**3GPP TSG-CT3 Meeting #121e C3-222477**

**E-Meeting, 6th – 12th April 2022**

Title: Reply LS on Traffic Identification within 5G Media Streaming

Response to: LS (S4-220305) on Traffic Identification within 5G Media Streaming

Release: Release 17

Work Item: FS\_5GMSA\_EXT

Source: CT3

To: SA4

Cc: SA2

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Attachments: None

**1. Overall Description:**

CT3 would like to thank SA4 for the LS on Traffic Identification within 5G Media Streaming and asks CT3 to review specifically clause 5.3.5 of TR 26.804.

CT3 would like to comment below in lines for CT3 related analysis to the clause 5.3.3 of TR 26.804, meanwhile also remind the concerned issues/limitation on ToS based Traffic Identification.

5.3.5 Potential open issues

The exact behaviour and information that needs to be provided to and by the 5GMSd AF as well as the Media Session Handler need to be specified.

The following open issues have been identified:

1. The *Npcf\_PolicyAuthorization* API as defined in TS 23.502 [24] only supports usage of a flow description or an application identifier. The flow description is not further defined in TS 23.501 or TS 23.502. In Stage 3 specifications, a flow description represents only a 5-tuple. Other information elements of the Service Data Flow Filter are not supported.

**CT3 Comments**: CT3 observed that “flow description information (e.g. source and destination IP address and port numbers and the protocol information)” and “PFD (Packet Flow Description) is a set of information enabling the detection of application traffic.” are described in TS 23.503.

2. The *Nnef\_ChargeableParty* and *Nnef\_AFsessionWithQOS* APIs support usage of a flow description or an Application Identifier for referencing one or more PFDs. The flow description is not further defined in TS 23.501 or TS 23.502. Other information elements of the Service Data Flow Filter are not supported.

**CT3 Comments**: CT3 observed that “flow description information (e.g. source and destination IP address and port numbers and the protocol information)” and “PFD (Packet Flow Description) is a set of information enabling the detection of application traffic.” are described in TS 23.503.

3. The *Npcf\_PolicyAuthorization* API Stage 3 as defined in TS 29.514 [42], only supports a flow description and a ToS value. However, it is not possible to define whether the ToS value should be used in uplink traffic detection or downlink traffic detection.

**CT3 Comments**: According to TS 29.514, the AF may specify the ToS traffic class for the described data flows within the “tosTrCl” attribute of the MediaSubcomponent, together with the flow description encoded in the fDescs attribute. The “tosTrCl” attribute is associated with the flow description, hence whether to be used in uplink, downlink or both depends on the flow descriptions filtering direction.

I.e. the Npcf\_PolicyAuthorization APIs stage 3 as defined in TS 29.514, only supports a ToS value per the associated media subcomponent, supports a ToS value for the UL and/or DL traffic described within the flow description fDescs property.

TS 29.514 define FlowDescription data type as a packet filter for an application traffic flow (PDU Session Type IP), refer to subclause 5.3.8 of 3GPP TS 29.214 with IPFilterRule type defined with IP 5-tuple.

**Table 5.6.3.2-1: Simple data types**

| **Type Name** | **Type Definition** | **Description** | **Applicability** |
| --- | --- | --- | --- |
| FlowDescription | string | Defines a packet filter for an IP flow. It contains an IpFilterRule according to section 4.3 of IETF RFC 6733 [52].  Refer to subclause 5.3.8 of 3GPP TS 29.214 [20] for encoding. |  |

**CT3 reminds** that TS 23.501 subclause 5.7.6.2 IP Packet Filter Set included ToS octec (IPv4) / Traffic Class octect (IPv6) and other parameters like SPI and flow label marking the flow template, which are not within the scope of the flow description as the application detection filter.

ToS/Traffic Class in the IPv4/IPv6 Header is outside of IP addresses, can be changed by the transport layer IP routers/switches which maybe not controlled by the operator network or EDN(External Data Network). External IP transport layer routers/switches can set or change ToS/Traffic Class octect for different application traffic flows with the same DSCP mapping to the same Transport layer QoS handling, and such clear text in IP header can be easily changed by any entity in the middle and/or UE side with fraud/fake usage if different ToS/Traffic class have different business value.

4. The *Nnef\_AFsessionWithQOS* and *Nnef\_ChargeableParty* stage 3 APIs, as defined in TS 29.522 [43], only supports a Packet Flow Description (through the FlowInfo Type) or an Application Identifier for referencing one or more PFDs. Other information elements of the Service Data Flow Filter (like a ToS value) are not supported. Note, the *FlowInfo* type from TS 29.122 [44] is different from the *FlowInformation* type in TS 29.512 [45].

**CT3 Comments**: CT3 TS 29.522 clause 4.4.8 and clause 4.4.9 refer to TS 29.122 clause 4.4.4 and clause 4.4.13 which refer to the data model including the data type FlowInfo with the same flow description refer to subclause 5.3.8 of 3GPP TS 29.214 [10] for encoding.

**Table 5.2.1.2.8-1: Definition of the FlowInfo data type**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Cardinality** | **Description** |
| flowId | Integer | 1 | Indicates the IP flow. |
| flowDescriptions | array(string) | 0..2 | Indicates the packet filters of the IP flow.  Refer to subclause 5.3.8 of 3GPP TS 29.214 [10] for encoding. It shall contain UL and/or DL IP flow description. |

NOTE: This data type is not on par with the information that can be provided via N5, namely the ToSTrafficClass attribute is not included here because the respective IP header fields can be changed by the operator network and there is no description about how to address this issue.

**CT3 reminds** that in line with the above information, TS 29.522 and TS 29.122 defines the northbound APIs facing external domains with external transport network routers/switches which are probably out of operators’ and/or external ASP’s control.

**2. Actions:**

**To SA4 group.**

**ACTION:** CT3 kindly requests SA4 to take the above information into consideration.

**3. Date of Next CT3 Meetings:**

3GPP TSG CT3#122e 12th - 20th May 2022 E-Meeting