**3GPP TSG-CT WG3 Meeting #134 *C3-242288***

**Changsha, China, 15 - 19 April, 2024 *(Revision of C3-242xxx)***

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** | **-** | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *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:*** | Corrections on presence condition | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | , Ericsson, ZTE | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc18, eNetAE | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***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:*** | | The following issues have been identified in the current specification:   1. Some attribute should be optional, otherwise, the condition of the presence should be stated. 2. Additional editorial issues. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Fix the above issues. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Unclear specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.6.2.2, 5.6.2.4, 5.6.2.5, 5.6.2.10 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*

#### 5.6.2.2 Type NsmfEventExposure

Table 5.6.2.2-1: Definition of type NsmfEventExposure

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| supi | Supi | C | 0..1 | Subscription Permanent Identifier (NOTE 1) |  |
| gpsi | Gpsi | C | 0..1 | Generic Public Subscription Identifier (NOTE 1)  This IE is not applicable to "SMCC\_EXP" event. |  |
| anyUeInd | boolean | C | 0..1 | This IE shall be present if the event subscription is applicable to any UE. It indicates whether the event subscription is applicable to any UE:  - "true": the event subscription is applicable to any UE;  - "false"(default): the event subscription is not applicable to any UE.  (NOTE 1) (NOTE 4) |  |
| groupId | GroupId | C | 0..1 | Identifies a group of UEs. (NOTE 1) |  |
| pduSeId | PduSessionId | C | 0..1 | PDU session ID (NOTE 1) |  |
| dnn | Dnn | O | 0..1 | Data Network Name. |  |
| snssai | Snssai | O | 0..1 | A single Network Slice Selection Assistance Information. (NOTE 4) |  |
| dnai | Dnai | O | 0..1 | Data network access identifier. | UPEAS |
| ssId | string | O | 0..1 | SSID that the PDU session is related to. | UPEAS |
| bssId | string | O | 0..1 | BSSID that the PDU session is related to. | UPEAS |
| upfId | string | O | 0..1 | Identifies the UPF. | UPEAS |
| nfId | NfInstanceId | C | 0..1 | Indicates the instance identity of the NF creating the subscription. It shall be provided if the "eventSubs" attribute contains an entry with the "event" set to the value "UPF\_EVENT". | UPEAS |
| subId | SubId | C | 0..1 | Subscription ID. This parameter shall be supplied by the SMF in HTTP responses that include an object of NsmfEventExposure type. |  |
| notifId | string | M | 1 | Notification Correlation ID provided by the NF service consumer. (NOTE 2) |  |
| notifUri | Uri | M | 1 | Identifies the recipient of Notifications sent by the SMF. |  |
| 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. |  |
| eventSubs | array(EventSubscription) | M | 1..N | Subscribed events. (NOTE 4) |  |
| eventNotifs | array(EventNotification) | O | 1..N | Represents the SMF Events to be reported in the Nsmf\_EvenExposure\_Subscribe response.  May be present when the "ERIR" feature is supported and the "ImmeRep" attribute set to true is included in the subscription request. | ERIR |
| ImmeRep | boolean | O | 0..1 | It is included and set to true if the immediate reporting of the current status of the subscribed event, if available is required.  (NOTE 6) |  |
| notifMethod | NotificationMethod | O | 0..1 | If "notifMethod" is not supplied, the default value "ON\_EVENT\_DETECTION" applies. (NOTE 4) (NOTE 5) |  |
| maxReportNbr | Uinteger | O | 0..1 | If omitted, there is no limit. (NOTE 4) (NOTE 5) |  |
| expiry | DateTime | C | 0..1 | This attribute indicates the expiry time of the subscription, after which the SMF shall not send any event notifications and the subscription becomes invalid. It may be included in an event subscription request and may be included in an event subscription response based on operator policies. If an expiry time was included in the request, then the expiry time returned in the response should be less than or equal to that value. If the expiry time is not included in the response, the NF service consumer shall not associate an expiry time for the subscription. (NOTE 4) |  |
