**3GPP TSG CT WG3 Meeting #133 *C3-241228***

**Athens, Greece, 26 February - 1 March, 2024 *(Revision of C3-241xxx)***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.522** | **CR** | **1172** | **rev** | **-** | **Current version:** | **18.4.0** |  |
|  | | | | | | | | |
| *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:*** | Fix issues of condition and feature control | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Nokia?, Nokia Shanghai Bell? | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NBI18 | | | | |  | ***Date:*** | | | 2024-02-13 |
|  |  | | | |  | |  | | |  |
| ***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 can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The following issues were found in the current specification:   1. Some attributes by using "boolean" data type in current specification, the description is unclear, e.g. the default value when omitted is missing. 2. The "tfcCorrInd" attribute in clause 5.4.3.3.3 is missing feauture control. 3. The clause number of the AnalyticsEventNotif data type in clause 5.6.3.1 is incorrect. 4. In clause 5.14.2.1.1, the Port data type is missing feature control. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Fix the above issues. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incorrect specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.3.3.2, 5.4.3.3.3, 5.6.3.1, 5.6.3.3.2, 5.6.3.3.5, 5.6.3.3.7, 5.11.2.3.2, 5.15.4.3.2, 5.18.3.3.2, 5.18.3.3.3, 5.25.5.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*

5.4.3.3.2 Type: TrafficInfluSub

This type represents a traffic influence subscription. The same structure is used in the subscription request and subscription response.

