**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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:*** | Event notification corrections | | | | | | | | | |
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| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc19 | | | | |  | ***Date:*** | | | 2024-11-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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)* | |
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| ***Reason for change:*** | | Some service operation descriptions for the Npcf\_PolicyAuthorization\_Notify operation erroneously specify that the notified events are included within a “200 OK” response to the AF, which is wrong. They are not included in any response with any response code, but rather in the Notify message, which is initiated by the PCF.  Further, the service operation description of the delete can be read as requiring that the PCF ALWAYS (without exceptions) interacts with the SMF to fetch the RAN-NAS termination cause *during* the delete invocation, even if it has already done so, e.g. in the case when the delete was solicited by the PCF itself after Notifying the AF about the RAN-NAS cause. | | | | | | | | |
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| ***Summary of change:*** | | Corrected the wrong message and response code in Npcf\_PolicyAuthorization\_Notify operation descriptions, and clarified the text about fetching the RAN-NAS cause in the Npcf\_PolicyAuthorization\_Delete operation description. | | | | | | | | |
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| ***Consequences if not approved:*** | | Wrong specification. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.4.10, 4.2.5.10, 4.2.5.11 | | | | | | | | |
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|  | | **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 any OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\* First Change \*\*\*

4.2.4.10 Report of RAN-NAS release cause

This procedure is used by a PCF to report about the RAN-NAS release cause together with access network information (i.e. user location and/or user timezone information) at the deletion of the "Individual Application Session Context" resource when the "RAN-NAS-Cause" feature is supported.

This procedure is initiated when:

- the "Individual Application Session Context" is deleted by the NF service consumer; or

- the PCF requests the deletion of the "Individual Application Session Context" from the NF service consumer, as described in clause 4.2.5.3, due to PDU session termination or the termination of all the service data flows of the AF session.

The PCF shall immediately configure the SMF to provide such RAN-NAS release cause together with access information, as specified in 3GPP TS 29.512 [8].

When the PCF receives the RAN-NAS release cause and access network information from the SMF, the PCF shall provide the corresponding access network information and RAN-NAS release cause to the NF service consumer by including the "EventsNotification" data type in the "200 OK" response to the HTTP POST request.

NOTE 1: The PCF does not need to interact with the SMF during this delete operation if it has already received the RAN-NAS release cause and access network information from the SMF.

The PCF shall include:

- in case of 3GPP access, the user location information in the "eutraLocation" or in the "nrLocation" attribute in the "ueLoc" attribute, if available;

- in case of untrusted non-3GPP access, the user location information in the "n3gaLocation" attribute in the "ueLoc" attribute, if available, as follows:

a) the user local IP address in the "ueIpv4Addr" or "ueIpv6Addr" attribute;

b) the UDP source port or the TCP source port in the "portNumber" and "protocol" attributes if available; and

c) if the "WLAN\_Location" feature is supported, the WLAN location information encoded in the "twapId" attribute, if available, that shall consist of:

i. the SSID in the "ssId" attribute;

ii. the BSSID the "bssId" attribute if available; and

iii. the civic address in the "civicAddress" attribute if available;

NOTE 2: When the UE reaches the ePDG via a NAT, the combination of UE local IP address and the UE source port is needed for lawful interception purposes. The UE source port may be either a UDP or a TCP port, and it is indicated in the "protocol" attribute.

- in case of trusted non-3GPP access, the user location information in the "n3gaLocation" attribute in the "ueLoc" attribute, if available, as follows:

a) the user local IP address in the "ueIpv4Addr" or "ueIpv6Addr" attribute, if available; and

b) the UDP source port in the "portNumber" attribute if available; and

NOTE 3: The UDP protocol can be used between the UE and the TNGF to enable NAT traversal.

c) either the TNAP identifier encoded in the "tnapId" attribute or the TWAP identifier encoded in the "twapId" attribute. The TNAP identifier and the TWAP identifier shall consist of:

i. the SSID in the "ssId" attribute;

ii. the BSSID the "bssId" attribute if available; and

iii. the civic address in the "civicAddress" attribute if available;

- the serving network identity i.e. the PLMN Identifier (the PLMN network code and the country code) or the SNPN Identifier (the PLMN Identifier and the NID) in the "plmnId" attribute, if user location information is not available in any access;

- the UE timezone in the "ueTimeZone" attribute if available; and

- the RAN and/or NAS release cause in the "ranNasRelCauses" attribute, if available.