| repPeriod | DurationSec | C | 0..1 | This attribute indicates the reporting period. Shall be provided if the notification method is set to "PERIODIC". |  |
| 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 the notification about subscribed events. |  |
| supportedFeatures | SupportedFeatures | C | 0..1 | List of Supported features used as described in clause 5.8.  This parameter shall be supplied by NF service consumer and SMF in the POST request that request the creation of an SMF Notification Subscriptions resource and the related reply, respectively. |  |
| sampRatio | SamplingRatio | O | 0..1 | Indicates the ratio of the random subset to target UEs, event reports only relates to the subset. |  |
| partitionCriteria | array(PartitioningCriteria) | O | 1..N | Defines criteria for partitioning the UEs in order to apply the sampling ratio for each partition. It may only be included in event subscription requests when the "sampRatio" attribute is also provided. (NOTE 3) | EneNA |
| grpRepTime | DurationSec | O | 0..1 | Indicates the time for which the SMF aggregates the event reports detected by the UEs in a group and report them together to the NF service consumer. |  |
| notifFlag | NotificationFlag | O | 0..1 | Indicates the notification flag, which is used to mute/unmute notifications and to retrieve events stored during a period of muted notifications.  Default: "ACTIVATE" | EneNA |
| notifFlagInstruct | MutingExceptionInstructions | O | 0..1 | Contains instructions to be executed upon the occurrence of an event muting exception (e.g. full buffer). It may only be provided if the "notifFlag" is provided and set to "DEACTIVATE". | EnhDataMgmt |
| mutingSetting | MutingNotificationsSettings | O | 0..1 | Contains settings related to the muting of notifications. It may only be provided in the NF service producer response and only if the muting instructions provided in the "notifFlag" and/or the "notifFlagInstruct" attributes are accepted. | EnhDataMgmt |
| defQosSupp | boolean | O | 0..1 | Indicates whether the NF service consumer requests to receive QoS Flow performance information for the QoS Flow associated with the default QoS rule if there are no measurements available for the provided Application Identifier included within the "appIds" attribute.  True: NF service consumer requests to receive QoS Flow performance information for the QoS Flow associated with the default QoS rule.  False (default): NF service consumer does not request to receive QoS Flow performance information for the QoS Flow associated with the default QoS rule. | UPEAS |
| qosMonPending | boolean | O | 0..1 | Indicates that the reporting will be activated when the measurements are enabled by a PCC rule. It shall be always set to true when present.  It may only be provided in the response.  Default value is false. | UPEAS |
| NOTE 1: If the event subscription applies for a specific PDU session, the PDU session of a single UE (pduSeId, and gpsi/supi) shall be included; otherwise one and only one of a single UE (gpsi/supi), a group of UEs (groupId), or anyUeInd set to true shall be included.  NOTE 2: If the UDM as NF service consumer subscribes to event (e.g. downlink data delivery status, PDU Session Establishment, PDU Session Release) on behalf of AF/NEF, "notifId" shall be set the same as "referenceId" received from the AF/NEF as defined in clause 6.4.6.2.4 of 3GPP TS 29.503 [14].  NOTE 3: For a given type of partitioning criteria, the UE shall belong to only one single partition as long as it is served by the NF service producer.  NOTE 4: If EneNA feature is supported, when the "snssai" attribute is presented together with "anyUeInd" attribute and the "eventSubs" attribute contains "PDU\_SES\_EST" and "PDU\_SES\_REL", then only the "ON\_EVENT\_DETECTION" value is applicable in the "notifMethod" attribute together with "maxReportNbr" attribute and/or "expiry"attribute presence.  NOTE 5: The attribute "maxReportNbr" is not applicable when the value of "notifMethod" is set to "ONE\_TIME".  NOTE 6: The attribute does not follow the related naming convention (i.e. "lowerCamel") defined in clause 5.1.4 of 3GPP TS 29.501 [7]. This attribute is however kept as currently defined in this specification for backward compatibility considerations. | | | | | |