**Table 5.4.3.3.2-1: Definition of type TrafficInfluSub**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability**  **(NOTE 1)** |
| afServiceId | string | O | 0..1 | Identifies a service on behalf of which the AF is issuing the request. |  |
| afAppId | string | O | 0..1 | Identifies an application.  (NOTE 3) |  |
| afTransId | string | O | 0..1 | Identifies an NEF Northbound interface transaction, generated by the AF. |  |
| appReloInd | boolean | O | 0..1 | Identifies whether an application can be relocated once a location of the application has been selected. Set to "true" if it can be relocated; otherwise set to "false". Default value is "false" if omitted. |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. |  |
| snssai | Snssai | O | 0..1 | Identifies an S-NSSAI. |  |
| externalGroupId | ExternalGroupId | O | 0..1 | Identifies a group of users.  (NOTE 2) (NOTE 6) |  |
| externalGroupIds | array(ExternalGroupId) | O | 2..N | List of external group identifiers associated with the subscriber.  (NOTE 2) (NOTE 6) (NOTE 7) | FinerGranUEs |
| extSubscCats | array(string) | O | 1..N | List of external categories associated with the subscriber.  (NOTE 8) | FinerGranUEs |
| anyUeInd | boolean | O | 0..1 | Identifies whether the AF request applies to any UE (i.e. all UEs).  - Set to "true": the AF request is applicable to any UE.  - Set to "false": the AF request is not applicable to any UE.  - Default value is "false" if omitted.  (NOTE 2) |  |
| subscribedEvents | array(SubscribedEvent) | O | 1..N | Identifies the requirement to be notified of the event(s). |  |
| gpsi | Gpsi | O | 0..1 | Identifies a user.  (NOTE 2) |  |
| ipv4Addr | Ipv4Addr | O | 0..1 | Identifies the IPv4 address.  (NOTE 2) |  |
| ipDomain | string | O | 0..1 | The IPv4 address domain identifier.  The attribute may only be provided if the ipv4Addr attribute is present. |  |
| ipv6Addr | Ipv6Addr | O | 0..1 | Identifies the IPv6 address.  (NOTE 2) |  |
| macAddr | MacAddr48 | O | 0..1 | Identifies the MAC address. (NOTE 2) |  |
| dnaiChgType | DnaiChangeType | O | 0..1 | Identifies a type of notification regarding UP path management event. |  |
| notificationDestination | Link | C | 0..1 | Contains the Callback URL to receive the notification from the NEF.  It shall be present if the "subscribedEvents" is present. |  |
| requestTestNotification | boolean | O | 0..1 | Indicates whether the AF requests the NEF to send a test notification.  - Set to "true" by the AF to request the NEF to send a test notification as defined in clause 5.2.5.3 of 3GPP TS 29.122 [4].  - Set to "false" by the AF to not to request the NEF to send a test notification.  - Default value is "false" if omitted. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol. | Notification\_websocket |
| self | Link | C | 0..1 | Link to the created resource.  This parameter shall be supplied by the NEF in HTTP responses that include an object of TrafficInfluSub type |  |
| trafficFilters | array(FlowInfo) | O | 1..N | Identifies IP packet filters.  (NOTE 3) |  |
| ethTrafficFilters | array(EthFlowDescription) | O | 1..N | Identifies Ethernet packet filters.  (NOTE 3) |  |
| trafficRoutes | array(RouteToLocation) | O | 1..N | Identifies the N6 traffic routing requirement. (NOTE 9) |  |
| sfcIdDl | string | O | 0..1 | Reference to a pre-configured steering of user traffic to service function chain in downlink.  (NOTE 5) | SFC |
| sfcIdUl | string | O | 0..1 | Reference to a pre-configured steering of user traffic to service function chain in uplink.  (NOTE 5) | SFC |
| metadata | Metadata | O | 0..1 | Contains opaque information for the service functions in the N6-LAN that is provided by AF and transparently sent to UPF. May only be provided when "sfcIdDl" and/or "sfcIdUl" are provided. | SFC |
| tfcCorrInd | boolean | O | 0..1 | Indication of traffic correlation.  May only be included when "externalGroupId" attribute was included within the TrafficInfluSub data type previously.  It is used to indicate that for the group of UEs, the targeted PDU sessions should be correlated by a common DNAI.  Set to "true" if it should be correlated; otherwise set to "false". Default value is "false" if omitted. (NOTE 4) (NOTE 10) |  |
| tfcCorreInfo | TrafficCorrelationInfo | O | 0..1 | Contains the information for traffic correlation. The "notifUri" and "notifCorrId" attributes are not applicable for "tfcCorreInfo" attribute. (NOTE 10) | CommonEASDNAI |
| tempValidities | array(TemporalValidity) | O | 1..N | Indicates the time interval(s) during which the AF request is to be applied. |  |
| validGeoZoneIds | array(string) | O | 1..N | Identifies a geographic zone that the AF request applies only to the traffic of UE(s) located in this specific zone.  This attribute is deprecated; the attribute "geoAreas" should be used instead. |  |
| geoAreas | array(GeographicalArea) | O | 1..N | Identifies geographical areas within which the AF request applies.  This attribute deprecates validGeoZoneIds attribute. |  |
| afAckInd | boolean | O | 0..1 | Identifies whether the AF acknowledgement of UP path event notification is expected.  - "true" indicates that the AF acknowledgement of UP path event is expected.  - "false" indicates that the AF acknowledgement of UP path event notification is not expected.  - Default value is "false" if omitted. | URLLC |
