**3GPP TSG-CT WG3 Meeting #130 *C3-235283***

**Chicago, USA, 13 - 17 November, 2023 *(Revision of C3-235xxx)***

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| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.512** | **CR** | **1166** | **rev** | **-** | **Current version:** | **18.3.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| --- |
|  |
| ***Title:***  | Clarifications on the dynamic satellite backhaul categories |
|  |  |
| ***Source to WG:*** | Huawei, CATT, Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | 5GSATB |  | ***Date:*** | 2023-10-25 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | The current description of satellite backhaul category information is unclear and the support of dynamic satellite backhaul is missing in clauses 5.6.2.3 and 5.6.2.19. |
|  |  |
| ***Summary of change:*** | 1. Clarify the enhancement of the satellite backhaul category to indicate the support of the dynamic satellite backhaul categories.
2. Update clause 5.6.3.6 to add reference to stage-2 specification
 |
|  |  |
| ***Consequences if not approved:*** | May cause confusion and lead to wrong implementation |
|  |  |
| ***Clauses affected:*** | 5.6.2.3, 5.6.2.19, 5.6.3.6 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR does not impact on the OpenAPI file. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

#### 5.6.2.3 Type SmPolicyContextData

Table 5.6.2.3-1: Definition of type SmPolicyContextData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| accNetChId | AccNetChId | O | 0..1 | Indicates the access network charging identifier for the whole PDU session. For EPS interworking scenarios, it indicates the access network charging identifier for the default QoS flow / default EPS bearer or the whole PDU session. |  |
| chargEntityAddr | AccNetChargingAddress | O | 0..1 | Address of the network entity performing charging. |  |
| gpsi | Gpsi | O | 0..1 | Gpsi shall contain either an External Id or an MSISDN. |  |
| supi | Supi | M | 1 | Subscription Permanent Identifier.(NOTE 2) |  |
| invalidSupi | boolean | C | 0..1 | When this attribute is included and set to true, it indicates that the "supi" attribute contains an invalid value. This attribute shall be present if the SUPI is not available in the NF service consumer, or the SUPI is unauthenticated. When present it shall be set as follows:- true: invalid SUPI.- false (default): valid SUPI. |  |
| pduSessionId | PduSessionId | M | 1 | PDU session Id. |  |
| dnn | Dnn | M | 1 | The DNN of the PDU session, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only.(NOTE 4) |  |
| dnnSelMode | DnnSelectionMode | O | 0..1 | Indicates whether the requested DNN corresponds to an explicitly subscribed DNN. | DNNSelectionMode |
| interGrpIds | array(GroupId) | O | 1..N | The internal Group Id(s). |  |
| notificationUri | Uri | M | 1 | Identifies the recipient of SM policies update notifications sent by the PCF. |  |
| pduSessionType | PduSessionType | M | 1 | Indicates the type of a PDU session. |  |
| accessType | AccessType | O | 0..1 | The Access Type where the served UE is camping. |  |
| ratType | RatType | O | 0..1 | The RAT Type where the served UE is camping. |  |
| addAccessInfo | AdditionalAccessInfo | O | 0..1 | Indicates the combination of additional Access Type and RAT Type for MA PDU session. | ATSSS |
| servingNetwork | PlmnIdNid | O | 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. |  |
| userLocationInfo | UserLocation | O | 0..1 | The location where the served UE is camping. (NOTE 3) |  |
| ueTimeZone | TimeZone | O | 0..1 | The time zone where the served UE is camping. |  |
| pei | Pei | O | 0..1 | The Permanent Equipment Identifier of the served UE. |  |
| ipv4Address | Ipv4Addr | O | 0..1 | The IPv4 Address of the served UE. |  |
| ipv6AddressPrefix | Ipv6Prefix | O | 0..1 | The Ipv6 Address Prefix of the served UE. |  |
| ipDomain | string | O | 0..1 | IPv4 address domain identifier.(NOTE 1) |  |
| subsSessAmbr | Ambr | O | 0..1 | UDM subscribed or DN-AAA authorized Session-AMBR. |  |
| authProfIndex | string | O | 0..1 | DN-AAA authorization profile index. | DN-Authorization |
| subsDefQos | SubscribedDefaultQos | O | 0..1 | Subscribed Default QoS Information. |  |
| vplmnQos | VplmnQos | O | 0..1 | QoS constraints in a VPLMN. | VPLMN-QoS-Control |
| numOfPackFilter | integer | O | 0..1 | Contains the number of supported packet filter for signalled QoS rules. |  |
| online | boolean | O | 0..1 | If it is included and set to true, the online charging is applied to the PDU session. |  |
| offline | boolean | O | 0..1 | If it is included and set to true, the offline charging is applied to the PDU session. |  |
| chargingCharacteristics | string | O | 0..1 | Contains the Charging Characteristics applied to the PDU session. Functional requirements for the Charging Characteristics are defined in 3GPP TS 32.255 [35] Annex A.The charging characteristics are encoded as specified in 3GPP TS 29.503 [34]. |  |
| 3gppPsDataOffStatus | boolean | O | 0..1 | If it is included and set to true, the 3GPP PS Data Off is activated by the UE. | 3GPP-PS-Data-Off |
| refQosIndication | boolean | O | 0..1 | If it is included and set to true, the reflective QoS is supported by the UE. |  |
| sliceInfo | Snssai | M | 1 | Identifies the S-NSSAI. |  |
| qosFlowUsage | QosFlowUsage | O | 0..1 | Indicates the required usage for default QoS flow. |  |
| servNfId | ServingNfIdentity | O | 0..1 | Contains the serving network function identity. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the list of Supported features used as described in clause 5.8.This parameter shall be supplied by the NF service consumer in the POST request that requested the creation of an individual SM policy resource. |  |
| traceReq | TraceData | O | 0..1 | Trace control and configuration parameters information defined in 3GPP TS 32.422 [24]. |  |
| smfId | NfInstanceId | O | 0..1 | SMF instance identifier. |  |
| recoveryTime | DateTime | O | 0..1 | It includes the recovery time of the NF service consumer. |  |
| maPduInd | MaPduIndication | O | 0..1 | Contains the MA PDU session indication, i.e., MA PDU Request or MA PDU Network-Upgrade Allowed. | ATSSS |
| atsssCapab | AtsssCapability | O | 0..1 | Contains the ATSSS capability supported for the MA PDU Session. | ATSSS |
| ipv4FrameRouteList | array(Ipv4AddrMask) | O | 1..N | List of Framed Route information of IPv4. |  |
| ipv6FrameRouteList | array(Ipv6Prefix) | O | 1..N | List of Framed Route information of IPv6. |  |
| satBackhaulCategory | SatelliteBackhaulCategory | O | 0..1 | Indicates satellite backhaul category or non-satellite backhaul used for the PDU session.When this attribute is not present, non-satellite backhaul applies.If the "EnSatBackhaulCatChg" feature is supported, the different dynamic satellite backhaul categories may be also provided. | SatBackhaulCategoryChg |
| pcfUeInfo | PcfUeCallbackInfo | O | 0..1 | PCF for the UE callback URI and SBA binding information. | AMInfluence |
| pvsInfo | array(ServerAddressingInfo) | O | 1..N | Provisioning Server(s) information that provision the UE with credentials and other data to enable SNPN access. | PvsSupport |
| onboardInd | boolean | O | 0..1 | If it is included and set to true, it indicates that the PDU session is used for UE Onboarding. | PvsSupport |
| nwdafDatas | array(NwdafData) | O | 1..N | List of NWDAF Instance IDs and their associated Analytics IDs consumed by the NF service consumer. | EneNA |
| urspEnfInfo | UrspEnforcementInfo | O | 0..1 | Contains the reporting of URSP rule(s) enforcement from the UE. | URSPEnforcement |
| sscMode | SscMode | C | 0..1 | SSC Mode of the PDU session.It shall be present when the "urspEnfInfo" attribute is present. | URSPEnforcement |
| ueReqDnn | Dnn | O | 0..1 | UE requested DNN.It shall be present, if available and different from the selected DNN, when the "urspEnfInfo" attribute is present. | URSPEnforcement |
| redundantPduSessionInfo | RedundantPduSessionInformation | O | 0..1 | RSN and PDU session pair ID of the redundant PDU session.It shall be present, if available, when the "urspEnfInfo" attribute is present. | URSPEnforcement |
| hrsboInd | boolean | O | 0..1 | HR-SBO support indication. If present and set to "true", it indicates that the HR-SBO is supported. Default value is "false" if omitted. | HR-SBO |
| NOTE 1: The value provided in this attribute is implementation specific. The only constraint is that the NF service consumer shall supply a different identifier for each overlapping address domain (e.g. the SMF NF instance identifier).NOTE 2: For an emergency session, when the SUPI is not available in the NF service consumer, or if available, the SUPI is unauthenticated, the value provided in the "supi" attribute is implementation specific.NOTE 3: The SMF may encode both 3GPP and non-3GPP access UE location in the "userLocationInfo" attribute.NOTE 4: The PCF uses the DNN as received from the NF service consumer without applying any transformation (e.g. in subsequent requests to the UDR). To successfully perform DNN matching, in a specific deployment a DNN shall always be encoded either with the full DNN (e.g., because there are multiple Operator Identifiers for a Network Identifier) or the DNN Network Identifier only. The NF service consumer may include the DNN Operator Identifier based on local configuration. |

