**3GPP TSG-CT3 Meeting #123e C3-224698**

**E-Meeting, 18th – 26th August 2022** (revision of)

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **0390** | **rev** | **-** | **Current version:** |  |  |
|  | | | | | | | | |
| *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 parameter data retrieval | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eEDGE\_5GC, 5G\_ProSe, eV2XARC | | | | |  | ***Date:*** | | | 2022-08-11 |
|  |  | | | |  | |  | | |  |
| ***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 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)* | |
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| ***Reason for change:*** | | TS 29.513 does not specify that the retrieval of service parameter concerns V2XP, URSP rules, if AfGuideURSP feature is upported, and ProSeP if ProSe feature is supported. | | | | | | | | |
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| ***Summary of change:*** | | Update of UE Policy Association Establishment to specify that the service parameter data are retreived for V2XP, URSP rules, if AfGuideURSP feature is upported, and ProSeP if ProSe feature is supported. | | | | | | | | |
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| ***Consequences if not approved:*** | | Ambiguous and incomplete specification about the retrieval of service parameter data from UDR. | | | | | | | | |
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| ***Clauses affected:*** | | 5.6.1.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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's revision history:*** | |  | | | | | | | | |

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

#### 5.6.1.2 Non-roaming



Figure 5.6.1.2-1: UE Policy Association Establishment procedure - Non-roaming

1. The AMF receives the registration request from the AN. Based on local policy, and the authorized capabilities received from the UE (e.g. V2X capabilities and/or 5G ProSe capabilities) , as defined in clause 4.2.2.1 of 3GPP TS 29.525 [31], the AMF selects to contact the PCF to create the UE policy association with the PCF and to retrieve the UE policy. The AMF invokes the Npcf\_UEPolicyControl\_Create service operation by sending an HTTP POST request to the "UE Policy Associations" resource. The request includes the parameters as defined in clause 4.2.2.1 of 3GPP TS 29.525 [31].

2-3. If the PCF does not have the subscription data or the latest list of UPSIs for the UE, it invokes the Nudr\_DataRepository\_Query service operation to the UDR by sending an HTTP GET request to the "UEPolicySet" resource. The UDR sends an HTTP "200 OK" response to the PCF with the latest UPSIs and its content, and/or the subscription data.

Additionally, if the "EnhancedBackgroundDataTransfer" feature defined in 3GPP TS 29.504 [27] is supported, the PCF invokes the Nudr\_DataRepository\_Query service operation to the UDR by sending the HTTP GET request to the "Applied BDT Policy Data" resource to retrieve the applied BDT Policy Data. The UDR sends an HTTP "200 OK" response with the stored applied BDT Policy Data. And then, if the corresponding transfer policy is not locally stored in the PCF, the PCF invokes the Nudr\_DataRepository\_Query service operation by sending the HTTP GET request to the "IndividualBdtData" resource or the "BdtData" collection resource with the URI query parameter "bdt-ref-ids" as specified in 3GPP TS 29.519 [12], to retrieve the related Background Data Transfer policy information (i.e. Time window and Location criteria) stored in the UDR. The UDR sends an HTTP "200 OK" response to the PCF.

Additionally, if the "AfGuideURSP" feature is supported and URSPs are influenced by the AF, and/or V2XP and/or the "ProSe" feature is supported and ProSeP policies may be delivered to the UE, the PCF invokes the Nudr\_DataRepository\_Query service operation to the UDR by sending the HTTP GET request to the "Service Parameter Data" resource to retrieve the service parameter data. The UDR sends an HTTP "200 OK" response with the stored service parameter data.

Additionally, the PCF invokes the Nudr\_DataRepository\_Query service operation to the UDR by sending the HTTP GET request to the "5GVnGroupsInternal" resource to retrieve the group configuration of the received 5G VN Group Id as specified in 3GPP TS 29.505 [47], if not internally available.

NOTE: The PCF can internally store the retrieved 5G VN group configuration data for later use for other SUPIs that belong to the same Internal-Group-Id.

4-5. The PCF may request notifications from the UDR on changes in the subscription information, and in this case, the PCF shall invoke the Nudr\_DataRepository\_Subscribe service operation by sending an HTTP POST request to the "PolicyDataSubscriptions" resource. The UDR sends an HTTP "201 Created" response to acknowledge the subscription.

Additionally, if the "EnhancedBackgroundDataTransfer" feature defined in 3GPP TS 29.504 [27] is supported, to request notifications from the UDR on changes in the applied BDT Policy Data, the PCF invokes the Nudr\_DataRepository\_Subscribe service operation by sending an HTTP POST request to the "ApplicationDataSubscriptions" resource. The UDR sends an HTTP "201 Created" response to acknowledge the subscription.

