**3GPP TSG- Meeting #**

**Maastricht, , - (revision of C3-244265)**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.525** | **CR** | **0355** | **rev** | **1** | **Current version:** | **18.6.1** |  |
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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:*** | Spending limits for UE Policy and Support of CHF information in roaming scenario | | | | | | | | | |
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| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI19\_SLUPiR | | | | |  | ***Date:*** | | | 2024-08-23 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | As per SA2 agreed CR S2-2407283 it clarifies that H-PCF for a UE interacts with the H-CHF applies to home routed roaming and local breakout roaming scenario.  Snippet from clause 6.1.1.4 (Policy decisions based on spending limits) of 23.503:  *In the non-roaming case this functionality is applicable to session management related policy control, access and mobility management related policy control and UE policy control. In the Home Routed roaming case this functionality is applicable only to session management related policies and UE policies. In the local breakout roaming case this functionality is applicable only to UE policies.* | | | | | | | | |
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| ***Summary of change:*** | | Updating the existing NOTE in clause 4.2.4.2 to align with the stage-2 specification regarding the support of the spending limit control for UE policy is applicable for both non-roaming and roaming scenarios. | | | | | | | | |
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| ***Consequences if not approved:*** | | Not possible to apply UE policies functionality in a roaming scenario and misalighment of stage-2 requirement. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.4.2 | | | | | | | | |
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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 ... | | |
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| ***Other comments:*** | | This CR does not introduce any impact in the OpenAPI specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

#### 4.2.4.2 Policy update notification

Figure 4.2.4.2-1 illustrates the policy update notification.



Figure 4.2.4.2-1: policy update notification

NOTE: For the roaming case, the PCF represents the V-PCF if the NF service consumer is an AMF and the PCF represents the H-PCF if the NF service consumer is a V-PCF.

The (V-)(H)-PCF may decide to update, based on external triggers (e.g. notifications received from UDR about new or updated service parameter data as described in 3GPP TS 29.519 [17]) or internal triggers (e.g., the activation of a pending policy counter provided via the Nchf\_SpendingLimitControl Service as described in 3GPP TS 29.594 [33]) policy control request trigger(s) and in the roaming case, the H-PCF may also decide to update the UE Policy, the N2 PC5 policy for V2X communications if the "V2X" feature is supported and/or the N2 PC5 policy for A2X communications if the "A2X" feature is supported and/or the N2 PC5 policy for 5G ProSe if the "ProSe" feature is supported and/or the N2 PC5 policy for Ranging/SL if the "Ranging\_SL" feature is supported.

NOTE: In this release of the specification, policy decisions based on policy counters provided via Nchf\_SpendingLimitControl service apply to URSP only.

If the "EpsUrsp" feature is supported and the NF consumer is a PCF for a PDU session the PCF (H-PCF in the LBO roaming scenario) may decide to update policy control request triggers and/or to update the URSP.

If the "SliceAwareANDSP" feature is supported, the PCF received the indication of wrong NI3WF or TNGF selection during UE Policy Association creation as described in clause 4.2.2.1 or during UE Policy Association modification as described in clause 4.2.3.1, and the PCF determines that the UE needs to be configured with ANDSP/WLANSP with slice selection information and the configuration result is to be indicated within a Npcf\_UEPolicyControl\_UpdateNotify request then:

- when the PCF has successfully delivered to the UE the updated ANDSP/WLANSP with the slice selection information for the corresponding type of non-3gpp node, the PCF notifies to the NF service consumer about the successful delivery providing the "andspDelInd" attribute set to value "CONFIGURED".

- if the UE update with the ANDSP/WLANSP with the slice selection information for the corresponding type of non-3GPP node fails, the PCF provides the "andspDelInd" attribute set to value "NOT\_CONFIGURED".

If the "VPLMNSpecificURSP" feature is supported, the NF consumer is the V-PCF and the H-PCF received the subscription to notification about the delivery outcome of VPLMN-specific URSP rules within the "deliveryEvents" attribute as specified in clauses 4.2.2.1, and 4.2.3.1, the H-PCF notifies about the result of the delivery of UE policies using the "delivReport" attribute as described in clause 4.2.4.7.

