**3GPP TSG CT WG3 Meeting #134 *C3-242189r2***

**Changsha, China, 15-19 April 2024**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.514** | **CR** | **0616** | **rev** | **1** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | adding dependency feature for packet delay measurement failure report | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | XRM | | | | |  | ***Date:*** | | | 2024-04-08 |
|  |  | | | |  | |  | | |  |
| ***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 can be 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | According to the supported features definition in Table 5.8-1, both PacketDelayFailureReport feature and EnQoSMon feature require that the QoSMonitoring feature is supported.  Besides, the description of repPeriod attribute in AfEventSubscription data type definition indicates: if the feature "PacketDelayFailureReport" or "EnQoSMon" is supported, it also indicates the time interval at which a measurement failure needs to be reported if no measurement result is provided, and QosMonitoringReport data type definition in Table 5.6.2.10-1 also shows PacketDelayFailureReport and EnQoSMon features are the applicable features for the pdmf attribute.  However, the procedure description related to packet delay measurement failure report does not mention EnQoSMon feature, which is not aligned with the data type definition.  In addition, NOTE 2 of 4.2.2.23.1 should be removed from the description part for packet delay QoS monitoring as it has nothing to do with packet delay QoS monitoring. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Udpate the procedure description in 4.2.2.23.1 and 4.2.5.14 to indicate that packet delay measurement failure report has dependency on EnQoSMon feature.  Remove NOTE 2 of 4.2.2.23.1. | | | | | | | | |
|  | | on | | | | | | | | |
| ***Consequences if not approved:*** | | Misalignment between the procedure description and data type definition. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.2.23.1, 4.2.5.14, 5.6.2.10, 5.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*

##### 4.2.2.23.1 Subscriptions to QoS Monitoring at AF session level

The subscription at AF session level to Service Data Flow QoS monitoring information is used by a NF service consumer to receive a notification about the real-time measurements of QoS monitoring parameters for a QoS Flow (i.e. when the AF request involves only flows with the same QoS requirements), e.g. packet delay between UPF and UE, when the "QoSMonitoring" feature is supported.

NOTE 1: When the subscription for QoS Monitoring is for multiple QoS flows, i.e, when the AF-session can contain multiple media components, the subscription for QoS monitoring can only be indicated within the corresponding "medSubComps" entry.

When the requested measurement(s) are for the packet delay QoS monitoring parameter, the NF service consumer shall use the "EventsSubscReqData" data type as described in clause 4.2.2.2 and shall include:

- the requested QoS monitoring parameter(s) to be measured (i.e. DL, UL and/or round trip packet delay) within the "reqQosMonParams" attribute; and

- an entry of the "AfEventSubscription" data type per requested notification method in the "events" attribute with:

a) the "event" attribute set to the value "QOS\_MONITORING"; and

b) the "notifMethod" attribute set to the value "EVENT\_DETECTION" or "PERIODIC"; and

c) when the "notifMethod" attribute is set to the value "PERIODIC", the periodic time for reporting and, if the feature "PacketDelayFailureReport" is supported, the maximum period with no QoS measurement results reported within the "repPeriod" attribute; and

d) when the "notifMethod" attribute is set to the value "EVENT\_DETECTION", the minimum waiting time between subsequent reports within the "waitTime" attribute and, if the feature "PacketDelayFailureReport" is supported, the maximum period with no QoS measurement results reported within the "repPeriod" attribute;

- when the "notifMethod" attribute set to the value "EVENT\_DETECTION":

a) the delay threshold for downlink with the "repThreshDl" attribute;

b) the delay threshold for uplink with the "repThreshUl" attribute; and/or

c) the delay threshold for round trip with the "repThreshRp" attribute

- The NF service consumer may include in "EventsSubscReqData" data type the notification correlation identifier assigned by the AF within the "notifCorreId" attribute and, if the feature "ExposureToEAS" is supported, the "directNotifInd" attribute set to true to indicate direct event notification of QoS Monitoring data from the UPF.