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

#### 5.6.2.19 Type SmPolicyUpdateContextData

Table 5.6.2.19-1: Definition of type SmPolicyUpdateContextData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| repPolicyCtrlReqTriggers | array(PolicyControlRequestTrigger) | C | 1..N | The policy control request triggers which are met. It is omitted if no triggers are met such as in clauses 4.2.4.7 and 4.2.4.15. |  |
| accNetChIds | array(AccNetChId) | O | 1..N | Indicates the access network charging identifier for the whole PDU session. For EPS interworking scenarios, it indicates the access network charging identifier for the PCC rule(s) or the whole PDU session. |  |
| accessType | AccessType | O | 0..1 | The Access Type where the served UE is camping. |  |
| ratType | RatType | O | 0..1 | The RAT Type where the served UE is camping. |  |
| addAccessInfo | AdditionalAccessInfo | O | 0..1 | Indicates the combination of added Access Type and RAT Type for MA PDU session. | ATSSS |
| relAccessInfo | AdditionalAccessInfo | O | 0..1 | Indicates the combination of released Access Type and RAT Type for MA PDU session. | ATSSS |
| servingNetwork | PlmnIdNid | O | 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. |  |
| userLocationInfo | UserLocation | O | 0..1 | The location(s) where the served UE is camping. (NOTE 4) |  |
| ueTimeZone | TimeZone | O | 0..1 | The time zone where the served UE is camping. |  |
| ipv4Address | Ipv4Addr | O | 0..1 | The IPv4 Address of the served UE. |  |
| ipDomain | string | O | 0..1 | IPv4 address domain identifier.(NOTE 2) |  |
| relIpv4Address | Ipv4Addr | O | 0..1 | Indicates the released IPv4 Address of the served UE. |  |
| ipv6AddressPrefix | Ipv6Prefix | O | 0..1 | The Ipv6 Address Prefix of the served UE. (NOTE 6) |  |
| relIpv6AddressPrefix | Ipv6Prefix | O | 0..1 | Indicates the released IPv6 Address Prefix of the served UE in multi-homing case. (NOTE 6) |  |
| relUeMac | MacAddr48 | O | 0..1 | Indicates the released MAC Address of the served UE. |  |
| ueMac | MacAddr48 | O | 0..1 | The MAC Address of the served UE. |  |
| subsSessAmbr | Ambr | O | 0..1 | UDM subscribed or DN-AAA authorized Session-AMBR. |  |
| authProfIndex | string | O | 0..1 | DN-AAA authorization profile index. | DN-Authorization |
| subsDefQos | SubscribedDefaultQos | O | 0..1 | Subscribed Default QoS Information. |  |
| vplmnQos | VplmnQos | O | 0..1 | QoS constraints in a VPLMN (NOTE 5) | VPLMN-QoS-Control |
| vplmnQosNotApp | boolean | O | 0..1 | If it is included and set to true, indicates that the QoS constraints in the VPLMN are not applicable. (NOTE 5) | VPLMN-QoS-Control |
| numOfPackFilter | integer | O | 0..1 | Contains the number of supported packet filter for signalled QoS rules.(NOTE 1) |  |
| accuUsageReports | array(AccuUsageReport) | O | 1..N | Contains the accumulated usage report(s). | UMC |
| 3gppPsDataOffStatus | boolean | O | 0..1 | If it is included and set to true, the 3GPP PS Data Off is activated by the UE. | 3GPP-PS-Data-Off  |
| appDetectionInfos | array(AppDetectionInfo) | O | 1..N | Reports the start/stop of the application traffic and detected SDF descriptions if applicable. | ADC |
| ruleReports | array(RuleReport) | O | 1..N | Used to report the PCC rule failure. |  |
| sessRuleReports | array(SessionRuleReport) | O | 1..N | Used to report the session rule failure. | SessionRuleErrorHandling |
| qncReports | array(QosNotificationControlInfo) | O | 1..N | QoS Notification Control information. |  |
| qosMonReports | array(QosMonitoringReport) | O | 1..N | QoS Monitoring reporting information. | QosMonitoring |
| qosMonDatRateReps | array(QosMonitoringReport) | O | 1..N | QoS Monitoring reporting information with data rate measurements. It shall be present when the notified event is "QOS\_MONITORING" and data rate measurements are available. | XRM\_5G |
| userLocationInfoTime | DateTime | O | 0..1 | Contains the NTP time at which the UE was last known to be in the location. (NOTE 3) |  |
| repPraInfos | map(PresenceInfo) | O | 1..N | Reports the changes of presence reporting area. 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. | PRA |
| ueInitResReq | UeInitiatedResourceRequest | O | 0..1 | Indicates a UE requests specific QoS handling for selected SDF. |  |
| refQosIndication | boolean | O | 0..1 | If it is included and set to true, the reflective QoS is supported by the UE. If it is included and set to false, the reflective QoS is revoked by the UE. |  |
| qosFlowUsage | QosFlowUsage | O | 0..1 | Indicates the required usage for default QoS flow. |  |
| creditManageStatus | CreditManagementStatus | O | 0..1 | Indicates the reason of the credit management session failure. |  |
| servNfId | ServingNfIdentity | O | 0..1 | Contains the serving network function identity. |  |
| traceReq | TraceData | C | 0..1 | It shall be included if trace is required to be activated, modified or deactivated (see 3GPP TS 32.422 [24]). For trace modification, it shall contain a complete replacement of trace data.For trace deactivation, it shall contain the Null value. |  |
| addIpv6AddrPrefixes | Ipv6Prefix | O | 0..1 | An additional Ipv6 Address Prefix of the served UE. (NOTE 6) | MultiIpv6AddrPrefix |
| addRelIpv6AddrPrefixes | Ipv6Prefix | O | 0..1 | Indicates an additional released IPv6 Address Prefix of the served UE. (NOTE 6) | MultiIpv6AddrPrefix |
| multiIpv6Prefixes | array(Ipv6Prefix) | O | 1..N | The Ipv6 Address Prefixes of the served UE. (NOTE 6) | UnlimitedMultiIpv6Prefix |
| multiRelIpv6Prefixes | array(Ipv6Prefix) | O | 1..N | Indicates the released IPv6 Address Prefixes of the served UE. (NOTE 6) | UnlimitedMultiIpv6Prefix |
| tsnBridgeInfo | TsnBridgeInfo | O | 0..1 | Transports TSC user plane node information. | TimeSensitiveNetworking |
| tsnBridgeManCont | BridgeManagementContainer | O | 0..1 | Transports TSC user plane node management information. | TimeSensitiveNetworking |