| addrPreserInd | boolean | O | 0..1 | Indicates whether UE IP address shall be preserved.  - "true" indicates that the UE IP address shall be preserved.  - "false" indicates that the UE IP address shall not preserved.  - Defalult value is "false" if omitted. | URLLC |
| simConnInd | boolean | O | 0..1 | Indication of whether simultaneous connectivity shall be temporarily maintained for the source and target PSA.  - "true" indicates that the temporary simultaneous connectivity shall be kept.  - "false" indicates that the temporary simultaneous connectivity shall not be kept.  - Default value is "false" if omitted. | SimultConnectivity |
| simConnTerm | DurationSec | O | 0..1 | Indication of the minimum time interval to be considered for inactivity of the traffic routed via the source PSA during the edge re-location procedure.  It may be included when the "simConnInd" attribute is set to true. | SimultConnectivity |
| maxAllowedUpLat | Uinteger | O | 0..1 | Indicates the target user plane latency in units of milliseconds. The SMF may use this value to decide whether edge relocation is needed to ensure that the user plane latency does not exceed the value. | AF\_lantency |
| easIpReplaceInfos | array(EasIpReplacementInfo) | O | 1..N | Contains EAS IP replacement information. | EASIPreplacement |
| easRedisInd | boolean | O | 0..1 | Indicates whether the EAS rediscovery is required for the application.  - "true" indicates that the EAS rediscovery is required for the application.  - "false" indicates that the EAS rediscovery is not required for the application.  - Defalult value is "false" if omitted.  The indication shall be invalid after it was applied unless it is provided again. | EASDiscovery |
| eventReq | ReportingInformation | O | 0..1 | Indicates the event reporting requirements.  This attribute may be provided if the "EDGEAPP" feature is supported and the "subscribedEvents" attribute is present. | EDGEAPP |
| eventReports | array(EventNotification) | C | 1..N | Represents user plane path management event report(s).  This attribute shall be present in an HTTP POST response if the immediate reporting indication in the "immRep" attribute within the "eventReq" attribute is set to true and the "subscribedEvents" was present in the corresponding HTTP POST request and the report(s) are available.  This attribute may also be present in an HTTP PUT or PATCH response when the report(s) are available. | EDGEAPP |
| candDnaiInd | boolean | O | 0..1 | Indication of reporting candidate DNAI(s). If it is included and set to "true", the candidate DNAI(s) for the PDU session need to be reported. Otherwise, the default value is "false" if omitted. | CommonEASDNAI |
| plmnId | PlmnId | O | 0..1 | Identifies the H-PLMN of the UE. | HR-SBO |
| portNumber | Port | O | 0..1 | Indicates the UDP or TCP port number associated with the UE IP address as provided in the "ipv4Addr" or "ipv6Addr" property. | HR-SBO |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the list of Supported features used as described in clause 5.4.4.  This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| NOTE 1: Properties marked with a feature as defined in clause 5.4.4 are applicable as described in clause 5.2.7 of 3GPP TS 29.122 [4]. If no feature is indicated, the related property applies for all the features.  NOTE 2: One of individual UE identifier (i.e. "gpsi", "macAddr", "ipv4Addr" or "ipv6Addr"), External Group Identifier (i.e. "externalGroupId" or "externalGroupIds" (is included when FinerGranUEs feature is supported)) or any UE indication "anyUeInd" shall be included.  NOTE 3: One of "afAppId", "trafficFilters" or "ethTrafficFilters" shall be included.  NOTE 4: The indication of traffic correlation shall be provided only when the AF requires that all the PDU sessions related to the 5G VN group member UEs should be correlated by a common DNAI in the user plane for the traffic as described in 3GPP TS 23.501 [3], clause 5.6.7.1 and clause 5.29.  NOTE 5: When the SFC feature is supported, for the purpose of influencing service function chaining, at least one attribute shall be present.  NOTE 6: The attributes "externalGroupId" and "externalGroupIds" are mutually exclusive attributes.  NOTE 7: The AF request applies to the UE(s) that belong to all the External Group Identifiers indicated by the attribute "externalGroupIds", when included.  NOTE 8: The AF request applies to the UE(s) that belong to all the External Subscriber Categories indicated by the attribute "extSubscCats", which is included only if either "externalGroupIds" attribute is included or "externalGroupId" is included or "anyUeInd" attribute is included.  NOTE 9: When only one DNAI is included, and the Indication of traffic correlation within the "tfcCorrInd" attribute is available or the "correType" attribute of the "tfcCorreInfo" includes the value "COMMON\_DNAI", the DNAI is used as common DNAI for UEs identified by AF request.  NOTE 10: The "tfcCorrInd" attribute and the "tfcCorreInfo" attribute are mutually exclusive. | | | | | |