When the "EnQoSMon" feature is supported, the NF service consumer shall use the "EventsSubscReqData" data type as described in clause 4.2.2.2, as follows:

- the requested QoS monitoring parameter(s) to be measured (i.e. DL, UL and/or round trip packet delay, and/or UL and/or DL data rate information, and/or UL and/or DL congestion information) within the "reqQosMonParams" attribute; and

- within the "events" attribute, the NF service cosnumer shall include an entry of the "AfEventSubscription" data type per QoS monitoring parameter, with:

1. the "event" attribute set to the value "QOS\_MONITORING";

2. the requested QoS monitoring parameter type within the "qosMonParamType" attribute;

3. the notification method within the "notifMethod" ("EVENT\_DETECTION" or "PERIODIC), as applicable for the indicated QoS monitoring within the "qosMonParamType" attribute;

NOTE 3: When the "reqQosMonParams" attribute indicates UL and/or DL congestion information, the "notifMethod" attribute can only indicate "EVENT\_DETECTION".

4. when the "notifMethod" attribute is set to the value "PERIODIC", the periodic time for reporting and the maximum period with no QoS measurement results reported within the "repPeriod" attribute; and

5. when the "notifMethod" attribute is set to the value "EVENT\_DETECTION", the minimum waiting time between subsequent reports within the "waitTime" attribute and the maximum period with no QoS measurement results reported within the "repPeriod" attribute; and

- when the "notifMethod" attribute is set to the value "EVENT\_DETECTION":

1. when the "qosMonParamType" attribute is omitted or indicates packet delay, the "qosMon" attribute with the required QoS Monitoring information as described above;

2. when the "qosMonParamType" attribute indicates congestion information, the "congestMon" attribute with:

a) the congestion threshold for downlink with the "conThreshDl" attribute; and/or

b) the congestion threshold for uplink with the "conThreshUl" attribute; or

3. when the "qosMonParamType" attribute indicates QoS monitoring for data rate, the "qosMonDatRate" attribute with:

a) the data rate threshold for the downlink within the "repThreshDatRateDl" attribute; and/or

b) the data rate threshold for the uplink within the "repThreshDatRateUl" attribute; and

and may include:

1. the notification correlation identifier assigned by the AF within the "notifCorreId" attribute;

2. the "directNotifInd" attribute set to true to indicate that the one or more QoS monitoring parameter(s) in the request require direct event notification data from the UPF; and

3. when the "qosMonParamType" attribute indicates QoS monitoring for data rate, an averaging window within the "avrgWndw" attribute.

The NF service consumer may include the "3gpp-Sbi-Consumer-Info" custom HTTP header as described in clause 6.6.2 of 3GPP TS 29.500 [5] to indicate the support of one or more QoS monitoring features (e.g. "QoSMonitoring" feature and "EnQoSMon" feature) by the NF service consumer over the Nsmf\_EventExposure service as described in 3GPP TS 29.508[13].

The NF service consumer shall include more than one "AfEventSubscription" data type within the "EventsSubscReqData" data type if more than one notification method is required.

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

If the AF provided an indication of direct event notification in the request and PCF determines that the direct notification of QoS Monitoring reports applies (i.e. the AF request does not include QoS parameter measurements that are derived by PCF), the PCF behaves as specified in 3GPP TS 29.512 [8].

If the AF provided an indication of direct event notification and PCF determines that the direct notification of QoS Monitoring reports does not apply (i.e. the AF request includes QoS parameter measurements that are derived by PCF as specified in clause 4.2.2.41 (AF request for monitoring packet delay variation), and clause 4.2.2.44 (AF request for monitoring round trip packet delay when UL and DL are on different service data flows) and the information cannot be consolidated in the QoS monitoring policy in the PCC rule), the PCF generates a successful response to the AF and indicates that direct event notification is not possible by including within the "servAuthInfo" attribute the value "DIRECT\_NOTIF\_NOT\_POSSIBLE". In this case, the PCF shall not indicate direct notification in the QoS Monitoring policy provided to the SMF and instead subscribe to receive QoS Monitoring reports from SMF as specified in 3GPP TS 29.512 [8].