| tsnPortManContDstt | PortManagementContainer | O | 0..1 | When DS-TT functionality is used, transports TSN port management information for the DS-TT port. | TimeSensitiveNetworking |
| tsnPortManContNwtts | array(PortManagementContainer) | O | 1..N | When NW-TT functionality is used, transports TSN port management information for one or more NW-TT ports. | TimeSensitiveNetworking |
| tscNotifUri | Uri | O | 0..1 | For PMIC/UMIC UPF event notification target address of the TSCTSF or TSN AF receiving the TSC management information. | ExposureToTSC |
| tscNotifCorreId | string | O | 0..1 | Correlation identifier for TSC management information notifications. | ExposureToTSC |
| maPduInd | MaPduIndication | O | 0..1 | Contains the MA PDU session indication, i.e., MA PDU Request or MA PDU Network-Upgrade Allowed. (NOTE 1) | ATSSS |
| atsssCapab | AtsssCapability | O | 0..1 | Contains the ATSSS capability supported for the MA PDU session. (NOTE 1) | ATSSS |
| mulAddrInfos | array(IpMulticastAddressInfo) | O | 1..N | Contains the IP multicast address information. | WWC |
| policyDecFailureReports | array(PolicyDecisionFailureCode) | O | 1..N | Indicates the type(s) of the failed policy decision and/or condition data. | PolicyDecisionErrorHandling |
| invalidPolicyDecs | array(InvalidParam) | O | 1..N | Indicates the invalid parameters for the reported type(s) of the failed policy decision and/or condition data. | ExtPolicyDecisionErrorHandling |
| trafficDescriptors | array(DddTrafficDescriptor) | O | 1..N | Contains the traffic descriptor(s) | DDNEventPolicyControl |
| typesOfNotif | array(DlDataDeliveryStatus) | O | 1..N | Contains the type of notification of DDD Status. | DDNEventPolicyControl |
| pccRuleId | string | O | 0..1 | Contains the identifier of the PCC rule which is used for traffic detection of event (e.g. DDN failure). | DDNEventPolicyControl2 |
| interGrpIds | array(GroupId) | O | 1..N | Internal Group Identifier(s) of the served UE. | GroupIdListChange |
| satBackhaulCategory | SatelliteBackhaulCategory | O | 0..1 | Indicates the satellite backhaul category or non-satellite backhaul used for the PDU session.If the "EnSatBackhaulCatChg" feature is supported, the dynamic satellite backhaul categories may be also provided. | SatBackhaulCategoryChg |
| pcfUeInfo | PcfUeCallbackInfo | O | 0..1 | PCF for the UE callback URI and SBA binding information. | AMInfluence |
| nwdafDatas | array(NwdafData) | O | 1..N | List of NWDAF Instance IDs and their associated Analytics IDs consumed by the NF service consumer. | EneNA |
| anGwStatus | boolean | O | 1..N | When it is included and set to "true", it indicates that the AN-Gateway has failed and that the PCF should refrain from sending policy decisions to the SMF until it is informed that the AN-Gateway has been recovered. (NOTE 1) | SGWRest |
| uePolCont | UePolicyContainer  | C | 0..1 | Indicates a UE policy container received from the UE. (NOTE 1) | EpsUrsp |
| urspEnfInfo | UrspEnforcementInfo | O | 0..1 | Contains the reporting of URSP rule enforcement form the UE. | URSPEnforcement |
| sscMode | SscMode | O | 0..1 | SSC Mode of the PDU session.It may be present when the "urspEnfInfo" attribute is present. | URSPEnforcement |
| ueReqDnn | Dnn | O | 0..1 | UE requested DNN.It may be present when the "urspEnfInfo" attribute is present. | URSPEnforcement |
| redundantPduSessionInfo | RedundantPduSessionInformation | O | 0..1 | RSN and PDU session pair ID of the redundant PDU session.It may be present when the "urspEnfInfo" attribute is present. | URSPEnforcement |
| l4sReports | array(L4sSupportInfo) | O | 1..N | ECN marking for L4S support report information. | XRM\_5G |
| sliceInfo | Snssai | O | 0..1 | Identifies the updated S-NSSAI. | FFS |
| batOffsetInfo | BatOffsetInfo | O | 0..1 | Contains the BAT offset and the optionally adjusted periodicity. | EnTSCAC |
| hrsboInd | boolean | O | 0..1 | HR-SBO support indication. If present and set to "true", it indicates that the HR-SBO is supported. If present and set to "false", it indicates that the HR-SBO is not supported.. (NOTE 7) | HR-SBO |
| NOTE 1: This attribute is only applicable to the 5GS and EPC/E-UTRAN interworking scenario as defined in Annex B.NOTE 2: The value provided in this attribute is implementation specific. The only constraint is that the NF service consumer shall supply a different identifier for each overlapping address domain (e.g. the SMF NF instance identifier).NOTE 3: The age of UE location included within the "userLocationInfoTime" attribute is the age of the 3GPP access UE location received from the AMF and shall be included only when the reported "userLocationInfo" attribute includes the UE location in the 3GPP access.NOTE 4: The SMF may encode both 3GPP and non-3GPP access UE location in the "userLocationInfo" attribute.NOTE 5: Only one of "vplmnQos" or "vplmnQosNotApp" attributes may be present.NOTE 6: When the "WWC" feature is supported, according to 3GPP TS 23.316 [42], clause 8.3.1 and 4.6.2, more than one IPv6 prefix shorter than /64 or more than one full IPv6 addres with a /128 prefix may be allocated to the RG. When feature MultiIpv6AddrPrefix is supported, additional IPv6 prefix shorter than /64 or full IPv6 address with a /128 prefix may be reported encoded as the "addIpv6AddrPrefixes" and the "addRelIpv6AddrPrefixes" attributes, , if the "MultiIpv6AddrPrefix" feature is supported, or as the "multiIpv6Prefixes" and the "multiRelIpv6Prefixes" attributes, if the "UnlimitedMultiIpv6Prefix" feature is supported. If the attribute "multiIpv6Prefixes" is provided, then attributes "ipv6AddressPrefix" and "addIpv6AddrPrefixes" shall be both absent. If the attribute "multiRelIpv6Prefixes" is provided, then attributes "relIpv6AddressPrefix" and "addRelIpv6AddrPrefixes" shall be both absent.NOTE 7: This attribute may be present when the "PLMN\_CH" trigger is included in "repPolicyCtrlReqTriggers" attribute. |

