**3GPP TSG CT WG3 Meeting #137 *C3-245xxx***

**Hefei, CN, 14th – 18th October, 2024 was C3-245187**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0371** | **rev** | **1** | **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:*** | Support 5G ProSe Multi-hop UE-to-Network Relay | | | | | | | | |
|  |  | | | | | | | | |
| ***Source to WG:*** | Huawei, CATT | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** | 5G\_ProSe\_Ph3 | | | | |  | ***Date:*** | | 2024-10-07 |
|  |  | | | |  | |  | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | |  |
|  | *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:*** | | | As per the agreed SA2 CRs in S2-2409085/S2-2409086/S2-2409087, the 5G ProSe Multi-hop UE-to-Network Relay functionality was introduced and the related UE policy management needs hence to be defined.  In a similar way to what was done in previous releases (e.g., to support 5G ProSe direct discovery, direct communications, U2N Relay or U2U relay), it is needed to update the Npcf\_UEPolicyControl API accordingly. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Address the above-detailed stage 2 requirements. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * The above-detailed stage 2 requirements are not specified in stage 3. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | 4.2.2.2.1.0, 4.2.2.2.5, 5.6.2.3, 5.6.2.4, 5.3.6.3, 5.8, A.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 introduces a backwards compatible new feature to the OpenAPI description of the Npcf\_UEPolicyControl API defined in this specification. | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

\* \* \* \* Start of changes \* \* \* \*

###### 4.2.2.2.1.0 General

The UE policy consists of

- UE Access Network discovery and selection policies (ANDSP). It is used by the UE for selecting non-3GPP accesses networks. The encoding of ANDSP is defined in 3GPP TS 24.526 [16];

- UE Route Selection Policy (URSP). This UE policy is used by the UE to determine how to route outgoing traffic. Traffic can be routed to an established PDU Session, offloaded to non-3GPP access outside a PDU Session, can be routed via a ProSe Layer-3 UE-to-Network Relay outside a PDU session or trigger the establishment of a new PDU Session. The encoding of URSP is defined in 3GPP TS 24.526 [16];

- UE Vehicle-to-Everything Policy (V2XP). This UE policy provides configuration information to the UE for V2X communications over PC5 reference point or over Uu reference point or both. The encoding of V2XP is defined in 3GPP TS 24.588 [25];

- UE 5G Proximity based Services Policy (ProSeP). This UE policy provides configuration information to the UE for 5G ProSe direct discovery, 5G ProSe direct communications, 5G ProSe UE-to-network relay, 5G ProSe usage reporting configuration and rules, 5G ProSe UE-to-UE relay, and/or 5G ProSe multi-hop UE-to-Network Relay;

- UE Aircraft-to-Everything Policy (A2XP). This UE policy provides configuration information to the UE for A2X communications over PC5 reference point or A2X communications over Uu reference point or both. The encoding of A2XP is defined in 3GPP TS 24.578 [33]; and

- UE Ranging and Sidelink Positioning Policy (RSLPP). The UE policy provides configuration information to the UE for Ranging/SL over PC5 reference point. The encoding of RSLPP is defined in 3GPP TS 24.514 [42];

The (V-)(H-)PCF determines the UE Policies that apply to the UE based on the received information from the UE about the list of UE Policies stored in the UE and UE policy classmark information as described in Annex D of 3GPP TS 24.501 [15], the information available in UDR as described in 3GPP TS 29.519 [17], inputs received from the NF service consumer and local policies as described in clause 4.2.2.2.

NOTE 1: There is a possibility of misalignment between the UE Policies determined by the PCF and the UE Policies stored at the UE (which can be caused e.g. in AMF relocation with PCF reselection scenario). When the PCF, based on configuration and implementation specific means, detects this possibility, the PCF can avoid it if the PCF first removes all the UE Policies in the UE as per the list of UPSI(s) stored in UDR/PCF and then provides to the UE all determined UE Policies as per currently specified procedures.

The UE Policy is transferred to the UE using the UE policy delivery protocol defined in Annex D of 3GPP TS 24.501 [15]. The (V-)(H-)PCF shall send UE policy using the "MANAGE UE POLICY COMMAND" message and will receive the "MANAGE UE POLICY COMPLETE"or the "MANAGE UE POLICY COMMAND REJECT" messages in the response. Those messages are transparently forwarded by the AMF.

The (V-)PCF shall use the Namf\_Communication\_N1N2MessageTransfer service operation defined in clause 5.2.2.3.1 of 3GPP TS 29.518 [14] to send "MANAGE UE POLICY COMMAND" messages to the UE and use the Namf\_Communication\_N1MessageNotify service operation defined in clause 5.2.2.3.5 of 3GPP TS 29.518 [14] to receive "MANAGE UE POLICY COMPLETE" and "MANAGE UE POLICY COMMAND REJECT" messages from the UE. The (V-)PCF shall only send "MANAGE UE POLICY COMMAND" messages below a predefined size limit.

The H-PCF shall use service operations as defined in the present specification to receive "MANAGE UE POLICY COMPLETE" and "MANAGE UE POLICY COMMAND REJECT" messages from the V-PCF and to send MANAGE UE POLICY COMMAND" messages to the V-PCF. The H-PCF shall encode the "MANAGE UE POLICY COMMAND" message in a "uePolicy" attribute. The H-PCF shall only send "MANAGE UE POLICY COMMAND" messages below a predefined size limit.

The (V-)(H-)PCF may deliver the UE policy to the UE in several "MANAGE UE POLICY COMMAND" messages.

For the purpose of such fragmented delivery and subsequent partial updates of UE policies, the UE policy is divided into policy sections. Such policy sections may be predefined in the (V-)(H-)PCF, may be retrieved by the (V-)(H-)PCF from the UDR as specified in 3GPP TS 29.519 [17], or may be dynamically generated by the (V-)(H-)PCF, but shall comply to the rules detailed below. The (V-)(H-)PCF may combine several policy sections into one "MANAGE UE POLICY COMMAND" message, if the predefined size limit is observed.

The following rules apply to policy sections:

- The size shall be below the predefined size limit.

- The policy section shall only contain complete URSP rule(s), WLANSP rule(s), N3AN node configuration information, V2XP, A2XP, ProSeP and/or RSLPP info content, but no fractions of such rules, configuration information, or info contents.

- To ease a subsequent partial update of UE policies, policy sections should only contain a small number of policies, e.g. URSP rule(s), and/or WLANSP rule(s).

- The entire content of a policy section shall be provided by a single PLMN.

A PCF shall only determine policy sections of its own PLMN(s). However, a V-PCF may forward UE policy sections received from the H-PCF to the UE.

Each UE policy section is identified by a UE policy section identifier (UPSI). The UPSI is composed of two parts:

a) a PLMN ID part containing the PLMN ID of the PLMN or SNPN of the PCF which provides the UE policies (i.e, the PLMN ID derived from the SUPI); and

b) a UE policy section code (UPSC) containing a unique value within the PLMN or SNPN selected by the PCF.

NOTE 2: When the UE is operating in SNPN access operation mode, the UE associates the PLMN ID with the NID of the SNPN to differentiate between PLMN UPSI(s) and SNPN UPSI(s).

The (V-)(H-)PCF provides an UPSI when providing a new UE policy section and may then identify that policy section using that UPSI when requesting that that UE policy section is modified or deleted, as specified in Annex D of 3GPP TS 24.501 [15].

If the (V-)(H-)PCF determines that changes are required and/or the V-PCF receives possible new or modified policy sections determined by the H-PCF in the roaming case, it shall send the determined new, updated or deleted policy sections using one or several "MANAGE UE POLICY COMMAND" messages towards the NF service consumer. In the roaming case, the V-PCF may either combine policy sections received from the H-PCF and policy sections the V-PCF selected in the same "MANAGE UE POLICY COMMAND" (as long as the predefined size limit is observed), or use separate "MANAGE UE POLICY COMMAND" messages; however, the V-PCF shall not distribute the policy sections received in one "MANAGE UE POLICY COMMAND" from the H-PCF into several "MANAGE UE POLICY COMMAND" messages as long as the predefined size limit is observed for the policy sections received from the H-PCF. The V-PCF shall allocate a new PTI for the "MANAGE UE POLICY COMMAND" sent by the V-PCF and store the mapping between the new PTI and the PTI within the "MANAGE UE POLICY COMMAND" received from the H-PCF.

