of the API as described in clause 5.2.7.This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| notificationDestination | Link | 1 | Contains the URL to receive the notification bearer level event(s) from the SCEF. |  |
| exterAppId | string | 0..1 | Identifies the external Application Identifier. (NOTE 2) (NOTE 8) (NOTE 9) (NOTE 11) | AppIdListUE\_5GGMEC |
| extGroupId | ExternalGroupId | 0..1 | Identifies a group of UE(s).(NOTE 10) | GMEC |
| gpsi | Gpsi | 0..1 | Identifies a UE using its GPSI.(NOTE 10) | GMEC |
| flowInfo | array(FlowInfo) | 0..N | Describe the IP data flow which requires QoS. (NOTE 2) (NOTE 7) (NOTE 8) (NOTE 9) (NOTE 10) (NOTE 11) (NOTE 17) |  |
| ethFlowInfo | array(EthFlowDescription) | 0..N | Identifies Ethernet packet flows.(NOTE 2) (NOTE 6) (NOTE 8) (NOTE 10) (NOTE 11) | EthAsSessionQoS\_5GGMEC |
| enEthFlowInfo | array(EthFlowInfo) | 0..N | Identifies the Ethernet flows which require QoS. Each Ethernet flow consists of a flow identifier and the corresponding UL and/or DL flows.(NOTE 2) (NOTE 6) (NOTE 8) (NOTE 10) (NOTE 11) | EnEthAsSessionQoS\_5GGMEC |
| qosReference | string | 0..1 | Identifies a pre-defined QoS information. (NOTE 4) (NOTE 5) |  |
| altQoSReferences | array(string) | 0..N | Identifies an ordered list of pre-defined QoS information. The lower the index of the array for a given entry, the higher the priority.(NOTE 4) | AlternativeQoS\_5GGMEC |
| altQosReqs | array(AlternativeServiceRequirementsData) | 0..N | Identifies an ordered list of alternative service requirements that include individual QoS parameter sets. The lower the index of the array for a given entry, the higher the priority.(NOTE 4) (NOTE 18) | AltQosWithIndParams\_5G |
| disUeNotif | boolean | 0..1 | Indicates whether to disable QoS flow parameters signalling to the UE when the SMF is notified by the NG-RAN of changes in the fulfilled QoS situation. The fulfilled situation is either the QoS profile or an Alternative QoS Profile.- true: the QoS flow parameters signalling to the UE is disabled;- false (default): the QoS flow parameters signalling to the UE is not disabled. | DisableUENotification\_5GGMEC |
| ueIpv4Addr | Ipv4Addr | 0..1 | The Ipv4 address of the UE.(NOTE 2) |  |
| ipDomain | string | 0..1 | The IPv4 address domain identifier.The attribute may only be provided if the ueIpv4Addr attribute is present. |  |
| ueIpv6Addr | Ipv6Addr | 0..1 | The Ipv6 address of the UE. (NOTE 2) |  |
| macAddr | MacAddr48 | 0..1 | Identifies the MAC address.(NOTE 2) | EthAsSessionQoS\_5G |
| listUeAddrs | array(UeAddInfo) | 0..N | Identifies the list of UE address(es).(NOTE 9) (NOTE 12) | ListUE\_5G |
| usageThreshold | UsageThreshold | 0..1 | Time period and/or traffic volume in which the QoS is to be applied. |  |
| sponsorInfo | SponsorInformation | 0..1 | Indicates a sponsor information |  |
| qosMonInfo | QosMonitoringInformation | 0..1 | Qos Monitoring information for packet delay measurements. It shall be present when the event "QOS\_MONITORING" is subscribed and packet delay measurements are required.Threshold information may be present only within the "repThreshUl", "repThreshDl" and/or "repThreshRp" attributes of the "QosMonitoringInformation" data type.(NOTE 13) | QoSMonitoring\_5G |
| directNotifInd | boolean | 0..1 | Indicates whether the direct event notification is requested.- true: the direct event notification is requested;- false (default): the direct event notification is not requested.(NOTE 13, NOTE 14) | ExposureToEASGMEC |
| tscQosReq | TscQosRequirement | 0..1 | Contains the QoS requirements for time sensitive communication (supported by time sensitive communication QoS flows as specified in clause 5.27.3 of 3GPP TS 23.501 [8]).(NOTE 5) | TSC\_5GGMEC |
| tempInValidity | TemporalInValidity | 0..1 | Indicates the time interval during which the AF request is not to be applied. | GMEC |
| requestTestNotification | boolean | 0..1 | Set to true by the SCS/AS to request the SCEF to send a test notification as defined in clause 5.2.5.3. Set to false or omitted otherwise. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol as defined in clause 5.2.5.4. | Notification\_websocket |
| events | array(UserPlaneEvent) | 0..N | Corresponds to the list of user plane event(s) to which the SCS/AS requests to subscribe. | enNBGMEC |
| multiModalId | MultiModalId | 0..1 | Multi-modal Service Identifier, as defined in 3GPP TS 29.514 [52]. | MultiMedia |
| multiModDatFlows | map(AsSessionMediaComponent) | 0..N | Each element of the map represents Media Component data for a single-modal data flow(s) of a multi-modal service. The key of the map is the attribute "medCompN". (NOTE 8) (NOTE 13) | MultiMedia |
| l4sInd | UplinkDownlinkSupport | 0..1 | Provides L4S support information.(NOTE 16) | L4SGMEC |
| pduSetQosDl | PduSetQosPara | 0..1 | Contains the PDU Set QoS Parameter(s) which are used to support PDU Set based QoS handling in the downlink direction. | PDUSetHandling |
| pduSetQosUl | PduSetQosPara | 0..1 | Contains the PDU Set QoS Parameter(s) which are used to support PDU Set based QoS handling in the uplink direction. | PDUSetHandling |
| rTLatencyInd | boolean | 0..1 | Indicates the service data flow needs to meet the Round-Trip (RT) latency requirement of the service, when it is included and set to "true". The default value is "false" if omitted. | RTLatencyGMEC |
| pdb | PacketDelBudget | 0..1 | Indicates an upper bound for the time that a packet may be delayed between the UE and the PSA UPF.This attribute applies also to an AF request QoS for a UE or group of UE(s) not identified by the UE address(es) defined in clause 4.4.9.3 of 3GPP TS 29.522 [62]. | RTLatencyGMEC |
| protoDescDl | ProtocolDescription | 0..1 | Downlink Protocol description for PDU Set identification, the detection of end of Data burst indication, the detection of the Data Burst size marking indication, TTNB indication, and/or indication of whether MoQ or UDP-option is used to carry media related information. | PDUSetHandlingPowerSavingTrafficCharChangeOnPathN6MediaInfo |
| protoDescUl | ProtocolDescription | 0..1 | Uplink Protocol description for PDU Set identification in UE. | PDUSetHandling |
| periodUl | DurationMilliSec | 0..1 | Indicates the time period between the start of the two data bursts in units of milliseconds in Uplink direction. | PowerSaving |
| periodDl | DurationMilliSec | 0..1 | Indicates the time period between the start of the two data bursts in units of milliseconds in Downlink direction. | PowerSaving |
| pdvMon | QosMonitoringInformation | 0..1 | Contains the Packet Delay Variation information for the subscribed report. It shall be present when the event "PACK\_DELAY\_VAR" is subscribed.Threshold information may be present only within the "repThreshUl", "repThreshDl" and/or "repThreshRp" attributes of the "QosMonitoringInformation" data type.(NOTE 13) | EnQoSMonGMEC |
| qosDuration | DurationSec | 0..1 | Contains the QoS duration to transfer data traffic transmission (e.g., AI/ML transmission). The minimum value of the QoS duration shall be 60 sec. | QoSTiming\_5G |
| qosInactInt | DurationSec | 0..1 | Contains the QoS inactivity interval for the given data traffic transmission (e.g., AI/ML transmission). The minimum value of the QoS inactivity interval shall be 60 sec.  | QoSTiming\_5G |
| qosMonDatRate | QosMonitoringInformation | 0..1 | Contains the data rate measurements information for the subscribed report. It shall be present when the event "QOS\_MONITORING" is subscribed and data rate measurements are required.Threshold information may be present only within the "repThreshDatRateUl" and/or "repThreshDatRateDl" attributes of the "QosMonitoringInformation" data type.(NOTE 12) (NOTE 13) | EnQoSMonListUE\_5GGMEC |