The PCF shall also include an event of the "AfEventNotification" data type in the "evNotifs" attribute with the "event" attribute set to the value "RAN\_NAS\_CAUSE".

\*\*\* Next Change \*\*\*

4.2.5.10 Notification of signalling path status

When the PCF is notified of the loss or release of resources associated to the PCC rules corresponding with AF signalling IP flows, the PCF shall inform the NF service consumer about the loss of the signalling transmission path if the NF service consumer has previously subscribed as described in clause 4.2.6.7.

The PCF shall notify the NF service consumer by including the "EventsNotification" data type in the body of the HTTP POST request as described in clause 4.2.5.2.

The PCF shall include within the "evNotifs" attribute an event of "AfEventNotification" data type indicating the matched event "FAILED\_RESOURCES\_ALLOCATION" in the "event" attribute and the deactivated IP flow encoded in the "flows" attribute.

If the "RAN-NAS-Cause" feature is supported and the PCF received the RAN-NAS release cause and/or access network information from the SMF, the PCF shall provide in the "EventsNotification" data type in the HTTP POST request:

- in case of 3GPP access, the user location information in the "eutraLocation" or in the "nrLocation" attribute in the "ueLoc" attribute, if available;

- in case of untrusted non-3GPP access, the user location information in the "n3gaLocation" attribute in the "ueLoc" attribute, if available, as follows:

a) the user local IP address in the "ueIpv4Addr" or "ueIpv6Addr" attribute; and

b) the UDP source port or the TCP source port in the "portNumber" and "protocol" attributes, if available; and

c) if the "WLAN\_Location" feature is supported, the WLAN location information encoded in the "twapId" attribute, if available, that shall consist of:

i. the SSID in the "ssId" attribute;

ii. the BSSID the "bssId" attribute if available; and

iii. the civic address in the "civicAddress" attribute if available;

NOTE 1: When the UE reaches the ePDG via a NAT, the combination of UE local IP address and the UE source port is needed for lawful interception purposes. The UE source port may be either a UDP or a TCP port, and it is indicated in the "protocol" attribute.

- in case of trusted non-3GPP access, the user location information in the "n3gaLocation" attribute in the "ueLoc" attribute, if available, as follows:

a) the user local IP address in the "ueIpv4Addr" or "ueIpv6Addr" attribute, if available; and

b) the UDP source port in the "portNumber" attribute if available; and

NOTE 2: The UDP protocol can be used between the UE and the TNGF to enable NAT traversal.

c) either the TNAP identifier encoded in the "tnapId" attribute or the TWAP identifier encoded in the "twapId" attribute. The TNAP identifier and the TWAP identifier shall consist of:

i. the SSID in the "ssId" attribute;

ii. the BSSID the "bssId" attribute if available; and

iii. the civic address in the "civicAddress" attribute if available;

- the serving network identity i.e. the PLMN Identifier (the PLMN network code and the country code) or the SNPN Identifier (the PLMN Identifier and the NID) in the "plmnId" attribute, if user location information is not available in any access;

- the UE timezone in the "ueTimeZone" attribute if available; and

- the RAN and/or NAS release cause in the "ranNasRelCauses" attribute, if available.

NOTE 3: The PCF forwards both 3GPP and non-3GPP access UE locations in the "ueLoc" attribute when both UE locations are provided by the SMF as defined in 3GPP TS 29.512 [8].

The PCF shall include in the "evNotifs" attribute, together with the event "FAILED\_RESOURCES\_ALLOCATION", an event of the "AfEventNotification" data type with the "event" attribute set to the value "RAN\_NAS\_CAUSE".