Editor’s Note: Name of the feature for the support of S-NSSAI replacement is FFS.

Editor’s Note: It is FFS how the bat offset is indicated and reported per PCC rule.

Editor’s Note: Whether existing QoS monitoring data types and attributes are reused or new ones are added is to be discussed.

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

#### 5.6.3.6 Enumeration: PolicyControlRequestTrigger

Table 5.6.3.6-1: Enumeration PolicyControlRequestTrigger

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| PLMN\_CH | PLMN Change. |  |
| RES\_MO\_RE | A request for resource modification has been received by the NF service consumer. (NOTE) |  |
| AC\_TY\_CH | Access Type Change. It also indicates the addition or removal of Access Type for MA PDU session. |  |
| UE\_IP\_CH | UE IP address change. (NOTE) |  |
| UE\_MAC\_CH | A new UE MAC address is detected or a used UE MAC address is inactive for a specific period. |  |
| AN\_CH\_COR | Access Network Charging Correlation Information. |  |
| US\_RE | The PDU Session or the Monitoring key specific resources consumed by a UE either reached the threshold or needs to be reported for other reasons. | UMC |
| APP\_STA | The start of application traffic has been detected. | ADC |
| APP\_STO | The stop of application traffic has been detected. | ADC |
| AN\_INFO | Access Network Information report. | NetLoc |
| CM\_SES\_FAIL | Credit management session failure. |  |
| PS\_DA\_OFF | The NF service consumer reports when the 3GPP PS Data Off status changes. (NOTE) | 3GPP-PS-Data-Off |
| DEF\_QOS\_CH | Default QoS Change. (NOTE) |  |
| SE\_AMBR\_CH | Session-AMBR Change. (NOTE) |  |
| QOS\_NOTIF | The NF service consumer notify the PCF when receiving notification from RAN that QoS targets of the QoS Flow cannot be guaranteed or can be guaranteed. |  |
| NO\_CREDIT | Out of credit. |  |
| REALLO\_OF\_CREDIT | Reallocation of credit | ReallocationOfCredit |
| PRA\_CH | Change of UE presence in Presence Reporting Area. | PRA |
| SAREA\_CH | Location Change with respect to the Serving Area. |  |
| SCNN\_CH | Location Change with respect to the Serving CN node. |  |
| RE\_TIMEOUT | Indicates the NF service consumer generated the request because there has been a PCC revalidation timeout (i.e. Enforced PCC rule request defined in table 6.1.3.5.-1 of 3GPP TS 23.503 [6]). |  |
| RES\_RELEASE | Indicates that the NF service consumer can inform the PCF of the outcome of the release of resources for those rules that require so. | RAN-NAS-Cause |
| SUCC\_RES\_ALLO | Indicates that the NF service consumer shall inform the PCF of the successful resource allocation for those rules that requires so. |  |
| RAT\_TY\_CH | RAT type change. |  |
| REF\_QOS\_IND\_CH | Reflective QoS indication Change. |  |
| NUM\_OF\_PACKET\_FILTER | Indicates that the NF service consumer shall report the number of supported packet filter for signalled QoS rules. (NOTE) Only applicable to the interworking scenario as defined in Annex B. |  |
| UE\_STATUS\_RESUME | Indicates that the UE's status is resumed. Only applicable to the interworking scenario as defined in Annex B. | PolicyUpdateWhenUESuspends |
| UE\_TZ\_CH | UE Time Zone Change. |  |
| AUTH\_PROF\_CH | Indicates that the DN-AAA authorization profile index has changed. (NOTE) | DN-Authorization |
| TSN\_BRIDGE\_INFO | Indicates the NF service consumer has detected information about new TSC user plane node port(s), and/or new/updated UMIC and/or PMIC(s). | TimeSensitiveNetworking |
| QOS\_MONITORING | Indicates that the NF service consumer notifies the PCF of the QoS Monitoring information. | QosMonitoring |
| SCELL\_CH | Location Change with respect to the Serving Cell. |  |
| USER\_LOCATION\_CH | Indicates that user location has changed, applicable to serving area change and serving cell change. | AggregatedUELocChanges |
| EPS\_FALLBACK | EPS Fallback report is enabled in the NF service consumer. Only applicable to the interworking scenario as defined is Annex B. | EPSFallbackReport |
| MA\_PDU | Indicates that the NF service consumer notifies the PCF of the MA PDU session request. Only applicable to the interworking scenario as defined in Annex B. (NOTE) | ATSSS |
| 5G\_RG\_JOIN | The 5G-RG has joined to an IP Multicast Group. | WWC |
| 5G\_RG\_LEAVE | The 5G-RG has left an IP Multicast Group. | WWC |
| DDN\_FAILURE | Indicates that the NF service consumer requests policies from PCF if it received an event subscription for DDN Failure event. | DDNEventPolicyControl |
| DDN\_DELIVERY\_STATUS | Indicates that the NF service consumer requests policies from PCF if it received an event subscription for DDN Delievery Status event. | DDNEventPolicyControl |
| GROUP\_ID\_LIST\_CHG | UE Internal Group Identifier(s) has changed: the NF service consumer reports that UDM provided list of group Ids has changed. (NOTE) | GroupIdListChange |
| DDN\_FAILURE\_CANCELLATION | Indicates that the event subscription for DDN Failure event is cancelled. | DDNEventPolicyControl2 |
| DDN\_DELIVERY\_STATUS\_CANCELLATION | Indicates that the event subscription for DDD STATUS is cancelled. | DDNEventPolicyControl2 |
| VPLMN\_QOS\_CH | Indicates that the NF service consumer has detected the change of the QoS supported in the VPLMN, the change from the case where the QoS constraints are applicable to the case where the QoS constraints are not applicable (e.g. the UE moves back from the home routed to the non-roaming scenario) or vice versa. (NOTE) | VPLMN-QoS-Control |
| SUCC\_QOS\_UPDATE | Indicates that the NF service consumer notifies the PCF of the successful update of the QoS for MPS.  | MPSforDTS |
| SAT\_CATEGORY\_CHG | Indicates that the SMF has detected a change between different satellite category, or non-satellite backhaul. | SatBackhaulCategoryChg |
| PCF\_UE\_NOTIF\_IND | Indicates the SMF has detected the AMF forwarded the PCF for the UE indication to receive/stop receiving notifications of SM Policy association established/terminated events.(NOTE) | AMInfluence |
| NWDAF\_DATA\_CHG | Indicates that the NWDAF instance IDs used for the PDU session and/or associated Analytics IDs have changed. (NOTE) | EneNA |
| UE\_POL\_CONT\_IND | Indicates that the NF service consumer has detected a new UE policy container. Only applicable to the interworking scenario as defined in Annex B. | EpsUrsp |
| URSP\_ENFORCEMENT\_INFO | Indicates that the NF service consumer has detected a report of URSP rule enforcement information. | URSPEnforcement |
| HR\_SBO\_IND\_CHG | Indicates the HR-SBO support indication has changed. (NOTE) | HR-SBO |
| L4S\_SUPP | Indicates whether the ECN marking for L4S support is not available or available again in 5GS. | XRM\_5G |
| SNSSAI\_REPLACEMENT | Indicates that the existing S-NSSAI for the PDU session has been replaced. (NOTE) | FFS |
| BAT\_OFFSET\_INFO | Indicates that the NF service consumer has detected the information about the BAT offset and optionally adjusted periodicity. | EnTSCAC |
| NOTE: The NF service consumer always reports to the PCF. |