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

#### 5.6.2.4 Type EventSubscription

Table 5.6.2.4-1: Definition of type EventSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| event | SmfEvent | M | 1 | Subscribed events |  |
| dnaiChgType | DnaiChangeType | C | 0..1 | For event UP path change, this attribute indicates whether the subscription is for early, late, or early and late DNAI change notification shall be supplied if the the subscribed event is set to “UP\_PATH\_CH”. |  |
| dddTraDescriptors | array(DddTrafficDescriptor) | C | 1..N | The traffic descriptor(s) of the downlink data source. Shall be included for event "DDDS". | DownlinkDataDeliveryStatus |
| dddStati | array(DlDataDeliveryStatus) | O | 1..N | May be included for event "DDDS". The subscribed statuses (discarded, transmitted, buffered) for the event. If omitted all statuses are subscribed. | DownlinkDataDeliveryStatus |
| appIds | array(ApplicationId) | O | 1..N | May be included for event "QFI\_ALLOC", "DISPERSION" or "QOS\_MON".  (NOTE 1) | QfiAllocation  Dispersion  PduSessionInfo  UPEAS |
| networkArea | NetworkAreaInfo | O | 0..1 | Identification of network area to which the subscription applies. | AreaFilter  UPEAS |
| targetPeriod | TimeWindow | O | 0..1 | Indicates the data collection target period.  May be included for event "SMCC\_EXP", "RED\_TRANS\_EXP" or "WLAN\_INFO". | SMCCE  RedundantTransmissionExp  WlanPerformance |
| transacDispInd | boolean | O | 0..1 | Indicates the subscription for UE transaction dispersion collection, if it is included and set to "true". Default value is "false".  May be included for event "DISPERSION". | Dispersion |
| transacMetrics | array(TransactionMetric) | O | 1..N | Requested transaction metrics.  May be included for event "DISPERSION". | Dispersion |
| ueIpAddr | IpAddr | O | 0..1 | Indicates the UE IP address. May be included for event "DISPERSION". | Dispersion |
| upfEvents | array(UpfEvent) | O | 1..N | Indicates the exposure information related to UPF events. May be included for event  "UPF\_EVENT".  (NOTE 2) | UPEAS |
| NOTE 1: Only one instance of "ApplicationId" shall be provided when the event is "QOS\_MON".  NOTE 2: If the UPEAS feature is supported and the "immediateFlag" attribute within the "upfEvents" attribute is provided, the "ImmeRep" attribute within the NsmfEventExposure data type is not applicable. | | | | | |

