**3GPP TSG CT WG3 Meeting #135 *C3-243156***

**Hyderabad, IN, 27 - 31 May, 2024**

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| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.122** | **CR** | **0841** | **rev** | **-** | **Current version:** | **18.5.0** |  |
|  |
| *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:***  | Completion of EnQoSMon feature description in 5.8 |
|  |  |
| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | XRM |  | ***Date:*** | 2024-05-20 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | The event subscription at media subcomponent level is supported with feature dependency of EnQoSMon, but it’s not reflected in the feature definition in 5.8. |
|  |  |
| ***Summary of change:*** | Extend the definition of EnQoSMon feature in 5.8 to indicate this feature also indicates the support of event subscription at flow level. |
|  |  |
| ***Consequences if not approved:*** | Incomplete feature description for EnQoSMon. |
|  |  |
| ***Clauses affected:*** | 5.14.2.1.13, 5.14.2.1.14, 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 have any impact in the OpenAPI specification. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 5.14.2.1.13 Type AsSessionMediaComponent

This type represents media component data for a single-modal data flow of a multi-modal service. It shall comply with the provisions defined in table 5.14.2.1.13-1.

Table 5.14.2.1.13-1: Definition of type AsSessionMediaComponent

| Attribute name | Data type | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- |
| flowInfos | array(FlowInfo) | 0..N | Contains the IP data flow(s) description for a single-modal data flow. |  |
| qosReference | string | 0..1 | Identifies a pre-defined QoS information. |  |
| altSerReqs | array(string) | 0..N | Ordered list of alternative service requirements that include a set of QoS references. The lower the index of the array for a given entry, the higher the priority.(NOTE) |  |
| altSerReqsData | array(AlternativeServiceRequirementsData) | 0..N | 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) |  |
| disUeNotif | boolean | 0..1 | Indicates 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 when it is included and set to "true". The fulfilled situation is either the QoS profile or an Alternative QoS Profile. The default value "false" shall apply, if the attribute is not present and has not been supplied previously. |  |
| medCompN | integer | 1 | Identifies the media component number, and it contains the ordinal number of the media component. |  |
| medType | MediaType | 0..1 | Indicates the media type of the service. |  |
| marBwUl | BitRate | 0..1 | Maximum requested bandwidth for the Uplink. |  |
| marBwDl | BitRate | 0..1 | Maximum requested bandwidth for the Downlink. |  |
| mirBwUl | BitRate | 0..1 | Minimum requested bandwidth for the Uplink. |  |
| mirBwDl | BitRate | 0..1 | Minimum requested bandwidth for the Downlink. |  |
| tsnQos | TsnQoSContainer | 0..1 | Transports QoS parameters for TSC traffic. |  |
| tscaiInputUl | TscaiInputContainer | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress interface of the DS-TT/UE (uplink flow direction).  |  |
| tscaiInputDl | TscaiInputContainer | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress of the NW-TT (downlink flow direction). |  |
| rTLatencyReq | 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. |  |
| pduSetQosDl | PduSetQosPara | 0..1 | Contains the PDU Set QoS parameter(s) which are used to support PDU Set based QoS handling in the downlink. | 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. | PDUSetHandling |
| l4sInd | UplinkDownlinkSupport | 0..1 | Provides L4S support information.(NOTE 2) | L4S |
| protoDescUl | ProtocolDescription | 0..1 | Uplink Protocol description for PDU Set identification in UE. | PDUSetHandling |
| protoDescDl | ProtocolDescription | 0..1 | Downlink Protocol description for PDU Set identification and end of Data burst indication in UPF. | PDUSetHandling PowerSaving |
| 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 |
| evSubsc | EventsSubscReqData | 0..1 | Identifies the events the application subscribes to at creation of a media component. (NOTE 1) | EnQoSMon |
| NOTE 1: If attribute "evSubsc" is present, one or more of the following IEs within EventsSubscReqData data type may be included: "events", "notifUri", "reqQosMonParams", "qosMon", "qosMonDatRate", "pdvReqMonParams", "pdvMon", "congestMon", "notifCorreId", "rttMon", "directNotifInd", "avrgWndw". In addition, when the attribute "events" is present, only one or more of the following Enumeration "AfEvent" may be included: "QOS\_MONITORING", "PACK\_DEL\_VAR", "RT\_DELAY\_TWO\_QOS\_FLOWS".NOTE 2: Within an AsSessionMediaComponent entry, the AF may include either the indication of L4S support within the "l4sInd" attribute or the request for congestion measurements within the "evSubsc" attribute as specified in 3GPP TS 29.514 [52]. The indication of the support of ECN marking for L4S and the request of congestion measurements are mutually exclusive and shall not be present simultaneously. |

Editor’s Note: the list of IEs of a AsSessionMediaComponent to complete the QoS parameters developed for the MediaComponent data defined in TS 29.514 and applicable to external AFs is FFS.