Additionally, the PCF requests notifications from the UDR on changes in the service parameter data, the PCF invokes the Nudr\_DataRepository\_Subscribe service operation by sending an HTTP POST request to the "ApplicationDataSubscriptions" resource. The UDR sends an HTTP "201 Created" response to acknowledge the subscription.

Additionally, to request notifications from the UDR on changes in the 5G VN group configuration data associated to each of the Internal-Group-Id provided to the PCF, the PCF invokes the Nudr\_DataRepository\_Subscribe service operation by sending an HTTP POST request to the "SubscriptionDataSubscriptions" resource as specified in 3GPP TS 29.505 [47], if not internally available. The UDR sends an HTTP "201 Created" response to acknowledge the subscription.

6. The PCF determines whether and which UE policy has to be provisioned or updated as defined in clause 4.2.2.2.1 of 3GPP TS 29.525 [31], and can determine applicable Policy Control Request Trigger(s).

If the "V2X" feature is supported, the PCF determines whether the V2XP and the V2X N2 PC5 policy haves to be provisioned as defined in clause 4.2.2.3 of 3GPP TS 29.525 [31].

If the "ProSe" feature is supported, the PCF determines whether the ProSeP and the 5G ProSe N2 PC5 policy have to be provisioned as defined in clauses 4.2.2.2.1.3 and 4.2.2.4 of 3GPP TS 29.525 [31].

In addition, the PCF checks if the size of determined UE policy exceeds a predefined limit.

NOTE: NAS messages from AMF to UE do not exceed the maximum size limit allowed in NG-RAN (PDCP layer), so the predefined size limit in PCF is related to that limitation.

- If the size is under the limit then the UE policy information is included in a single Namf\_Communication\_N1N2MessageTransfer service operation and messages 10 to 13 are thus executed one time.

- If the size exceeds the predefined limit, the PCF splits the UE policy information in smaller logical independent UE policy information fragments and ensures the size of each is under the predefined limit. Each UE policy information fragment will be then sent in separated Namf\_Communication\_N1N2MessageTransfer service operations and messages 10 to 13 are thus executed several times, one time for each UE policy information fragment.

7. The PCF sends an HTTP "201 Created" response to the AMF with the Policy Control Request Trigger(s) if applicable.

8-9. If the "ProSe" feature is supported for the Npcf\_UEPolicyControl service, the PCF may register with the BSF as the PCF serving this UE, if not already registered at the AM Policy Association establishment. This is performed by using the Nbsf\_Management\_Register operation, providing as inputs the SUPI, the GPSI, if available, and the PCF end points related to the Npcf\_AMPolicyAuthorization service.

10. To subscribe to notifications of N1 message for UE Policy Delivery Result, or subsequent UE policy requests (e.g. for V2XP and/or ProSeP), the PCF invokes Namf\_Communication\_N1N2MessageSubscribe service operation to the AMF by sending the HTTP POST method with the URI of the "N1N2 Subscriptions Collection for Individual UE Contexts" resource.

11. The AMF sends an HTTP "201 Created" response to the PCF.

12. If the PCF determines to provision or update the UE policy in step 6, the PCF sends the UE policy to the UE via the AMF by invoking the Namf\_Communication\_N1N2MessageTransfer service operation.

If the "V2X" feature is supported and the PCF determines to provision V2XP and V2X N2 PC5 policy in step 6, the PCF sends the V2XP to the UE and the V2X N2 PC5 policy to the NG-RAN via the AMF by invoking the Namf\_Communication\_N1N2MessageTransfer service operation.

If the "ProSe" feature is supported and the PCF determines to provision ProSeP and 5G ProSe N2 PC5 policy in step 6, the PCF sends the ProSeP to the UE and the5G ProSe N2 PC5 policy to the NG-RAN via the AMF by invoking the Namf\_Communication\_N1N2MessageTransfer service operation.

The PCF can provision the UE policy (including V2XP and/or ProSeP) and V2X N2 PC5 policy and/or 5G ProSe N2 PC5 Policy in the same message.

13. The AMF sends a response to the Namf\_Communication\_N1N2MessageTransfer service operation.

14. When receiving the UE Policy container, the AMF forwards the response of the UE to the PCF using Namf\_Communication\_N1MessageNotify service operation.

15. The PCF sends a response to the Namf\_Communication\_N1MessageNotify service operation.

16-17. The PCF maintains the latest list of UE policy sections delivered to the UE (in step 8) and updates the UE policy information for the subscriber including the latest list of UPSIs and its content in the UDR by invoking the Nudr\_DataRepository\_Update service operation.

- If there is no UE policy information retrieved in step 3, the PCF sends an HTTP PUT request to the "UEPolicySet" resource, and the UDR sends an HTTP "201 Created" response.

- Otherwise, the PCF sends an HTTP PUT/PATCH request to the "UEPolicySet" resource, and the UDR sends an HTTP "200 OK" or "204 No Content" response accordingly.

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