**3GPP TSG-CT WG1 Meeting #133bis-eC1-22xxxx**

**E-meeting, 17-21 January 2022was C1-220208**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.193** | **CR** | **0077** | **rev** | **1** | **Current version:** | **17.3.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Clarifications on PMFP used on the user planes via 3GPP access in EPC and non-3GPP access in 5GC | | | | | | | | | |
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| ***Source to WG:*** | ZTE, Mediatek Inc. | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ATSSS\_Ph2 | | | | |  | ***Date:*** | | | 2022-01-19 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | There are following facts regarding PMFP:   1. According to clause 4.22.2.3.1 of TS 23.502, the PMF protocol may be used via any user plane connection, i.e. via 3GPP access in EPC or non-3GPP access in 5GC in the case of multi-access connectivity using ATSSS via both 3GPP access to EPC and non-3GPP access to 5GC. 2. R17 introduces access performance measurements per QoS flow. QoS flow is applicable to 5GS only. This implies that "access performance measurements per QoS flow" is not performed over the user plane of the PDN connection via 3GPP access in EPS when the PDN connection is established as the user plane resources of an MA PDU session. 3. When Ethernet type PDN Connection is supported in EPS, the PMF MAC address information can also be provided as ATSSS PCO parameters.   The three points above need to be clarified in stage 3 specification accordingly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Specify that PMFP procedures can be performed on the user plane of PDN connection which is established as the user plane resource of an MA PDU session via 3GPP access in EPS.  Add a NOTE to clarify for the PDN connection over 3GPP access in EPS which is established as a user-plane resource of an MA PDU session, the PMFP procedures is only performed over the default EPS bearer of the PDN connection.  The measurement assistance information field in the ATSSS PCO parameter can be coded as the PMF MAC address information as well. | | | | | | | | |
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| ***Consequences if not approved:*** | | It is not clear how to perform PMFP procedures on the PDN connection which is established as the user plane resource of an MA PDU session. | | | | | | | | |
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| ***Clauses affected:*** | | 5.4.1, 6.1.6.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* First 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:

a) on the user plane of an MA PDU session via either 3GPP access or non-3GPP access in 5GS if the MAI is provided to the UE during establishment of the MA PDU session; or

b) on the user plane of the PDN connection established as the user plane resource of an MA PDU session via 3GPP access in EPS or the user plane of the MA PDU session via non-3GPP access in 5GS as specified in clause 5.3.

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.

NOTE 1: In this release of the specification, for the PDN connection established as a user-plane resource of an MA PDU session, the PMFP procedures are only performed over the default EPS bearer of the PDN connection.

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.

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 2: 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, or over the default EPS bearer of the PDN connection established as a user-plane resource.

\* \* \* Next change \* \* \* \*

#### 6.1.6.3 ATSSS response with the length of two octets PCO parameter

The purpose of the ATSSS response with the length of two octets PCO parameter is to provide network parameters for MA PDU session management.

The ATSSS response with the length of two octets PCO parameter container contents are coded as shown in figure 6.1.6.3-1 and table 6.1.6.3-1.

The ATSSS response with the length of two octets PCO parameter container contents may be one or more octets long. If the ATSSS response with the length of two octets PCO parameter container contents is longer than as indicated in the figure 6.1.6.3-1, the octets after the last field of the figure 6.1.6.3-1 shall be ignored.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | | 6 | | 5 | | 4 | | 3 | | 2 | | 1 | |  |
| 0  Spare | | 0  Spare | | 0  Spare | | 0  Spare | | 0  Spare | | 0  Spare | | MAII | | NSFII | octet 1 |
| Network steering functionalities information length | | | | | | | | | | | | | | | octet 2\*  octet 3\* |
| Network steering functionalities information | | | | | | | | | | | | | | | octet 4\*  octet n\* |
| Measurement assistance information length | | | | | | | | | | | | | | | octet n+1\*  octet n+2\* |
| Measurement assistance information | | | | | | | | | | | | | | | octet n+3\*  octet m\* |

Figure 6.1.6.3-1: ATSSS response with the length of two octets PCO parameter container contents

Table 6.1.6.3-1: ATSSS response with the length of two octets PCO parameter container contents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Network steering functionalities information indicator (NSFII) (octet 1, bit 1) | | | | |
| This bit indicates whether the network steering functionalities information length field and the network steering functionalities information are included. | | | | |
| Bit | | | | |
| **1** |  |  |  |  |
| 0 |  |  |  | Network steering functionalities information length field and network steering functionalities information field not included. |
| 1 |  |  |  | Network steering functionalities information length field and network steering functionalities information field included. |
|  | | | | |
| Measurement assistance information indicator (MAII) (octet 1, bit 2) | | | | |
| This bit indicates whether the measurement assistance information length field and the measurement assistance information field are included. | | | | |
| Bit | | | | |
| **2** |  |  |  |  |
| 0 |  |  |  | Measurement assistance information length field and the measurement assistance information field not included. |
| 1 |  |  |  | Measurement assistance information length field and the measurement assistance information field included. |
|  | | | | |
| All other bits in octet 1 are spare and shall be coded as zero. | | | | |
|  | | | | |
| The network steering functionalities information length field indicates length of the network steering functionalities information field. | | | | |
|  | | | | |
| The network steering functionalities information field is coded as specified in figure 6.1.4.2-1, figure 6.1.4.2-2 and table 6.1.4.2-1. | | | | |
|  | | | | |
| The measurement assistance information length field indicates length of the measurement assistance information field. | | | | |
|  | | | | |
| The measurement assistance information field is coded as specified in figure 6.1.5.2-1 and table 6.1.5.2-1, figure 6.1.5.2-2 and table 6.1.5.2-2. | | | | |
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\* \* \* End of changes \* \* \* \*