**3GPP TSG SA WG4 #113e *S4-210501***

**E-meeting, 6th – 14th April 2021**

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| *CR-Form-v12.0* | | | | | | | | |
| **Pseudo CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **26.804** | **CR** | **<CR#>** | **rev** | **-** | **Current version:** | **0.1.1** |  |
|  | | | | | | | | |
| *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:*** | [FS\_5GMS-EXT] Update on the Traffic Identification for 5-tuple identified streaming | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei Technologies Co.,Ltd. | | | | | | | | | |
| ***Source to TSG:*** | SA4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | FS\_5GMS-EXT | | | | |  | ***Date:*** | | | 2021-3-31 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | Current “Traffic Identification” work for the 5-tuple streaming identification is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adds more current detailed traffic identification work on this topic in 3GPP about the 5-tuple streaming identification. | | | | | | | | |
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| ***Consequences if not approved:*** | | Key topic not addressed | | | | | | | | |
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| ***Clauses affected:*** | | 5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |
| ***56*** | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**===== 1st CHANGE =====**

## 5.3 Traffic Identification

### 5.3.1 Description

Besides the PFD related traffic identification method which identifies the 3-tuple or the domain name, the application detection filters required in the UPF can also be configured in the SMF and provided to UPF, which can be used to detect a specific 5-tuples streaming within one specific application, e.g. subtitles, video, audio and bullet screen comments. The 5GMS AF is able to provision, update and remove a dynamic PCC rule which contains flow description parameters for traffic handling and application/flow detection in the UPF.

The application detection filter can be configured in the SMF and the SMF shall provide it in the service data flow filter to the UPF, as well as flow description parameters for traffic handling in the UPF received from the dynamic PCC rule.

The flow description defines a packet filter for an IP flow with the following information as defined in the clause 5.7.6.2 of TS 23.501 [23]:

* Source/destination IP address or IPv6 prefix.
* Source / destination port number.
* Protocol ID of the protocol above IP/Next header type.
* Type of Service (TOS) (IPv4) / Traffic class (IPv6) and Mask.
* Flow Label (IPv6).
* Security parameter index.
* Packet Filter direction.

As shown in the figure below, the 5GMSd AF in the extrenal DN can send a request using Nnef\_AFsessionWithQos API to provision, update or remove a request to reserve resources for a specific application/flow with specific flow descriptions. After the AF request authorization, NEF interacts with the PCF, providing the flow description together with the QoS reference, the optional other parameters like Alternative Service Requirements, period of time or traffic volume, etc.

The PCF determines to derive the required QoS parameters based on the information provided by NEF/AF if this request is atuhorized. After AF Session With Required QoS Creatation Procedure, a transaction id is allocated by NEF to identify this AF Session. Then 5GMSd AF can invoke the Nnef\_AFSessionWithQoS\_Update API with this transaction ID to update the flow descrption.

Alternatively, the 5GMSd AF in the trusted/internal DN can directly send a request using Npcf\_PolicyControl API to provision, update and remove a request to reserve resources for a specific application/flow with specific flow descriptions.

Then the PCF initiates the PDU Session modification procedure to provide the updated PCC rule to the SMF and SMF will also update the PDRs in UPF for the application/traffic identification and policy handling.

When the 5-tuple identifying one streaming within one application always changes for the ongoing session due to factors like load balancing, multiple concurrent requests for different types of resources, shared TCP connection pool, etc. The 5GMSd AF can invoke the NEF/PCF related APIs with new flow description to update the PDRs installed in UPF to follow the application layer 5-tuples change for application/flow identification.



Figure 1 Traditional application/flow identification method