| avlBitRateMon | QosMonitoringInformation | 0..1 | Contains the requirements of the available bitrate information monitoring and reporting. It may be present when the event "QOS\_MONITORING" is subscribed.(NOTE 13) (NOTE 15) | EnQoSMon\_v2 |
| avrgWndw | AverWindow | 0..1 | Averaging window for the calculation of the data rate for the service data flow. It may be present when the "qosMonDatRate" attribute is present.(NOTE 13) | EnQoSMonGMEC |
| servAuthInfo | ServAuthInfo | 0..1 | Indicates the authorization result for the QoS monitoring request.Supplied by the NEF. | EnQoSMonGMEC |
| qosMonCapRepoTypes | array(NotifCapType) | 0..N | Contains the requested type(s) of QoS Monitoring capability report.This attribute shall be present if the event "QOS\_MON\_CAP\_REPO" is subscribed. | QoSMonCapRepo |
| qosMonConReq | QosMonitoringInformation | 0..1 | Contains the requirements of the congestion information (ECN marking percentage) monitoring and reporting. It shall be present when the event "QOS\_MONITORING" is subscribed and congestion information measurements are required.(NOTE 13) (NOTE 15) (NOTE 16)Threshold information may be present only within the "conThreshUl" and/or "conThreshDl" attributes of the "QosMonitoringInformation" data type. | EnQoSMonGMEC |
| listUeConsDtRt | array(IpAddr) | 0..N | Identifies the list of UE addresses subject for Consolidated Data Rate monitoring.(NOTE 12) | ListUE\_5G |
| datBurstSizeInd | boolean | 0..1 | Indicates the Data Burst Size marking for the DL service data flow is supported, when it is included and set to "true". The default value is "false" if omitted. | TrafficCharChange |
| timetoNextBurstInd | boolean | 0..1 | Indicates the Time to Next Burst for the DL service data flow is supported, when it is included and set to "true". The default value is "false" if omitted. | TrafficCharChange |
| onPathN6SigInfo | OnPathN6SigInfo | 0..1 | Contains the on-path N6 signaling information, when it is present, it indicates supporting of setting up On-path N6 connection to deliver media related information. | OnPathN6MediaInfo |
| expTranInd | boolean | 0..1 | Expedited Transfer Indication for the downlink traffic to enable expedited data transfer with reflective QoS for the Non-GBR service data flow. - "true": the expedited data transfer of larger payload for XR application is enabled for the flow.- "false": the expedited data transfer of larger payload for XR application is not enabled for the flow.The default value is "false" if omitted. | TrafficCharChange |
| NOTE 1: Properties marked with a feature as defined in clause 5.14.4 are applicable as described in clause 5.2.7. If no features are indicated, the related property applies for all the features.NOTE 2: When the "GMEC" feature is not supported, one of "ueIpv4Addr", "ueIpv6Addr" or "macAddr" or "listUeAddrs" shall be included. If ipv4 or ipv6 address is provided, IP flow information shall be provided. If MAC address is provided and the AppId feature is not supported, Ethernet flow information (either "ethFlowInfo", or if the feature EnEthAsSessionQoS\_5G is supported, "enEthFlowInfo") shall be provided. If the AppId feature is supported, one of IP flow information, Ethernet flow information (if EthAsSessionQoS\_5G and/or EnEthAsSessionQoS\_5G is supported) or External Application Identifier shall be provided.NOTE 3: The property is only applicable for the NEF.NOTE 4: The attributes "altQoSReferences" and "altQosReqs" are mutually exclusive. The attributes "qosReference" and "altQosReqs" are also mutually exclusive.NOTE 5: The attributes "reqGbrDl", "reqGbrUl", "reqMbrDl", "reqMbrUl", "maxTscBurstSize", "req5Gsdelay", "reqPer" (if the ExtQoS\_5G and/or "GMEC" feature(s) is/are supported), and "priority" within the "tscQosReq" attribute may be provided only if the "qosReference" attribute is not provided.NOTE 6: When the Ethernet flow information is provided and, the EthAsSessionQoS\_5G and EnEthAsSessionQoS\_5G features are supported, either the "ethFlowInfo" or the "enEthFlowInfo" shall be provided, but not both simultenously.NOTE 7: The "tosTC" attribute of the "flowInfo" attribute may only be present if the "ToSTC\_5G" feature is supported.NOTE 8: The attributes "exterAppId", "flowInfo", "ethFlowInfo", "enEthFlowInfo", "qosReference", "altQoSReferences", "altQosReqs", "tscQosReq", "qosMonInfo" may be provided only if the "multiModDatFlows" attribute is not provided.NOTE 9: When the "ListUE\_5G" feature is supported, the "listUeAddrs" attribute shall be provided, and either "exterAppId" attribute or "flowInfo" attribute shall be provided.NOTE 10: When the "GMEC" feature is supported and the target UE(s) are not identified by UE address(es) (i.e., the "ueIpv4Addr", "ueIpv6Addr", "macAddr" or "listUeAddrs" attribute is not applicable to identify the UE(s)), the "extGroupId" attribute and the "gpsi" attributes are mutually exclusive And either one of them shall be provided. If either the "gpsi" attribute or the "extGroupId" attribute are present, then neither the "ueIpv4Addr" attribute, the "ueIpv6Addr" attribute, the "macAddr" attribute nor the "listUeAddrs" attribute shall be included.NOTE 11: When the "GMEC" feature is supported, either the "exterAppId" attribute, "flowInfo" attribute or Ethernet flow information (either within the "ethFlowInfo" attribute or the "enEthFlowInfo" attribute) shall be provided.NOTE 12: When the "ListUE\_5G" feature is supported and the "qosMonDatRate" attribute is provided, the "qosMonDatRate" attribute indicates the cosolidated data rate for the list of UEs, the "consDataRateThrDl" and "consDataRateThrUl" attributes contained in "qosMonDatRate" attribute indicate the upper bound of the aggregated DL/UL data rate and by default, are applicable to the list of UEs specified by the "listUeAddrs" attribute. If the "listUeConsDtRt" attribute is also provided, then it has to be the subset of "listUeAddrs" attribute.NOTE 13: When the "MultiMedia" feature is supported, the "qosMonInfo", "directNotifInd", "pdvMon", "qosMonDatRate", "avrgWndw", "qosMonConReq" and "avlBitRateMon" attributes may be present only when the "multiModDatFlows" attribute is not present.NOTE 14: When the "ExposureToEAS" feature is supported, the "directNotifInd" attribute indicates whether direct event notification is requested for the packet delay measurements provided in the "qosMonInfo" attribute. When the "EnQoSMon" feature is supported, the "directNotifInd" attribute indicates whether direct event notification is requested for the QoS measurement(s) provided in the "qosMonInfo", "qosMonDatRate" and/or "qosMonConReq" attribute(s).NOTE 15: Only the "EVENT\_TRIGGERED" reporting frequency in "repFreqs" attribute contained in QosMonitoringInformation data type is applicable.NOTE 16: When both, the "L4S" and "EnQoSMon" features are supported, the AF request may include either the indication of L4S support within the "l4sInd" attribute or the request for congestion measurements within the "qosMonConReq" attribute, but shall not include both attributes simultaneously.NOTE 17: When the "ListUE\_5G" feature is supported and the "flowInfo" attribute is present, the flow description information shall be common for the list of UE(es) with the application server side IP address, port number and protocol.NOTE 18: The "pduSetQosDl", "pduSetQosUl", "averWindow" and "maxDataBurstVol" attributes within the AlternativeServiceRequirementsData data type may be present only when the "ExtQoSR19" feature is required. |