After sending a "MANAGE UE POLICY COMMAND" messages, the (V-)(H-)PCF shall wait for a related confirmation in a "MANAGE UE POLICY COMPLETE" messages or failure indication in a "MANAGE UE POLICY COMMAND REJECT" message. When receiving no such message until the expiry of a supervision timer specified in Annex D of 3GPP TS 24.501 [15], or when receiving a failure indication, the PCF should re-send related instructions for the policy sections. In the roaming case, the H-PCF and the V-PCF shall each be responsible for resending those policy sections that it originally supplied. In the case that the V-PCF combined policy sections received from the H-PCF and policy sections the V-PCF selected in the same "MANAGE UE POLICY COMMAND" described below, the V-PCF shall wait for the H-PCF to resend the policy sections of HPLMN, and then resend the combined policy sections. The (V-)(H-)PCF shall always include the initially supplied policy sections when resending the UE policy.

The (V-)(H-)PCF shall determine that a received "MANAGE UE POLICY COMPLETE" message or "MANAGE UE POLICY COMMAND REJECT" message is related to the result of a "MANAGE UE POLICY COMMAND" based on the PTI within that message. In the roaming case, the V-PCF shall determine that the received message is related to the result of the UE policy provided by the H-PCF if the PTI within the message belongs to one of the stored PTI mapping(s).

If the V-PCF combined policy sections received from the H-PCF and policy sections the V-PCF selected in the same "MANAGE UE POLICY COMMAND", upon reception of a "MANAGE UE POLICY COMPLETE" message or "MANAGE UE POLICY COMMAND REJECT" message the V-PCF shall:

- forward the corresponding "MANAGE UE POLICY COMPLETE" message to the H-PCF;

- if a "MANAGE UE POLICY COMMAND REJECT" message with UPSI(s) of the HPLMN is received, forward the parts of the "MANAGE UE POLICY COMMAND REJECT" message that relate to the UPSI(s) of the HPLMN to the H-PCF;

- if a "MANAGE UE POLICY COMMAND REJECT" message without UPSI(s) of the HPLMN is received, send a "MANAGE UE POLICY COMPLETE" message to the H-PCF; and

- provide the stored PTI received from the HPLMN in the corresponding "MANAGE UE POLICY COMMAND" within the "MANAGE UE POLICY COMPLETE" message or "MANAGE UE POLICY COMMAND REJECT" message towards the H-PCF.

If the V-PCF sent a separate "MANAGE UE POLICY COMMAND" containing only the policy sections received from the H-PCF, the V-PCF shall forward the corresponding "MANAGE UE POLICY COMPLETE" or "MANAGE UE POLICY COMMAND REJECT" message to the H-PCF and provide the stored PTI received from the HPLMN in the corresponding "MANAGE UE POLICY COMMAND" within the "MANAGE UE POLICY COMPLETE" message or "MANAGE UE POLICY COMMAND REJECT" message towards the H-PCF.If the V-PCF distributed the policy sections received in one "MANAGE UE POLICY COMMAND" from the H-PCF into several "MANAGE UE POLICY COMMAND" messages to the UE (because the predefined size limit of the VPLMN was exceeded), the V-PCF shall aggregate all corresponding "MANAGE UE POLICY COMPLETE" or "MANAGE UE POLICY COMMAND REJECT" messages received from the UE into one "MANAGE UE POLICY COMPLETE" or "MANAGE UE POLICY COMMAND REJECT" message towards the H-PCF.

When the (V-)PCF receives an Namf\_Communication\_N1N2MessageTransfer failure response as defined in clause 5.2.2.3.1.2 of 3GPP TS 29.518 [14], or an N1N2 Transfer Failure Notification as defined in clause 5.2.2.3.2 of 3GPP TS 29.518 [14], the (V-)PCF shall stop the supervision timer specified in Annex D of 3GPP TS 24.501 [15] corresponding to the affected PTIs. If the "retryAfter" attribute is received, the (V-)PCF should not initiate new UE Policy Delivery request until the timer expires. For the N1N2 Transfer Failure Notification case, the (V-)PCF determines the affected PTIs allocated by the V-PCF based on the resource URI within the "n1n2MsgDataUri" attribute of the N1N2MsgTxfrFailureNotification data structure as defined in clause 6.1.6.2.30 of 3GPP TS 29.518 [14].

NOTE 3: The (V-)PCF correlates the Namf\_Communication\_N1N2MessageTransfer request and the corresponding N1N2 Transfer Failure Notification based on the resource URI within the "Location" header included in the response HTTP status code "202 Accepted" of the Namf\_Communication\_N1N2MessageTransfer response and the resource URI within the "n1n2MsgDataUri" attribute of and N1N2 Transfer Failure Notification. And then the V-PCF determines the affected PTIs related with the resource URI.

For the non-roaming case or the roaming case when the V-PCF determines that the affected UE Policy is related to the V-PLMN, the (V-)PCF may provision the policy control request trigger "CON\_STATE\_CH" if not provisioned yet. Upon receiving the notification of UE connectivity state change indicating that the UE enters the CM-Connected state, the (V-)PCF may retry to deliver the UE Policy.

For the roaming case and if the V-PCF determines that the affected UE policy is related with the UE policy delivered by the H-PCF, the V-PCF shall send a POST message as defined in clause 4.2.3.1 to notify the H-PCF of the failure of UE policy transfer by including the "uePolTransFailNotif" attribute within the PolicyAssociationUpdateRequest data structure. Within the UePolicyTransferFailureNotification data structure, the V-PCF shall include the cause of the UE Policy Transfer Failure within the "cause" attribute and the PTI(s) allocated by the H-PCF corresponding to the PTI(s) allocated by the V-PCF within the "ptis" attribute. The H-PCF shall stop the supervision timer corresponding to the affected PTIs. In this case, the H-PCF may provision the policy control request trigger "CON\_STATE\_CH" if not provisioned yet. Upon receiving the notification of UE connectivity state change indicating that the UE enters the CM-Connected state, the H-PCF may retry to deliver the UE Policy. If the feature "EnErrorHandling" is supported and the "retryAfter" attribute is received, the H-PCF should not initiate new UE Policy Delivery request until the timer expires.

When the (H-)PCF receives the "MANAGE UE POLICY COMPLETE" or the "MANAGE UE POLICY COMMAND REJECT" message and determines that this message indicates a UE Policy Delivery outcome to which an NF service consumer has subscribed via a request for service specific parameters, the (H-)PCF shall invoke the Npcf\_EventExposure\_Notify service operation as defined in clause 4.2.4.2 of 3GPP TS 29.523 [30].

\* \* \* \* Next changes \* \* \* \*

##### 4.2.2.2.5 Proximity based Services Policy (ProSeP)

The ProSeP includes:

- ProSeP for 5G ProSe direct discovery defined in clause 5.3 of 3GPP TS 24.555 [29];

- ProSeP for 5G ProSe direct communications defined in clause 5.4 of 3GPP TS 24.555 [29];

- ProSeP for 5G ProSe UE-to-network relay, including:

- ProSeP for 5G ProSe UE-to-network relay UE defined in clause 5.5 of 3GPP TS 24.555 [29]; and/or

- ProSeP for 5G ProSe Remote UE defined in clause 5.6 of 3GPP TS 24.555 [29];

- ProSeP for 5G ProSe usage reporting configuration and rules defined in clause 5.7 of 3GPP TS 24.555 [29];

- when the "ProSe\_Ph2" feature is supporetd:

- ProSeP for 5G ProSe UE-to-UE relay UE defined in clause 5.8 of 3GPP TS 24.555 [29]; and/or

- ProSeP for 5G ProSe End UE defined in clause 5.9 of 3GPP TS 24.555 [29];

and/or

- when the "ProSe\_Ph3" feature is supporetd:

- ProSeP for 5G ProSe multi-hop UE-to-Network Relay, including:

- ProSeP for 5G ProSe UE-to-Network relay UE supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay, as defined in 3GPP TS 24.555 [29];

- ProSeP for 5G ProSe Remote UE supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay, as defined in 3GPP TS 24.555 [29]; and/or

- ProSeP for 5G ProSe Intermediate UE-to-Network Relay supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay, as defined in 3GPP TS 24.555 [29].

Editor's note: The clause numbers of the clauses where the ProSeP for 5G ProSe Multi-hop UE-to-Network Relay will be added once the related work is completed by CT1.

Editor's note: Whether only Layer-3 multi-hop UE-to-Network Relay or Layer-2 and/or Layer-3 multi-hop UE-to-Network Relay will be supported is FFS and pending stage 2 progress.