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

#### 5.6.2.5 Type EventNotification

Table 5.6.2.5-1: Definition of type EventNotification

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute name | | Data type | | P | Cardinality | | Description | | Applicability |
| event | | SmfEvent | | M | 1 | | Event that is notified. | |  |
| timeStamp | | DateTime | | M | 1 | | Time at which the event is observed. | |  |
| supi | | Supi | | C | 0..1 | | Subscription Permanent Identifier. It is included when the subscription applies to a group of UE(s) or any UE. (NOTE 9) | |  |
| gpsi | | Gpsi | | C | 0..1 | | Identifies a GPSI. It shall contain an MSISDN. It is included when it is available and the subscription applies to a group of UE(s) or any UE.  This IE is not applicable to "SMCC\_EXP" event. | |  |
| ueIpAddr | | IpAddr | | C | 0..1 | | Indicates the UE IP address, It is included for event "DISPERSION" when it is available and requested in the subscription. | | Dispersion |
| transacInfos | | array(TransactionInfo) | | C | 1..N | | Transaction Information. Shall be included for event "DISPERSION". | | Dispersion |
| sourceDnai | | Dnai | | C | 0..1 | | Source DN Access Identifier. Shall be included for event "UP\_PATH\_CH" if the DNAI changed (NOTE 1, NOTE 2). | |  |
| targetDnai | | Dnai | | C | 0..1 | | Target DN Access Identifier. Shall be included for event "UP\_PATH\_CH" if the DNAI changed (NOTE 1, NOTE 2). | |  |
| dnaiChgType | | DnaiChangeType | | C | 0..1 | | DNAI Change Type. Shall be included for event "UP\_PATH\_CH". | |  |
| candidateDnais | | array(Dnai) | | O | 1..N | | The candidate DNAI(s) for the PDU Session. May be included for event "UP\_PATH\_CH". | | CommonEASDNAI |
| easRediscoverInd | | boolean | | O | 0..1 | | Indication of EAS re-discovery. If present and set to "true", it indicates the EAS re-discovery is performed, e.g. due to change of common EAS. Default value is "false" if omitted. | | CommonEASDNAI |
| candDnaisPrioInd | | boolean | | O | 0..1 | | If provided and set to "true", it indicates that the candidate DNAIs provided in the "candidateDnais" attribute are in descending priority order, i.e. the lower the array index the higher the priority of the respective DNAI. If omitted, the default value is "false". It may only be provided if the "candidateDnais" attribute is provided and the "dnaiChgType" attribute is set to the value "EARLY". | | CommonEASDNAI |
| trafCorreInfo | | TrafficCorrelationNotification | | C | 0..1 | | Contains traffic correlation information for notification.  It shall be provided if the event attribute has the value "TRAFFIC\_CORRELATION". | | CommonEASDNAI |
| sourceUeIpv4Addr | | Ipv4Addr | | O | 0..1 | | The IPv4 Address of the served UE for the source DNAI. May be included for event "UP\_PATH\_CH". | |  |
| sourceUeIpv6Prefix | | Ipv6Prefix | | O | 0..1 | | The Ipv6 Address Prefix of the served UE for the source DNAI. May be included for event "UP\_PATH\_CH". | |  |
| targetUeIpv4Addr | | Ipv4Addr | | O | 0..1 | | The IPv4 Address of the served UE for the target DNAI. May be included for event "UP\_PATH\_CH". | |  |
| targetUeIpv6Prefix | | Ipv6Prefix | | O | 0..1 | | The Ipv6 Address Prefix of the served UE for the target DNAI. May be included for event "UP\_PATH\_CH". | |  |
| sourceTraRouting | | RouteToLocation | | C | 0..1 | | N6 traffic routing information for the source DNAI. Shall be included for event "UP\_PATH\_CH" if available (NOTE 2). | |  |
| targetTraRouting | | RouteToLocation | | C | 0..1 | | N6 traffic routing information for the target DNAI. Shall be included for event "UP\_PATH\_CH" if available (NOTE 2). | |  |
| ueMac | | MacAddr48 | | O | 0..1 | | UE MAC address. May be included for event "UP\_PATH\_CH". | |  |
| adIpv4Addr | | Ipv4Addr | | O | 0..1 | | Added IPv4 Address(es). May be included for event "UE\_IP\_CH". | |  |
| adIpv6Prefix | | Ipv6Prefix | | O | 0..1 | | Added Ipv6 Address Prefix(es). May be included for event "UE\_IP\_CH". | |  |
| reIpv4Addr | | Ipv4Addr | | O | 0..1 | | Removed IPv4 Address(es). May be included for event "UE\_IP\_CH". | |  |