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

##### 5.14.2.1.3 Type: AsSessionWithQoSSubscriptionPatch

This type represents an AS session request with specific QoS for the service provided by the SCS/AS to the SCEF via T8 interface. The structure is used for PATCH request.

Table 5.14.2.1.3-1: Definition of type AsSessionWithQoSSubscriptionPatch

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability (NOTE 1) |
| exterAppId | string | 0..1 | Identifies the external Application Identifier. (NOTE 2) (NOTE 8) | AppIdListUE\_5GGMEC |
| flowInfo | array(FlowInfo) | 0..N | Describe the data flow which requires QoS.(NOTE 2) (NOTE 5) (NOTE 6) (NOTE 8) (NOTE 14) |  |
| ethFlowInfo | array(EthFlowDescription) | 0..N | Describes Ethernet packet flows.(NOTE 2) (NOTE 6) | EthAsSessionQoS\_5GGMEC |
| enEthFlowInfo | array(EthFlowInfo) | 0..N | Identifies the Ethernet flows which require QoS. Each Ethernet flow consists of a flow identifier and the corresponding UL and/or DL flows.(NOTE 2) (NOTE 6) | EnEthAsSessionQoS\_5GGMEC |
| listUeAddrs | array(UeAddInfo) | 0..N | Identifies the list of UE address(es).(NOTE 8) (NOTE 9) | ListUE\_5G |
| qosReference | string | 0..1 | Pre-defined QoS reference. (NOTE 3) (NOTE 4) |  |
| altQoSReferences | array(string) | 0..N | Identifiers an ordered list of pre-defined QoS information. The lower the index of the array for a given entry, the higher the priority. (NOTE 3) | AlternativeQoS\_5GGMEC |
| altQosReqs | array(AlternativeServiceRequirementsData) | 0..N | Identifies an ordered list of alternative service requirements that include individual QoS parameter sets. The lower the index of the array for a given entry, the higher the priority. (NOTE 3) (NOTE 15) | AltQosWithIndParams\_5G |
| disUeNotif | boolean | 0..1 | Indicates whether to disable QoS flow parameters signalling to the UE when the SMF is notified by the NG-RAN of changes in the fulfilled QoS situation. The fulfilled situation is either the QoS profile or an Alternative QoS Profile.- true: the QoS flow parameters signalling to the UE is disabled;- false: the QoS flow parameters signalling to the UE is not disabled. | DisableUENotification\_5GGMEC |
| usageThreshold | UsageThresholdRm | 0..1 | Time period and/or traffic volume in which the QoS is to be applied. |  |
| qosMonInfo | QosMonitoringInformationRm | 0..1 | Qos Monitoring information for packet delay measurements. It may be present when the event "QOS\_MONITORING" is subscribed.Threshold information may be present only within the "repThreshUl", "repThreshDl" and/or "repThreshRp" attributes of the "QosMonitoringInformationRm" data type.(NOTE 10) | QoSMonitoring\_5GGMEC |
| directNotifInd | boolean | 0..1 | Indicates whether the direct event notification is requested.- true: the direct event notification is requested;- false: the direct event notification is not requested.(NOTE 10, NOTE 11) | ExposureToEASGMEC |
| tscQosReq | TscQosRequirementRm | 0..1 | Contains the QoS requirements for time sensitive communication. (NOTE 4) | TSC\_5GMultiMediaGMEC |
| tempInValidity | TemporalInValidity | 0..1 | Indicates the time interval during which the AF request is not to be applied. | GMEC |
| notificationDestination | Link | 0..1 | Contains the URL to receive the notification event(s) from the SCEF. |  |
| events | array(UserPlaneEvent) | 0..N | Corresponds to the list of user plane event(s) to which the SCS/AS requests to subscribe. | enNBGMEC |
| multiModDatFlows | map(AsSessionMediaComponentRm) | 0..N | Each element of the map represents Media Component data for a single-modal data flow(s) of a multi-modal service. The key of the map is the attribute "medCompN". (NOTE 6, NOTE 10) | MultiMedia |
| l4sInd | UplinkDownlinkSupport | 0..1 | Provides L4S support information.(NOTE 13) | L4SGMEC |
| pduSetQosDl | PduSetQosParaRm | 0..1 | Contains the PDU Set QoS Parameter(s) which are used to support PDU Set based QoS handling in the downlink direction. | PDUSetHandling |
| pduSetQosUl | PduSetQosParaRm | 0..1 | Contains the PDU Set QoS Parameter(s) which are used to support PDU Set based QoS handling in the uplink direction. | PDUSetHandling |
| rTLatencyInd | boolean | 0..1 | Indicates the service data flow needs to meet the Round-Trip (RT) latency requirement of the service, when it is included and set to "true". | RTLatencyGMEC |
| pdb | PacketDelBudgetRm | 0..1 | Indicates an upper bound for the time that a packet may be delayed between the UE and the PSA UPF.This attribute applies also to an AF request QoS for a UE or group of UE(s) not identified by the UE address(es) defined in clause 4.4.9.3 of 3GPP TS 29.522 [62]. | RTLatencyGMEC |
| protoDescDl | ProtocolDescriptionRm | 0..1 | Downlink Protocol description for PDU Set identification, the detection of end of Data burst indication, the detection of the Data Burst Size marking indication, TTNB indication, indication of whether MoQ or UDP-option is used to carry media related information. | PDUSetHandlingPowerSavingTrafficCharChangeOnPathN6MediaInfo |
| protoDescUl | ProtocolDescriptionRm | 0..1 | Uplink Protocol description for PDU Set identification in UE | PDUSetHandling |
| periodUl | DurationMilliSecRm | 0..1 | Indicates the time period between the start of the two data bursts in units of milliseconds in Uplink direction. | PowerSaving |
| periodDl | DurationMilliSecRm | 0..1 | Indicates the time period between the start of the two data bursts in units of milliseconds in Downlink direction. | PowerSaving |
| pdvMon | QosMonitoringInformationRm | 0..1 | Packet Delay Variation information for the subscribed report. It may be present when the event "PACK\_DELAY\_VAR" is subscribed.Threshold information may be present only within the "repThreshUl", "repThreshDl" and/or "repThreshRp" attributes of the "QosMonitoringInformationRm" data type.(NOTE 10) | EnQoSMonGMEC |
| qosDuration | DurationSecRm | 0..1 | Contains the QoS duration to transfer data transmission (e.g., AI/ML transmission). The minimum value of the QoS duration shall be 60 sec.. | QoSTiming\_5G |
| qosInactInt | DurationSecRm | 0..1 | Contains the QoS inactivity interval for the given data transfer transmission (e.g., AI/ML transmission). The minimum value of the QoS inactivity interval shall be 60 sec.  | QoSTiming\_5G |
| qosMonDatRate | QosMonitoringInformationRm | 0..1 | Contains the data rate measurements information for the subscribed report. It may be present when the event "QOS\_MONITORING" is subscribed and data rate measurements apply.Threshold information may be present only within the "repThreshDatRateUl" and/or "repThreshDatRateDl" attributes of the "QosMonitoringInformationRm" data type.(NOTE 9, NOTE 10) | EnQoSMonListUE\_5GGMEC |
| avrgWndw | AverWindowRm | 0..1 | Averaging window for the calculation of the data rate for the service data flow.(NOTE 10) | EnQoSMonGMEC |
| qosMonCapRepoTypes | array(NotifCapType) | 0..N | Contains the requested type(s) of QoS Monitoring capability report.This attribute may be present if the event "QOS\_MON\_CAP\_REPO" is subscribed. | QoSMonCapRepo |
| qosMonConReq | QosMonitoringInformationRm | 0..1 | Contains the requirements of the congestion information (ECN marking percentage) monitoring and reporting. It may be present when the event "QOS\_MONITORING" is subscribed and congestion information measurements apply.Threshold information may be present only within the "conThreshUl" and/or "conThreshDl" attributes of the "QosMonitoringInformationRm" data type.(NOTE 10) (NOTE 12) (NOTE 13) | EnQoSMonGMEC |
| avlBitRateMon | QosMonitoringInformationRm | 0..1 | Contains the requirements of the available bitrate information monitoring and reporting. It may be present when the event "QOS\_MONITORING" is subscribed.(NOTE 10) (NOTE 12) | EnQoSMon\_v2 |
| listUeConsDtRt | array(IpAddr) | 0..N | Identifies the list of UE addresses subject for Consolidated Data Rate monitoring.(NOTE 9) | ListUE\_5G |
| datBurstSizeInd | boolean | 0..1 | Indicates the Data Burst Size marking for the DL service data flow is supported, when it is included and set to "true". | TrafficCharChange |
| timetoNextBurstInd | boolean | 0..1 | Indicates the Time to Next Burst for the DL service data flow is supported, when it is included and set to "true". | TrafficCharChange |
| onPathN6SigInfo | OnPathN6SigInfo | 0..1 | Contains the on-path N6 signaling information, when it is present, it indicates supporting setting up On-path N6 connection to deliver media related information. | OnPathN6MediaInfo |
| expTranInd | boolean | 0..1 | Expedited Transfer Indication for the downlink traffic to enable expedited data transfer with reflective QoS for the Non-GBR service data flow.- "true": the expedited data transfer of larger payload for XR application is enabled for the flow.- "false": the expedited data transfer of larger payload for XR application is not enabled for the flow. | TrafficCharChange |
| NOTE 1: Properties marked with a feature as defined in clause 5.14.4 are applicable as described in clause 5.2.7. If no features are indicated, the related property applies for all the features.NOTE 2: One of "exterAppId", "flowInfo" or either "ethFlowInfo" or "enEthFlowInfo" may be provided.NOTE 3 The attributes "altQoSReferences" and "altQosReqs" are mutually exclusive. The attributes "qosReference" and "altQosReqs" are also mutually exclusive.NOTE 4: The attributes "reqGbrDl", "reqGbrUl", "reqMbrDl", "reqMbrUl", "maxTscBurstSize", "req5Gsdelay", "reqPer" (if the ExtQoS\_5G and/or "GMEC" feature(s) is supported), and "priority" within the "tscQosReq" attribute may be provided only if the "qosReference" attribute is not provided.NOTE 5: The "tosTC" attribute of the "flowInfo" attribute may only be present if the "ToSTC\_5G" feature is supported.NOTE 6: The attributes "exterAppId", "flowInfo", "ethFlowInfo", "enEthFlowInfo", "qosReference", "altQoSReferences", "altQosReqs", "tscQosReq", "qosMonInfo" may be provided only if the "multiModDatFlows" attribute is not provided.NOTE 8: When the "ListUE\_5G" feature is supported, the "listUeAddrs" attribute may be provided, and/or either "exterAppId" attribute or "flowInfo" attribute may be provided.NOTE 9: When the "ListUE\_5G" feature is supported and the "qosMonDatRate" attribute is provided, the "qosMonDatRate" attribute indicates the cosolidated data rate for the list of UEs, the "consDataRateThrDl" and "consDataRateThrUl" attributes contained in "qosMonDatRate" attribute indicate the upper bound of the aggregated DL/UL data rate and by default, are applicable to the list of UEs specified by the "listUeAddrs" attribute. If the "listUeConsDtRt" attribute is also provided, then it has to be the subset of "listUeAddrs" attribute.NOTE 10: When the "MultiMedia" feature is supported, the "qosMonInfo", "directNotifInd", "pdvMon", "qosMonDatRate", "avrgWndw", "qosMonConReq" and "avlBitRateMon" attributes may be present only when the "multiModDatFlows" attribute is not present.NOTE 11: When the "ExposureToEAS" feature is supported, the "directNotifInd" attribute indicates whether direct event notification is requested for the packet delay measurements provided in the "qosMonInfo" attribute. When the "EnQoSMon" feature is supported, the "directNotifInd" attribute indicates whether direct event notification is requested for the QoS measurement(s) indicated in the provided and/or previously provided "qosMonInfo", "qosMonDatRate" and "qosMonConReq" attribute(s).NOTE 12: Only the "EVENT\_TRIGGERED" reporting frequency in "repFreqs" attribute contained in QosMonitoringInformationRm data type is applicable.NOTE 13: When both, the "L4S" and "EnQoSMon" features are supported, the AF request may include either the indication of L4S support within the "l4sInd" attribute or the request for congestion measurements within the "qosMonConReq" attribute but shall not include both attributes simultaneously. As result of the PATCH operation, the Individual AS Session with Required QoS Subscription resource shall not contain simultaneously both, the indication of L4S support and the subscription to congestion monitoring.NOTE 14: When the "ListUE\_5G" feature is supported and the "flowInfo" attribute is present, the flow description information shall be common for the list of UE(es) with the application server side IP address, port number and protocol.NOTE 15: The "pduSetQosDl", "pduSetQosUl", "averWindow" and "maxDataBurstVol" attributes within the AlternativeServiceRequirementsData data type may be present only when the "ExtQoSR19" feature is required. |