As result of this action, the PCF shall set the appropriate subscription to QoS Monitoring information for the corresponding PCC rule as described in 3GPP TS 29.512 [8].

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

#### 4.2.5.14 Notification about Service Data Flow QoS Monitoring control

When the PCF gets the information about real-time measurements of QoS monitoring parameters for one or more SDFs from the SMF (e.g. for QoS monitoring for packet delay, uplink packet delay(s), downlink packet delay(s) and/or round trip delay(s) or if the feature "PacketDelayFailureReport" is supported, indicator of packet delay measurement failure) the PCF shall inform the NF service consumer accordingly if the NF service consumer has previously subscribed as described in clauses 4.2.2.23 and 4.2.3.23 and 4.2.6.8.

The PCF shall notify the NF service consumer of the QoS monitoring events by including the "EventsNotification" data type in the body of the HTTP POST request as described in clause 4.2.5.2.

The PCF shall include:

- within the "evNotifs" attribute an event entry of the "AfEventNotification" data type with the matched event "QOS\_MONITORING" in the "event" attribute; and

- for QoS monitoring for packet delay, one or more entries of the "qosMonReports" array, where each entry shall containh:

1. the identification of the affected service flows (if not all the flows are affected) encoded in the "flows" attribute if applicable; and:

2. the received packet delay measurement:

a) the uplink packet delays within the "ulDelays" attribute; and/or

b) the downlink packet delays within the "dlDelays" attribute; and/or

c) the round trip packet delays within the "rtDelays" attribute; or

d) if the feature "PacketDelayFailureReport" is supported, the packet delay measurement failure indicator within the"pdmf" attribute; and/or

NOTE: The SMF reports one UL, DL and/or round-trip packet delay measurement for each periodic and/or event-triggered report as described in 3GPP TS 29.512 [8]. I.e, the PCF can include only one element within the "ulDelays", "dlDelays", and/or "rtDelays" array(s) respectively, each one with the received report from the SMF for the UL, DL and/or round trip delay(s).

- if the feature "EnQoSMon" is supported, to report data rate measurements, one or more entries of the "qosMonDatRateReps" array, where each entry shall contain:

1. the identification of the affected service flows (if not all the flows are affected) encoded in the "flows" attribute if applicable; and

2. the received data rate measurement:

a) one data rate measurement for the UL within the "ulDataRate" attribute; and/or

b) one data rate measurement for the DL within the "dlDataRate" attribute; and/or.

Editor’s note: Whether Data Rate monitoring requires the report of the maximum and minimum calculated during the waiting time is FFS.

- if the feature "EnQoSMon" is supported, for QoS monitoring report for congestion information, one or more entries of the "congestReports" array, where each entry sahll contain:

1. the identification of the affected service flows (if not all the flows are affected) encoded in the "flows" attribute if applicable;

2. the received congestion measurement:

a) the uplink congestion information measurement(s) within the "ulConInfo" attribute; and/or

b) the downlink congestion information measurement(s) within the "dlConInfo" attribute.

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

#### 5.6.2.10 Type AfEventSubscription

Table 5.6.2.10-1: Definition of type AfEventSubscription

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| event | AfEvent | M | 1 | Subscribed Event. |  |
| notifMethod | AfNotifMethod | O | 0..1 | If notifMethod is not supplied, the default value "EVENT\_DETECTION" applies. |  |
| repPeriod | DurationSec | O | 0..1 | Indicates the time interval between successive event notifications. It is supplied for notification method "PERIODIC".  If the feature "PacketDelayFailureReport" is supported, it also indicates the time interval at which a measurement failure needs to be reported if no measurement result is provided. It is supplied for notification methods "PERIODIC" and "EVENT\_DETECTION". | EnhancedSubscriptionToNotification  PacketDelayFailureReport |
| waitTime | DurationSec | O | 0..1 | Indicates the minimum waiting time between subsequent reports. Only applicable when the notification is set to "EVENT\_DETECTION". | EnhancedSubscriptionToNotification |
| qosMonParamType | QosMonitoringParamType | C | 0..1 | Indicates the type of QoS monitoring parameter when the "event" attribute indicates "QOS\_MONITORING". It may be omitted when the QoS monitoring parameter is Packet Delay, otherwise it shall be provided when the "EnQoSMon" feature is supported. | EnQoSMon |

