**3GPP TSG-CT WG3 Meeting #137 *C3-245536***

**Hefei, CN, 14 - 18 October, 2024 (Revision of C3-245361)**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.522** | **CR** | **1417** | **rev** | **1** | **Current version:** | **19.0.0** |  |
|  | | | | | | | | |
| *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:*** | Service procedures to obtain UE Public Address | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, ZTE, Nokia | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UPEAS\_Ph2 | | | | |  | ***Date:*** | | | 2024-09-27 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Clause 5.2.6.36 of TS 23.502 and clause 6.2.8.2.4.5 of TS 23.288 added Nnef\_UEAddress\_Subscribe/UnSubscribe/Notify service operations and AF obtain NATed UE public IP address and port number from NEF-UPF procedures, hence needs to implement according in this TS. | | | | | | | | |
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| ***Summary of change:*** | | Adding procedures, API definitions and OpenAPI definitions in UEAddress API to obtain NATed public UE IP address and port number. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not supporting stage 2 required function on obtain public UE IP address and port number in Nnef\_UEAddress API in UPEAS\_Ph2 WI. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.4.39.1, 4.4.39.3(new), 4.4.39.4(new), 4.4.39.5(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 does not impact the OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

#### 4.4.39.1 General

The procedures described in the clauses below are used by an AF to request the NEF to provide UE Address(es).

The following procedures are supported:

- AF request to retrieve UE Address(es) as defined in clause 6.2.8.2.4.3 of 3GPP TS 23.288 [29].

- AF (un)subscribe to obtain NATed UE Public IP Address information from NEF and NEF notify NATed UE Public IP Address information to the subscribed AF as defined in clause 6.2.8.2.4.5 of 3GPP TS 23.288 [29].

\*\*\* 2nd Change \*\*\*

#### 4.4.39.3 Creation of a new subscription to obtain UE Address

In order to create a new subscription to obtain NATed UE Public IP Address information for a given AF, the AF shall initiate an HTTP POST request message to the NEF for the "UE Address Subscriptions" resource. The HTTP POST request message body shall include the UeAddrSubsc data structure as defined in clause 5.35.2.2.3.3 and clause 5.35.2.2.4.

Upon receipt of the corresponding HTTP POST message, if the AF is authorized by the NEF to obtain the NATed UE Public IP Address information, the NEF shall discover the UPF implementing e.g., NAT functionality for the provided UE private IP address by invoking Nnrf\_NFDiscovery service as defined in 3GPP TS 29.510 [57], then upon receiving the UPF address, the NEF shall further invoke the Nupf\_EventExposure\_Subscribe service operation to obtain the NATed UE public IP Address and port information from the UPF as defined in 3GPP TS 29.564 [61]. If the NEF receives an error response from the NRF or UPF, the NEF shall not create the resource and shall respond to the AF with a proper error status code. If the NEF received within an error response a "ProblemDetails" data structure with a "cause" attribute indicating an application error, the NEF shall relay this error response to the AF with a corresponding application error, when applicable.

On successful UE Address information subscription creation, the NEF shall return an HTTP POST response with an HTTP "201 Created" status code to the AF, including a "Location" header containing the URI of the created "Individual UE Address Subscription" resource and the response body containing a representation of the created resource within the UeAddrSubsc data structure.

On failure, the NEF shall take proper error handling actions, as specified in clause 5.35.7, and respond to the AF with an appropriate error status code.

#### 4.4.39.4 Deletion of an existing individual UE Address subscription

In order to delete an existing UE Address subscription, the AF shall send an HTTP DELETE request message and targeting the correponding "Individual UE Address Subscription" resource as defined in clause 5.35.2.3.3.3.

On successful deletion of the subscription, the NEF shall return an HTTP DELETE response with an HTTP "204 No Content" status code.

On failure, the NEF shall take proper error handling actions, as specified in clause 5.35.7, and respond to the AF with an appropriate error status code.

#### 4.4.39.5 Notification for UE Address information

This procedure is used by the NEF to send UE Address information information update notifications to a previously subscribed AF.

When the NEF receives the notification of the NATed UE Public IP Address information from the UPF, the NEF shall provide a notification by sending an HTTP POST request message to the AF with the request body including the UeAddrNotif data structure and targeting the notification URI provided by the AF during the corresponding UE Address subscription as defined in clause 5.35.4 and clause 5.35.2.2.6.

Upon reception of this notification request, the AF shall acknowledge its successful reception by sending a HTTP POST response message with an HTTP "204 No Content" status code.

On failure, the AF shall take proper error handling actions, as specified in clause 5.35.7, and respond to the NEF with an appropriate error status code.

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