**3GPP TSG-CT WG1 Meeting #133e-bisC1-22XXXX**

**E-meeting, 17-21 January 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.193** | **CR** | **0073** | **rev** | **1** | **Current version:** | **17.3.0** |  |
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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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Performance Measurement over PDN leg | | | | | | | | | |
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| ***Source to WG:*** | Mediatek Inc. | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ATSSS\_Ph2 | | | | |  | ***Date:*** | | | 2022-01-18 |
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| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | How to performe performance over PDN leg need to be defined.  <For access availability or unavailability report >  It is proposed that when the UE wants to perform access availability or unavailability report procedure over PDN leg, the UE send the PMFP message over default EPS bearer.  <For RTT and PLR measurement>  It is proposed that when the UE wants to mesure the performance of a QoS flow of a **non-default** QoS rule, the UE send the PMFP message over the EPS bearer to which the target QoS flow maps to. For example, in the following example, if the UE wants to measure the performance of QoS flow ID 1  - over non-3GPP leg the UE send the PMFP over QoS flow ID 1  - over PDN leg the UE send the PMFP over EPS bearer ID 5  一張含有 文字 的圖片  自動產生的描述  Additionally, it is proposed that when the UE wants to mesure the performance of the QoS flow of the **default** QoS rule, the UE send the PMFP message  - over non-3GPP leg the UE send the PMFP over QoS flow of the **default** QoS rule  - over PDN leg the UE send the PMFP over default EPS bearer of the PDN leg  Additionally, In 24.501 6.2.5.2 QoS in MA PDU session  *In an MA PDU session:*  *a) established over non-3GPP access; and*  *b) with a PDN connection as a user-plane resource;*  *the UE shall have…****two sets*** *of QoS flow descriptions… -* ***one*** *is maintained via non-3GPP access and* ***the other*** *is associated with EPS bearer contexts of the PDN connection and maintained via extended protocol configuration options IE parameters received via the PDN connection.*  There are ***two sets*** *of QoS flow descriptions* for an MA PDU session with PDN leg + non-3GPP leg, it is proposed that the UE use:  - the set of of QoS flow descriptions *associated with EPS bearer contexts of the PDN connection and maintained via extended protocol configuration options IE parameters received via the PDN connection.* | | | | | | | | |
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| ***Summary of change:*** | | Define how to performe performance over PDN leg | | | | | | | | |
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| ***Consequences if not approved:*** | | How to performe performance over PDN leg is not defined | | | | | | | | |
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| ***Clauses affected:*** | | 5.4.1 | | | | | | | | |
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|  | | **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's revision history:*** | |  | | | | | | | | |

\*\*\* change \*\*\*

### 5.4.1 General

Performance measurement function protocol (PMFP) procedures are performed between a performance measurement function (PMF) in a UE and a PMF in the UPF.

The following UE-initiated PMFP procedures are specified:

a) UE-initiated RTT measurement procedure; and

b) access availability or unavailability report procedure;

c) UE-initiated PLR measurement procedure; and

d) UE assistance data provisioning procedure.

The following UPF-initiated PMFP procedures are specified:

a) UPF-initiated RTT measurement procedure; and

b) UPF-initiated PLR measurement procedure.

The UE-initiated PMFP procedures and the UPF-initiated PMFP procedures can be performed in an MA PDU session only when the MAI is provided to the UE during establishment of the MA PDU session.

PMFP messages are transported in an IP packet or an Ethernet frame according to clause 5.3.2.

If the UE supports performance measurement function protocol procedures for the QoS flow of a non-default QoS rule, the UE indicates its "access performance measurements per QoS flow" capability as defined in clause 9.11.4.1 of 3GPP TS 24.501 [6] to the SMF. If the SMF determines that PMFP using the QoS flow of the non-default QoS rule is applied to the MA PDU session for the UE, the SMF provides the UE with the MAI including a list of QoS flows over which access performance measurements may be performed. The UE performs the RTT measurement procedure or the PLR measurement procedure over the QoS flow(s) as indicated in the received MAI.

If the UPF receives the indication from the SMF that the performance measurement is for QoS flow(s) of the non-default QoS rule, the UPF performs the RTT measurement procedure or the PLR measurement procedure over the QoS flow(s) of non-default QoS rule as indicated by the SMF. Otherwise, the UPF performs the RTT measurement procedure or the PLR measurement procedure over the QoS flow of the default QoS rule

PMFP messages, transported between the UE and the UPF over one (or more) QoS flows of a non-default QoS rule, are specified in clause 5.4.2.1.3.

If a PDN connection is established as a user-plane resource of an MA PDU session as specified in clause 5.3:

- if PMFP using the QoS flow of the non-default QoS rule is applied to the MA PDU session, the UE or the network performs the RTT measurement procedure or the PLR measurement procedure over the EPS bearer with the EPS bearer identity included in the corresponding QoS flow description of the target QoS flow in the set of QoS flow descriptions associated with EPS bearer contexts of the PDN connection and maintained via extended protocol configuration options IE parameters received via the PDN connection stored in the UE; and

- for PMFP using the QoS flow of the default QoS rule, the UE or the network performs the RTT measurement procedure or the PLR measurement procedure over the default EPS bearer of the PDN connection.

PMFP messages transported between the UE and the UPF (and vice versa) are protected using the security mechanisms protecting the user data packets transported over NG-RAN or non-3GPP access connected to the 5GCN and over the N3 and N9 reference points, are specified in 3GPP TS 33.501 [14]. A PMFP-specific security mechanism is not specified.

NOTE: Even though transport of PMFP messages between the UE and the UPF is protected, a compromised UE can send false or incorrect PMFP messages.

PMFP is a standard L3 protocol according to 3GPP TS 24.007 [13], PMFP messages are standard L3 messages according to 3GPP TS 24.007 [13] and error behaviour specified for L3 protocol in according to 3GPP TS 24.007 [13] applies for PMFP.

The access availability or unavailability report procedure is only performed over the QoS flow of the default QoS rule and the default EPS bearer of the PDN connection established as a user-plane resource.

\*\*\* end of change \*\*\*