The PCF may provision the values of policy control request trigger which are not always reported by the NF service consumer as defined in clause 4.2.6.4.

When the NF service consumer detects the corresponding policy control request trigger(s), the NF service consumer shall report the detected trigger(s) to the PCF as defined in clause 4.2.4.1 with the additional information for different independent policy control request triggers as follows:

If the "PLMN\_CH" is provisioned, when the NF service consumer detects a change of the serving network (a PLMN or an SNPN), the NF service consumer shall include the "PLMN\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current identifier of the serving network within the "servingNetwork" attribute.

NOTE 1: Handover between non-equivalent SNPNs, and between SNPN and PLMN is not supported. When the UE is operating in SNPN access mode, the trigger reports changes of equivalent SNPNs.

When the NF service consumer receives the resource modification request from the UE, the NF service consumer shall include the "RES\_MO\_RE" within the "repPolicyCtrlReqTriggers" attribute and the information for requesting the PCC rule as defined in clause 4.2.4.17.

If the "AC\_TY\_CH" is provisioned, when the NF service consumer detects a change of access type, the NF service consumer shall include the "AC\_TY\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current access type within the "accessType" attribute. The RAT type encoded in the "ratType" attribute shall also be provided when applicable to the specific access type. Specific attributes for the EPC interworking case are described in Annex B. If the ATSSS feature is supported, when the NF service consumer detects an access is added or released for MA PDU session, the NF service consumer shall include the added Access Type or released Access type encoded as "accessType" attribute within the AdditionalAccessInfo data structure. The RAT type encoded in the "ratType" attribute shall also be provided within the AdditionalAccessInfo data structure when applicable to the added access type or released access type.

When the NF service consumer detects an IPv4 address and/or an IPv6 prefix is allocated or released, the NF service consumer shall include the "UE\_IP\_CH" within the "repPolicyCtrlReqTriggers" attribute and new allocated UE Ipv4 address within the "ipv4Address" attribute and/or the UE Ipv6 prefix within the "ipv6AddressPrefix" attribute or the released UE Ipv4 address within the "relIpv4Address" attribute and/or the UE Ipv6 prefix within the "relIpv6AddressPrefix" attribute. If the "MultiIpv6AddrPrefix" feature is supported, and if an additional allocated or released IPv6 prefix is detected, the NF service consumer shall include the new allocated UE Ipv6 prefix within the "addIpv6AddrPrefixes" attribute and the released UE Ipv6 prefix within the "addRelIpv6AddrPrefixes" attribute. If the "UnlimitedMultiIpv6Prefix" feature is supported, and if multiple allocated or released IPv6 prefixes are detected, the NF service consumer shall include the new allocated UE Ipv6 prefixes within the "multiIpv6Prefixes" attribute and the released UE Ipv6 prefixes within the "mutliRelIpv6Prefixes" attribute.

When the NF service consumer detects a new UE MAC address or a used UE MAC address is not used any more, the NF service consumer shall include the "UE\_MAC\_CH" within the "repPolicyCtrlReqTriggers" attribute and new detected UE MAC address within the "ueMac" attribute or the not used UE MAC address within the "relUeMac" attribute.

If the "AN\_CH\_COR" is provisioned, when the NF service consumer is provisioned with the PCC rule as defined in clause 4.2.6.5.1, the NF service consumer shall notify the PCF of access network charging identifier associated with the PCC rules as defined in clause 4.2.4.13.

If the "US\_RE" is provisioned, when the NF service consumer receives the usage report from the UPF, the NF service consumer shall notify the PCF of the accumulated usage as defined in clause 4.2.4.10. Applicable to functionality introduced with the UMC feature as described in clause 5.8.

If the "APP\_STA" is provisioned, when the NF service consumer receives the application start report from the UPF, the NF service consumer shall notify the PCF of the application start report as defined in clause 4.2.4.6. Applicable to functionality introduced with the ADC feature as described in clause 5.8.