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

## 5.8 Feature negotiation

The optional features in table 5.8-1 are defined for the Npcf\_PolicyAuthorization API. They shall be negotiated using the extensibility mechanism defined in clause 6.6.2 of 3GPP TS 29.500 [5].

When requesting the PCF to create an Individual Application Session Context resource the NF service consumer shall indicate the optional features the NF service consumer supports for the Npcf\_PolicyAuthorization service by including the "suppFeat" attribute in the "AppSessionContextReqData" data type of the HTTP POST request.

The PCF shall determine the supported features for the created Individual Application Session Context resource as specified in clause 6.6.2 of 3GPP TS 29.500 [5]. The PCF shall indicate the supported features in the HTTP response confirming the creation of the Individual Application Session Context resource by including the "suppFeat" attribute in the "AppSessionContextRespData" data type.

Table 5.8-1: Supported Features

| Feature number | Feature Name | Description |
| --- | --- | --- |
| 1 | InfluenceOnTrafficRouting | Indicates support of Application Function influence on traffic routing. If the PCF supports this feature, the NF service consumer may influence SMF routing to applications or subscribe to notifications of UP path management for the traffic flows of an active PDU session. |
| 2 | SponsoredConnectivity | Indicates support of sponsored data connectivity. If the PCF supports this feature, the NF service consumer may provide sponsored data connectivity to the SUPI. |
| 3 | MediaComponentVersioning | Indicates the support of the media component versioning. |
| 4 | URLLC | Indicates support of Ultra-Reliable Low-Latency Communication (URLLC) requirements, i.e. AF application relocation acknowledgement and UE address(es) preservation. The InfluenceOnTrafficRouting feature shall be supported in order to support this feature. |
| 5 | IMS\_SBI | Indicates support of the communication with the 5GC IMS NF service consumer via Service Based Interfaces. |
| 6 | NetLoc | Indicates the support of access network information reporting. |
| 7 | ProvAFsignalFlow | This indicates support for the feature of provisioning of AF signalling flow information as described in clauses 4.2.2.16 and 4.2.3.17. If the PCF supports this feature the NF service consumer may provision AF signalling flow information.  NOTE: This feature is used by the IMS Restoration Procedures to provide to the SMF the address of the P-CSCF selected by the UE, refer to 3GPP TS 23.380 [39].  The IMS\_SBI feature shall be supported in order to support this feature. |
| 8 | ResourceSharing | This feature indicates the support of resource sharing across several "Individual Application Session Context" resources. The IMS\_SBI feature shall be supported in order to support this feature. |
| 9 | MCPTT | This feature indicates the support of Mission Critical Push To Talk services as described in 3GPP TS 24.379 [41]. |
| 10 | MCVideo | This feature indicates the support of Mission Critical Video services as described in 3GPP TS 24.281 [43]. |
| 11 | PrioritySharing | This feature indicates that Priority Sharing is supported as described in 3GPP TS 23.503 [4], clause 6.1.3.15. |
| 12 | MCPTT-Preemption | This feature indicates the support of service pre-emption based on the information provided by the NF service consumer. It requires that both PrioritySharing and MCPTT features are also supported. |
| 13 | MacAddressRange | Indicates the support of a set of MAC addresses with a specific range in the traffic filter. |
| 14 | RAN-NAS-Cause | This feature indicates the support for the release cause code information from the access network. |
| 15 | EnhancedSubscriptionToNotification | Indicates the support of:  - Subscription to periodic notifications.  - Definition of a waiting time between the reporting of two event triggered events.  - Indication of whether the event has to be reported at PDU Session termination.  - Notification Correlation Id for a subscription to an event. |
| 16 | QoSMonitoring | Indicates the support of QoS monitoring functionality and the report of packet delay monitoring. This feature requires the support of the EnhancedSubscriptionToNotification feature. |