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

5.4.3.3.3 Type: TrafficInfluSubPatch

This type represents a subscription of traffic influence parameters provided by the AF to the NEF. The structure is used for HTTP PATCH request.

**Table 5.4.3.3.3-1: Definition of type TrafficInfluSubPatch**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| appReloInd | boolean | O | 0..1 | Identifies whether an application should be relocated once a location of the application has been selected.  - "true" indicates that an application shall be relocated once a location of the application has been selected.  - "false" indicates that an application shall not be relocated once a location of the application has been selected.  - Defalult value is "false" if omitted and not previously provided.  (NOTE 1) |  |
| trafficFilters | array(FlowInfo) | O | 1..N | Identifies IP packet filters. |  |
| ethTrafficFilters | array(EthFlowDescription) | O | 1..N | Identifies Ethernet packet filters. |  |
| trafficRoutes | array(RouteToLocation) | O | 1..N | Identifies the N6 traffic routing requirement.  (NOTE 1) |  |
| sfcIdDl | string | O | 0..1 | Reference to a pre-configured steering of user traffic to service function chain in downlink. | SFC |
| sfcIdUl | string | O | 0..1 | Reference to a pre-configured steering of user traffic to service function chain in uplink. | SFC |
| metadata | Metadata | O | 0..1 | Contains opaque information for the service functions in the N6-LAN that is provided by AF and transparently sent to UPF. | SFC |
| tfcCorrInd | boolean | O | 0..1 | Indication of traffic correlation.  May only be included when "externalGroupId" attribute was included within the TrafficInfluSub data type previously.  - "true" indicates that for the group of UEs, the targeted PDU sessions should be correlated by a common DNAI.  - "false" indicates that for the group of UEs, the targeted PDU sessions shall not be correlated by a common DNAI.  - Defalult value is "false" if omitted and not previously provided.  (NOTE 2) | CommonEASDNAI |
| tfcCorreInfo | TrafficCorrelationInfo | O | 0..1 | Contains the information for traffic correlation. The "notifUri" and "notifCorrId" attributes are not applicable for "tfcCorreInfo" attribute. (NOTE 2) | CommonEASDNAI |
| tempValidities | array(TemporalValidity) | O | 1..N | Indicates the time interval(s) during which the AF request is to be applied.  (NOTE 1) |  |
| validGeoZoneIds | array(string) | O | 1..N | Identifies a geographic zone that the AF request applies only to the traffic of UE(s) located in this specific zone.  (NOTE 1)  This attribute is deprecated; the attribute "geoAreas" should be used instead. |  |
| geoAreas | array(GeographicalArea) | O | 1..N | Identifies geographical areas within which the AF request applies. (NOTE 1)  This attribute deprecates validGeoZoneIds attribute. |  |
| afAckInd | boolean | O | 0..1 | Identifies whether the AF acknowledgement of UP path event notification is expected.  - "true" indicates that the AF acknowledgement of UP path event notification is expected.  - "false" indicates that the AF acknowledgement of UP path event notification is not expected.  - Defalult value is "false" if omitted and not previously provided.  (NOTE 3) | URLLC |
| addrPreserInd | boolean | O | 0..1 | Indicates whether UE IP address shall be preserved.  - "true" indicates that the UE IP address shall be preserved.  - "false" indicates that the UE IP address shall not be preserved.  - Defalult value is "false" if omitted and not previously provided.  (NOTE 3) | URLLC |
| simConnInd | boolean | O | 0..1 | Indication of whether simultaneous connectivity shall be temporarily maintained for the source and target PSA.  - "true" indicates that temporary simultaneous connectivity shall be kept.  - "false" indicates that the temporary simultaneous connectivity shall not be kept.  - Defalult value is "false" if omitted and not previously provided. | SimultConnectivity |
| simConnTerm | DurationSec | O | 0..1 | Indication of the minimum time interval to be considered for inactivity of the traffic routed via the source PSA during the edge re-location procedure. | SimultConnectivity |
| maxAllowedUpLat | UintegerRm | O | 0..1 | Indicates the target user plane latency in units of milliseconds. The SMF may use this value to decide whether edge relocation is needed to ensure that the user plane latency does not exceed the value. | AF\_latency |
| easIpReplaceInfos | array(EasIpReplacementInfo) | O | 1..N | Contains EAS IP replacement information. | EASIPreplacement |
| easRedisInd | boolean | O | 0..1 | Indicates whether the EAS rediscovery is required for the application.  - "true" indicates that the EAS rediscovery is required for the application.  - "false" indicates that the EAS rediscovery is not required for the application.  - Defalult value is "false" if omitted.  The indication shall be invalid after it was applied unless it is provided again. | EASDiscovery |
| notificationDestination | Link | O | 0..1 | Contains the Callback URL to receive the notification from the NEF. |  |
| eventReq | ReportingInformation | O | 0..1 | Indicates the event reporting requirements.  This attribute may be provided if the "EDGEAPP" feature is supported. | EDGEAPP |
| NOTE 1: The value of the property shall be set to NULL for removal.  NOTE 2: The "tfcCorrInd" attribute and the "tfcCorreInfo" attribute are mutually exclusive.  NOTE 3: The value of the property shall be set to NULL for removal, and in that case, the default value "false" applies. | | | | | |

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

5.6.3.1 General

This clause specifies the application data model supported by the AnalyticsExposure API.

Table 5.6.3.1-1 specifies the data types defined for the AnalyticsExposure API.