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

##### 5.14.2.1.5 Type: UserPlaneEventReport

This type represents an event report for user plane. It shall comply with the provisions defined in table 5.14.2.1.5-1.

Table 5.14.2.1.5-1: Definition of the UserPlaneEventReport data type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability (NOTE 1) |
| event | UserPlaneEvent | 1 | Indicates the event reported by the SCEF. |  |
| accumulatedUsage | AccumulatedUsage | 0..1 | Contains the applicable information corresponding to the event. |  |
| flowIds | array(integer) | 0..N | Identifies the affected flows that were sent during event subscription. It may be omitted when the reported event applies to all the flows sent during the subscription.(NOTE 2) |  |
| multiModFlows | array(MultiModalFlows) | 0..N | Each element of the array identifies the flow filters for the multi-modal data flows that were sent during event subscription and that are affected by the reported event. It may be omitted when the reported event applies to all the multi-modal data flows sent during the subscription.(NOTE 2) | MultiMedia |
| appliedQosRef | string | 0..1 | The currently applied QoS reference (or applied individual QoS parameter set, if AltQosWithIndParams\_5G is supported). Applicable for event QOS\_NOT\_GUARANTEED or SUCCESSFUL\_RESOURCES\_ALLOCATION.When it is omitted and the "event" attribute is "QOS\_NOT\_GUARANTEED", or if the "ExtQoSR19" feature is supported, the "QOS\_NOT\_GUARANTEED\_DL" and/or "QOS\_NOT\_GUARANTEED\_UL", the event report indicates that the lowest priority alternative QoS profile could not be fulfilled in the corresponding directions either. | AlternativeQoS\_5G, AltQosWithIndParams\_5G |
| altQosNotSuppInd | boolean | 0..1 | It may be set to true when the "event" attribute is QOS\_NOT\_GUARANTEED", or if the "ExtQoSR19" feature is supported, the "QOS\_NOT\_GUARANTEED\_DL" and/or "QOS\_NOT\_GUARANTEED\_UL", to indicate that alternative service requirements are not supported in the corresponding directions by the access network. The default value false shall apply if the attribute is not present. | AltQoSProfilesSupportReport, GMEC |
| plmnId | PlmnIdNid | 0..1 | Contains the PLMN Identifier or the SNPN Identifier.This attribute may be present when the reported event is "PLMN\_CHG" and it is allowed to be exposed to the AF based on the local policy or local configuration. | enNB\_5G, GMEC |
| qosMonReports | array(QosMonitoringReport) | 0..N | Contains the QoS Monitoring Reporting information for packet delay. It shall be present when the notified event is "QOS\_MONITORING" and packet delay measurement error or packet delay measurements are available..Only the "ulDelays", "dlDelays" and/or "rtDelays" attributes, or the "pdmf" attribute in QosMonitoringReport may be present. | QoSMonitoring\_5G, GMEC |
| pdvMonReports | array(PdvMonitoringReport) | 0..N | Contains the PDV Monitoring Reporting information. It shall be present when the notified event is "PACK\_DELAY\_VAR" and packet delay variations measurements are available.(NOTE 3) | EnQoSMon, GMEC |
| ratType | RatType | 0..1 | Contains the RAT type.This attribute may be present if applicable, the notified event is "ACCESS\_TYPE\_CHANGE" and it is allowed to be exposed to the AF based on the local policy or local configuration. | enNB\_5G, GMEC |
| batOffsetInfo | BatOffsetInfo | 0..1 | The BAT offset and the optionally adjusted periodicity. | EnTSCAC |
| aggrDataRateRpts | array(QosMonitoringReport) | 0..N | Contains QoS Monitoring for aggregated data rate reporting information. It shall be present when the notified event is "QOS\_MONITORING" and data rate measurements are available.Only the "ulAggrDataRate" and/or "dlAggrDataRate" attributes in QosMonitoringReport may be present. | ListUE\_5G, GMEC |
| rttMonReports | array(QosMonitoringReport) | 0..N | Round-Trip delay for the indicated UL and DL QoS flows. It shall be present when the notified event is "RT\_DELAY\_TWO\_QOS\_FLOWS".Only the "rtDelays" attributes in QosMonitoringReport may be present. | EnQoSMon, GMEC |
| qosMonDatRateReps | array(QosMonitoringReport) | 0..1 | Contains QoS Monitoring for data rate reporting information. It shall be present when the notified event is "QOS\_MONITORING" and data rate measurements are available.Only the "ulDataRate" and/or "dlDataRate" attributes in QosMonitoringReport may be present. | EnQoSMon, GMEC |
| qosMonConInfoReps | array(QosMonitoringReport) | 0..N | Contains QoS Monitoring for congestion information (ECN marking percentage). It shall be present when the notified event is "QOS\_MONITORING" and congestion measurements are available.Only the "ulConInfo" and/or "dlConInfo" attributes in QosMonitoringReport may be present. | EnQoSMon, GMEC |
| qosMonCapRepos | map(CapabilityReport) | 0..N | QoS Monitoring notification can be performed or not. The key of of the map is the attribute "capType".It shall be present when the notified event is "QOS\_MON\_CAP\_REPO". | QoSMonCapRepo |
| rateLimitRepo | RatelimitRepo | 0..1 | Indicates the data rate limitation information for the Non-GBR service data flow(s).It shall be present when the notified event is "RATE\_LIMIT\_INFO\_REPO". | RateLimitReport |
| NOTE 1: Properties marked with a feature as defined in clause 5.14.4 are applicable as described in clause 5.2.7. If no features are indicated, the related property applies for all the features.NOTE 2: The attributes "flowIds" and "multiModFlows" are mutually exclusive.NOTE 3: The PdvMonitoringReport data type does not include the "flows" attribute in this API. |

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

##### 5.14.2.2.3 Enumeration: UserPlaneEvent

The enumeration UserPlaneEvent represents the user plane event.

