**3GPP TSG-CT WG3 Meeting #140 *C3-251119***

**Wuhan, CN, 7 - 11 April 2025**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | C3 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | Requested Alternative QoS Parameter Set may contain "Requested Averaging Window" paremeter, as agreed in CR#1280 (Rel-18) and CR#1440 (Rel-19) of TS 23.503, which have been approved by SA Plenary (SA#107).*6.1.3.22 AF session with required QoS**…**If an AF session can adjust to different QoS parameter combinations, the AF may provide Alternative Service Requirements in a prioritized order (indicating the preference of the QoS requirements with which the service can operate) in addition to the QoS Reference or individual QoS parameters. Alternative Service Requirements contain:**- When the AF requests the network to provide QoS with a QoS Reference, one or more QoS Reference parameters in a prioritized order.**- When the AF requests the network to provide QoS with individual QoS parameters, one or more Requested Alternative QoS Parameter Set(s) in a prioritized order. Each Requested Alternative QoS Parameter Set is comprised of the following individual parameters: Requested 5GS Delay, Requested Guaranteed Flow Bitrate , Requested Packet Error Rate and optionally, a* ***Requested Averaging Window****. Each requested Alternative QoS Parameter Set may also include a* ***Maximum Burst Size*** *parameter.* *If the AF request is sent via the TSCTSF, the TSCTSF determines a Requested PDB considering the Requested 5GS Delay and the UE-DS-TT Residence Time.*The "Maximum Burst Size" parameter introduced in CR#1179 (Rel-18) of TS 23.503 is also missing in the stage 3 specification. |
|  |  |
| ***Summary of change:*** | Add Notes and a new feature. |
|  |  |
| ***Consequences if not approved:*** | The stage 2 required parameters cannot be supported. |
|  |  |
| ***Clauses affected:*** | 5.14.2.1.2, 5.14.2.1.3, 5.14.4 |
|  |  |
|  | **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 does not impact any yaml file. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* First 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) (NOTE 19) | 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 and/or TTNB indication. | PDUSetHandlingPowerSavingTrafficCharChange |
| 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 |
| 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 type(s) of QoS Monitoring capability report is applied when the event "QOS\_MON\_CAP\_REPO" is subscribed.This attribute shall be present if the event "QOS\_MON\_CAP\_REPO" is subscirbed. | 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. | MediaInfoDeliver |
| 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" and "qosMonConReq" 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" and "pduSetQosUl" attributes within the AlternativeServiceRequirementsData data type may be present only when the "EnPDUSetHandling" feature is supported.NOTE 19: The "averWindow" and "maxDataBurstVol" attributes within the AlternativeServiceRequirementsData data type specified in 3GPP TS 29.514 [52] may be present only when the "AltQosWithIndParams\_5G\_ext" feature is supported. |

\* \* \* 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) (NOTE 16) | 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 and/or TTNB indication. | PDUSetHandlingPowerSavingTrafficCharChange |
| 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 type(s) of QoS Monitoring capability report is applied when the event "QOS\_MON\_CAP\_REPO" is subscribed.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 |
| 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. | MediaInfoDeliver |
| 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" and "qosMonConReq" 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" and "pduSetQosUl" attributes within the AlternativeServiceRequirementsData data type may be present only when the "EnPDUSetHandling" feature is supported.NOTE 16: The "averWindow" and "maxDataBurstVol" attributes within the AlternativeServiceRequirementsData data type specified in 3GPP TS 29.514 [52] may be present only when the "AltQosWithIndParams\_5G\_ext" feature is supported. |

Editor's note: How the Protocol Description indicates the methods to delivery the media related information is for FFS.

\* \* \* 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 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.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 Information. |
| 33 | MediaInfoDeliver | 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. |
| 34 | RateLimitReport | This feature indicates the support of AF request the 5GS to expose the 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 | EnPDUSetHandling | This feature indicates the enhancements on the PDU set based QoS handling, including:- the support of PDU Set QoS parameters in Alternative QoS.This feature requires that the PDUSetHandling and AltQosWithIndParams\_5G features are also supported.This feature may only be supported in 5G. |
| 37 | AltQosWithIndParams\_5G\_ext | This feature indicates the enhancements of provisioning Alternative Service Requirements with individual QoS parameters, including: - the support of Averaging Window and Maximum Data Burst Volume parameters.This feature requires that the AltQosWithIndParams\_5G feature is also 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: The PSDB and PSER information in the alternative QoS supported by EnPDUSetHandling feature may need to be further updated based on stage 2 requirement.

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