**Table 5.6.3.1-1: AnalyticsExposure API specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Clause defined** | **Description** | **Applicability** |
| AbnormalExposure | 5.6.3.3.15 | Represents a user's abnormal behavior information. | Abnormal\_Behavior |
| AnalyticsData | 5.6.3.3.14 | Represents analytics data. |  |
| AnalyticsEvent | 5.6.3.4.3 | Event that is subscribed. |  |
| AnalyticsEventFilter | 5.6.3.3.13 | Represents analytics event filter information. |  |
| AnalyticsEventFilterSubsc | 5.6.3.3.6 | Represents an analytics event filter. |  |
| AnalyticsEventNotif | 5.6.3.3.4 | Represents an analytics event to be reported. |  |
| AnalyticsEventNotification | 5.6.3.3.3 | Represents an analytics event(s) notification. |  |
| AnalyticsEventSubsc | 5.6.3.3.5 | Represents a subscribed analytics event. |  |
| AnalyticsExposureSubsc | 5.6.3.3.2 | Represents an analytics exposure subscription. |  |
| AnalyticsFailureCode | 5.6.3.4.4 | Identifies the failure reason. |  |
| AnalyticsFailureEventInfo | 5.6.3.3.20 | Represents an event for which the subscription request was not successful and including the associated failure reason. |  |
| AnalyticsRequest | 5.6.3.3.12 | Represents the parameters to request to retrieve analytics information. |  |
| CongestInfo | 5.6.3.3.16 | Represents a UE's user data congestion information. | Congestion |
| CongestionAnalytics | 5.6.3.3.17 | Represents data congestion analytics for transfer over the user plane, control plane or both. |  |
| NetworkPerfExposure | 5.6.3.3.19 | Represents network performance information. | Network\_Performance |
| QosSustainabilityExposure | 5.6.3.3.18 | Represents a QoS sustainability information. | QoS\_Sustainability |
| TargetUeId | 5.6.3.3.7 | Represents the target UE(s) information. |  |
| UeLocationInfo | 5.6.3.3.10 | Represents a UE location information. |  |
| UeMobilityExposure | 5.6.3.3.9 | Represents a UE mobility information. | Ue\_Mobility |
| WlanPerformInfo | 5.6.3.3.21 | Prpresents WLAN performance information | WlanPerformance\_AIML |

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

5.6.3.3.2 Type: AnalyticsExposureSubsc

This type represents an analytics exposure subscription. The same structure is used in the subscription request and subscription response.

**Table 5.6.3.3.2-1: Definition of type AnalyticsExposureSubsc**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability**  **(NOTE 1)** |
| analyEventsSubs | array(AnalyticsEventSubsc) | M | 1..N | Subscribed analytics events. |  |
| analyRepInfo | ReportingInformation | O | 0..1 | Reporting requirement information of the subscription.  If omitted, the default values within the ReportingInformation data type apply. (NOTE 2) |  |
| notifUri | Uri | M | 1 | Notification URI for analytics event reporting. |  |
| notifId | string | M | 1 | Notification Correlation ID assigned by the NF service consumer. |  |
| eventNotifis | array(AnalyticsEventNotif) | C | 1..N | Represents the Events to be reported.  Shall only be present if the immediate reporting indication in the "immRep" attribute within the "analyRepInfo" attribute sets to true during the event subscription, and the reports are available. |  |
| failEventReports | array(AnalyticsFailureEventInfo) | O | 1..N | Supplied by the NWDAF.  When available, shall contain the event(s) for which the subscription is not successful, including the failure reason(s). |  |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the list of Supported features used as described in clause 5.6.4.  This attribute shall be provided in the POST request and in the response of successful resource creation, or in the HTTP GET response if the "supp-feat" attribute query parameter is included in the HTTP GET request. |  |
| self | Link | C | 0..1 | Identifies the Individual Analytics Exposure Subscription resource.  Shall be present in the HTTP GET response when reading all the subscriptions for an AF. |  |
| requestTestNotification | boolean | O | 0..1 | Set to true by the AF to request the NEF to send a test notification as defined in clause 5.2.5.3 of 3GPP TS 29.122 [4]. The default value is false if omitted. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol. | Notification\_websocket |
| NOTE 1: Properties marked with a feature as defined in clause 5.6.4 are applicable as described in clause 5.2.7 of 3GPP TS 29.122 [4]. If no feature is indicated, the related property applies for all the features.  NOTE 2: The attributes "partitionCriteria" and "notifFlag" of the data type ReportingInformation are applicable only if the "EneNA" feature is supported. | | | | | |

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

5.6.3.3.5 Type: AnalyticsEventSubsc

**Table 5.6.3.3.5-1: Definition of type AnalyticsEventSubsc**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| analyEvent | AnalyticsEvent | M | 1 | Requested analytics event. |  |
| analyEventFilter | AnalyticsEventFilterSubsc | O | 0..1 | Represents analytics event filter. |  |
| tgtUe | TargetUeId | O | 0..1 | Identifies target UE information. |  |
|  | | | | | |

