**TSG-CT WG3 Meeting #119-e *C3-216128***

**E-Meeting, 11th – 19th November 2021 (Revision of C3-216xyz)**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **29.513** | **CR** | 0303 | **rev** | **-** | **Current version:** | **17.4.0** |  |
|  |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  |  Update the procedure to support AF preference for the user plane latency |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | eEDGE\_5GC |  | ***Date:*** | 2021-11-11 |
|  |  |  |  |  |
| ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | It is agreed that the maximum allowed user plane latency can be provided by the AF to indicate how to perform the PSA relocation. |
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| ***Summary of change:*** | If the "EnEDGE" feature defined in 3GPP TS 29.522 [24] is supported, the AF may provide a maximum allowed user plane latency to ensure that the user plane latency in the 5GC does not exceed that value and to allow the SMF to decide whether to relocate the PSA UPF to satisfy the user plane latency. |
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| ***Consequences if not approved:*** | The procedure does not support to indicate the maximum allowed user plane latency. |
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| ***Clauses affected:*** | 5.5.3.3 |
|  |  |
|  | **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:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

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

#### 5.5.3.3 AF requests targeting PDU Sessions not identified by an UE address

If the AF traffic influence request affects future PDU session, the traffic influence procedure is performed as depicted in Figure 5.5.3.3-1.



Figure 5.5.3.3-1: Processing AF requests to influence traffic routing for Sessions not identified by an UE address, affecting future PDU session

1. To create a new AF request, the AF invokes the Nnef\_TrafficInfluence\_Create service operation to the NEF by sending the HTTP POST request to the "Traffic Influence Subscription" resource. If the "URLLC" feature defined in 3GPP TS 29.522 [24] is supported, the AF may provide an indication of AF acknowledgement to be expected. If the "EnEDGE" feature defined in 3GPP TS 29.522 [24] is supported, the AF may provide a maximum allowed user plane latency to ensure that the user plane latency in the 5GC does not exceed that value and to allow the SMF decide whether to relocate the PSA UPF to satisfy the user plane latency.

 To update an existing AF request, the AF invokes the Nnef\_TrafficInfluence\_Update service operation by sending the HTTP PUT or PATCH request to the "Individual Traffic Influence Subscription" resource. If the "URLLC" feature defined in 3GPP TS 29.522 [24] is supported, the AF may provide an indication of AF acknowledgement to be expected. If the "EnEDGE" feature defined in 3GPP TS 29.522 [24] is supported, the AF may provide a maximum allowed user plane latency to ensure that the user plane latency in the 5GC does not exceed that value and to alow the SMF decide whether to relocate the PSA UPF to satisfy the user plane latency.

 To remove an existing AF request, the AF invokes the Nnef\_TrafficInfluence\_Delete service operation by sending the HTTP DELETE request to the "Individual Traffic Influence Subscription" resource.

2. Upon receipt of the AF request, the NEF authorizes it and then performs the mapping from the information provided by the AF into information needed by the 5GC as described in 3GPP TS 23.501 [2] and 3GPP TS 23.502 [3].

3-4. When receiving the Nnef\_TrafficInfluence\_Create request, the NEF invokes the Nudr\_DataRepository\_Create service operation to store the AF request information in the UDR by sending the HTTP PUT request to the "Individual Influence Data" resource, and the UDR sends a "201 Created" response.

 When receiving the Nnef\_TrafficInfluence\_Update request, the NEF invokes the Nudr\_DataRepository\_Update service operation to modify the AF request information in the UDR by sending the HTTP PATCH/PUT request to the resource "Individual Influence Data", and the UDR sends a "200 OK" or "204 No Content" response accordingly.

 When receiving the Nnef\_TrafficInfluence\_Delete request, the NEF invokes the Nudr\_DataRepository\_Delete service operation to delete the AF requirements from the UDR by sending the HTTP DELETE request to the "Individual Influence Data" resource, and the UDR sends a "204 No Content" response.