If the "APP\_STO" is provisioned, when the NF service consumer receives the application stop report from the UPF, the NF service consumer shall notify the PCF of the application stop report as defined in clause 4.2.4.6. Applicable to functionality introduced with the ADC feature as described in clause 5.8.

If the "AN\_INFO" is provisioned, when the NF service consumer receives the reported access network information from the access network, the NF service consumer shall notify the PCF of the access network information as defined in clause 4.2.4.9. Applicable to functionality introduced with the NetLoc feature as described in clause 5.8.

If the "CM\_SES\_FAIL" is provisioned, when the NF service consumer receives a detected transient/permanent failure from the CHF, the NF service consumer shall include the "CM\_SES\_FAIL" within the "repPolicyCtrlReqTriggers" attribute. If the failure does not apply to all PCC Rules, the affected PCC Rules are indicated within the "ruleReports" attribute, with the "ruleStatus" attribute set to value ACTIVE and the "failureCode" attribute set to the corresponding value as reported by the CHF; otherwise if the failure applies to the session, the "creditManageStatus" shall be set to the corresponding value as reported by the CHF.

If the "PS\_DA\_OFF" is provisioned, when the NF service consumer receives a change of 3GPP PS Data Off status from the UE, the NF service consumer shall notify the PCF as defined in clause 4.2.4.8. Applicable to functionality introduced with the 3GPP-PS-Data-Off feature as described in clause 5.8.

When the NF service consumer detects a change of subscribed default QoS, the NF service consumer shall include the "DEF\_QOS\_CH" within the "repPolicyCtrlReqTriggers" attribute and the new subscribed default QoS within the "subsDefQos" attribute.

When the NF service consumer detects a change of Session-AMBR, the NF service consumer shall include the "SE\_AMBR\_CH" within the "repPolicyCtrlReqTriggers" attribute and the new Session-AMBR within the "subsSessAmbr" attribute.

If the "QOS\_NOTIF" is provisioned, when the NF service consumer receives a notification from access network that QoS targets of the QoS Flow cannot be guaranteed or can be guaranteed again, the NF service consumer shall send the notification as defined in clause 4.2.4.20.

If the "NO\_CREDIT" is provisioned, when the NF service consumer detects the credit for the PCC rule(s) is no longer available, the NF service consumer shall include the "NO\_CREDIT" within the "repPolicyCtrlReqTriggers" attribute, the termination action the NF service consumer applies to the PCC rules as instructed by the CHF within the "finUnitAct" attribute and the affected PCC rules within the "ruleReports" attribute.

When the "ReallocationOfCredit" feature is supported, if the "REALLO\_OF\_CREDIT" is provisioned, when the NF service consumer detects the credit for the PCC rule(s) is reallocated, the NF service consumer shall include the "REALLO\_OF\_CREDIT" within the "repPolicyCtrlReqTriggers" attribute and include the affected PCC rules for which credit has been reallocated after credit was no longer available and the "ruleStatus" attribute set to value ACTIVE within the "ruleReports" attribute.

If the "PRA\_CH" is provisioned, to detect when the UE enters/leaves certain presence reporting areas, the NF service consumer is provisioned the presence reporting area information as defined in clause 4.2.6.5.6. When the NF service consumer receives the presence reporting area information from the serving node, the NF service consumer shall notify the PCF of the reported presence area information as defined in clause 4.2.4.16. This report includes reporting the initial status at the time the request for reports is initiated. Applicable to the functionality introduced by the PRA or ePRA feature as described in clause 5.8.

If the "SAREA\_CH" is provisioned, when the NF service consumer detects a change of serving area (i.e. tracking area, or if the feature "2G3GIWK" is supported routing area), the NF service consumer shall include the "SAREA\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current TAI within the "userLocationInfo" attribute in either the "eutraLocation" or "nrLocation", or the current Routing Area within the "userLocationInfo" attribute in the "utraLocation" attribute when UTRAN access, or in the "geraLocation" attribute when GERAN access, as applicable. Non-3GPP access user location is reported in the "n3gaLocation" attribute when applicable. The attributes used in case of EPC interworking are described in Annex B.

If the "SCNN\_CH" is provisioned, when the NF service consumer detects a change of serving Network Function (i.e. the AMF, ePDG, S-GW or if the feature "2G3GIWK" is supported SGSN), the NF service consumer shall include the "SCNN\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current serving Network Function in the "servNfId" attribute if available. When the serving Network Function is an AMF, the NF service consumer shall include the AMF Network Function Instance Identifier within the "servNfInstId" attribute and the Globally Unique AMF Identifier within the "guami" attribute. The attributes included in case of EPC interworking are described in Annex B.

NOTE 1: In the home-routed roaming case, if the AMF change is unknown to the H-SMF, then the AMF change is not reported.

If the "RE\_TIMEOUT" is provisioned, when the NF service consumer is provisioned with the revalidation time by the PCF, the NF service consumer shall request the policy before the indicated revalidation time is reached as defined in clause 4.2.4.3.

If the "RES\_RELEASE" is provisioned, when the NF service consumer receives the request of PCC rule removal as defined in clause 4.2.6.5.2, the NF service consumer shall report the outcome of resource release as defined in clause 4.2.4.12. Applicable to functionality introduced with the RAN-NAS-Cause feature as described in clause 5.8.

When "SUCC\_RES\_ALLO" is provisioned and PCC rules are provisioned according to clause 4.2.6.5.5, the NF service consumer shall inform the PCF of the successful resource allocation as defined in clause 4.2.4.14.

If the feature "2G3GIWK" is supported, and if the "RAI\_CH" is provisioned, when the NF service consumer detects a change of routing area, the NF service consumer shall include the "RAI\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current RAI within the "userLocationInfo" attribute as described in Annex B.

If the "RAT\_TY\_CH" is provisioned, when the NF service consumer detects a change of the RAT type, the NF service consumer shall include the "RAT\_TY\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current RAT type within the "ratType" attribute. For MA PDU session, the NF service consumer shall include the current RAT type at the SmPolicyUpdateContextData data type level or AdditionalAccessInfo data type level. If the RAT type is provided at the SmPolicyUpdateContextData data type level, the NF service consumer shall also provide the associated access type within the SmPolicyUpdateContextData data structure.

If the "REF\_QOS\_IND\_CH" is provisioned, when the NF service consumer receives a change of reflective QoS indication from the UE, the NF service consumer shall include the "REF\_QOS\_IND\_CH" within the "repPolicyCtrlReqTriggers" attribute and the indication within the "refQosIndication" attribute.