For the (V-)PCF communicating with the AMF, if the "URSPEnforcement" feature is supported, and if not previously provided, the (V-)PCF may decide to request to the AMF to be notified about the PDU session established/terminated events by providing the PCF for the UE callback information within the "pcfUeInfo" attribute, and the DNN and S-NSSAI of the concerned PDU session(s) within the "matchPdus" attribute. Alternatively, the (V-)PCF may provide the updated complete list of DNN and S-NSSAI combination(s) of the concerned PDU sessions within the "matchPdus" attribute and/or updated PCF for the UE callback information within the "pcfUeInfo" attribute.

The (V-)(H-)PCF shall then send an HTTP POST request with "{notificationUri}/update" as URI (where the Notification URI was previously supplied by the NF service consumer) to the NF service consumer and the PolicyUpdate data structure as request body encoded as described in clause 4.2.3.3.

Upon the reception of the HTTP POST request, the NF service consumer:

- if the V-PCF is the NF service consumer, shall use the Namf\_Communication Service defined in 3GPP TS 29.518 [14] to send "MANAGE UE POLICY COMMAND" message(s) with the received UE policy to the UE via the AMF and/or with the received N2 PC5 policy for V2X communications and/or A2X communications and/or 5G ProSe to the NG-RAN via the AMF;

- if the V-PCF is the NF service consumer, shall provision the received policy control requested trigger(s) to the AMF, if applicable, using the Npcf\_UEPolicyControl\_UpdateNotify service operation according to the present clause;

- if the AMF is the NF service consumer, shall enforce the received policy control request trigger(s);

- if the "EpsUrsp" feature is supported and a PCF for a PDU session is the NF service consumer, shall behave as specified in clause 4.2.4.9;

- shall either send a successful response indicating the success of the enforcement or an appropriate failure response, for the V-PCF as the NF service consumer taking into consideration a reply received from the possible Namf\_Communication Service service operation and from the possible Npcf\_UEPolicyControl\_UpdateNotify service operation according to the previous bullets. In case of a successful response:

a. if the feature "ImmediateReport" is supported and the PCF provisioned policy control request triggers (applicable triggers are as defined in Table 5.6.2.8-1), a "200 OK" response code and a response body with the corresponding available information in the "UeRequestedValueRep" data structure shall be returned in the response;

b.- otherwise, a "204 No Content" response code shall be returned in the response; and

- if errors occur when processing the HTTP POST request, shall send an HTTP error response as specified in clause 5.7; or

- 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].

When the "URSPEnforcement" feature is supported and the AMF receives the "matchPdus" attribute, the AMF shall update the affected established PDU sesssion(s), by forwarding the received PCF for the UE callback information for the PDU session(s) matching the new S-NSSAI and DNN combination(s) to the SMF, and removing the previously provided PCF for the UE callback information for the PDU session(s) matching the removed S-NSSAI and DNN combination(s) from the SMF as defined in 3GPP TS 29.502 [31]. When the AMF receives "pcfUeInfo" attribute with updated SBA binding indication, the AMF shall apply the updated PCF for the UE callback information to the new PDU sessions only, i.e., already established PDU sessions are not affected.

If the feature "ErrorResponse" is supported and if the AMF as NF service consumer is not able to handle the notification but another unknown AMF could possibly handle the notification, it shall reply with an HTTP "404 Not found" error response.

If the (V-)PCF receives a "307 Temporary Redirect" response, the (V-)PCF shall resend the failed policy update notification request using the received URI in the Location header field as Notification URI. Subsequent policy update notifications, triggered after the failed one, shall be sent to the Notification URI provided by the NF service consumer during the corresponding policy association creation/update.

If the (V-)PCF becomes aware that a new AMF is requiring notifications (e.g. via the "404 Not found" response or via Namf\_Communication service AMFStatusChange Notifications, see 3GPP TS 29.518 [14], or via link level failures), and the (V-)PCF knows alternate or backup IPv4, Ipv6 Addess(es) or FQDN(s) where to send Notifications (e.g. via "altNotifIpv4Addrs", "altNotifIpv6Addrs" or "altNotifFqdns" attributes received when the policy association was created or via AMFStatusChange Notifications, or via the Nnrf\_NFDiscovery Service specified in 3GPP TS 29.510 [13] (using the service name and GUAMI obtained during the creation of the subscription) to query the other AMFs within the AMF set), the (V-)PCF shall exchange the authority part of the corresponding Notification URI with one of those addresses and shall use that URI in any subsequent communication.

If the (V-)PCF received a "404 Not found" response, the (V-)PCF should resend the failed policy update notification request to that URI.

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