| 17 | AuthorizationWithRequiredQoS | Indicates support of policy authorization for the AF session with required QoS. |
| 18 | TimeSensitiveNetworking | Indicates that the 5G System is integrated within the external network as a TSN bridge. |
| 19 | PCSCF-Restoration-Enhancement | This feature indicates support of P-CSCF Restoration Enhancement. It is used for the PCF and the P-CSCF to indicate if they support P-CSCF Restoration Enhancement. |
| 20 | CHEM | This feature indicates the support of Coverage and Handover Enhancements for Media (CHEM). |
| 21 | FLUS | This feature indicates the support of FLUS functionality as described in 3GPP TS 26.238 [51]. |
| 22 | EPSFallbackReport | This feature indicates the support of the report of EPS Fallback as defined in clauses 4.2.2.30, 4.2.3.29 and 4.2.5.15. |
| 23 | ATSSS | Indicates the support of the report of the multiple access types of a MA PDU session. |
| 24 | QoSHint | This feature indicates the support of specific QoS hint parameters as described in 3GPP TS 26.114 [30], clause 6.2.10. |
| 25 | ReallocationOfCredit | This feature indicates the support of notifications of reallocation of credits events. It requires the support of IMS\_SBI feature. |
| 26 | ES3XX | Extended Support for 3xx redirections. This feature indicates the support of redirection for any service operation, according to Stateless NF procedures as specified in clauses 6.5.3.2 and 6.5.3.3 of 3GPP TS 29.500 [5] and according to HTTP redirection principles for indirect communication, as specified in clause 6.10.9 of 3GPP TS 29.500 [5]. |
| 27 | DisableUENotification | Indicates the support of disabling QoS flow parameters signalling to the UE when the SMF is notified by the NG-RAN of changes in the fulfilled QoS situation. This feature requires that the AuthorizationWithRequiredQoS featute is also supported. |
| 28 | PatchCorrection | Indicates support of the correction to the PATCH method:  When this feature is not supported, the interoperability between a NF service consumer and the PCF can only be ensured when it is not required the update of the Individual Application Session Context resource. |
| 29 | MPSforDTS | Indicates support for MPS for DTS as described in clauses 4.2.2.12.2 and 4.2.3.12. |
| 30 | ApplicationDetectionEvents | This feature indicates the support of the subscription to notifications of the detection of the start and stop of an application's traffic. |
| 31 | TimeSensitiveCommunication | Indicates that the 5G System is integrated within the external network as a TSC user plane node to enable Time Sensitive Communication, Time Synchronization and Deterministic Networking. This feature requires that the TimeSensitiveNetworking feature is also supported. |
| 32 | ExposureToEAS | This feature indicates the support of the indication of direct event notification of QoS monitoring events from the UPF to the Local NEF or AF in 5GC. This indication requires that the QoSMonitoring feature is supported. |
| 33 | SatelliteBackhaul | Indicates the support of the report of the satellite or non-satellite backhaul category of the PDU session. |
| 34 | RoutingReqOutcome | Indicates the support of:  - the report of UP path change failures; and  - the indication of whether AF routing requirements are applied.  It requires the support of InfluenceOnTrafficRouting feature. |
| 35 | EASDiscovery | This feature indicates the support of EAS (re)discovery. |
| 36 | AltSerReqsWithIndQoS | Indicates the support of provisioning Alternative Service Requirements with individual QoS parameters. This feature requires that the AuthorizationWithRequiredQoS feature is also supported. |
| 37 | SimultConnectivity | This feature indicates the support of the indication of temporary simultaneous connectivity over source and target PSA at edge relocation. This indication requires that the InfluenceOnTrafficRouting feature is supported. |
| 38 | EASIPreplacement | This feature indicates the support of provisioning of EAS IP replacement info. This support requires that InfluenceOnTrafficRouting feature is also supported |
| 39 | AccNetChargId\_String | This feature indicates the support of long character strings as access network charging identifier. |