When the NF service consumer receives the number of supported packet filter for signalled QoS rules for the PDU session from the UE during the PDU Session Modification procedure after the first inter-system change from EPS to 5GS for a PDU Session established in EPS and transferred from EPS with N26 interface, the NF service consumer shall include the "NUM\_OF\_PACKET\_FILTER" within the "repPolicyCtrlReqTriggers" attribute and the number of supported packet filter for signalled QoS rules within the "numOfPackFilter" attribute. Only applicable to the interworking scenario as defined in Annex B.

If the "UE\_STATUS\_RESUME" is provisioned, when the NF service consumer detected the UE's status is resumed from suspend state, the NF service consumer shall inform the PCF of the UE status including the "UE\_STATUS\_RESUME" within "repPolicyCtrlReqTriggers" attribute. The PCF shall after this update the NF service consumer with PCC Rules or session rules if necessary. Applicable to functionality introduced with the PolicyUpdateWhenUESuspends feature as described in clause 5.8.

If the "UE\_TZ\_CH" is provisioned, when the NF service consumer detects a change of the UE Time Zone, the NF service consumer shall include the "UE\_TZ\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current UE Time Zone within the "ueTimeZone" attribute.

If the "DN-Authorization" feature is supported, when the NF service consumer detects a change of DN-AAA authorization profile index, the NF service consumer shall include the "AUTH\_PROF\_CH" within the "repPolicyCtrlReqTriggers" attribute and the new DN-AAA authorization profile index within the "authProfIndex" attribute.

If the "TimeSensitiveNetworking" or "TimeSensitiveCommunication" feature is supported and "TSN\_BRIDGE\_INFO" is provisioned, when the NF service consumer detects:

- there is information about new TSC user plane node port(s), e.g. a new manageable Ethernet port, the NF service consumer shall include the "TSN\_BRIDGE\_INFO" within the "repPolicyCtrlReqTriggers" attribute and the updated TSC user plane node information within the "tsnBridgeInfo" attribute; and/or

- the NF service consumer detects a UMIC or PMIC, the NF service consumer shall include the "TSN\_BRIDGE\_INFO" within the "repPolicyCtrlReqTriggers" attribute and the UMIC, if available, within the "tsnBridgeManCont" attribute, and/or the PMIC(s), if available, within the "tsnPortManContDstt" and the "tsnPortManContNwtts" attributes.

NOTE 2: When the NF service consumer detects updated Port Management Information of the NW-TT ports, the NF service consumer includes the PMIC within the "tsnPortManContNwtts" attribute of SmPolicyUpdateContextData data type.

If the "QoSMonitoring" feature and/or the "XRM\_5G" is supported and if the "QOS\_MONITORING" is provisioned, upon receiving the QoS Monitoring report from the UPF, the NF service consumer shall send the QoS monitoring report(s) for the concerned PCC rules to the PCF as defined in clause 4.2.4.24.

If the "SCELL\_CH" is provisioned, when the NF service consumer detects a change of serving cell, the NF service consumer shall include the "SCELL\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current cell Id within the "userLocationInfo" attribute either in the "eutraLocation" attribute when EPC/E-UTRAN access or "nrLocation" attribute when NR access or "geraLocation" attribute when GERAN access or "utraLocation" attribute when UTRAN access, as applicable.

NOTE 3: Location change of serving cell can increase signalling load on multiple interfaces. Hence, it is recommended that any such serving cell changes event trigger subscription is only applied for a limited number of subscribers.

If the "AggregatedUELocChanges" feature is supported and the "USER\_LOCATION\_CH" is provisioned, when the NF service consumer detects a change of serving cell and/or a change of serving area (i.e. tracking area), the NF service consumer shall include the "USER\_LOCATION\_CH" within the "repPolicyCtrlReqTriggers" attribute and the current serving area and/or cell Id within the "userLocationInfo" attribute in the "eutraLocation" attribute or "nrLocation" attribute or "geraLocation" attribute or "utraLocation" attribute, as applicable.

NOTE 4: The access network can be configured to report location changes only when transmission resources are established in the radio access network.

If the "EPSFallbackReport" feature is supported and the "EPS\_FALLBACK" is provisioned and there is a PCC rule installed that required the reporting, when the NF service consumer receives a PDU session modification response indicating the rejection of the establishment of the QoS flow with 5QI=1, the NF service consumer shall notify the PCF of EPS fallback as defined in clause B.3.4.6.

When the NF service consumer receives the MA PDU Request Indication or MA PDU Network-Upgrade Allowed Indication and ATSSS Capability from the UE during the PDU Session Modification procedure after the first inter-system change from EPS to 5GS for a PDU Session established in EPS and transferred from EPS with N26 interface, the NF service consumer shall include the "MA\_PDU" within the "repPolicyCtrlReqTriggers" attribute, the MA PDU session Indication in the "maPduInd" attribute, the ATSSS capability of the MA PDU session within the "atsssCapab" attribute. Only applicable to the interworking scenario as defined in Annex B.

If the "WWC" feature is supported and "5G\_RG\_JOIN" is provisioned and when the NF service consumer detects a 5G-RG has joined to an IP Multicast Group, the NF service consumer shall include the "5G\_RG\_JOIN" within the "repPolicyCtrlReqTriggers" attribute and the IP multicast addressing information within the "mulAddrInfos" attribute.

If the "WWC" feature is supported and "5G\_RG\_LEAVE" is provisioned and when the NF service consumer detects a 5G-RG has left an IP Multicast Group, the NF service consumer shall include the "5G\_RG\_LEAVE" within the "repPolicyCtrlReqTriggers" attribute and the IP multicast addressing information within the "mulAddrInfos" attribute.

If "DDNEventPolicyControl" feature is supported, and if "DDN\_FAILURE" is provisioned, when the NF service consumer receives an event subscription for DDN Failure event including the traffic descriptors, the NF service consumer shall include the "DDN\_FAILURE" within the "repPolicyCtrlReqTriggers" attribute and traffic descriptor(s) within the "trafficDescriptors" attribute.

If "DDNEventPolicyControl" feature is supported, and if "DDN\_DELIVERY\_STATUS" is provisioned, when the NF service consumer receives an event subscription for DDD Status event including the traffic descriptors, the NF service consumer shall include the "DDN\_DELIVERY\_STATUS" within the "repPolicyCtrlReqTriggers" attribute and traffic descriptor(s) within the "trafficDescriptors" attribute and the requested type(s) of notifications (notifications about downlink packets being buffered, and/or discarded).

If "GroupIdListChange" feature is supported, when the SMF receives the updated Internal Group Identifier(s) from the UDM, the SMF shall include the "GROUP\_ID\_LIST\_CHG" within the "repPolicyCtrlReqTriggers" attribute and the Internal Group Identifier(s) of the served UE within the "interGrpIds" attribute.

