**3GPP TSG-CT WG3 Meeting #123e *C3-224192***

**E-meeting, 18th - 26th, August, 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.523** | **CR** | **0074** | **rev** | **-** | **Current version:** | **17.7.0** |  |
|  |
| *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:***  | Correction to notification of outcome of the UE Policy Delivery |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | eEDGE\_5GC |  | ***Date:*** | 2022-08-26 |
|  |  |  |  |  |
| ***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 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | The subscription to the notification of outcome of the UE Policy Delivery is performed by including the information with the service parameter.  |
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| ***Summary of change:*** | Clarify the the callback URI for the UE policy delivery outcome notifcaiton. |
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| ***Consequences if not approved:*** | Wrong specification. The PCF may not report the UE policy delivery outcome. |
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| ***Clauses affected:*** | 4.2.2.1, 4.2.4.2 |
|  |  |
|  | **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:*** |  |

\* \* \* \* Start of Changes \* \* \* \*

#### 4.2.2.1 General

This service operation is used by an NF service consumer to explicitly subscribe for policy events notifications on a specified context for a group of UE(s) or any UE, or to modify an existing subscription.

The following are the types of events for which a subscription can be made:

- PLMN identifier notification;

NOTE 1: Within the PLMN identifier notification event the PLMN Identifier or SNPN Identifier where the UE is currently located is provided. The SNPN Identifier consists of the PLMN Identifier and the NID.

- change of Access Type;

- when the feature "AMPoliciesEvents" is supported, change of Service Area Coverage;

- when the feature "SatelliteBackhaul" is supported, satellite backhaul category change; and

- when the feature "DeliveryOutcome" is supported, UE Policy delivery outcome.

The following procedures using the Npcf\_EventExposure\_Subscribe service operation are supported:

- creating a new subscription;

- modifying an existing subscription.

NOTE 2: It is also possible to implicitly subscribe for policy events notifications for a single UE, a group of UE(s) or any UE. Implicit subscription information is obtained from the UDR for application data. In this case, the PCF will use the callback URI provided by the AF to the UDR, see 3GPP TS 29.519 [24] for the details.

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

#### 4.2.4.2 Notification about subscribed events

Figure 4.2.4.2-1 illustrates the notification about subscribed events.



Figure 4.2.4.2-1: Notification about subscribed events

If the PCF observes policy control related event(s) for which an NF service consumer has subscribed explicitly as defined in clause 4.2.2 or implicitly when the subscription information is obtained from the UDR for application data, the PCF shall send an HTTP POST request as shown in figure 4.2.4.2-1, step 1, with the "{notifUri}" as request URI containing the value previously provided by the NF service consumer within the corresponding subscription or containing the callback URI provided by the AF to the UDR, and the "PcEventExposureNotif" data structure.

The "PcEventExposureNotif" data structure shall include:

- The notification correlation ID provided by the NF service consumer during the subscription as "notifId" attribute or obtained from the UDR as specified in 3GPP TS 29.519 [24]; and

- information about the observed event(s) within the "eventNotifs" attribute that shall contain for each observed event an "PcEventNotification" data structure that shall include:

1. the Policy Control event as "event" attribute;

2. for an access type change:

a) new access type as "accType" attribute;

b) the new RAT type as "ratType" attribute, if applicable for the notified access type; and

c) if the "ATSSS" feature is supported:

i. if it is the first access type report for a PDU session, and both, 3GPP and non-3GPP access information is available, the "addAccessInfo" attribute. The "addAccessInfo" attribute contains the additional access type information, where the access type is encoded in the "accessType" attribute, and the RAT type is encoded in the "ratType" attribute when applicable for the notified access type;

ii. if it is a subsequent access type change report:

- if a new access type is added to the MA PDU session, the "addAccessInfo" attribute with the added access type encoded in the "accessType" attribute, and the RAT type encoded in the "ratType" attribute when applicable for the notified access type;

- if an access type is released in the MA PDU session, the "relAccessInfo" attribute with the released access type encoded in the "accessType" attribute, and the RAT type encoded in the "ratType" attribute when applicable for the notified access type; and

NOTE 1: For a MA PDU session, if the "ATSSS" feature is not supported by the AF, the PCF includes the "accessType" attribute and the "ratType" attribute with a currently active combination of access type and RAT type (if applicable for the notified access type). When both 3GPP and non-3GPP accesses are available, the PCF includes the information corresponding to the 3GPP access.

d) for EPC interworking scenarios, the ePDG address as "anGwAddr" attribute, if applicable for the notified access type;

3. for a PLMN change:

a) new network identity containing the PLMN Identifier or the SNPN Identifier in the "plmnId" attribute;

NOTE 2: The SNPN Identifier consists of the PLMN Identifier and the NID.

4. when the feature "AMPoliciesEvents" is supported, for a service area coverage change, the new service area coverage in the "appliedCov" attribute, encoded as specified in 3GPP TS 29.534 [23], clause 4.2.7.4;

NOTE 3: The service area coverage change event is met and the notification is triggered when the PCF determines the tracking areas where the service is allowed in relation to the NF consumer requested service area coverage. The actual service area coverage for the UE might be larger than the one reported with the service area coverage change event.

5. when the feature "SatelliteBackhaul" is supported, for a satellite backhaul category change:

a) the satellite backhaul category (i.e., GEO, MEO, LEO, or other satellite) or the indication of non-satellite backhaul category in the "satBackhaulCategory" attribute;

6. when the feature "DeliveryOutcome" is supported, to report the unsuccessful outcome of the UE Policy Delivery related to the invocation of AF provisioned service parameters, the reason of failure within the "delivFailure" attribute;

7. the identity of the affected UE in the "supi" attribute and, if available, in the "gpsi" attribute;

8. the time at which the event was observed encoded as "timeStamp" attribute;

9. if available, and if the feature "ExtendedSessionInformation" is supported, information about the PDU session involved in the reported event in the "pduSessInfo" attribute, that shall include:

a) the S-NSSAI of the PDU session in the "snssai" attribute;

b) the DNN of the PDU session in the "dnn" attribute; and

c) the IPv4 address in the "ueIpv4" attribute and/or the IPv6 prefix in the "ueIpv6" attribute, or the Ethernet MAC address in the "ueMac" attribute; and

if the IPv4 address is included in the "ueIpv4" attribute, may include the IP domain in the "ipDomain" attribute;

10. if available, and if the feature "ExtendedSessionInformation" is supported, information about the services involved in the reported event in the indicated PDU session in the "repServices" attribute, which may include per identified service:

a) a list of Ethernet flows in the "servEthFlows" attribute which contains an impacted Ethernet flow number within the "flowNumber" attribute in each EthernetFlowInfo data structure; or

b) a list of IP flows in the "servIpFlows" attribute which contains an impacted IP flow number within the "flowNumber" attribute in each IpFlowInfo data structure; and/or

c) an AF application identifier in the "afAppId" attribute.

If the NF service consumer cannot successfully fulfil the received HTTP POST request due to an internal error or an error in the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 5.7.

If the feature "ES3XX" is supported, and the NF service consumer determines the received HTTP POST request needs to be redirected, the NF service consumer shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [5].

Upon successful reception of the HTTP POST request with "{notifUri}" as request URI and a "PcEventExposureNotif" data structure as request body, the NF service consumer shall send a "204 No Content" HTTP response, as shown in figure 4.2.4.2-1, step 2, for a successful processing.

\* \* \* \* End of change \* \* \* \*