**3GPP TSG CT WG3 Meeting #134 *C3-242188r1***

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

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.514** | **CR** | **0615** | **rev** | **1** | **Current version:** | **18.5.0** |  |
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| *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:***  | Inapplicable measurement failure report for PDV and RTT QoS monitoring |
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| ***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 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | measurement failure report is not applicable to PDV monitoring and QoS monitoring for RTT delay over two QoS flow, however the 4.2.2.41 and 4.2.2.44 still specify that AF requests may include "repPeriod" attribute for measurement failure report. |
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| ***Summary of change:*** | 4.2.2.41 and 4.2.2.44 updated to remove the case of AF subscription for measurement failure report. |
|  | on |
| ***Consequences if not approved:*** | Incorrect specification may lead misunderstanding. |
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| ***Clauses affected:*** | 4.2.2.41, 4.2.2.44 |
|  |  |
|  | **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 ...  |
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| ***Other comments:*** | This CR does not have any impact in the OpenAPI specification. |
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| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

#### 4.2.2.41 Subscription to Packet Delay Variation monitoring

The subscription to Packet Delay Variation is used by an NF service consumer to receive a notification about the variation of packet delay between UE and PSA UPF when the "EnQoSMon" feature is supported.

When the subscription to measure Packet Delay Variation is at AF session level and for a QoS flow, the NF service consumer may use the "EventsSubscReqData" data type as described in clause 4.2.2.2 and shall include:

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

a) the "event" attribute set to the value "PACK\_DEL\_VAR"; 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 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;

NOTE: When packet delay measurement failure happens, how the PCF to calculate the variation of packet delay is implementation specific.

- the requested Packet Delay Variation parameter(s) to be measured (i.e. DL, UL and/or round trip packet delay variation) within the "pdvReqMonParams" attribute;

- when the "notifMethod" attribute set to the value "EVENT\_DETECTION", the "pdvMon" attribute, with the required Packet Delay Variation monitoring information:

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 shall include more than one "AfEventSubscription" data types within the "EventsSubscReqData" data type if more than one notification methods are required.

NOTE: When the subscription to Packet Delay Variation is for one or more media components of the AF session, the subscription to Packet Delay Variation can only be indicated within the corresponding "medSubComps" entry.

When the NF service consumer subscribes to the monitoring of Packet Delay Variation for one or more service data flow(s), the NF service consumer shall include the "medComponents" attribute as described in clause 4.2.2.2. For each media component that requires Packet Delay Variation measurements, the NF service consumer shall include the service data flow filter information within the "medSubComps" attribute and Packet Delay Variation subscription information for the indicated flows within the "evSubscs" attribute.

If the AF also subscribed to packet delay measurements and provided "directNotifInd" attribute in the request as described in clause 4.2.2.23, and the PCF determines that to calculate the Packet Delay Variations, based on the packet delay measurements, the packet delay measurements cannot be notified directly, the PCF shall set the "servAuthInfo" attribute to "DIRECT\_NOTIF\_NOT\_POSSIBLE" and shall include the "directNotifReports" attribute with the QoS parameter that cannot be notified directly within the "qosMonParamType" attribute and the affected flows within the "flows" attribute in the HTTP response message. The PCF shall not provide the notification addresses and direct notification indication in the QoS monitoring policy of the PCC rule and for the indicated QoS monitoring parameter. The PCF shall subscribe to receive the QoS Monitoring reports from SMF by setting the QoS Monitoring Policy Control Request Trigger.

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

As result of this action, the PCF shall determine the QoS Monitoring information to derive packet delay variation measurements requested by the AF and shall set the appropriate subscription for QoS Monitoring with the SMF to receive packet delay monitoring reports for the corresponding PCC rule(s) as described in 3GPP TS 29.512 [8].

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

#### 4.2.2.44 Subscription to Round-Trip delay over two QoS flows

When the "EnQoSMon" feature is supported, this procedure is used by an NF service consumer to receive a notification about the Round-Trip delay measurements over two Service Data Flows.