Table 5.14.2.2.3-1: Enumeration UserPlaneEvent

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability (NOTE) |
| SESSION\_TERMINATION | Indicates that Rx session is terminated. |  |
| LOSS\_OF\_BEARER | Indicates a loss of a bearer. (NOTE 3) |  |
| RECOVERY\_OF\_BEARER | Indicates a recovery of a bearer. (NOTE 3) |  |
| RELEASE\_OF\_BEARER | Indicates a release of a bearer. (NOTE 3) |  |
| USAGE\_REPORT | Indicates the usage report event. |  |
| FAILED\_RESOURCES\_ALLOCATION | Indicates the resource allocation is failed. |  |
| SUCCESSFUL\_RESOURCES\_ALLOCATION | Indicates the resource allocation is successful. |  |
| QOS\_GUARANTEED | The QoS targets of one or more SDFs are guaranteed again. | AlternativeQoS\_5G, GMEC |
| QOS\_NOT\_GUARANTEED | The QoS targets of one or more SDFs are not being guaranteed. | AlternativeQoS\_5G, GMEC |
| QOS\_NOT\_GUARANTEED\_DL | The QoS targets of one or more SDFs are not being guaranteed in DL directions. | ExtQoSR19 |
| QOS\_NOT\_GUARANTEED\_UL | The QoS targets of one or more SDFs are not being guaranteed in UL directions. | ExtQoSR19 |
| QOS\_MONITORING | Indicates a QoS monitoring event. | QoSMonitoring\_5G, GMEC, ListUE\_5G |
| ACCESS\_TYPE\_CHANGE | Indicates an Access type change. (NOTE 2) | enNB\_5G, GMEC |
| PLMN\_CHG | Indicates a PLMN change. (NOTE 2) | enNB\_5G, GMEC |
| L4S\_NOT\_AVAILABLE | The ECN marking for L4S of one or more SDFs is not available. | L4S, GMEC |
| L4S\_AVAILABLE | The ECN marking for L4S of one or more SDFs is available again. | L4S, GMEC |
| BAT\_OFFSET\_INFO | Indicates the network provided BAT offset and the optionally adjusted periodicity. | EnTSCAC, GMEC |
| RT\_DELAY\_TWO\_QOS\_FLOWS | Indicates round-trip delay on UL and DL flows over two QoS flows.This event may only be subscribed at Application Session Media Component level. I.e., it shall not be included within the "events" attribute of the AsSessionWithQoSSubscription and AsSessionWithQoSSubscriptionPatch data types. | EnQoSMon, GMEC |
| PACK\_DELAY\_VAR | Indicates Packet Delay Variation is enabled for the SDF. | EnQoSMon, GMEC |
| QOS\_MON\_CAP\_REPO | Indicates the QoS Monitoring capability report event. | QoSMonCapRepo |
| RATE\_LIMIT\_INFO\_REPO | Indicates the support of reporting the data rate limitation information. | RateLimitReport |
| NOTE 1: Properties marked with a feature as defined in clause 5.14.4 are applicable as described in clause 5.2.7. If no features are indicated, the related property applies for all the features.NOTE 2: The exposure of such network information to the AF needs to be authorized based on the local policy or local configuration.NOTE 3: The LOSS\_OF\_BEARER, RECOVERY\_OF\_BEARER, and RELEASE\_OF\_BEARER only apply to 4G. |

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

### 5.14.4 Used Features

The table below defines the features applicable to the AsSessionWithQoS API. Those features are negotiated as described in subclause 5.2.7.

**Table 5.14.4-1: Features used by AsSessionWithQoS API**

|  |  |  |
| --- | --- | --- |
| **Feature Number** | **Feature** | **Description** |
| 1 | Notification\_websocket | The delivery of notifications over Websocket is supported according to clause 5.2.5.4. This feature requires that the Notification\_test\_event featute is also supported. |
| 2 | Notification\_test\_event | The testing of notifications connections is supported according to clause 5.2.5.3. |
| 3 | EthAsSessionQoS\_5G | Setting up required QoS for Ethernet UE. This feature may only be supported in 5G. |
| 4 | MacAddressRange\_5G | Indicates the support of a set of MAC addresses with a specific range in the traffic filter. This feature may only be supported in 5G. |
| 5 | AlternativeQoS\_5G | Indicates the support of alternative QoS requirements and the QoS notification (i.e. whether the QoS targets for SDF(s) are not guaranteed or guaranteed again). This feature may only be supported in 5G. |
| 6 | QoSMonitoring\_5G | Indicates the support of QoS Monitoring functionality and the report for packet delay monitoring. This feature may only be supported in 5G. |
| 7 | DisableUENotification\_5G | 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 may only be supported in 5G. This feature requires that the AlternativeQoS\_5G feature is also supported. |
| 8 | TSC\_5G | Indicates the support of Time Sensitive Communication. This feature may only be supported in 5G. |
| 9 | AppId | Indicates the support of dynamically providing the Application Identifier via the API. |
| 10 | ExposureToEAS | This feature indicates the support of direct notification in 5GC. This feature requires that the QoSMonitoring\_5G feature is also supported. |
| 11 | enNB | Indicates the support of enhancements to the northbound interfaces. |
| 12 | AltQosWithIndParams\_5G | This feature indicates the support of provisioning Alternative Service Requirements with individual QoS parameters. This feature requires that the AlternativeQoS\_5G feature is also supported. |
| 13 | EnEthAsSessionQoS\_5G | Indicates the support of required QoS for Ethernet UE, allowing to indicate separately different UL and/or DL Ethernet flows. This feature may only be supported in 5G. |
| 14 | enNB\_5G | Indicates the support of enhancements to the northbound interfaces and only applicable to 5G. |
| 15 | PacketDelayFailureReport | Indicates the support of packet delay failure report as part of QoS Monitoring procedures. This feature requires that QoSMonitoring\_5G is supported. This feature may only be supported in 5G. |
| 16 | ToSTC\_5G | Indicates the support of Type of Service or Traffic Class. This feature may only be supported in 5G. |
| 17 | EnTSCAC | Indicates the support of extensions to TSCAC and the RAN feedback for BAT offset and adjusted periodicity.This feature may only be supported in 5G, and requires that the TSC\_5G feature is also supported. |
| 18 | AltQoSProfilesSupportReport | This feature indicates the support of the report of whether Alternative QoS parameters are supported by the access network. This feature requires that AlternativeQoS\_5G and/or AltQosWithIndParams\_5G features are also supported. |
| 19 | ExtQoS\_5G | This feature indicates the support of extended QoS parameters. This feature may only be supported in 5G. |
| 20 | MultiMedia | Indicates the support for multi-modal or multimedia flows for single UE and multiple UE. This feature may only be supported in 5G. This feature may be used in eXtend Reality (XR) use cases. |
| 21 | ExtErrors | Indicates the support of additional application errors related to authorization or PDU Session availability. |
| 22 | QoSTiming\_5G | This feature indicates the support of QoS timing information for the transfer and support of data transmission (e.g., AI/ML transmission). This feature may only be supported in 5G. |
| 23 | ListUE\_5G | Indicates the support for the list of UEs This feature may only be supported in 5G. |
| 24 | GMEC | This feature indicates the support of Generic Group Management Exposure and Communication related enhancements.The following functionalities are supported:- Support AF requested QoS for a UE or group of UE(s) not identified by the UE address(es).This feature may only be supported in 5G.This feature requires the support of the "QoSMonitoring\_5G" and "AltQosWithIndParams\_5G" features. |
| 25 | PDUSetHandling | This feature indicates the support of PDU Set handling. This feature may be used for eXtended Reality (XR) and interactive media services.This feature may only be supported in 5G. |
| 26 | RTLatency | This feature indicates the support of Round-Trip latency. This feature may be used for eXtended Reality (XR) and interactive media services.This feature may only be supported in 5G. |
| 27 | EnQoSMon | This feature indicates the support of enhanced QoS monitoring functionality, i.e. the enhancement of packet delay QoS monitoring, and/or, the report of the congestion information, and/or, the RTT delay over two QoS flows, and/or, the data rate information, and/or, the Packet Delay Variation monitoring.This feature requires that QoSMonitoring\_5G is supported.In order to support the report of packet delay measurement failure, the PacketDelayFailureReport feature also requires to be supported.This feature may only be supported in 5G. |
| 28 | PowerSaving | This feature indicates the support of the Power Saving for different traffic measurement**.**This feature may only be supported in 5G. |
| 29 | L4S | This feature indicates the support of the AF indication of ECN marking for L4S support.This feature may only be supported in 5G. |
| 30 | QoSMonCapRepo | This feature indicates the support QoS Monitoring Capability Report for packet delay and/or congestion.This feature requires the support of the QoSMonitoring\_5G feature if packet delay is requested.This feature requires that the EnQoSMon feature is supported if congestion is requested.This feature requires that the EnQoSMon\_v2 feature is supported if available bitrate is requested.This feature may only be supported in 5G. |
| 31 | TrafficCharChange | This feature indicates the support of dynamically changing traffic characteristics, including:- the handling of Data Burst Size Marking Indication.- the handling of Time to Next Burst Indication.- the handling of Expedite Data Transfer with reflective QoS Indication for the Non-GBR flows.This feature may only be supported in 5G. |
| 32 | MpxMedia | This feature indicates the support of uniquely identifying each media flow of multiplexed media with the provided Multiplexed Media Identification Information.This feature may only be supported in 5G. |
| 33 | OnPathN6MediaInfo | This feature indicates the support of deliver media related information for encrypted traffic, including:- Using on-path N6 signaling information to deliver media related information for encrypted traffic.This feature may only be supported in 5G. |
| 34 | RateLimitReport | This feature indicates the support of AF request the 5GS to expose the data rate limitation information.This feature may only be supported in 5G. |
| 35 | AcceptableQosDetails | This feature indicates the support of providing detailed information about the QoS that can be authorized in error responses of not authorized requests.This feature may only be supported in 5G. |
| 36 | ExtQoSR19 | This feature indicates the enhancements on the support for the extensions to the QoS mechanisms, including:- the support of PDU Set QoS parameters in Alternative QoS Profile when the PDUSetHandling feature is supported.- the support of Averaging Window and Maximum Data Burst Volume parameters.- the support of reporting the QoS targets for the indicated SDFs can no longer be guaranteed or can be guaranteed in the certain direction when the AlternativeQoS\_5G feature is supported.This feature requires that AltQosWithIndParams\_5G feature is also supported.This feature may only be supported in 5G. |
| 37 | EnQoSMon\_v2 | This feature indicates the enhancements on the QoS monitoring functionality, including:- the reporting of available bitrate rate for a GBR QoS Flow.This feature requires that the EnQoSMon feature is supported. |
| Feature: A short name that can be used to refer to the bit and to the feature, e.g. "Notification".Description: A clear textual description of the feature. |

Editor's note: Available bitrate capability reporting dependency on the EnQoSMon\_v2 feature is FFS.