\* \* \* \* Next changes \* \* \* \*

#### 5.6.2.3 Type PolicyAssociationRequest

Table 5.6.2.3-1: Definition of type PolicyAssociationRequest

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute name | | Data type | | P | | Cardinality | | Description | | Applicability | |
| notificationUri | | Uri | | M | | 1 | | Identifies the recipient of Notifications sent by the PCF. | |  | |
| altNotifIpv4Addrs | | array(Ipv4Addr) | | O | | 1..N | | Alternate or backup IPv4 Addess(es) where to send Notifications. | |  | |
| altNotifIpv6Addrs | | array(Ipv6Addr) | | O | | 1..N | | Alternate or backup IPv6 Addess(es) where to send Notifications. | |  | |
| altNotifFqdns | | array(Fqdn) | | O | | 1..N | | Alternate or backup FQDN(s) where to send Notifications. | |  | |
| supi | | Supi | | M | | 1 | | Subscription Permanent Identifier. | |  | |
| gpsi | | Gpsi | | C | | 0..1 | | Generic Public Subscription Identifier. Shall be provided when available. | |  | |
| accessType | | AccessType | | C | | 0..1 | | The Access Type where the served UE is camping. Shall be provided when available. | |  | |
| accessTypes | | array(AccessType) | | C | | 1..N | | The Access Type(s) where the served UE is camping. Shall be provided when available. | | AccessChange | |
| pei | | Pei | | C | | 0..1 | | The Permanent Equipment Identifier of the served UE. Shall be provided when available. | |  | |
| userLoc | | UserLocation | | C | | 0..1 | | The location of the served UE. Shall be provided when available. | |  | |
| timeZone | | TimeZone | | C | | 0..1 | | The time zone of the network where the served UE is camping. Shall be provided when available. | |  | |
| servingPlmn | | PlmnIdNid | | C | | 0..1 | | The serving network (a PLMN or an SNPN) where the served UE is camping. For the SNPN the NID together with the PLMN ID identifies the SNPN. Shall be provided when available. | |  | |
| ratType | | RatType | | C | | 0..1 | | The RAT Type where the served UE is camping. Shall be provided when available. | |  | |
| ratTypes | | array(RatType) | | C | | 1..N | | The RAT Type(s) where the served UE is camping. Shall be provided when available. | | AccessChange | |
| groupIds | | array(GroupId) | | C | | 1..N | | Internal Group Identifier(s) of the served UE. Shall be provided when available. | |  | |
| hPcfId | | NfInstanceId | | C | | 0..1 | | H-PCF Identifier. Shall be provided by the AMF in roaming scenarios when available. | |  | |
| hPcfUri | | Uri | | C | | 0..1 | | H-PCF URI. It shall be provided by the AMF in roaming scenarios, if available.  When present, it shall contain the API URI of the Npcf\_UEPolicyControl service of the H-PCF ID indicated in the "hPcfId" attribute. The API URI shall take the form specified in clause 5.1. | | EnhEstRoaming | |
| hPcfSetId | | NfSetId | | C | | 0..1 | | H-PCF Set Identifier of the H-PCF instance indicated in the "hPcfId" attribute. It shall be provided by the AMF in roaming scenarios, if available. | | EnhEstRoaming | |
| uePolReq | | UePolicyRequest | | C | | 0..1 | | A request for UE Policies. Shall be provided when the AMF receives an "UE STATE INDICATION" message, as defined in Annex D.5.4 of 3GPP TS 24.501 [15]. | |  | |
| guami | | Guami | | C | | 0..1 | | The Globally Unique AMF Identifier (GUAMI) shall be provided by an AMF as NF service consumer. | |  | |
| serviceName | | ServiceName | | O | | 0..1 | | If the NF service consumer is an AMF, it should provide the name of a service produced by the AMF that makes use of information received within the Npcf\_UEPolicyControl\_UpdateNotify service operation. | |  | |
| servingNfId | | NfInstanceId | | C | | 0..1 | | If the NF service consumer is an AMF, it shall contain the identifier of the serving AMF. | |  | |
| pc5Capab | | Pc5Capability | | C | | 0..1 | | Indicates the PC5 Capability for V2X communications supported by the UE. It shall be provided when available at the NF service consumer. | | V2X | |
| a2xCapab | | array(A2xCapability) | | C | | 1..N | | Indicates the A2X Capabilities for A2X communications supported by the UE. It shall be provided when available at the NF service consumer. | | A2X | |
| proSeCapab | | array(ProSeCapability) | | C | | 1..N | | Indicates whether the UE is capable of one or more of the the 5G ProSe Capabilities.  This attribute shall be provided when available at the NF service consumer. | | ProSe | |
| confSnssais | | array(ConfiguredSnssai) | | C | | 1..N | | The Configured NSSAI for the serving PLMN, and optionally the mapped S-NSSAI value of home network corresponding to the configured S-NSSAI in the serving PLMN.  When the feature SliceAwareANDSP is supported, it shall be provided in the roaming case when available at the NF service consumer and the "n3gNodeReSel" attribute is present.  If the feature NssaiChange is supported, it shall be provided in the roaming case. (NOTE 1) | | SliceAwareANDSP, NssaiChange | |
| n3gNodeReSel | | Non3gppAccess | | C | | 0..1 | | A wrongly selected non-3gpp access node. It shall be provided when the UE has selected a non-3gpp access node that is not compatible with the Allowed NSSAI. | | SliceAwareANDSP | |
| sliceN3gNodeSelCap | | SliceSpecificN3gNodeSelectionCapability | | O | | 0..1 | | Indicates whether the UE supports N3IWF/TNGF selection based on the slices the UE wishes to use over untrusted/trusted non-3GPP access. | | SliceAwareANDSP | |
| satBackhaulCategory | | SatelliteBackhaulCategory | | O | | 0..1 | | Indicates types of the satellite backhaul based on satellite types (when satellite backhaul is used) or non-satellite backhaul (when satellite backhaul is not used).  The default value "NON\_SATELLITE" shall apply if the attribute is not present. | | EnSatBackhaulCategoryChg | |
| vpsUePolGuidance | | map(UePolicyParameters) | | O | | 1..N | | Contains the service parameter used to guide the VPLMN-specific URSP and may contain the subscription to VPLMN-specific URSP delivery outcome. The key of the map represents the AF request to guide the VPLMN-specific URSP rules.  This attribute only applies in roaming and when the V-PCF is the NF service consumer. | | VPLMNSpecificURSP | |
| lboRoamInfo | | array(LboRoamingInformation) | | O | | 1..N | | Contains LBO roaming information for DNN and S-NSSAI combination(s).  This attribute only applies in roaming and when the AMF is the NF service consumer. | | VPLMNSpecificURSP | |
| 5gsToEpsMob | | boolean | | O | | 0..1 | | When it is set to true, it indicates the UE Policy Association creation is triggered by a 5GS to EPS mobility scenario.  Default value is false. | | EpsUrsp | |
| s uppFeat | | SupportedFeatures | | M | | 1 | | Indicates the features supported by the service consumer. | |  | |
| rangSlCapab | | array(RangSLCapability) | | C | | 1..N | | Contains the Ranging/SL related UE capabilities.  It shall be provided when available at the NF service consumer. | | Ranging\_SL | |
| NOTE 1: The "mappedHomeSnssai" attribute within the ConfiguredSnssai data type may only be provided if the "NssaiChange" feature is supported. | | | | | | | | | | | |