| reIpv6Prefix | | Ipv6Prefix | | O | 0..1 | | Removed Ipv6 Address Prefix(es). May be included for event "UE\_IP\_CH". | |  |
| plmnId | | PlmnIdNid | | C | 0..1 | | New PLMN Identifier or the SNPN Identifier. Shall be included for event "PLMN\_CH".  It shall be included for event "UP\_PATH\_CH" to contain the new serving PLMN identifier, if the "HR-SBO" feature is supported and the UE has moved to a serving PLMN where local traffic offloading is allowed.  (NOTE 7) | |  |
| accType | | AccessType | | C | 0..1 | | New Access Type. Shall be included for event "AC\_TY\_CH" and may be included for event "QFI\_ALLOC". | |  |
| pduAccTypes | | array(AccessType) | | O | 1..N | | The list of Access Types used for the PDU session. May be included for event "QFI\_ALLOC".  (NOTE 10) | | MultipleAccessTypes |
| pduSeId | | PduSessionId | | C | 0..1 | | PDU session ID. Shall be included for event "PDU\_SES\_REL" and "PDU\_SES\_EST". It shall also be included for event "QFI\_ALLOC" if the subscription was for a UE, a group of UEs, or any UE, and not for a specific PDU Session. | |  |
| ratType | | RatType | | C | 0..1 | | New RAT Type. Shall be included for event 'RAT\_TY\_CH'. | | EneNA |
| dddStatus | | DlDataDeliveryStatus | | C | 0..1 | | Downlink data delivery status (discarded, transmitted, buffered). Shall be included for event "DDDS", | | DownlinkDataDeliveryStatus |
| maxWaitTime | | DateTime | | C | 0..1 | | The estimated maximum waiting time for downlink data delivery, Shall be included for event "DDDS" with status "BUFFERED". | | DownlinkDataDeliveryStatus |
| dddTraDescriptor | | DddTrafficDescriptor | | C | 0..1 | | The downlink data descriptor impacted by downlink data delivery status change. Shall be included for event "DDDS" | | DownlinkDataDeliveryStatus |
| commFailure | | CommunicationFailure | | C | 0..1 | | Describes the communication failure cause for the UE. Shall be included for event "COMM\_FAIL". | | CommunicationFailure |
| ipv4Addr | | Ipv4Addr | | O | 0..1 | | IPv4 address. May be included for event "PDU\_SES\_REL" or "PDU\_SES\_EST". | | PduSessionStatus |
| ipv6Prefixes | | array(Ipv6Prefix) | | O | 1..N | | IPv6 prefixes. May be included for event "PDU\_SES\_REL" or "PDU\_SES\_EST". (NOTE 3) | | PduSessionStatus |
| ipv6Addrs | | array(Ipv6Addr) | | O | 1..N | | IPv6 addresses. May be included for event "PDU\_SES\_REL" or "PDU\_SES\_EST". (NOTE 3) | | PduSessionStatus |
| pduSessType | | PduSessionType | | C | 0..1 | | PDU session type. Shall be included if the PduSessionStatus or PduSessionInfo feature is supported. (NOTE 8) | | PduSessionStatus  PduSessionInfo |
| sscMode | | SscMode | | O | 0..1 | | Represents the SSC mode of the PDU Session. It may be included for event "QFI\_ALLOC". (NOTE 8) | | PduSessionInfo |
| qfi | | Qfi | | C | 0..1 | | QoS flow identifier. Shall be included for event "QFI\_ALLOC". | | QfiAllocation |
| appId | | ApplicationId | | O | 0..1 | | Contains the application identifier. May be included for event "QFI\_ALLOC". (NOTE 4) (NOTE 8) | | QfiAllocation  PduSessionInfo |
| ethFlowDescs | | array(EthFlowDescription) | | O | 1..N | | Descriptor(s) for non-IP traffic in which only ethernet flow description is defined. It allows the encoding of multiple UL and/or DL flows. Each entry of the array describes a single Ethernet flow. May be included for event "QFI\_ALLOC", when the description of the Ethernet traffic requires multiple UL and/or DL flows. (NOTE 4) | | MultipleFlowDescriptions |
| ethfDescs | | array(EthFlowDescription) | | O | 1..2 | | Contains the flow description for the Uplink and/or Downlink Ethernet flows. May be included for event "QFI\_ALLOC". (NOTE 4) | | QfiAllocation |
| flowDescs | | array(FlowDescription) | | O | 1..N | | Descriptor(s) of IP traffic. It allows the encoding of multiple UL and/or DL flows. Each entry of the array describes a single IP flow. May be included for event "QFI\_ALLOC", when the description of the IP traffic requires multiple UL and/or DL flows. (NOTE 4) | | MultipleFlowDescriptions |