5. The NEF sends the HTTP response message to the AF correspondingly.

6. The PCF retrieves the stored AF request in the UDR by invoking the Nudr\_DataRepository\_Query service operation during SM Policy Association Establishment procedure (see subclause 5.2.1).

 The PCF generates the PCC rule(s) based on the AF request and provides it to the SMF. If the AF subscribes to UP Path change event, the PCF includes the Notification URI pointing to the NEF and the Notification Correlation ID assigned by NEF within the corresponding PCC rule(s) as specified in 3GPP TS 29.512 [9]. If the AF unsubscribes from UP Path change event, the PCF removes the related subscription information from the corresponding PCC rule(s) as specified in 3GPP TS 29.512 [9].

6a. This step is the same as the step 3a in Figure 5.5.3.2-1.

7. If the SMF observes PDU Session related event(s) that AF has subscribed to, the SMF invokes the Nsmf\_EventExposure\_Notify service operation to the NEF by sending an HTTP POST request to the callback URI "{notifUri}". If the indication of AF acknowledgement to be expected was included in the PCC rule(s), the SMF may notify with an URI for the AF acknowledgement as described in 3GPP TS 29.508 [8].

8. When receiving the Nsmf\_EventExposure\_Notify service operation, the NEF performs information mapping (e.g. Notification Correlation ID to AF Transaction ID), and invokes the Nnef\_TrafficInfluence\_Notify service operation to forward the notification to the AF by sending the HTTP request to the callback URI "notificationDestination" as specified in 3GPP TS 29.522 [24]. If the notification from the SMF includes an URI for the AF acknowledgement, the NEF also notifies with a URI for the AF acknowledgement as described in 3GPP TS 29.522 [24].

9. The AF sends an HTTP "204 No Content" response to the NEF.

10. The NEF sends an HTTP "204 No Content" response to the SMF.

11-12. When receiving the notification with the URI for AF acknowledgement from the NEF, the AF invokes Nnef\_TrafficInfluence\_AppRelocationInfo service operation by sending an HTTP POST request to the callback URI "{afAckUri}" to acknowledge the notification, and the NEF sends a "204 No Content" response to the AF.

13-14. When receiving the AF acknowledgement from the AF, to forward it to the SMF, the NEF invokes Nsmf\_EventExposure\_AppRelocationInfo service operation by sending an HTTP POST request to the callback URI "{ackUri}", and the SMF sends a "204 No Content" response to the NEF.

If the AF traffic influence request affects ongoing PDU session, the traffic influence procedure is performed as depicted in Figure 5.5.3.3-2.



Figure 5.5.3.3-2: Processing AF requests to influence traffic routing for Sessions not identified by an UE address, affecting ongoing PDU session

0. The PCF subscribes to the changes of traffic influence data in the UDR during SM Policy Association procedure (see subclause 5.2.1).

1-5. These steps are the same as steps 1-5 in Figure 5.5.3.3-1.

6-7. The UDR invokes the Nudr\_DataRepository\_Notify service operation to PCF(s) that have subscribed to modifications of AF requests by sending the HTTP POST request to the callback URI "{notificationUri}", and the PCF sends a "204 No Content" response to the UDR.

8-9. Upon receipt of the AF request from the UDR, the PCF determines if existing PDU Sessions are potentially impacted by the AF request. For each of these PDU Sessions, the PCF invokes the Npcf\_SMPolicyControl\_UpdateNotify service operation to update the SMF with corresponding PCC rule(s) by sending the HTTP POST request to the callback URI "{notificationUri}/update" as described in subclause 5.2.2.2.1.

 If the AF subscribes to UP Path change event, the PCF includes the information on AF subscription to UP path change event within the corresponding PCC rule(s) as specified in 3GPP TS 29.512 [9]. If the AF unsubscribes from UP Path change event, the PCF removes the related subscription information from the corresponding PCC rule(s) as specified in 3GPP TS 29.512 [9].

9a. This step is the same as step 6a in Figure 5.5.3.3-1.

10-17. These steps are the same as steps 7-14 in Figure 5.5.3.3-1.

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