\* \* \* \* Next changes \* \* \* \*

#### 5.6.2.4 Type PolicyAssociationUpdateRequest

Table 5.6.2.4-1: Definition of type PolicyAssociationUpdateRequest

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute name | | Data type | | P | | Cardinality | | Description | | Applicability | |
| notificationUri | | Uri | | O | | 0..1 | | Identifies the recipient of Notifications sent by the PCF. | |  | |
| altNotifIpv4Addrs | | array(Ipv4Addr) | | O | | 1..N | | Alternate or backup IPv4 Address(es) where to send Notifications. | |  | |
| altNotifIpv6Addrs | | array(Ipv6Addr) | | O | | 1..N | | Alternate or backup IPv6 Address(es) where to send Notifications. | |  | |
| altNotifFqdns | | array(Fqdn) | | O | | 1..N | | Alternate or backup FQDN(s) where to send Notifications. | |  | |
| triggers | | array(RequestTrigger) | | C | | 1..N | | Request Triggers that the NF service consumer observes. | |  | |
| praStatuses | | map(PresenceInfo) | | C | | 1..N | | If the Trigger "PRA\_CH" is reported, the UE presence status for tracking area for which changes of the UE presence occurred shall be provided. The "praId" attribute within the PresenceInfo data type shall also be the key of the map. The "presenceState" attribute within the PresenceInfo data type shall be supplied. The "additionalPraId" attribute within the PresenceInfo data type shall not be supplied. The "praId" attribute within the PresenceInfo data type shall include the identifier of an individual presence reporting area. | |  | |
| userLoc | | UserLocation | | C | | 0..1 | | The location of the served UE shall be provided for trigger "LOC\_CH". | |  | |
| uePolDelResult | | UePolicyDeliveryResult | | C | | 0..1 | | UE Policy Delivery Result. Shall be provided together with trigger "UE\_POLICY" when a "MANAGE UE POLICY COMPLETE" message or a "MANAGE UE POLICY COMMAND REJECT" message, as defined in Annex D.5 of 3GPP TS 24.501 [15], has been received by the V-PCF and is being forwarded to the H-PCF. | |  | |
| uePolTransFailNotif | | UePolicyTransferFailureNotification | | C | | 0..1 | | The UE policy transfer failure notification. Shall be the provided together with trigger "UE\_POLICY" when a response with HTTP status code 4xx or 5xx as defined in clause 5.2.2.3.1.2 of 3GPP TS 29.518 [14] or a N1N2 Transfer Failure Notification as defined in clause 5.2.2.3.2 of 3GPP TS 29.518 [14] is received after the V-PCF provisioned the UE policy by invoking the Namf\_Communication\_N1N2MessageTransfer service operation to the AMF and is notifying the H-PCF. | |  | |
| uePolReq | | UePolicyRequest | | C | | 0..1 | | A request for UE Policies. Shall be provided together with trigger "UE\_POLICY" when the V-PCF receives an "UE POLICY PROVISIONING REQUEST" message, as defined in clause 7.2.1.1 of 3GPP TS 24.587 [24], if the "V2X" feature is supported, and/or when the V-PCF receives an "UE POLICY PROVISIONING REQUEST" message for 5G ProSe, as defined in clause 10.4.1 of 3GPP TS 24.554 [28], if the "ProSe" feature is supported and/or when the V-PCF receives an "UE POLICY PROVISIONING REQUEST" message for A2X, as defined 3GPP TS 24.577 [32], if the "A2X" feature is supported and/or when the V-PCF receives an "UE POLICY PROVISIONING REQUEST" message for Ranging/SL, as defined 3GPP TS 24.514 [42], if the "Ranging\_SL" feature is supported.. | | V2X, A2X, ProSe, Ranging\_SL | |
| guami | | Guami | | C | | 0..1 | | The Globally Unique AMF Identifier (GUAMI) shall be provided by an AMF as NF service consumer during the AMF relocation. | |  | |
| servingNfId | | NfInstanceId | | C | | 0..1 | | It shall contain the identifier of the new AMF during the AMF relocation. | |  | |
| plmnId | | PlmnIdNid | | C | | 0..1 | | The serving network identity (a PLMN or an SNPN) of the served UE shall be provided for trigger "PLMN\_CH". | | PlmnChange | |
| connectState | | CmState | | C | | 0..1 | | The connectivity state of the served UE shall be provided for trigger "CON\_STATE\_CH". | | ConnectivityStateChange | |
| groupIds | | array(GroupId) | | C | | 1..N | | Internal Group Identifier(s) of the served UE. Shall be provided for trigger "GROUP\_ID\_LIST\_CHG". | | GroupIdListChange | |
| pc5Capab | | Pc5Capability | | C | | 0..1 | | Indicates the PC5 Capability for V2X communications supported by the UE. It shall be provided when available at the NF service consumer.  It shall be included by the target AMF only in inter-AMF mobility scenarios and for trigger "FEAT\_RENEG". It requires that the "V2X" feature is supported. | | FeatureRenegotiation | |
| a2xCapab | | array(A2xCapability) | | C | | 1..N | | Indicates the A2X capabilities supported by the UE. It shall be provided when available at the NF service consumer.  It shall be included by the target AMF only in inter-AMF mobility scenarios and for trigger "FEAT\_RENEG". It requires that the "A2X" feature is supported. | | FeatureRenegotiation | |
| proSeCapab | | array(ProSeCapability) | | O | | 1..N | | Indicates whether the UE is capable of one or more of the 5G ProSe Capabilities. | | ProSe | |
| confSnssais | | array(ConfiguredSnssai) | | C | | 1..N | | The Configured NSSAI for the serving PLMN, and optionally the mapped S-NSSAI value of home network corresponding to the configured S-NSSAI in the serving PLMN. It shall be provided in case of roaming for trigger "CONF\_NSSAI\_CH" or for trigger "NON\_3GPP\_NODE\_RESELECTION". (NOTE) | | SliceAwareANDSP, NssaiChange | |
| n3gNodeReSel | | Non3gppAccess | | C | | 0..1 | | A wrongly selected non-3gpp access node. It shall be provided when available at the NF service consumer and the "NON\_3GPP\_NODE\_RESELECTION" trigger is reported within the "triggers" attribute. | | SliceAwareANDSP | |
| sliceN3gNodeSelCap | | SliceSpecificN3gNodeSelectionCapability | | O | | 0..1 | | Indicates whether the UE supports N3IWF/TNGF selection based on the slices the UE wishes to use over untrusted/trusted non-3GPP access.  It may be included by the target AMF only in inter-AMF mobility scenarios and for trigger "FEAT\_RENEG". It requires that the "SliceAwareANDSP" feature is supported. | | FeatureRenegotiation | |
| satBackhaulCategory | | SatelliteBackhaulCategory | | C | | 0..1 | | Indicates types of the satellite backhaul based on satellite types (when satellite backhaul is used) or non-satellite backhaul (when satellite backhaul is not used).  It shall be provided for trigger "SAT\_CATEGORY\_CHG". | | EnSatBackhaulCategoryChg | |
| urspEnfReport | | map(UrspEnforcementPduSession) | | C | | 1..N | | Represents information about the enforced URSP rule(s) in one or more PDU sessions for the affected UE.  The key of the map is a character string that represents an integer value (it may correspond with a PDU session identifier).  It shall be present when the notified policy control request trigger is "URSP\_ENF\_INFO". | | URSPEnforcement | |
| vpsUePolGuidance | | map(UePolicyParameters) | | O | | 1..N | | Contains the service parameter used to guide the VPLMN-specific URSP rule determination and may contain the subscription to VPLMN-specific URSP delivery outcome. The key of the map represents the AF request to guide VPLMN-specific URSP rules.  This attribute only applies in roaming and when the V-PCF is the NF service consumer. | | VPLMNSpecificURSP | |
| lboRoamInfo | | array(LboRoamingInformation) | | O | | 1..N | | Contains LBO roaming information for a DNN and S-NSSAI combination(s).  This attribute only applies in roaming and when the AMF is the NF service consumer. | | VPLMNSpecificURSP | |
| accessTypes | | array(AccessType) | | C | | 1..N | | The Access Type(s) where the served UE is camping. It shall be provided for trigger "ACCESS\_TYPE\_CH" when the access type(s) changes or when the access type(s) is initially reported as consequence of the provisioning of the trigger. | | AccessChange | |
| ratTypes | | array(RatType) | | C | | 1..N | | The RAT Type(s), if available, for the reported "accessTypes" where the served UE is camping. It shall be provided, if available, for trigger "ACCESS\_TYPE\_CH" when the access type(s) changes or when the access type(s) is initially reported as consequence of the provisioning of the trigger. | | AccessChange | |
| suppFeat | | SupportedFeatures | | C | | 0..1 | | Indicates the features supported by the NF service consumer. It shall be included by the target AMF in inter-AMF mobility scenarios for trigger "FEAT\_RENEG". | | FeatureRenegotiation | |
| rangSlCapab | | array(RangSLCapability) | | O | | 1..N | | Contains the Ranging/SL related UE capabilities. | | Ranging\_SL | |
| NOTE: The "mappedHomeSnssai" attribute within the ConfiguredSnssai data type may only be provided if the "NssaiChange" feature is supported. | | | | | | | | | | | |

\* \* \* \* Next changes \* \* \* \*

#### 5.6.3.6 Enumeration: ProSeCapability

This enumeration indicates the 5G ProSe capabilities. It shall comply with the provisions defined in table 5.6.3.6-1.

