**3GPP TSG CT WG3 Meeting #134 *C3-242194r2***

**Changsha, China, 15-19 April 2024**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.513** | **CR** | **0537** | **rev** | **1** | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *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:*** | UP path change notification for HR-SBO | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EDGE\_Ph2 | | | | |  | ***Date:*** | | | 2024-04-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | For HR-SBO scenario, the Traffic Influence information is provided directly from V-NEF to V-SMF bypassing the PCF. If the AF request is for subscribing to UP path change events of the HR-SBO PDU session (especially for the change of local PSA UPF in VPLMN, see TS 23.548), the V-SMF will report the UP path change to the V-NEF.  The UP path change notification is not covered by 5.5.3.4. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | A new step is added to show the UP path change notification between the V-SMF and V-NEF/V-AF. | | | | | | | | |
|  | | on | | | | | | | | |
| ***Consequences if not approved:*** | | Incomplete procedure for AF request on PDU Sessions supporting HR-SBO. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.5.3.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*

#### 5.5.3.4 AF request on PDU Sessions supporting HR-SBO

If the AF in VPLMN request to influence the traffic routing of PDU Sessions supporting HR-SBO (e.g., for the purpose of subscription to UP path management events on HR-SBO Sessions in VPLMN), the traffic influence procedure is performed as depicted in Figure 5.5.3.4-1.



Figure 5.5.3.4-1: Processing AF requests on PDU Sessions supporting HR-SBO

1. The V-AF requests to influence traffic routing is the same as steps 1 to step 5 of of Figure 5.5.3.3-1. The V-NEF determines in step 2 in that figure that the HPLMN is different from the PLMN the V-NEF belongs to. The V-NEF derives the UE identity(ies) from the AF request information as defined in 3GPP TS 29.522 [24] before storing it in the V-UDR.

Editor's note: How roamers will be identified in TrafficInfluData is FFS.

2. The V-SMF may include the HR-SBO support indication in Nsmf\_PDUSession\_Create/Update request as described in 3GPP TS 29.502 [52].

3-4. If the "HR-SBO" feature is supported and the HR-SBO support indication was received from the V-SMF in step 2, the H-SMF may include the HR-SBO support indication in the SM policy association as defined in clauses 4.2.2.2 and 4.2.4.2 of 3GPP TS 29.512 [9].

When the H-SMF provides the HR-SBO support indication to the PCF, the H-PCF of the PDU Session may provide the VPLMN Specific Offloading Policy for the local part of the DN in VPLMN clause 4.2.6.1 of 3GPP TS 29.512 [9].

5. The H-SMF may include the VPLMN Specific Offloading Policy in Nsmf\_PDUSession\_Create/Update response as described in 3GPP TS 29.502 [52].

6-7. When the H-SMF provides the HR-SBO support indication to the H-PCF, the H-PCF of the PDU Session may also provide the VPLMN Specific Offloading Policy for the local part of the DN in VPLMN in Npcf\_SMPolicyControl\_UpdateNotify request.

8-9. The H-SMF may include the VPLMN Specific Offloading Policy in Nsmf\_PDUSession\_Update request as described in clause 5.2.2.3 of 3GPP TS 29.502 [52].

10-11. The V-SMF may subscribe to notification of AF request by invoking Nnef\_TrafficInfluenceData\_Subscribe service from V-NEF as defined in clause 4.4.2.2 of 3GPP TS 29.591 [67].

12-13. If the V-NEF receives the subscription from the V-SMF in step 10, the V-NEF subscribes to notification of AF request by invoking Nudr\_DataRepository\_Subscribe service operation by sending an HTTP POST request to the "Influence Data Subscription" resource. The UDR sends an HTTP "201 Created" response to acknowledge the subscription.

14-15. The UDR invokes the Nudr\_DataRepository\_Notify service operation to V-NEF that has subscribed to modifications of AF requests by sending the HTTP POST request to the callback URI "{notificationUri}", and the V-NEF sends a "204 No Content" response to the UDR.

Editor’s Note: What information is used in step 1 to identify the user in the UDR so that it can be identified in steps 12-15 and whether additional steps are needed to get it requires further work in stage 2.

16-17. The V-NEF may send notification to the V-SMF which has subscribed to AF request by invoking Nnef\_TrafficInfluenceData\_Notify service operation to the V-SMF as defined in clause 4.4.2.4 of 3GPP TS 29.591 [67].

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

19. If the V-SMF observes UP path change events of the HR-SBO PDU session that the AF has subscribed to, the V-SMF sends notification to the AF via the NEF. This step is the same as the steps 4a-4h in Figure 5.5.3.2-1.

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