The Round-Trip delay measurement over two QoS flows includes two aspects,

- Round-Trip delay measurement for one service data flow, the UL traffic and DL traffic are mapped two QoS flows;

- Round-Trip delay for two service data flows, one UL direction service data flow and one DL direction service data flow, which are over two QoS flows respectively.

The NF service consumer shall include the "medComponents" attribute as described in clause 4.2.2.2. For each media component that requires Round-Trip delay monitoring, the NF service consumer shall include the Round-Trip delay monitoring subscription information for the indicated flows within the "evSubsc" attribute as follows as described in clause 4.2.2.23.2:

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

a) the "event" attribute set to the value "RT\_DELAY\_TWO\_QOS\_FLOWS"; 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 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;

NOTE: When packet delay measurement failure happens, how the PCF to calculate the variation of packet delay is implementation specific.

- when the "notifMethod" attribute set to the value "EVENT\_DETECTION", the "rttMon" attribute, with the delay threshold for round trip with the "repThreshRp" attribute; and

- when the UL and DL flows to be measured are defined in different media subcomponents, the "rttFlowUlref" attribute or the "rttFlowDlref" attribute with the reference to the flow number and, optionally, media number that describe the UL and DL respectively.

Editor's note: It is FFS how to identify the UL and DL flows involved in a round trip time over two QoS flows subscription.If the UL and DL flows request the same QoS and the same subscription events, the NF service consumer shall use an entry of the "MediaComponent" data type as described in clause 4.2.2.2 for the two Service Data Flows which Round-Trip delay will be measured and shall include:

- an entry of the "MediaSubComponent" data type with the "fDescs" attribute contains the flow description for the monitored Uplink and Downlink IP flows, and with the "evSubsc" attribute with the subscription to Round-Trip delay measurements over two SDFs as described above.

If the UL and DL flows request the same QoS but the different subscription events, the NF service consumer shall use an entry of the "MediaComponent" data type as described in clause 4.2.2.2 for the two Service Data Flows which Round-Trip delay will be measured and shall include:

- for the uplink flow, an entry of the "MediaSubComponent" data type with the "fDescs" attribute contains the monitored flow description for the Uplink IP flow, and with the "evSubsc" attribute with the subscription to Round-Trip delay measurements over two SDFs as described above, where the "rttFlowDlRef" attribute includes the flow number where the corresponding DL subscription is defined

- for the downlink flow, an entry of the "MediaSubComponent" data type with the "fDescs" attribute cantains the monitored flow description for the Downlink IP flow, and with the "evSubsc" attribute with the subscription to Round-Trip delay measurements over two SDF as described above, where the "rttFlowUlRef" attribute includes the flow number where the corresponding UL subscription is defined.

If the UL and DL flows request the different QoS, the NF service consumer shall use two "MediaComponent" data type as described in clause 4.2.2.2 for the uplink and downlink QoS flows which Round-Trip delay will be measured and shall include:

- for the uplink flow, an entry of the "MediaSubComponent" data type with the "fDescs" attribute cantains the monitored flow description for the Uplink IP flow. The "MediaSubComponent" data type may also include the "evSubsc" attribute with the subscription to Round-Trip delay measurements over two SDF as described above, where the "rttFlowDlRef" attribute includes the flow number and media component number where the corresponding DL subscription is defined; and

- for the downlink flow, an entry of the "MediaSubComponent" data type with the "fDescs" attribute cantains the monitored flow description for the Downlink IP flow. The "MediaSubComponent" data type may also include the "evSubsc" attribute with the subscription to Round-Trip delay measurements over two SDF as described above, where the "rttFlowDlRef" attribute includes the flow number and media component number where the corresponding DL subscription is defined.

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.

Based on the AF request and local policy, the PCF derives the separate QoS monitoring policies of each direction as defined in clause 4.2.2.23.

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

As result of this action, the PCF shall determine the QoS Monitoring information to derive round-trip delay measurements requested by the AF and shall set the appropriate subscription for QoS Monitoring information for the corresponding PCC rule(s) as described in 3GPP TS 29.512 [8].

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