Table 5.6.3.6-1: Enumeration ProSeCapability

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| PROSE\_DD | Indicates that the UE supports 5G ProSe Direct Discovery. |  |
| PROSE\_DC | Indicates that the UE supports 5G ProSe Direct Communication. |  |
| PROSE\_L2\_U2N\_RELAY | Indicates that the UE supports acting as a Layer-2 5G ProSe UE-to-Network Relay UE. |  |
| PROSE\_L3\_U2N\_RELAY | Indicates that the UE supports acting as a Layer-3 5G ProSe UE-to-Network Relay UE. |  |
| PROSE\_L2\_REMOTE\_UE | Indicates that the UE supports acting as a Layer-2 5G ProSe Remote UE. |  |
| PROSE\_L3\_REMOTE\_UE | Indicates that the UE supports acting as a Layer-3 5G ProSe Remote UE. |  |
| PROSE\_L2\_U2U\_RELAY | Indicates that the UE supports acting as a Layer-2 5G ProSe UE-to-UE Relay UE. | ProSe\_Ph2 |
| PROSE\_L3\_U2U\_RELAY | Indicates that the UE supports acting as a Layer-3 5G ProSe UE-to-UE Relay UE. | ProSe\_Ph2 |
| PROSE\_L2\_END\_UE | Indicates that the UE supports acting as a Layer-2 5G ProSe End UE. | ProSe\_Ph2 |
| PROSE\_L3\_END\_UE | Indicates that the UE supports acting as a Layer-3 5G ProSe End UE. | ProSe\_Ph2 |
| PROSE\_MH\_L3\_U2N\_RELAY | Indicates that the UE supports acting as a 5G ProSe Layer-3 UE-to-Network Relay UE supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay. | ProSe\_Ph3 |
| PROSE\_MH\_L3\_REMOTE\_UE | Indicates that the UE supports acting as a 5G ProSe Layer-3 Remote UE supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay. | ProSe\_Ph3 |
| PROSE\_MH\_L3\_INTERMEDIATE\_UE | Indicates that the UE supports acting as a 5G ProSe Layer-3 Intermediate UE-to-Network Relay supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay. | ProSe\_Ph3 |

\* \* \* \* Next changes \* \* \* \*

## 5.8 Feature negotiation

The optional features in table 5.8-1 are defined for the Npcf\_UEPolicyControl API. They shall be negotiated using the extensibility mechanism defined in clause 6.6 of 3GPP TS 29.500 [5].

Table 5.8-1: Supported Features

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feature number | | | Feature Name | | | Description | | |
| 1 | | | PendingTransaction | | | This feature indicates support for the race condition handling as defined in 3GPP TS 29.513 [7]. | | |
| 2 | | | PlmnChange | | | This feature indicates support for the change of PLMN trigger handling. | | |
| 3 | | | ConnectivityStateChange | | | This feature indicates support for the UE connectivity state change trigger handling. | | |
| 4 | | | V2X | | | This feature indicates support for the UE policy provisioning and N2 information provisioning for V2X communications. | | |
| 5 | | | GroupIdListChange | | | This feature indicates the support for the notification of changes in the list of internal group identifiers. | | |
| 6 | | | ImmediateReport | | | This feature indicates the support of the current applicable values report corresponding to the policy control request triggers for policy update notification. | | |
| 7 | | | ErrorResponse | | | This feature indicates support for "404 Not Found" error response code for policy update notification between AMF and (V-)PCF. | | |
| 8 | | | ES3XX | | | Extended Support for 3xx redirections. This feature indicates the support of redirection for any service operation, according to Stateless NF procedures as specified in clauses 6.5.3.2 and 6.5.3.3 of 3GPP TS 29.500 [5] and according to HTTP redirection principles for indirect communication, as specified in clause 6.10.9 of 3GPP TS 29.500 [5]. | | |
| 9 | | | ProSe | | | This feature indicates support of UE policy and N2 information provisioning for 5G ProSe. | | |
| 10 | | | FeatureRenegotiation | | | This feature indicates the support of feature renegotiation during the update of a policy association triggered by UE mobility with AMF change. | | |
| 11 | | | SliceAwareANDSP | | | This feature indicates the support of ANDSP/WLANSP policies that consider the slices supported by the UE. | | |
| 12 | | | EpsUrsp | | | This feature indicates support of URSP provisioning in EPS and is only applicable in the case of of 5GC and EPC interworking. | | |
| 13 | | | EnSatBackhaulCategoryChg | | | This feature indicates the support of notification of a change between different satellite backhaul categories, or dynamic satellite backhaul categories, or between satellite backhaul and non-satellite backhaul. | | |
| 14 | | | UECapabilityIndication | | | This feature indicates the support of the provisioning by the H-PCF to the V-PCF of the UE Capability for UE Policy, when the UE Capability is not received from the UE and the information is available and reliable in the UDR. | | |
| 15 | | | A2X | | | This feature indicates support of A2X communications. | | |
| 16 | | | NssaiChange | | | This feature indicates support for the change of Configured NSSAI trigger handling. | | |
| 17 | | | ProSe\_Ph2 | | | This feature indicates the support of UE policy and N2 information provisioning for 5G ProSe UE-to-UE Relay function.  This feature requires that the "ProSe" feature is also supported. | | |
| 18 | | | PresenceInfo | | | The feature indicates the support of policy update to remove the existing presence reporting areas entry. | | |
| 19 | | | URSPEnforcement | | | This feature indicates the support of the report of URSP rule enforcement information by the V-PCF to the H-PCF. | | |
| 20 | | | VPLMNSpecificURSP | | | This feature indicates the support of AF guidance on VPLMN-specific URSP rules. It requires the support of NssaiChange feature. | | |
| 21 | | | Ranging\_SL | | | This feature indicates the support of the ranging and sidelink positioning functionality.  The following functionalities are supported:  - Support for the UE policy provisioning and N2 information provisioning for Ranging and sidelink positioning. | | |
| 22 | | | AccessChange | | | This feature indicates the support of the reporting of an access type and RAT type changes, the addition of an access type and RAT type or the removal of an existing access type and RAT type. | | |
| 23 | | | EnErrorHandling | | | This feature indicates the support of the indication from the V-PCF to the H-PCF of the received AMF error response to the UE Policy Delivery transfer request. | | |
| 24 | | | SLAMUP | | | This feature indicates the support of the provisioning to the AMF of the CHF information of the CHF selected by the PCF for UE policy. | | |
| 25 | | | EnhEstRoaming | | | The feature enhanced UE Policy Establishment procedure in roaming scenarios indicates the provisioning of the AMF to the V-PCF of the H-PCF Set Id and H-PCF URI of the selected H-PCF ID. | | |
| 26 | | | ProSe\_Ph3 | | | This feature indicates the support of the second set of enhancements to the 5G ProSe functionality.  The following sub-functionalities are supported:  - Support UE policy and N2 information provisioning for Multi-hop UE-to-Network Relay.  - Support UE policy and N2 information provisioning for UE-to-UE Relay.  This feature requires that the "ProSe\_Ph2" feature are also supported. | | |

\* \* \* \* Next changes \* \* \* \*

# A.2 Npcf\_UEPolicyControl API

openapi: 3.0.0

info:

version: 1.3.1

title: Npcf\_UEPolicyControl

description: |

UE Policy Control Service.