| fDescs | | array(FlowDescription) | | O | 1..2 | | Contains the flow description for the Uplink and/or Downlink IP flows. May be included for event "QFI\_ALLOC". (NOTE 4) | | QfiAllocation |
| dnn | | Dnn | | C | 0..1 | | Data network name, Shall be included for event "QFI\_ALLOC". May be included for event "PDU\_SES\_REL" or "PDU\_SES\_EST". Shall be included to indiate the DNN associated with URLLC service for event "RED\_TRANS\_EXP".  Shall be included if DNN based SMCC is applied.  It shall be included for event "UP\_PATH\_CH" to contain the HPLMN DNN, if the "HR-SBO" feature is supported and the UE has moved to a serving PLMN where local traffic offloading is allowed. | | QfiAllocation, PduSessionStatus  RedundantTransmissionExp  SMCCE  HR-SBO |
| snssai | | Snssai | | C | 0..1 | | Identifies the slice information. Shall be included for event "QFI\_ALLOC".  Shall be included if S-NSSAI based SMCC is applied.  It shall be included for event "UP\_PATH\_CH" to contain the HPLMN S-NSSAI, if the "HR-SBO" feature is supported and the UE has moved to a serving PLMN where local traffic offloading is allowed. | | QfiAllocation  EneNA  SMCCE  HR-SBO |
| ulDelays | | array(Uinteger) | | O | 1..N | | Uplink packet delay in units of milliseconds. May be included for event "QOS\_MON". (NOTE 5) | | QoSMonitoring  E2eDataVolTransTime |
| dlDelays | | array(Uinteger) | | O | 1..N | | Downlink packet delay in units of milliseconds. May be included for event "QOS\_MON". (NOTE 5) | | QoSMonitoring  E2eDataVolTransTime |
| ulCongInfo | | Uinteger | | O | 0..1 | | Uplink congestion information. Percentage of packets that UPF uses for ECN marking for L4S (without "%" sign).  May be included for event "QOS\_MON". | | EnQoSMon |
| dlCongInfo | | Uinteger | | O | 0..1 | | Downlink congestion information. Percentage of packets that UPF uses for ECN marking for L4S (without "%" sign).  May be included for event "QOS\_MON". | | EnQoSMon |
| rtDelays | | array(Uinteger) | | O | 1..N | | Round trip delay in units of milliseconds. May be included for event "QOS\_MON". (NOTE 5) | | QoSMonitoring  E2eDataVolTransTime |
| ulDataRate | | BitRate | | O | 0..1 | | Uplink data rate. May be included for event "QOS\_MON". (NOTE 11) | | EnQoSMon |
| dlDataRate | | BitRate | | O | 0..1 | | Downlink data rate. May be included for event "QOS\_MON". (NOTE 11) | | EnQoSMon |
| timeWindow | | TimeWindow | | C | 0..1 | | Time window representing a start time and a stop time of the data collection period. Shall be included for event "SMCC\_EXP". | | SMCCE |
| smNasFromUe | | array(SmNasFromUe) | | C | 1..N | | Information on the SM NAS messages that SMF receives from UE for PDU Session. Shall be included for event "SMCC\_EXP". | | SMCCE |
| smNasFromSmf | | array(SmNasFromSmf) | | C | 1..N | | Information on the SM congestion control applied SM NAS messages that SMF sends to UE for PDU Session. Shall be included for event "SMCC\_EXP". | | SMCCE |
| upRedTrans | | boolean | | C | 0..1 | | Indicates whether the redundant transmission is setup or terminated. Set to "true" if the redundant transmission is setup, otherwise set to "false" if the redundant transmission is terminated. Default value is set to "false". Shall be included for event "RED\_TRANS\_EXP". | | RedundantTransmissionExp |
| ssId | | string | | C | 0..1 | | SSID that the PDU session is related to. (NOTE 6) | | WlanPerformance |
| bssId | | string | | C | 0..1 | | BSSID that the PDU session is related to. (NOTE 6) | | WlanPerformance |
| startWlan | | DateTime | | C | 0..1 | | The time stamp that indicates when the existing PDU Session's access type changes to WLAN or when the new PDU Session for WLAN is established. (NOTE 6) | | WlanPerformance |
| endWlan | | DateTime | | C | 0..1 | | The time stamp that indicates when the existing WLAN based PDU Session's access type is not WLAN any more or when the PDU Session for WLAN is released. (NOTE 6) | | WlanPerformance |
| pduSessInfos | | array(PduSessionInformation) | | C | 1..N | | The PDU session related information. It shall be included for event "UP\_STATUS\_INFO". | | UeCommunication |