If the "EnQosMon" feature is supported, and the AF includes the attribute "evSubsc" in the "AsSessionMediaComponent" data type with a subscription to a specific event, then the "events" attribute within the "AsSessionWithQoSSubscription" data type shall not include a subscription to notifications for that specific event. In this case, the NEF shall use the value of the "notifUri" attribute included within the "evSubsc" attribute in the "AsSessionMediaComponent" data type as target URI of the HTTP POST request for that specific event notification.

NOTE: The AF can provide different values per AS session media component for the "notifUri" attribute and/or "notifCorrId" attribute, e.g. to identify the media component of a received report.

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

##### 5.14.2.1.14 Type AsSessionMediaComponentRm

This type represents the AsSessionMediaComponent with the "nullable: true" property. It shall comply with the provisions defined in table 5.14.2.1.14-1

Table 5.14.2.1.14-1: Definition of type AsSessionMediaComponentRm

| Attribute name | Data type | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- |
| flowInfos | array(FlowInfo) | 0..N | Contains the IP data flow(s) description for a single-modal data flow. |  |
| qosReference | string | 0..1 | Identifies a pre-defined QoS information. |  |
| altSerReqs | array(string) | 0..N | Ordered list of alternative service requirements that include a set of QoS references. The lower the index of the array for a given entry, the higher the priority.(NOTE) |  |
| altSerReqsData | array(AlternativeServiceRequirementsData) | 0..N | 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) |  |
| disUeNotif | boolean | 0..1 | Indicates 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 when it is included and set to "true". The fulfilled situation is either the QoS profile or an Alternative QoS Profile. The default value "false" shall apply, if the attribute is not present and has not been supplied previously. |  |
| medCompN | integer | 1 | Identifies the media component number, and it contains the ordinal number of the media component. |  |
| medType | MediaType | 0..1 | Indicates the media type of the service. |  |
| marBwUl | BitRateRm | 0..1 | Maximum requested bandwidth for the Uplink. |  |
| marBwDl | BitRateRm | 0..1 | Maximum requested bandwidth for the Downlink. |  |
| mirBwUl | BitRateRm | 0..1 | Minimum requested bandwidth for the Uplink. |  |
| mirBwDl | BitRateRm | 0..1 | Minimum requested bandwidth for the Downlink. |  |
| tsnQos | TsnQoSContainerRm | 0..1 | Transports QoS parameters for TSC traffic. |  |
| tscaiInputUl | TscaiInputContainer | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress interface of the DS-TT/UE (uplink flow direction).  |  |
| tscaiInputDl | TscaiInputContainer | 0..1 | Transports TSCAI input parameters for TSC traffic at the ingress of the NW-TT (downlink flow direction). |  |
| rTLatencyReq | 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". |  |
| pduSetQosDl | PduSetQosParaRm | 0..1 | Contains the PDU Set QoS parameter(s) which are used to support PDU Set based QoS handling in the downlink. | 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. | PDUSetHandling |
| l4sInd | UplinkDownlinkSupport | 0..1 | Provides L4S support information.(NOTE 2) | L4S |
| protoDescUl | ProtocolDescription | 0..1 | Uplink Protocol description for PDU Set identification in UE. | PDUSetHandling |
| protoDescDl | ProtocolDescription | 0..1 | Downlink Protocol description for PDU Set identification and end of Data burst indication in UPF. | PDUSetHandlingPowerSaving |
| 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 |
| evSubsc | EventsSubscReqDataRm | 0..1 | Identifies the events the application subscribes to at creation of a media component. (NOTE 1) | EnQoSMon |
| NOTE 1: If attribute "evSubsc" is present, one or more of the following IEs within EventsSubscReqDataRm data type may be included: "events", "notifUri", "reqQosMonParams", "qosMon", "qosMonDatRate", "pdvReqMonParams", "pdvMon", "congestMon", "notifCorreId", "rttMon", "directNotifInd", "avrgWndw". In addition, when the attribute "events" is present, only one or more of the following Enumeration "AfEvent" may be included: "QOS\_MONITORING", "PACK\_DEL\_VAR", "RT\_DELAY\_TWO\_QOS\_FLOWS".NOTE 2: Within an AsSessionMediaComponentRm entry, the AF may include either the indication of L4S support within the "l4sInd" attribute or the request for congestion measurements within the "evSubsc" attribute as specified in 3GPP TS 29.514 [52]. An AsSessionMediaComponent entry within 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. |

If the "EnQosMon" feature is supported, and the AF includes the attribute "evSubsc" in the "AsSessionMediaComponentPatch" data type with a subscription to a specific event, then the "events" attribute within the Individual AS Session with Required QoS Subscription resource shall not include a subscription to notifications for that specific event. In this case, the NEF shall use the value of the "notifUri" attribute included within the "evSubsc" attribute in the "AsSessionMediaComponentPatch" data type as target URI of the HTTP POST request for that specific event notification.

NOTE: The AF can provide different values per AS session media component for the "notifUri" attribute and/or "notifCorrId" attribute, e.g. to identify the media component of a received report.

\*\*\* 3rd 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\_5G | 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 report of enhanced packet delay monitoring, and/or, 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.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. |
| 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: Whether and/how to indicate the support of end of burst indication, and provision the flow periodicity information within the Power Saving feature is FFS.

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