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externalDocs:

description: 3GPP TS 29.525 V18.7.0; 5G System; UE Policy Control Service.

url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.525/'

servers:

- url: '{apiRoot}/npcf-ue-policy-control/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

security:

- {}

- oAuth2ClientCredentials:

- npcf-ue-policy-control

paths:

/policies:

post:

operationId: CreateIndividualUEPolicyAssociation

summary: Create individual UE policy association.

tags:

- UE Policy Associations (Collection)

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/PolicyAssociationRequest'

responses:

'201':

description: Created

content:

application/json:

schema:

$ref: '#/components/schemas/PolicyAssociation'

headers:

Location:

description: >

Contains the URI of the newly created resource, according to the structure

{apiRoot}/npcf-ue-policy-control/v1/policies/{polAssoId}'

required: true

schema:

type: string

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

policyUpdateNotification:

'{$request.body#/notificationUri}/update':

post:

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/PolicyUpdate'

responses:

'200':

description: >

OK. The current applicable values corresponding to the policy control request

trigger is reported

content:

application/json:

schema:

$ref: '#/components/schemas/UeRequestedValueRep'

'204':

description: No Content, Notification was successful

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

policyAssocitionTerminationRequestNotification:

'{$request.body#/notificationUri}/terminate':

post:

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/TerminationNotification'

responses:

'204':

description: No Content, Notification was successful

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/policies/{polAssoId}:

get:

operationId: ReadIndividualUEPolicyAssociation

summary: Read individual UE policy association.

tags:

- Individual UE Policy Association (Document)

parameters:

- name: polAssoId

in: path

description: Identifier of a policy association

required: true

schema:

type: string

responses:

'200':

description: OK. Resource representation is returned

content:

application/json:

schema:

$ref: '#/components/schemas/PolicyAssociation'

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

operationId: DeleteIndividualUEPolicyAssociation

summary: Delete individual UE policy association.

tags:

- Individual UE Policy Association (Document)

parameters:

- name: polAssoId

in: path

description: Identifier of a policy association

required: true

schema:

type: string

responses:

'204':

description: No Content. Resource was successfully deleted

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/policies/{polAssoId}/update:

post:

operationId: ReportObservedEventTriggersForIndividualUEPolicyAssociation

summary: >

Report observed event triggers and possibly obtain updated policies for an individual UE

policy association.

tags:

- Individual UE Policy Association (Document)

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/PolicyAssociationUpdateRequest'

parameters:

- name: polAssoId

in: path

description: Identifier of a policy association

required: true

schema:

type: string

responses:

'200':

description: OK. Updated policies are returned

content:

application/json:

schema:

$ref: '#/components/schemas/PolicyUpdate'

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

npcf-ue-policy-control: Access to the Npcf\_UEPolicyControl API

schemas:

PolicyAssociation:

description: >

Contains the description of a policy association that is returned by the PCF when a policy

Association is created, updated, or read.

type: object

properties:

request:

$ref: '#/components/schemas/PolicyAssociationRequest'

uePolicy:

$ref: '#/components/schemas/UePolicy'

n2Pc5Pol:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

n2Pc5PolA2x:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

n2Pc5ProSePol:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

triggers:

type: array

items:

$ref: '#/components/schemas/RequestTrigger'

minItems: 1

description: >

Request Triggers that the PCF subscribes.

pras:

type: object

additionalProperties:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfoRm'

minProperties: 1

description: >

Contains the presence reporting area(s) for which reporting was requested.

The praId attribute within the PresenceInfoRm data type is the key of the map.

andspDelInd:

$ref: '#/components/schemas/PolicyStatus'

andspInd:

description: >

Indication of UE support of ANDSP. When set to true, it indicates the UE supports ANDSP,

when set to false it indicates the UE does not support ANDSP.

type: boolean

pduSessions:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionInfo'

minItems: 1

description: Combination of DNN and S-NSSAIs for which LBO information is requested.

chfInfo:

$ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/ChargingInformation'

suppFeat:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

n2Pc5RsppPol:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

pcfUeInfo:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PcfUeCallbackInfo'

matchPdus:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionInfo'

minItems: 1

required:

- suppFeat

PolicyAssociationRequest:

description: >

Represents information that the NF service consumer provides when requesting the creation of

a policy association.

type: object

properties:

notificationUri:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

altNotifIpv4Addrs:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

description: Alternate or backup IPv4 Address(es) where to send Notifications.

altNotifIpv6Addrs:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

description: Alternate or backup IPv6 Address(es) where to send Notifications.

altNotifFqdns:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

minItems: 1

description: Alternate or backup FQDN(s) where to send Notifications.

supi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

gpsi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

accessType:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

accessTypes:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

minItems: 1

description: >

The Access Type(s) where the served UE is camping.

It shall be provided, if available, for trigger "ACCESS\_TYPE\_CH.

pei:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Pei'

userLoc:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

timeZone:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

servingPlmn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'

ratType:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

ratTypes:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

minItems: 1

description: >

The RAT Type(s), if available, for the reported "accessTypes" where the served UE is

camping. It shall be provided, if available, for trigger "ACCESS\_TYPE\_CH.

groupIds:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/GroupId'

minItems: 1

hPcfId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

hPcfUri:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

hPcfSetId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

uePolReq:

$ref: '#/components/schemas/UePolicyRequest'

guami:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Guami'

serviceName:

$ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/ServiceName'

servingNfId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

pc5Capab:

$ref: '#/components/schemas/Pc5Capability'

a2xCapab:

type: array

items:

$ref: '#/components/schemas/A2xCapability'

minItems: 1

proSeCapab:

type: array

items:

$ref: '#/components/schemas/ProSeCapability'

minItems: 1

confSnssais:

type: array

items:

$ref: 'TS29531\_Nnssf\_NSSelection.yaml#/components/schemas/ConfiguredSnssai'

minItems: 1

description: >

The Configured NSSAI for the serving PLMN, and the mapped S-NSSAI value of home

network corresponding to the configured S-NSSAI in the serving PLMN.

n3gNodeReSel:

$ref: '#/components/schemas/Non3gppAccess'

sliceN3gNodeSelCap:

$ref: '#/components/schemas/SliceSpecificN3gNodeSelectionCapability'

satBackhaulCategory:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SatelliteBackhaulCategory'

5gsToEpsMob:

type: boolean

description: >

It indicates the UE Policy Association is triggered by a 5GS to EPS mobility

scenario.

vpsUePolGuidance:

type: object

additionalProperties:

$ref: '#/components/schemas/UePolicyParameters'

minProperties: 1

description: >

Contains the service parameter used to guide the VPLMN-specific URSP and may contain

the subscription to VPLMN-specific URSP delivery outcome.

The key of the map represents the AF request to guide VPLMN-specific URSP rules.

This attribute only applies in roaming and when the V-PCF is the NF service consumer.

lboRoamInfo:

type: array

items:

$ref: '#/components/schemas/LboRoamingInformation'

minItems: 1

description: >

Contains LBO roaming information for DNN and S-NSSAI combination(s).

This attribute only applies in roaming and when the AMF is the NF service consumer.

suppFeat:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

rangSlCapab:

type: array

items:

$ref: '#/components/schemas/RangSLCapability'

minItems: 1

required:

- notificationUri

- suppFeat

- supi

PolicyAssociationUpdateRequest:

description: >

Represents Information that the NF service consumer provides when requesting the update of

a policy association.

type: object

properties:

notificationUri:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

altNotifIpv4Addrs:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

minItems: 1

description: Alternate or backup IPv4 Address(es) where to send Notifications.

altNotifIpv6Addrs:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

minItems: 1

description: Alternate or backup IPv6 Address(es) where to send Notifications.

altNotifFqdns:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

minItems: 1

description: Alternate or backup FQDN(s) where to send Notifications.

triggers:

type: array

items:

$ref: '#/components/schemas/RequestTrigger'

minItems: 1

description: Request Triggers that the NF service consumer observes.

praStatuses:

type: object

additionalProperties:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'

description: >

Contains the UE presence status for tracking area for which changes of the UE presence

occurred. The praId attribute within the PresenceInfo data type is the key of the map.

minProperties: 1

userLoc:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

uePolDelResult:

$ref: '#/components/schemas/UePolicyDeliveryResult'

uePolTransFailNotif:

$ref: '#/components/schemas/UePolicyTransferFailureNotification'

uePolReq:

$ref: '#/components/schemas/UePolicyRequest'

guami:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Guami'

servingNfId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

plmnId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'

connectState:

$ref: 'TS29518\_Namf\_EventExposure.yaml#/components/schemas/CmState'

groupIds:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/GroupId'

minItems: 1

pc5Capab:

$ref: '#/components/schemas/Pc5Capability'

a2xCapab:

type: array

items:

$ref: '#/components/schemas/A2xCapability'

minItems: 1

proSeCapab:

type: array

items:

$ref: '#/components/schemas/ProSeCapability'

minItems: 1

confSnssais:

type: array

items:

$ref: 'TS29531\_Nnssf\_NSSelection.yaml#/components/schemas/ConfiguredSnssai'

minItems: 1

description: >

The Configured NSSAI for the serving PLMN, and the mapped S-NSSAI value of home

network corresponding to the configured S-NSSAI in the serving PLMN.

n3gNodeReSel:

$ref: '#/components/schemas/Non3gppAccess'

sliceN3gNodeSelCap:

$ref: '#/components/schemas/SliceSpecificN3gNodeSelectionCapability'

satBackhaulCategory:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SatelliteBackhaulCategory'

urspEnfRep:

type: object

additionalProperties:

$ref: '#/components/schemas/UrspEnforcementPduSession'

description: >

Contains information about the enforced URSP rule(s) in one or more PDU sessions.