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

# A.14 AsSessionWithQoS API

openapi: 3.0.0

info:

 title: 3gpp-as-session-with-qos

 version: 1.4.0-alpha.4

 description: |

 API for setting us an AS session with required QoS.

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externalDocs:

 description: 3GPP TS 29.122 V19.3.0 T8 reference point for Northbound APIs

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.122/'

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-as-session-with-qos/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 5.2.4 of 3GPP TS 29.122.

paths:

 /{scsAsId}/subscriptions:

 get:

 summary: Read all or queried active subscriptions for the SCS/AS.

 operationId: FetchAllASSessionWithQoSSubscriptions

 tags:

 - AS Session with Required QoS Subscriptions

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS

 required: true

 schema:

 type: string

 - name: ip-addrs

 in: query

 description: The IP address(es) of the requested UE(s).

 required: false

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 - name: ip-domain

 in: query

 description: >

 The IPv4 address domain identifier. The attribute may only be provided if IPv4 address

 is included in the ip-addrs query parameter.

 required: false

 schema:

 type: string

 - name: mac-addrs

 in: query

 description: The MAC address(es) of the requested UE(s).

 required: false

 schema:

 type: array

 items:

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

 minItems: 1

 responses:

 '200':

 description: OK.

 content:

 application/json:

 schema:

 type: array

 items:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 post:

 summary: Creates a new subscription resource.

 operationId: CreateASSessionWithQoSSubscription

 tags:

 - AS Session with Required QoS Subscriptions

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS

 required: true

 schema:

 type: string

 requestBody:

 description: Request to create a new subscription resource

 required: true

 content:

 application/json:

 schema:

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

 callbacks:

 notificationDestination:

 '{$request.body#/notificationDestination}':

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content (successful notification)

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 responses:

 '201':

 description: Created (Successful creation of subscription)

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource'

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

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

 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:

 type: string

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /{scsAsId}/subscriptions/{subscriptionId}:

 get:

 summary: Read an active subscriptions for the SCS/AS and the subscription Id.

 operationId: FetchIndASSessionWithQoSSubscription

 tags:

 - Individual AS Session with Required QoS Subscription

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 put:

 summary: Updates/replaces an existing subscription resource.

 operationId: UpdateIndASSessionWithQoSSubscription

 tags:

 - Individual AS Session with Required QoS Subscription

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 requestBody:

 description: Parameters to update/replace the existing subscription

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful update of the subscription)

 content:

 application/json:

 schema:

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

 '204':

 description: No Content (Successful update of the subscription)

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

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

 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:

 type: string

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 patch:

 summary: Updates/replaces an existing subscription resource.

 operationId: ModifyIndASSessionWithQoSSubscription

 tags:

 - Individual AS Session with Required QoS Subscription

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK. The subscription was modified successfully.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content. The subscription was modified successfully.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

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

 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:

 type: string

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Deletes an already existing subscription.

 operationId: DeleteIndASSessionWithQoSSubscription

 tags:

 - Individual AS Session with Required QoS Subscription

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content (Successful deletion of the existing subscription)

 '200':

 description: OK (Successful deletion of the existing subscription)

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 AsSessionWithQoSSubscription:

 description: Represents an individual AS session with required QoS subscription resource.

 type: object

 properties:

 self:

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

 supportedFeatures:

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

 dnn:

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

 snssai:

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

 notificationDestination:

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

 exterAppId:

 type: string

 description: Identifies the external Application Identifier.

 extGroupId:

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

 gpsi:

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

 flowInfo:

 type: array

 items:

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

 minItems: 1

 description: Describe the data flow which requires QoS.

 ethFlowInfo:

 type: array

 items:

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

 minItems: 1

 description: Identifies Ethernet packet flows.

 enEthFlowInfo:

 type: array

 items:

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

 minItems: 1

 description: >

 Identifies the Ethernet flows which require QoS. Each Ethernet flow consists of a flow

 idenifer and the corresponding UL and/or DL flows.

 listUeAddrs:

 type: array

 items:

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

 minItems: 1

 description: Identifies the list of UE address.

 multiModalId:

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

 protoDescUl:

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

 protoDescDl:

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

 qosReference:

 type: string

 description: Identifies a pre-defined QoS information

 altQoSReferences:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies an ordered list of pre-defined QoS information. The lower the index of the

 array for a given entry, the higher the priority.

 altQosReqs:

 type: array

 items:

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

 minItems: 1

 description: >

 Identifies an ordered list of alternative service requirements that include individual

 QoS parameter sets. The lower the index of the array for a given entry, the higher the

 priority.

 disUeNotif:

 description: >

 Indicates whether the QoS flow parameters signalling to the UE when the SMF is notified

 by the NG-RAN of changes in the fulfilled QoS situation is disabled (true) or

 not (false). Default value is false. The fulfilled situation is either the QoS profile

 or an Alternative QoS Profile.

 type: boolean

 ueIpv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ipDomain:

 type: string

 ueIpv6Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv6Addr'

 macAddr:

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

 usageThreshold:

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

 sponsorInfo:

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

 qosMonInfo:

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

 pdvMon:

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

 qosDuration:

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

 qosInactInt:

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

 directNotifInd:

 type: boolean

 description: >

 Indicates whether the direct event notification is requested (true) or not (false) for

 the provided and/or previously provided QoS monitoring parameter(s).

 tscQosReq:

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

 l4sInd:

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

 requestTestNotification:

 type: boolean

 description: >

 Set to true by the SCS/AS to request the SCEF to send a test notification as defined

 in clause 5.2.5.3. Set to false or omitted otherwise.

 tempInValidity:

 $ref: 'TS29565\_Ntsctsf\_QoSandTSCAssistance.yaml#/components/schemas/TemporalInValidity'

 websockNotifConfig:

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

 events:

 description: >

 Represents the list of user plane event(s) to which the SCS/AS requests to subscribe to.

 type: array

 items:

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

 minItems: 1

 multiModDatFlows:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains media component data for a single-modal data flow(s).

 The key of the map is the medCompN attribute.

 pduSetQosDl:

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

 pduSetQosUl:

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

 rTLatencyInd:

 type: boolean

 description: >

 Indicates the service data flow needs to meet the Round-Trip (RT) latency requirement of

 the service, when it is included and set to "true".

 The default value is "false" if omitted.

 pdb:

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

 periodUl:

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

 periodDl:

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

 qosMonDatRate:

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

 avrgWndw:

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

 servAuthInfo:

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

 qosMonConReq:

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

 avlBitRateMon:

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

 qosMonCapRepoTypes:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains the type(s) of QoS Monitoring capability report is applied.

 listUeConsDtRt:

 type: array

 items:

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

 minItems: 1

 description: >

 Identifies the list of UE addresses subject for Consolidated Data Rate monitoring.

 datBurstSizeInd:

 type: boolean

 description: >

 Indicates the Data Burst Size marking for the DL service data flow is supported, when

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

 timetoNextBurstInd:

 type: boolean

 description: >

 Indicates the Time to Next Burst for the DL service data flow is supported, when it is

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

 onPathN6SigInfo:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/OnPathN6SigInfo'

 expTranInd:

 type: boolean

 description: >

 Expedited Transfer Indication for the downlink traffic to enable expedited data transfer

 with reflective QoS for the Non-GBR service data flow. "true": the expedited data

 transfer of larger payload for XR application is enabled in the flow. "false": the

 expedited data transfer of larger payload for XR application is not enabled in the flow.