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

5.6.3.3.7 Type TargetUeId

**Table 5.6.3.3.7-1: Definition of type TargetUeId**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| anyUeInd | boolean | C | 0..1 | Identifies whether the AF request applies to any UE.  - Set to "true": the AF request is applicable to any UE.  - Set to "false": the AF request is not applicable to any UE.  - Default value is "false" if omitted. | Abnormal\_Behavior  Congestion  Network\_Performance  QoS\_Sustainability  Dispersion  DnPerformance  ServiceExperience  WlanPerformance\_AIML |
| gpsi | Gpsi | C | 0..1 | Identifies a GPSI for an UE. | Abnormal\_Behavior  Congestion  Ue\_Mobility  Ue\_Communication  Network\_Performance  Dispersion  DnPerformance  ServiceExperience  WlanPerformance\_AIML  RelativeProximity |
| exterGroupId | ExternalGroupId | C | 0..1 | Represents an external group identifier and identifies a group of UEs. | Abnormal\_BehaviorUe\_Mobility  Ue\_Communication  Network\_Performance  Dispersion  DnPerformance  ServiceExperience  RelativeProximity |
| NOTE: For an applicable feature, only one attribute identifying the target UE shall be provided. | | | | | |

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

5.11.2.3.2 Type: ServiceParameterData

**Table 5.11.2.3.2-1: Definition of type ServiceParameterData**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| self | Link | C | 0..1 | Identifies the individual service parameter subscription resource URI.  Shall be present by the NEF in HTTP responses that include an object of ServiceParameterData type. |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN. (NOTE 2) (NOTE 3) |  |
| snssai | Snssai | O | 0..1 | Identifies an S-NSSAI. (NOTE 2) (NOTE 3) |  |
| afServiceId | string | O | 0..1 | Identifies a service on behalf of which the AF is issuing the request. (NOTE 2) (NOTE 3) |  |
| appId | string | O | 0..1 | Identifies an application identifier. (NOTE 2) |  |
| gpsi | Gpsi | O | 0..1 | Identifies GPSI. (NOTE 1) |  |
| ueIpv4 | Ipv4Addr | O | 0..1 | The IPv4 address of the served UE. (NOTE 1) |  |
| ueIpv6 | Ipv6Addr | O | 0..1 | The IPv6 address of the served UE. (NOTE 1) |  |
| ueMac | MacAddr48 | O | 0..1 | The MAC address of the served UE. (NOTE 1) |  |
| externalGroupId | ExternalGroupId | O | 0..1 | Represents a group of users. (NOTE 1) |  |
| anyUeInd | boolean | O | 0..1 | Identifies whether the service parameters apply to any non-roaming UE.  - Set to "true": the service parameters are applicable to any non-roaming UE.  - Set to "false": the service parameters are not applicable to any non-roaming UE.  - Default value is "false" if omitted.  (NOTE 1) (NOTE 3) |  |
| roamUeNetDescs | array(NetworkDescription) | O | 1..N | Each element identifies one (e.g., combination of MCC and MNC) or more (e.g. a MCC only) PLMN ID(s). It indicates the PLMN(s) of inbound roamers to which the provided AF guidance on VPLMN-specific URSP rules apply. (NOTE 1) | VPLMNSpecificURSP |
| subNotifEvents | array(Event) | C | 1..N | Identifies the AF subscribed event(s) notifications related to AF provisioned service parameters. (NOTE 4) | AfNotifications |
| notificationDestination | Uri | C | 0..1 | Contains the callback URI to receive the notifications from the NEF. Shall be present If "subNotifEvents" attribute is included. | AfNotifications |
| requestTestNotification | boolean | O | 0..1 | Set to true by the AF to request the NEF to send a test notification as defined in clause 5.2.5.3 of 3GPP TS 29.122 [4]. The default value is false if omitted. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol. | Notification\_websocket |