If "DDNEventPolicyControl2" feature is supported, and if "DDN\_FAILURE\_CANCELLATION" is provisioned, when the SMF receives a cancellation of event subscription for DDN Failure event, the SMF shall include the "DDN\_FAILURE\_CANCELLATION" within the "repPolicyCtrlReqTriggers" attribute and the PCC rule identifier of the PCC rule which is used for traffic detection of DDN failure event within the "pccRuleId" attribute.

If "DDNEventPolicyControl2" feature is supported, and if "DDN\_DELIVERY\_STATUS\_CANCELLATION" is provisioned, when the SMF receives a cancellation of event subscription for DDD Status event, the SMF shall include the "DDN\_DELIVERY\_STATUS\_CANCELLATION" within the "repPolicyCtrlReqTriggers" attribute and the PCC rule identifier of the PCC rule which is used for traffic detection of DDD status event within the "pccRuleId" attribute.

When the "VPLMN-QoS-Control" feature is supported and if the NF service consumer receives a new QoS value supported in the VPLMN, the NF service consumer shall include the "VPLMN\_QOS\_CH" within the "repPolicyCtrlReqTriggers" attribute and the received QoS constraints within the "vplmnQos" attribute; if the NF service consumer detects that the UE moves from a VPLMN with QoS constraints to the HPLMN or to a VPLMN without QoS constraints, the NF service consumer shall include the "VPLMN\_QOS\_CH" within the "repPolicyCtrlReqTriggers" attribute and the "vplmnQosNotApp" attribute set to true.

If the "MPSforDTS" feature is supported, and if "SUCC\_QOS\_UPDATE" is provisioned, when the resources for the MPS for DTS invocation/revocation are successfully allocated for MPS for DTS, the NF service consumer shall include the "SUCC\_QOS\_UPDATE" within the "repPolicyCtrlReqTriggers" attribute.

If "SatBackhaulCategoryChg" is supported, and if "SAT\_CATEGORY\_CHG" is provisioned, the NF service consumer notifies the PCF when there is a change of the backhaul which is used for the PDU session between different satellite backhaul categories or between a satellite backhaul and a non-satellite backhaul. When the "EnSatBackhaulCatChg" feature is supported, the different dynamic satellite backhaul categories may be also reported. The NF service consumer shall include the satellite backhaul category or dynamic satellite backhaul category or non-satellite backhaul within the "satBackhaulCategory" attribute together with the "SAT\_CATEGORY\_CHG" policy control request trigger within the "repPolicyCtrlReqTriggers" attribute.

NOTE 5: The type of the satellite involved in the backhaul is referred as the satellite backhaul category as defined in clause 5.43.4 of 3GPP TS 23.501 [2]. Only a single backhaul category can be indicated.

If the "AMInfluence" feature is supported, the NF service consumer notifies the PCF about the PCF for the UE request to be notified of PDU session established/terminated events by forwarding within the "pcfUeInfo" attribute, the received PCF for the UE callback URI within the "callbackUri" attribute and, if received, SBA binding information within the "bindingInfo" attribute, together with the "PCF\_UE\_NOTIF\_IND" policy control request trigger within the "repPolicyCtrlReqTriggers" attribute. The NF service consumer notifies the PCF about the PCF for the UE request to stop being notified about the PDU session established/terminated events by sending the "pcfUeInfo" attribute set to NULL together with the "PCF\_UE\_NOTIF\_IND" policy control request trigger within the "repPolicyCtrlReqTriggers" attribute.

If "EneNA" feature is supported, the NF service consumer notifies the PCF when there is a change in the list of NWDAF Instance IDs used for the PDU Session and/or associated Analytics IDs. The NF service consumer shall include within the "nwdafDatas" attribute the list of NWDAF instance IDs used for the PDU Session within the "nwdafInstanceId" attribute and their associated Analytic ID(s) within the "nwdafEvents" attribute, and the "NWDAF\_DATA\_CHG" within the "repPolicyCtrlReqTriggers" attribute.

If the "EpsUrsp" feature is supported and "UE\_POL\_CONT\_IND" is provisioned, when the NF service consumer detects a new UE policy container, the the NF service consumer shall include the "UE\_POL\_CONT\_IND" within the "repPolicyCtrlReqTriggers" attribute and the UE policy container within the "uePolCont" attribute. Only applicable to the interworking scenario as defined in Annex B.

Editor's Note: It will be aligned with SA2 (once it is specified in 3GPP TS 23.503) the name of the Policy Control Request trigger to indicate the provisioning of a UE Policy Container and whether it needs to be provisioned or the NF service consumer always reports it to the PCF.

If the "URSPEnforcement" feature is supported and "URSP\_ENFORCEMENT\_INFO" is provisioned, when the NF service consumer detects the UE includes URSP enforcement information in the PDU session modification request, the NF service consumer shall include the "URSP\_ENFORCEMENT\_INFO" within the "repPolicyCtrlReqTriggers" attribute and shall forward the received information from the UE within the "urspEnfInfo" attribute. In this case, the NF service consumer shall also include, if they were not previously provided, the SSC mode within the "sscMode" attribute, the UE requested DNN (if available and different from the selected DNN) within the "ueReqDnn" attribute, and if the PDU session is redundant, the RSN and the PDU session pair ID within the "redundantPduSessionInfo" attribute. The NF service consumer shall also include the access type within the "accessType" attribute, if changed compared with the latest provided value.

If "HR-SBO" feature is supported, the NF service consumer notifies the PCF when the HR-SBO support indication has changed. The NF service consumer shall include the "hrsboInd" attribute and set it to "true" if the HR-SBO is supported, otherwise set it to "false", and the "HR\_SBO\_IND\_CHG" within the "repPolicyCtrlReqTriggers" attribute.

When the "XRM\_5G" feature is supported and the "L4S\_SUPP" is provisioned, when the PCC rules are provisioned with the explicit indication of ECN marking for L4S according to clause 4.2.6.21.3, the NF service consumer shall inform the PCF of the unavailability or availability again in 5GS for ECN marking for L4S support as defined in clause 4.2.6.21.3.

If "NetSliceRepl" feature is supported, the NF service consumer notifies the PCF when the existing S-NSSAI for the PDU Session has been replaced. The NF service consumer shall include the updated S-NSSAI within the "sliceInfo" attribute and the "SNSSAI\_REPLACEMENT" PCRT within the "repPolicyCtrlReqTriggers" attribute.

If "EnTSCAC" feature is supported, and if "BAT\_OFFSET\_INFO" is provisioned, when the SMF receives the notification on BAT offset and optionally adjusted periodicity, the SMF shall include the "BAT\_OFFSET\_INFO" within the "repPolicyCtrlReqTriggers" attribute and the BAT offset and optionally adjusted periodicity within the "batOffsetInfo" attribute.

Editor’s Note: It is FFS how the bat offset is indicated and reported per PCC rule.

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