 The default value is "false" if omitted.

 required:

 - notificationDestination

 AsSessionWithQoSSubscriptionPatch:

 description: Represents parameters to modify an AS session with specific QoS subscription.

 type: object

 properties:

 exterAppId:

 type: string

 description: Identifies the external Application Identifier.

 flowInfo:

 type: array

 items:

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

 minItems: 1

 description: Describe the IP data flow which requires QoS.

 ethFlowInfo:

 type: array

 items:

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

 minItems: 1

 description: Identifies Ethernet packet flows.

 enEthFlowInfo:

 type: array

 items:

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

 minItems: 1

 description: >

 Identifies the Ethernet flows which require QoS. Each Ethernet flow consists of a flow

 idenifer and the corresponding UL and/or DL flows.

 listUeAddrs:

 type: array

 items:

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

 minItems: 1

 description: Identifies the list of UE address.

 qosReference:

 type: string

 description: Pre-defined QoS reference

 altQoSReferences:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies an ordered list of pre-defined QoS information. The lower the index of the

 array for a given entry, the higher the priority.

 altQosReqs:

 type: array

 items:

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

 minItems: 1

 description: >

 Identifies an ordered list of alternative service requirements that include individual

 QoS parameter sets. The lower the index of the array for a given entry, the higher the

 priority.

 disUeNotif:

 type: boolean

 description: >

 Indicates whether the QoS flow parameters signalling to the UE when the SMF is notified

 by the NG-RAN of changes in the fulfilled QoS situation is disabled (true) or

 not (false). The fulfilled situation is either the QoS profile or an Alternative QoS

 Profile.

 usageThreshold:

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

 qosMonInfo:

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

 pdvMon:

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

 directNotifInd:

 type: boolean

 description: >

 Indicates whether the direct event notification is requested (true) or not (false) for

 the provided QoS monitoring parameter(s).

 notificationDestination:

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

 tscQosReq:

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

 l4sInd:

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

 tempInValidity:

 $ref: 'TS29565\_Ntsctsf\_QoSandTSCAssistance.yaml#/components/schemas/TemporalInValidity'

 events:

 description: >

 Represents the updated list of user plane event(s) to which the SCS/AS requests to

 subscribe to.

 type: array

 items:

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

 minItems: 1

 multiModDatFlows:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains media component data for a single-modal data flow(s).

 The key of the map is the medCompN attribute.

 pduSetQosDl:

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

 pduSetQosUl:

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

 rTLatencyInd:

 type: boolean

 nullable: true

 description: >

 Indicates the service data flow needs to meet the Round-Trip (RT) latency requirement of

 the service, when it is included and set to "true".

 pdb:

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

 protoDescUl:

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

 protoDescDl:

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

 periodUl:

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

 periodDl:

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

 qosDuration:

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

 qosInactInt:

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

 qosMonDatRate:

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

 avrgWndw:

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

 qosMonConReq:

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

 avlBitRateMon:

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

 qosMonCapRepoTypes:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains the type(s) of QoS Monitoring capability report is applied.

 listUeConsDtRt:

 type: array

 items:

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

 minItems: 1

 description: >

 Identifies the list of UE addresses subject for Consolidated Data Rate monitoring.

 datBurstSizeInd:

 type: boolean

 nullable: true

 description: >

 Indicates the Data Burst Size marking for the DL service data flow is supported, when

 it is included and set to "true".

 timetoNextBurstInd:

 type: boolean

 nullable: true

 description: >

 Indicates the Time to Next Burst for the DL service data flow is supported, when it is

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

 onPathN6SigInfo:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/OnPathN6SigInfo'

 expTranInd:

 type: boolean

 nullable: true

 description: >

 Expedited Transfer Indication for the downlink traffic to enable expedited data transfer

 with reflective QoS for the Non-GBR service data flow. "true": the expedited data

 transfer of larger payload for XR application is enabled in the flow. "false":

 the expedited data transfer of larger payload for XR application is not enabled in the

 flow.

 QosMonitoringInformation:

 description: Represents QoS monitoring information.

 type: object

 properties:

 reqQosMonParams:

 type: array

 items:

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

 minItems: 1

 repFreqs:

 type: array

 items:

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

 minItems: 1

 repThreshDl:

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

 repThreshUl:

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

 repThreshRp:

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

 conThreshDl:

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

 conThreshUl:

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

 waitTime:

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

 repPeriod:

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

 repThreshDatRateDl:

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

 repThreshDatRateUl:

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

 consDataRateThrDl:

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

 consDataRateThrUl:

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

 avlBitrateUlThrs:

 type: array

 items:

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

 minItems: 1

 description: Indicates a list of thresholds for uplink available bitrate reporting.

 avlBitrateDlThrs:

 type: array

 items:

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

 minItems: 1

 description: Indicates a list of thresholds for downlink available bitrate reporting.

 required:

 - reqQosMonParams

 - repFreqs

 QosMonitoringInformationRm:

 description: >

 Represents the same as the QosMonitoringInformation data type but with

 the nullable:true property.

 type: object

 properties:

 reqQosMonParams:

 type: array

 items:

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

 minItems: 1

 repFreqs:

 type: array

 items:

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

 minItems: 1

 repThreshDl:

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

 repThreshUl:

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

 repThreshRp:

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

 conThreshDl:

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

 conThreshUl:

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

 waitTime:

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

 repPeriod:

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

 repThreshDatRateDl:

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

 repThreshDatRateUl:

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

 consDataRateThrDl:

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

 consDataRateThrUl:

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

 avlBitrateUlThrs:

 type: array

 items:

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

 minItems: 1

 description: Indicates a list of thresholds for uplink available bitrate reporting.

 avlBitrateDlThrs:

 type: array

 items:

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

 minItems: 1

 description: Indicates a list of thresholds for downlink available bitrate reporting.

 nullable: true

 QosMonitoringReport:

 description: Represents a QoS monitoring report.

 type: object

 properties:

 ulDelays:

 type: array

 items:

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

 minItems: 1

 dlDelays:

 type: array

 items:

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

 minItems: 1

 rtDelays:

 type: array

 items:

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

 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'

 ulAggrDataRate:

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

 dlAggrDataRate:

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

 ulConInfo:

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

 dlConInfo:

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

 UserPlaneNotificationData:

 description: Represents the parameters to be conveyed in a user plane event(s) notification.

 type: object

 properties:

 transaction:

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

 eventReports:

 type: array

 items:

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

 minItems: 1

 description: Contains the reported event and applicable information

 required:

 - transaction

 - eventReports

 UserPlaneEventReport:

 description: Represents an event report for user plane.

 type: object

 properties:

 event:

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

 accumulatedUsage:

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

 flowIds:

 type: array

 items:

 type: integer

 minItems: 1

 description: >

 Identifies the affected flows that were sent during event subscription. It might be

 omitted when the reported event applies to all the flows sent during the subscription.

 multiModFlows:

 type: array

 items:

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

 minItems: 1

 description: >

 Identifies the the flow filters for the single-modal data flows thatwere sent

 during event subscription.

 It may be omitted when the reported event applies to all the

 single-modal data flows sent during the subscription.

 appliedQosRef:

 type: string

 description: >

 The currently applied QoS reference. Applicable for event QOS\_NOT\_GUARANTEED or

 SUCCESSFUL\_RESOURCES\_ALLOCATION.

 altQosNotSuppInd:

 type: boolean

 description: >

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

 supported by the access network. Applicable for event QOS\_NOT\_GUARANTEED.

 plmnId:

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

 qosMonReports:

 type: array

 items:

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

 minItems: 1

 description: Contains the QoS Monitoring Reporting information

 pdvMonReports:

 type: array

 items:

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

 minItems: 1

 description: Contains the PDV Monitoring Reporting information

 ratType:

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

 batOffsetInfo:

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

 rttMonReports:

 type: array

 items:

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

 minItems: 1

 description: Contains the round trip delay over two SDFs reporting information

 qosMonDatRateReps:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains QoS Monitoring for data rate information. It shall be present when the notified

 event is "QOS\_MONITORING" and data rate measurements are available.

 aggrDataRateRpts:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains QoS Monitoring for aggregated data rate information. It shall be present when

 the notified event is "QOS\_MONITORING" and data rate measurements are available.

 qosMonConInfoReps:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains QoS Monitoring for congestion information. It shall be present when the

 notified event is "QOS\_MONITORING" and congestion measurements are available.

 qosMonCapRepos:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 QoS Monitoring notification can be performed or not. It shall be present when

 the notified event is "QOS\_MON\_CAP\_REPO".The key of of the map is the attribute

 "capType".

 rateLimitRepo:

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

 required:

 - event

 TscQosRequirement:

 description: Represents QoS requirements for time sensitive communication.

 type: object

 properties:

 reqGbrDl:

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

 reqGbrUl:

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

 reqMbrDl:

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

 reqMbrUl:

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

 maxTscBurstSize:

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

 req5Gsdelay:

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

 reqPer:

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

 priority:

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

 tscaiTimeDom:

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

 tscaiInputDl:

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

 tscaiInputUl:

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

 capBatAdaptation:

 type: boolean

 description: >

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

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

 TscQosRequirementRm:

 description: >

 Represents the same as the TscQosRequirement data type but with the nullable:true property.

 type: object

 properties:

 reqGbrDl:

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

 reqGbrUl:

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

 reqMbrDl:

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

 reqMbrUl:

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

 maxTscBurstSize:

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

 req5Gsdelay:

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

 reqPer:

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

 priority:

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

 tscaiTimeDom:

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

 tscaiInputDl:

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

 tscaiInputUl:

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

 capBatAdaptation:

 type: boolean

 description: >

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

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

 nullable: true

 AdditionInfoAsSessionWithQos:

 description: Describes additional error information specific for this API.

 type: object

 properties:

 acceptableServInfo:

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

 ProblemDetailsAsSessionWithQos:

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

 allOf:

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

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

 AsSessionMediaComponent:

 description: >

 Representmedia component data for a single-modal data flow of a multi-modal service.

 type: object

 required:

 - medCompN

 allOf:

 - not:

 required: [altSerReqs,altSerReqsData]

 - not:

 required: [qosReference,altSerReqsData]

 properties:

 flowInfos:

 type: array

 items:

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

 minItems: 1

 nullable: true

 description: >

 Contains the IP data flow(s) description for a single-modal data flow.

 qosReference:

 type: string

 disUeNotif:

 type: boolean

 altSerReqs:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Contains alternative service requirements that include QoS references set

 altSerReqsData:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains alternative service requirements that include individual QoS parameter sets.

 marBwDl:

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

 marBwUl:

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

 medCompN:

 type: integer

 medType:

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

 mirBwDl:

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

 mirBwUl:

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

 rTLatencyInd:

 type: boolean

 description: >

 Indicates the service data flow needs to meet the Round-Trip (RT) latency requirement of

 the service, when it is included and set to "true".

 The default value is "false" if omitted.

 pdb:

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

 rTLatencyIndCorreId:

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

 pduSetQosDl:

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

 pduSetQosUl:

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

 l4sInd:

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

 protoDescDl:

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

 protoDescUl:

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

 periodUl:

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

 periodDl:

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

 evSubsc:

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

 datBurstSizeInd:

 type: boolean

 description: >

 Indicates the Data Burst Size marking for the DL service data flow is supported, when

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

 timetoNextBurstInd:

 type: boolean

 description: >

 Indicates the Time to Next Burst for the DL service data flow is supported, when it is

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

 onPathN6SigInfo:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/OnPathN6SigInfo'

 expTranInd:

 type: boolean

 description: >

 Expedited Transfer Indication for the downlink traffic to enable expedited data transfer

 with reflective QoS for the Non-GBR service data flow. "true": the expedited data

 transfer of larger payload for XR application is enabled in the flow. "false": the

 expedited data transfer of larger payload for XR application is not enabled in the flow.

 The default value is "false" if omitted.

 AsSessionMediaComponentRm:

 description: >

 Represents the AsSessionMediaComponent data type with nullable information.

 type: object

 required:

 - medCompN

 allOf:

 - not:

 required: [altSerReqs,altSerReqsData]

 - not:

 required: [qosReference,altSerReqsData]

 properties:

 flowInfos:

 type: array

 items:

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

 minItems: 1

 nullable: true

 description: >

 Contains the IP data flow(s) description for a single-modal data flow.

 qosReference:

 type: string

 nullable: true

 altSerReqs:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Contains removable alternative service requirements that include set of QoS references

 nullable: true

 altSerReqsData:

 type: array

 items:

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

 minItems: 1

 description: >

 Contains removable alternative service requirements that include individual QoS

 parameter sets.

 nullable: true

 disUeNotif:

 type: boolean

 nullable: true

 marBwDl:

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

 marBwUl:

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

 medCompN:

 type: integer

 medType:

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

 mirBwDl:

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

 mirBwUl:

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

 rTLatencyInd:

 type: boolean

 nullable: true

 description: >

 Indicates the service data flow needs to meet the Round-Trip (RT) latency requirement of

 the service, when it is included and set to "true".

 The default value is "false" if omitted.

 pdb:

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

 rTLatencyIndCorreId:

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

 pduSetQosDl:

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

 pduSetQosUl:

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

 l4sInd:

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

 protoDescDl:

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

 protoDescUl:

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

 periodUl:

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

 periodDl:

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

 evSubsc:

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

 datBurstSizeInd:

 type: boolean

 nullable: true

 description: >

 Indicates the Data Burst Size marking for the DL service data flow is supported, when

 it is included and set to "true".

 timetoNextBurstInd:

 type: boolean

 nullable: true

 description: >

 Indicates the Time to Next Burst for the DL service data flow is supported, when it is

 included and set to "true".

 onPathN6SigInfo:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/OnPathN6SigInfo'

 expTranInd:

 type: boolean

 nullable: true

 description: >

 Expedited Transfer Indication for the downlink traffic to enable expedited data transfer

 with reflective QoS for the Non-GBR service data flow. "true": the expedited data

 transfer of larger payload for XR application is enabled in the flow. "false":

 the expedited data transfer of larger payload for XR application is not enabled in the

 flow.

 nullable: true

 MultiModalFlows:

 description: Represents a flow information within a single-modal data flow.

 type: object

 properties:

 medCompN:

 type: integer

 description: >

 It contains the ordinal number of the single-modal data flow. Identifies the

 single-modal data flow.

 flowIds:

 type: array

 items:

 type: integer

 minItems: 1

 description: >

 Identifies the affected flow(s) within the single-modal data flow

 (identified by the medCompN attribute).

 It may be omitted when all flows are affected.

 required:

 - medCompN

 UeAddInfo:

 description: Represent the UE address information.

 properties:

 ueIpAddr:

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

 portNumber:

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

 UserPlaneEvent:

 anyOf:

 - type: string

 enum:

 - SESSION\_TERMINATION

 - LOSS\_OF\_BEARER

 - RECOVERY\_OF\_BEARER

 - RELEASE\_OF\_BEARER

 - USAGE\_REPORT

 - FAILED\_RESOURCES\_ALLOCATION

 - QOS\_GUARANTEED

 - QOS\_NOT\_GUARANTEED

 - QOS\_NOT\_GUARANTEED\_DL

 - QOS\_NOT\_GUARANTEED\_UL

 - QOS\_MONITORING

 - SUCCESSFUL\_RESOURCES\_ALLOCATION

 - ACCESS\_TYPE\_CHANGE

 - PLMN\_CHG

 - L4S\_NOT\_AVAILABLE

 - L4S\_AVAILABLE

 - BAT\_OFFSET\_INFO

 - RT\_DELAY\_TWO\_QOS\_FLOWS

 - PACK\_DELAY\_VAR

 - QOS\_MON\_CAP\_REPO

 - RATE\_LIMIT\_INFO\_REPO

 - 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: |

 Represents the user plane event.

 Possible values are:

 - SESSION\_TERMINATION: Indicates that Rx session is terminated.

 - LOSS\_OF\_BEARER : Indicates a loss of a bearer.

 - RECOVERY\_OF\_BEARER: Indicates a recovery of a bearer.

 - RELEASE\_OF\_BEARER: Indicates a release of a bearer.

 - USAGE\_REPORT: Indicates the usage report event.

 - FAILED\_RESOURCES\_ALLOCATION: Indicates the resource allocation is failed.

 - QOS\_GUARANTEED: The QoS targets of one or more SDFs are guaranteed again.

 - QOS\_NOT\_GUARANTEED: The QoS targets of one or more SDFs are not being guaranteed.

 - QOS\_NOT\_GUARANTEED\_DL: The QoS targets of one or more SDFs are not being guaranteed in DL

 directions.

 - QOS\_NOT\_GUARANTEED\_UL: The QoS targets of one or more SDFs are not being guaranteed in UL

 directions.

 - QOS\_MONITORING: Indicates a QoS monitoring event.

 - SUCCESSFUL\_RESOURCES\_ALLOCATION: Indicates the resource allocation is successful.

 - ACCESS\_TYPE\_CHANGE: Indicates an Access type change.

 - PLMN\_CHG: Indicates a PLMN change.

 - L4S\_NOT\_AVAILABLE: The ECN marking for L4S of one or more SDFs is not available.

 - L4S\_AVAILABLE: The ECN marking for L4S of one or more SDFs is available again.

 - BAT\_OFFSET\_INFO: Indicates the network provided BAT offset and the optionally adjusted

 periodicity.

 - RT\_DELAY\_TWO\_QOS\_FLOWS: Indicates round-trip delay on UL and DL flows over two QoS flows.

 - PACK\_DELAY\_VAR: Indicates Packet Delay Variation is enabled for the SDF.

 - QOS\_MON\_CAP\_REPO: Indicates whether the QoS Monitoring can be performed or not.

 - RATE\_LIMIT\_INFO\_REPO: Indicates whether support of reporting rate limitation information.

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