| paramOverPc5 | ParameterOverPc5 | O | 0..1 | Contains the V2X service parameters used over PC5 |  |
| paramOverUu | ParameterOverUu | O | 0..1 | Contains the V2Xservice parameters used over Uu |  |
| paramForProSeDd | ParamForProSeDd | O | 0..1 | Contains the service parameters for 5G ProSe direct discovery. | ProSe |
| paramForProSeDc | ParamForProSeDc | O | 0..1 | Contains the service parameters for 5G ProSe direct communications. | ProSe |
| paramForProSeU2NRelUe | ParamForProSeU2NRelUe | O | 0..1 | Contains the service parameters for 5G ProSe UE-to-network relay UE. | ProSe |
| paramForProSeRemUe | ParamForProSeRemUe | O | 0..1 | Contains the service parameters for 5G ProSe remote UE. | ProSe |
| paramForProSeU2URelUe | ParamForProSeU2URelUe | O | 0..1 | Contains the service parameters for 5G ProSe UE-to-UE relay UE. | ProSe\_Ph2 |
| paramForProSeEndUe | ParamForProSeEndUe | O | 0..1 | Contains the service parameters for 5G ProSe end UE. | ProSe\_Ph2 |
| paramForRangingSlPos | ParamForRangingSlPos | O | 0..1 | Contains the service parameters for ranging and sidelink positioning. | Ranging\_SL |
| urspGuidance | array(UrspRuleRequest) | O | 1..N | Contains the service parameter used to guide the URSP and/or, when the VPLMNSpecificURSP feature is supported, to guide the VPLMN-specific URSP. | AfGuideURSP |
| a2xParamsPc5 | A2xParamsPc5 | O | 0..1 | Contains the A2X service parameters used over PC5. | A2X |
| tnaps | array(TnapId) | O | 1..N | Contains the TNAP ID(s) collocated with the 5G-RG(s) of a specific user. | AfGuideTNAPs |
| mtcProviderId | MtcProviderInformation | O | 0..1 | Indicates MTC provider information. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the list of Supported features used as described in clause 5.11.3.  This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| NOTE 1: One of individual UE identifier (i.e. "gpsi", "ueIpv4", "ueIpv6" or "ueMac" attribute), External Group Identifier (i.e. "externalGroupId" attribute) or any UE indication (i.e. "anyUeInd" attribute) , and when the feature "VPLMNSpecificURSP" is supported, or any inbound roaming UE from the indicated PLMN(s) (i.e., "roamUeNetDescs" attribute) shall be included. For V2X, Prose (when the "ProSe" and/or "ProSe\_Ph2" feature is supported), A2X (when the "A2X" feature is supported) and URSP service parameter provisioning (see clause 4.4.20), only "anyUeInd", "gpsi" and "externalGroupId" attributes are applicable. When the "VPLMNSpecificURSP" feature is supported, the "roamUeNetDescs" attribute only applies to URSP service parameter provisioning and shall be included when the "urspGuidance" attribute contains VPLMN(s) description. When the "AfGuideTNAPs" feature is supported, when TNAP ID(s) is provisioned within the "tnaps" attribute, only "gpsi" shall be provided.  NOTE 2: Either the "afServiceId" attribute, "appId" attribute or the combination of "snssai" and "dnn" attributes shall be provided. When the feature "AfGuideURSP" is supported, only the "afServiceId" attribute shall be provided for providing guidance for URSP determination. When the feature "AfGuideTNAPs" is supported, when TNAP ID(s) is provisioned within the "tnaps" attribute, only the "afServiceId" attribute shall be provided.  NOTE 3: When "anyUeInd" attribute is present, "appId" attribute, "afServiceId" attribute or the combination of "snssai" attribute and "dnn" attribute shall be provided. When the feature "AfGuideURSP" is supported, only the "afServiceId" attribute shall be provided for providing guidance for URSP determination.  NOTE 4: The attribute may be present when the individual UE identifier (i.e. "gpsi", "ueIpv4", "ueIpv6" or "ueMac" attribute) is present. | | | | | |