The key of the map is a character string that represents an integer value.

minProperties: 1

vpsUePolGuidance:

type: object

additionalProperties:

$ref: '#/components/schemas/UePolicyParameters'

minProperties: 1

description: >

Contains the service parameter used to guide the VPLMN-specific URSP and may contain

the subscription to VPLMN-specific URSP delivery outcome.

The key of the map represents the AF request to guide VPLMN-specific URSP rules.

This attribute only applies in roaming and when the V-PCF is the NF service consumer.

nullable: true

lboRoamInfo:

type: array

items:

$ref: '#/components/schemas/LboRoamingInformation'

minItems: 1

description: >

Contains LBO roaming information for DNN and S-NSSAI combination(s).

This attribute only applies in roaming and when the AMF is the NF service consumer.

accessTypes:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

minItems: 1

description: >

The Access Type(s) where the served UE is camping.

It shall be provided, if available, for trigger "ACCESS\_TYPE\_CH.

ratTypes:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

minItems: 1

description: >

The RAT Type(s), if available, for the reported "accessTypes" where the served UE is

camping. It shall be provided, if available, for trigger "ACCESS\_TYPE\_CH.

suppFeat:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

rangSlCapab:

type: array

items:

$ref: '#/components/schemas/RangSLCapability'

minItems: 1

description: >

Contains the Ranging/SL related UE capabilities.

PolicyUpdate:

description: >

Represents updated policies that the PCF provides in a notification or in the reply to an

Update Request.

type: object

properties:

resourceUri:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

uePolicy:

$ref: '#/components/schemas/UePolicy'

n2Pc5Pol:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

n2Pc5PolA2x:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

n2Pc5ProSePol:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

triggers:

type: array

items:

$ref: '#/components/schemas/RequestTrigger'

minItems: 1

nullable: true

description: >

Request Triggers that the PCF subscribes.

pras:

type: object

additionalProperties:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'

description: >

Contains the presence reporting area(s) for which reporting was requested.

The praId attribute within the PresenceInfo data type is the key of the map.

minProperties: 1

nullable: true

andspDelInd:

$ref: '#/components/schemas/PolicyStatus'

delivReport:

type: object

additionalProperties:

$ref: '#/components/schemas/UePolicyNotification'

minProperties: 1

description: >

Contains the delivery outcome of the VPLMN-specific URSP.

The key of the map represents the AF request of the corresponding subscription, i.e. its

value shall match the key that was previously provided by the V-PCF in the

vpsUePolGuidance attribute.

This attribute only applies in roaming and when the V-PCF is the NF service consumer.

pduSessions:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionInfo'

minItems: 1

description: >

Combination of DNN and S-NSSAIs for which LBO information is requested.

nullable: true

pcfUeInfo:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PcfUeCallbackInfo'

matchPdus:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionInfo'

minItems: 1

nullable: true

suppFeat:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

n2Pc5RsppPol:

$ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N2InfoContent'

required:

- resourceUri

TerminationNotification:

description: >

Represents a request to terminate a policy association that the PCF provides in a

notification.

type: object

properties:

resourceUri:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

cause:

$ref: '#/components/schemas/PolicyAssociationReleaseCause'

required:

- resourceUri

- cause

UePolicyTransferFailureNotification:

description: >

Represents information on the failure of a UE policy transfer to the UE because the UE is

not reachable.

type: object

properties:

cause:

$ref: '#/components/schemas/UePolicyTransferFailureCause'

retryAfter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uinteger'

ptis:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uinteger'

minItems: 1

description: >

This contains a list of PTI assigned by the H-PCF corresponding to the UE policy(s)

which could not be transferred by the AMF.

required:

- cause

- ptis

UeRequestedValueRep:

description: >

Contains the current applicable values corresponding to the policy control request triggers.

type: object

properties:

userLoc:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

praStatuses:

type: object

additionalProperties:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'

minProperties: 1

description: >

Contains the UE presence statuses for tracking areas. The praId attribute within the

PresenceInfo data type is the key of the map.

plmnId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'

connectState:

$ref: 'TS29518\_Namf\_EventExposure.yaml#/components/schemas/CmState'

confSnssais:

type: array

items:

$ref: 'TS29531\_Nnssf\_NSSelection.yaml#/components/schemas/ConfiguredSnssai'

minItems: 1

description: >

The Configured NSSAI for the serving PLMN, and the mapped S-NSSAI value of home

network corresponding to the configured S-NSSAI in the serving PLMN.

satBackhaulCategory:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SatelliteBackhaulCategory'

urspEnfRep:

type: object

additionalProperties:

$ref: '#/components/schemas/UrspEnforcementPduSession'

description: >

Contains information about the enforced URSP rule(s) in one or more PDU sessions.

The key of the map is a character string that represents an integer value.

minProperties: 1

lboRoamInfo:

type: array

items:

$ref: '#/components/schemas/LboRoamingInformation'

minItems: 1

description: >

Contains LBO roaming information for DNN and S-NSSAI combination(s).

accessTypes:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

minItems: 1

description: >

The Access Type(s) where the served UE is camping.

It shall be provided, if available, for trigger "ACCESS\_TYPE\_CH.

ratTypes:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

minItems: 1

description: >

The RAT Type(s), if available, for the reported "accessTypes" where the served UE is

camping. It shall be provided, if available, for trigger "ACCESS\_TYPE\_CH.

UePolicyParameters:

description: >

Contains the service parameters used to guide the VPLMN-specific URSP rule determination.

type: object

properties:

urspGuidance:

type: array

items:

$ref: 'TS29522\_ServiceParameter.yaml#/components/schemas/UrspRuleRequest'

minItems: 1

description: >

Contains the service parameter used to guide the VPLMN-specific URSP.

deliveryEvents:

type: array

items:

$ref: 'TS29522\_ServiceParameter.yaml#/components/schemas/Event'

minItems: 1

description: >

AF subscribed event(s) notifications related to AF provisioned guidance

for VPLMN-specific URSP rules.

nullable: true

nullable: true

LboRoamingInformation:

description: >

Contains LBO roaming information for a DNN and S-NSSAI.

type: object

properties:

lboRoamAllowed:

type: boolean

description: >

Indicates whether LBO for the DNN and S-NSSAI is allowed when roaming.

dnn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

snssai:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

required:

- dnn

- snssai

UrspEnforcementPduSession:

description: >

Represents URSP rule enforcement information for a PDU session.

type: object

required:

- urspEnfInfo

properties:

urspEnfInfo:

$ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/UrspEnforcementInfo'

sscMode:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SscMode'

ueReqDnn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

ueReqPduSessionType:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionType'

dnn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

snssai:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

UePolicyNotification:

description: >

Contains the delivery outcome of VPLMN-specific URSP rules.

type: object

required:

- eventNotifs

properties:

eventNotifs:

type: array

items:

$ref: 'TS29523\_Npcf\_EventExposure.yaml#/components/schemas/PcEventNotification'

minItems: 1

description: >

Represents the events to be reported according to the subscription to notifications

of VPLMN-specific URSP delivery outcome events.

UePolicy:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Bytes'

UePolicyDeliveryResult:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Bytes'

UePolicyRequest:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Bytes'

RequestTrigger:

anyOf:

- type: string

enum:

- LOC\_CH

- PRA\_CH

- UE\_POLICY

- PLMN\_CH

- CON\_STATE\_CH

- GROUP\_ID\_LIST\_CHG

- UE\_CAP\_CH

- SAT\_CATEGORY\_CHG

- NON\_3GPP\_NODE\_RESELECTION

- CONF\_NSSAI\_CH

- LBO\_INFO\_CH

- FEAT\_RENEG

- URSP\_ENF\_INFO

- ACCESS\_TYPE\_CH

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents the possible request triggers.

Possible values are:

- LOC\_CH: Location change (tracking area). The tracking area of the UE has changed.

- PRA\_CH: Change of UE presence in PRA. The AMF reports the current presence status

of the UE in a Presence Reporting Area, and notifies that the UE enters/leaves the

Presence Reporting Area.

- UE\_POLICY: A MANAGE UE POLICY COMPLETE message or a MANAGE UE POLICY COMMAND REJECT

message, as defined in Annex D.5 of 3GPP TS 24.501 or a "UE POLICY PROVISIONING REQUEST"

message, as defined in clause 7.2.1.1 of 3GPP TS 24.587, has been received by the AMF

and is being forwarded.

- PLMN\_CH: PLMN change. the serving PLMN of UE has changed.

- CON\_STATE\_CH: Connectivity state change: the connectivity state of UE has changed.