| upfInfo | | UpfInformation | | C | 0..1 | | The information of the UPF serving the UE.  Shall be included for event "UPF\_INFO". | | ServiceExperience  DnPerformance |
| pdmf | | boolean | | O | 0..1 | | Packet delay measurement failure indicator. When set to true, it indicates that a packet delay failure has occurred, i.e. no measurement result is available during the reporting period.  Default value is false if omitted.  May be included for event "QOS\_MON". | | PacketDelayFailureReport |
| satBackhaulCat | | SatelliteBackhaulCategory | | C | 0..1 | | The satellite backhaul category or non-satellite backhaul used for the PDU session shall be included for event "SATB\_CH". | | EnSatBackhaulCategoryChg |
| supportedFeatures | | SupportedFeatures | | C | 0..1 | | List of negotiated features supported by the SMF and NF service consumer as described in clause 5.8.  This parameter shall be supplied by the SMF when the SMF detects that at least one feature related to an implicit subscription is supported by both the SMF and the NF service consumer. | |  |
| targetAfId | | string | | O | 0..1 | | Identifier of the Application Function responsible for the target DNAI. May be included for event "UP\_PATH\_CH" if the target DNAI is not known to the source AF. | | EasRelocationEnh |
| 5qi | | 5Qi | | O | 0..1 | | The 5G QoS Identifier. May be included for event "QFI\_ALLOC". | | EnQfiAllocation |
| NOTE 1: If the DNAI is not changed while the N6 traffic routing information is changed, the "sourceDnai" attribute and "targetDnai" attribute shall not be provided.  NOTE 2: The change from the UP path status where no DNAI applies to a status where a DNAI applies indicates the activation of the related AF request and therefore only the target DNAI and N6 traffic routing information is provided in the event notification; the change from the UP path status where a DNAI applies to a status where no DNAI applies indicates the de-activation of the related AF request and therefore only the source DNAI and N6 traffic routing information is provided in the event notification.  NOTE 3: If provided, either ipv6Prefixes or ipv6Addrs shall be present.  NOTE 4: Only one of the appId, ethfDescs, ethFlowDescs, flowDescs or fDescs attributes shall be provided.  NOTE 5: In this release of the specification one element may be included in the array as specified in clause 4.2.2.2.  NOTE 6: If notified event is "WLAN\_INFO", then one of the "ssId" or "bssId" attribute and one of the "startWLAN" or "endWLAN" attribute shall be present.  NOTE 7: The SNPN Identifier consists of the PLMN Identifier and the NID.  NOTE 8: When the subscribed event is "QFI\_ALLOC" and the PduSessionInfo feature is supported, if the "pduSessionType" attribute and/or "sscMode" attribute is included, the associated "appId" attribute shall be provided.  NOTE 9: If the "WlanPerformanceExt\_AIML" feature is supported, the "supi" attribute may also be included for a single UE when the subscription applies to the "WLAN\_INFO" event.  NOTE 10: If multiple Access Types are used for the PDU session and the "MultipleAccessTypes" feature is supported, the SMF shall include one Access Type in the "accType" attribute and the remaining Access Types in the "addAccTypes" attribute.  NOTE 11: When the "ulDataRate" and/or "dlDataRate" attributes are present, the congestion related attributes and the packet delay related attributes shall not be present. | | | | | | | | | |

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

#### 5.6.2.10 Type TransactionInfo

Table 5.6.2.10-1: Definition of type TransactionInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| transaction | Uinteger | M | 1 | Number of transactions. |  |
| snssai | Snssai | O | 0..1 | Identifier of the network slice. |  |
| appIds | array(ApplicationId) | O | 1..N | Application Identifiers. |  |
| transMetrics | array(TransactionMetric) | O | 1..N | Indicates Session Management Transaction metrics. |  |

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