| 40 | WLAN\_Location | This feature indicates the support of the report of the WLAN location information received from the ePDG/EPC, if available. It is only applicable to EPS interworking scenarios as described in 3GPP TS 29.512 [8], Annex B. |
| 41 | AF\_latency | This feature indicates support for edge relocation considering user plane latency. |
| 42 | UEUnreachable | This feature indicates the support for the reporting of UE temporary unavailable. |
| 43 | AltQoSProfilesSupportReport | This feature indicates the support of the report of whether Alternative QoS parameters are supported by NG-RAN. This feature requires that AuthorizationWithRequiredQoS feature is also supported. |
| 44 | PacketDelayFailureReport | Indicates the support of packet delay failure report as part of QoS Monitoring procedures. This feature requires that QoSMonitoring feature is supported. |
| 45 | EnTSCAC | Indicates the support of extensions to TSCAC and the RAN feedback for BAT offset and adjusted periodicity.  This feature requires that the TimeSensitiveCommunication feature is also supported. |
| 46 | SignalingPathValidation | This feature indicates the support of the validation of the NF type that originates the Npcf\_PolicyAuthorization\_Create request. |
| 47 | ExtQoS | This feature indicates the support for the extensions to the QoS mechanisms. |
| 48 | CommonEASDNAI | This feature controls the support of the common EAS/DNAI selection. This feature requires that the InfluenceOnTrafficRouting feature is alos supported. |
| 49 | SFC | This feature indicates support of Service Function Chaining functionality. |
| 50 | MultiMedia | This feature indicates the support of multi-modal or multimedia communication service. This feature acts as a basic functional block for extended reality (XR) and interactive media services. |
| 51 | EnSatBackhaulCatChg | This feature indicates the support also of the report of the dynamic  satellite backhaul category of the PDU session. This feature requires the support of SatelliteBackhaul feature. |
| 52 | MTU\_Size | This feature indicates the support of the report of the MTU size of the device side port. This feature requires that the TimeSensitiveCommunication feature is also supported. |
| 53 | ExtraUEaddrReport | This feature indicates the support of the report of additional IP addresses or address ranges allocated for the given PDU session resulting from framed routes or IPv6 prefix delegation. |
| 54 | AuthorizationForMpsSignalling | This feature indicates support for use of the "mpsAction" attribute to signal that the UE's MPS subscription shall be checked by the PCF prior to enabling MPS for AF signalling. |
| 55 | ExposureToTSC | This feature indicates the support of the direct event notification of TSC management information from the UPF to the TSCTSF or TSN AF in 5GC. This feature requires that the TimeSensitiveCommunication feature is also supported. |
| 56 | URSPEnforcement | This feature indicates the support of awareness of URSP rule enforcement |
| 57 | AddFlowDescriptionInformation | This feature indicates support for use e.g. of additional flow description parameters, as the flow label and the IPSec SPI. |
| 58 | QoSTiming\_5G | This feature indicates the support of QoS timing information for the transfer and support of data transmission (e.g., AI/ML traffic transmission). |
| 59 | PDUSetHandling | This feature indicates the support of PDU Set handling. This feature may be used for eXtended Reality (XR) and interactive media services. |
| 60 | RTLatency | This feature indicates the support of Round-Trip latency. This feature may be used for eXtended Reality (XR) and interactive media services. |
| 61 | EnQoSMon | This feature indicates the support of enhanced QoS monitoring functionality, i.e. 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 the QoSMonitoring feature is supported.  In order to support the report of packet delay measurement failure, the PacketDelayFailureReport feature also requires to be supported. |
| 62 | PowerSaving | This feature indicates the support of UE Power Saving management in multi modal traffic as described in clause 4.2.2.42. |
| 63 | L4S | This feature indicates the support of the AF indication of ECN marking for L4S support. |

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 \*\*\*