- GROUP\_ID\_LIST\_CHG: UE Internal Group Identifier(s) has changed. This policy

control request

trigger does not require a subscription.

- UE\_CAP\_CH: UE Capabilities change: the UE provided 5G ProSe capabilities have changed.

This policy control request trigger does not require subscription.

- SAT\_CATEGORY\_CHG: Indicates that the AMF has detected a change between different satellite

category, or non-satellite backhaul.

- NON\_3GPP\_NODE\_RESELECTION: The UE has connected to a wrong non-3GPP access node that

does not match its subscribed S-NSSAI(s). This policy control request trigger does not

require a subscription.

- CONF\_NSSAI\_CH: Configured NSSAI change. Indicates that the configured NSSAI has changed.

- LBO\_INFO\_CH: LBO information change. The AMF reports LBO roaming allowed or not allowed

for the requested DNN(s) and S-NSSAI(s). This policy control request trigger only applies

in roaming scenarios when the NF service consumer is the AMF.

- FEAT\_RENEG: The NF service consumer notifies that the target AMF is requesting feature

re-negotiation.

- URSP\_ENF\_INFO: The V-PCF has received URSP rule enforcement information about the enforced

URSP rule(s) in one or more PDU sessions. This trigger applies in roaming scenarios and

to the V-PCF.

- ACCESS\_TYPE\_CH: Access Type change. The registered access type and RAT type

has changed, an access type and RAT type is added or removed.

PolicyAssociationReleaseCause:

anyOf:

- type: string

enum:

- UNSPECIFIED

- UE\_SUBSCRIPTION

- INSUFFICIENT\_RES

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents the cause why the PCF requests the policy association termination.

Possible values are:

- UNSPECIFIED: This value is used for unspecified reasons.

- UE\_SUBSCRIPTION: This value is used to indicate that the policy association needs to be

terminated because the subscription of UE has changed (e.g. was removed).

- INSUFFICIENT\_RES: This value is used to indicate that the server is overloaded and needs

to abort the policy association.

Pc5Capability:

anyOf:

- type: string

enum:

- LTE\_PC5

- NR\_PC5

- LTE\_NR\_PC5

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents the specific PC5 RAT(s) which the UE supports for V2X communications over

PC5 reference point.

Possible values are:

- LTE\_PC5: This value is used to indicate that UE supports PC5 LTE RAT for V2X

communications over the PC5 reference point

- NR\_PC5: This value is used to indicate that UE supports PC5 NR RAT for V2X communications

over the PC5 reference point.

- LTE\_NR\_PC5: This value is used to indicate that UE supports both PC5 LTE and NR RAT for

V2X communications over the PC5 reference point.

ProSeCapability:

anyOf:

- type: string

enum:

- PROSE\_DD

- PROSE\_DC

- PROSE\_L2\_U2N\_RELAY

- PROSE\_L3\_U2N\_RELAY

- PROSE\_L2\_REMOTE\_UE

- PROSE\_L3\_REMOTE\_UE

- PROSE\_L2\_U2U\_RELAY

- PROSE\_L3\_U2U\_RELAY

- PROSE\_L2\_END\_UE

- PROSE\_L3\_END\_UE

- PROSE\_MH\_L3\_U2N\_RELAY

- PROSE\_MH\_L3\_REMOTE\_UE

- PROSE\_MH\_L3\_INTERMEDIATE\_UE

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

the content defined in the present version of this API.

description: |

Represents the 5G ProSe capabilities.

Possible values are:

- PROSE\_DD: This value is used to indicate that 5G ProSe Direct Discovery is supported

by the UE.

- PROSE\_DC: This value is used to indicate that 5G ProSe Direct Communication is supported

by the UE.

- PROSE\_L2\_U2N\_RELAY: This value is used to indicate that Layer-2 5G ProSe UE-to-Network

Relay is supported by the UE.

- PROSE\_L3\_U2N\_RELAY: This value is used to indicate that Layer-3 5G ProSe UE-to-Network

Relay is supported by the UE.

- PROSE\_L2\_REMOTE\_UE: This value is used to indicate that Layer-2 5G ProSe Remote UE is

supported by the UE.

- PROSE\_L3\_REMOTE\_UE: This value is used to indicate that Layer-3 5G ProSe Remote UE is

supported by the UE.

- PROSE\_L2\_U2U\_RELAY: This value is used to indicate that Layer-2 5G ProSe UE-to-UE

Relay is supported by the UE.

- PROSE\_L3\_U2U\_RELAY: This value is used to indicate that Layer-3 5G ProSe UE-to-UE

Relay is supported by the UE.

- PROSE\_L2\_END\_UE: This value is used to indicate that Layer-2 5G ProSe End UE is

supported by the UE.

- PROSE\_L3\_END\_UE: This value is used to indicate that Layer-3 5G ProSe End UE is

supported by the UE.

- PROSE\_MH\_L3\_U2N\_RELAY: Indicates that the UE supports acting as a 5G ProSe Layer-3

UE-to-Network Relay UE supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay.

- PROSE\_MH\_L3\_REMOTE\_UE: Indicates that the UE supports acting as a 5G ProSe Layer-3 Remote

UE supporting 5G ProSe Layer-3 multi-hop UE-to-Network Relay.

- PROSE\_MH\_L3\_INTERMEDIATE\_UE: Indicates that the UE supports acting as a 5G ProSe Layer-3

Intermediate UE-to-Network Relay supporting 5G ProSe Layer-3 multi-hop UE-to-Network

Relay.

Non3gppAccess:

anyOf:

- type: string

enum:

- N3IWF

- TNGF

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents a non-3gpp access node.

Possible values are:

- N3IWF: Non-3gpp Interworking Function.

- TNGF: Trusted Non-3gpp Gateway Function.

N1N2MessTransferErrorReply:

anyOf:

- type: string

enum:

- UE\_NOT\_REACHABLE

- UNSPECIFIED

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents an N1N2 Message Transfer error.

Possible values are:

- UE\_NOT\_REACHABLE: The UE is not reachable for paging.

- UNSPECIFIED: Unspecified error.

RangSLCapability:

anyOf:

- type: string

enum:

- PC5\_RANGING\_SL

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

but is not used to encode content defined in the present version of this API.

description: |

Indicates the Ranging and Sidelink Capability.

Possible values are:

- PC5\_RANGING\_SL: Indicates that the PC5 Capability for Ranging and Sidelink is supported

by the UE.

PolicyStatus:

anyOf:

- type: string

enum:

- CONFIGURED

- NOT\_CONFIGURED

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents the configuration status of a UE Policy in the UE.

Possible values are:

- CONFIGURED: The UE Policy is configured in the UE.

- NOT\_CONFIGURED: The UE Policy is not configured in the UE.

A2xCapability:

anyOf:

- type: string

enum:

- EUTRA\_PC5

- NR\_PC5

- UU

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents the A2X capabilities the UE supports for A2X communication.

Possible values are:

- EUTRA\_PC5: This value is used to indicate that the UE supports PC5 EUTRA RAT for A2X

communications over the PC5 reference point

- NR\_PC5: This value is used to indicate that the UE supports PC5 NR RAT for A2X

communications over the PC5 reference point.

- UU: This value is used to indicate that UE supports A2X communications over the PC5

reference point.

SliceSpecificN3gNodeSelectionCapability:

anyOf:

- type: string

enum:

- ONLY\_N3IWF\_SS\_SEL

- ONLY\_TNGF\_SS\_SEL

- TNGF\_N3IWF\_SS\_SEL

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: |

Represents the UE capabilities with regard to slice-specific non-3gpp node selection.

Possible values are:

- ONLY\_N3IWF\_SS\_SEL: Indicates that the UE supports N3IWF selection based on the slices

the UE wishes to use over untrusted non-3GPP access.

- ONLY\_TNGF\_SS\_SEL: Indicates that the UE supports TNGF selection based on the slices

the UE wishes to use over trusted non-3GPP access.

- TNGF\_N3IWF\_SS\_SEL: Indicates that the UE supports N3IWF selection based on the slices

the UE wishes to use over untrusted non-3GPP access and TNGF selection based on the

slices the UE wishes to use over trusted non-3GPP access.

#

UePolicyTransferFailureCause:

description: UE Policy Transfer Failure Cause.

anyOf:

- $ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/N1N2MessageTransferCause'

- $ref: '#/components/schemas/N1N2MessTransferErrorReply'

\* \* \* \* End of changes \* \* \* \*