When the NF service consumer receives the HTTP POST request, it shall acknowledge the request by sending a "204 No Content" response to the PCF.

\*\*\* Next Change \*\*\*

4.2.5.11 Reporting access network information

This procedure is used by the PCF to report the access network information (i.e. user location and/or user timezone information) to the NF service consumer when the "NetLoc" feature is supported.

When the PCF receives the access network information from the SMF, the PCF shall include the "EventsNotification" data type in the body of the HTTP POST request message sent to the NF service consumer as described in clause 4.2.5.2. The PCF shall include in the "EventsNotification" data type:

- in case of 3GPP access, the user location information in the "eutraLocation" or in the "nrLocation" attribute in the "ueLoc" attribute, if available and required;

- in case of untrusted non-3GPP access, the user location information in the "n3gaLocation" attribute in the "ueLoc" attribute, if required, as follows:

a) the user local IP address in the "ueIpv4Addr" or "ueIpv6Addr" attribute, if available;

b) the UDP source port or the TCP source port in the "portNumber" and "protocol" attributes, if available; and

c) if the "WLAN\_Location" feature is supported, the WLAN location information encoded in the "twapId" attribute, if available, that shall consist of:

i. the SSID in the "ssId" attribute;

ii. the BSSID the "bssId" attribute if available; and

iii. the civic address in the "civicAddress" attribute if available;

NOTE 1: When the UE reaches the ePDG via a NAT, the combination of UE local IP address and the UE source port is needed for lawful interception purposes. The UE source port may be either a UDP or a TCP port, and it is indicated in the "protocol" attribute.

- in case of trusted non-3GPP access, the user location information in the "n3gaLocation" attribute in the "ueLoc" attribute, if required, as follows:

a) the user local IP address in the "ueIpv4Addr" or "ueIpv6Addr" attribute, if available; and

b) the UDP source port in the "portNumber" attribute if available; and

NOTE 2: The UDP protocol can be used between the UE and the TNGF to enable NAT traversal.

c) either the TNAP identifier encoded in the "tnapId" attribute or the TWAP identifier encoded in the "twapId" attribute. The TNAP identifier and the TWAP identifier shall consist of:

i. the SSID in the "ssId" attribute;

ii. the BSSID the "bssId" attribute if available; and

iii. the civic address in the "civicAddress" attribute if available;

- if user location was required, the time when it was last known in the "ueLocTime" attribute if available;

NOTE 3: The PCF derives the value of the "ueLocTime" attribute from the "userLocationInfoTime" attribute received from the SMF as specified in 3GPP TS 29.512 [8].

- the serving network identity i.e. the PLMN Identifier (the PLMN network code and the country code) or the SNPN Identifier (the PLMN Identifier and the NID) in the "plmnId" attribute, if user location information is required but not available in any access; and/or

- the UE timezone in the "ueTimeZone" attribute if required and available.

NOTE 4: The PCF forwards both 3GPP and non-3GPP access UE locations in the "ueLoc" attribute when both UE locations are provided by the SMF as defined in 3GPP TS 29.512 [8].

When the PCF receives from the SMF that the access network does not support access network information report, the PCF shall include the "noNetLocSupp" attribute set to "ANR\_NOT\_SUPPORTED", "TZR\_NOT\_SUPPORTED" or "LOC\_NOT\_SUPPORTED" value received from the SMF in the "EventsNotification" data type in the HTTP POST request.

The PCF shall also include an event of the "AfEventNotification" data type in the "evNotifs" attribute with the "event" attribute set to the value "ANI\_REPORT".

NOTE 5: The PCF receives the access network information from the SMF if it is previously requested by the NF service consumer or at PDU session termination or at the termination of all the service data flows of the AF session.

The PCF shall not invoke the Npcf\_PolicyAuthorization\_Notify service operation with the "event" attribute set to the value "ANI\_REPORT" to report to the NF service consumer any subsequently received access network information, unless the NF service consumer sends a new request for access network information.

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