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

5.15.4.3.2 Type: TimeSyncExposureSubsc

**Table 5.15.4.3.2-1: Definition of type TimeSyncExposureSubsc**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| exterGroupId | ExternalGroupId | C | 0..1 | Identifies a group of UE(s) for which the time synchronization capabilities is requested. (NOTE 1) |  |
| gpsis | array(Gpsi) | C | 1..N | Contains a list of UE for which the time synchronization capabilities is requested. (NOTE 1) |  |
| anyUeInd | boolean | C | 0..1 | Identifies whether the AF request applies to any UE (i.e. all UEs).  - Set to "true": the AF request is applicable to any UE.  - Set to "false": the AF request is not applicable to any UE.  - Default value is "false" if omitted.  (NOTE 1) (NOTE 2) |  |
| notifMethod | NotificationMethod | O | 0..1 | If "notifMethod" is not supplied, the default value "ON\_EVENT\_DETECTION" applies. |  |
| dnn | Dnn | C | 0..1 | Identifies a DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. (NOTE 2) |  |
| snssai | Snssai | C | 0..1 | Identifies an S-NSSAI. (NOTE 2) |  |
| afServiceId | string | O | 0..1 | Identifies a service on behalf of which the AF is issuing the request. |  |
| subscribedEvents | array(SubscribedEvent) | O | 1..N | Identifies the requirement to be notified of the event(s). |  |
| eventFilters | array(EventFilter) | O | 1..N | Contains the filter conditions to match for notifying the event(s) of time synchronization capabilities for a list of UE(s). |  |
| subsNotifUri | Uri | M | 1 | Notification URI for time sensitive capability reporting. |  |
| subsNotifId | string | M | 1 | Notification Correlation ID assigned by the NF service consumer. |  |
| maxReportNbr | Uinteger | O | 0..1 | If omitted, there is no limit. |  |
| expiry | DateTime | C | 0..1 | This attribute indicates the expiry time of the subscription, after which the NEF 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. |  |
| repPeriod | DurationSec | C | 0..1 | Is supplied for notification Method "periodic". |  |
| requestTestNotification | boolean | O | 0..1 | Indicates whether the AF requests the NEF to send a test notification.  - Set to "true" by the AF to request the NEF to send a test notification as defined in clause 5.2.5.3 of 3GPP TS 29.122 [4].  - Set to "false" by the AF not to request the NEF to send a test notification.  - Default value is "false" if omitted. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol. | Notification\_websocket |
| suppFeat | SupportedFeatures | C | 0..1 | Represents the features supported by the NF service consumer. This parameter shall be supplied by the NF service consumer in the POST request and the response that requested the creation of an Individual Time Synchronization Subscription resource. |  |
| NOTE 1: Only one of the properties "gpsis", "anyUeInd" or "externalGroupId" shall be included.  NOTE 2 The properties of "anyUeInd" may be included only when the properties of "dnn" and "snssai" are included. | | | | | |

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

5.18.3.3.2 Type: AmInfluSub

This type represents an AM influence subscription. The same structure is used in the subscription request and subscription response.

**Table 5.18.3.3.2-1: Definition of type AMInfluSub**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability**  **(NOTE 1)** |
| afTransId | string | M | 1 | Identifies an NEF Northbound interface transaction request, generated by the AF. |  |
| gpsi | Gpsi | O | 0..1 | Identifies a user with GPSI.  (NOTE 3) |  |
| externalGroupId | ExternalGroupId | O | 0..1 | Identifies a group of users.  (NOTE 3) |  |
| anyUeInd | boolean | O | 0..1 | Identifies whether the AF request applies to any UE (i.e. all non-roaming UEs).  - Set to "true": the AF request is applicable to any UE (i.e. all non-roaming UEs).  - Set to "false": the AF request is not applicable to any UE (i.e. all non-roaming UEs).  - Default value is "false" if omitted.  (NOTE 2) (NOTE 3) |  |
| roamUePlmnIds | array(PlmnId) | O | 1..N | Indicates a list of PLMNs representing the home PLMN for the inbound roaming UEs in LBO roaming scenarios. (NOTE 3) (NOTE 5) | DCAMP\_Roaming\_LBO |
| dnnSnssaiInfos | array(DnnSnssaiInformation) | O | 1..N | Each of the element identifies a combination of (DNN, S-NSSAI). |  |
| afAppIds | array(string) | O | 1..N | Identifies application(s). |  |
| highThruInd | boolean | C | 0..1 | Indicates whether high throughput is desired for UE traffic. Set to "true" if high throughput is desired; otherwise set to "false". Default value is "false" if omitted. (NOTE 4) |  |
| geoAreas | array(GeographicalArea) | C | 1..N | Identifies geographical areas of the user where the request is applicable. (NOTE 4) |  |
| policyDuration | DurationSec | O | 0..1 | Indicates the time duration that the policy shall last. |  |
| self | Link | C | 0..1 | Link to the created resource.  This parameter shall be supplied by the NEF in HTTP responses that include an object of AmInfluSub type. |  |
| subscribedEvents | array(AmInfluEvent) | O | 1..N | Identifies the requirement to be notified of the event(s). |  |
| notificationDestination | Link | C | 0..1 | Contains the Callback URL to receive the notification from the NEF.  It shall be present if the "subscribedEvents" is present. |  |
| requestTestNotification | boolean | O | 0..1 | Set to true by the AF to request the NEF to send a test notification as defined in clause 5.2.5.3 of 3GPP TS 29.122 [4]. The default value is false if omitted. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | O | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol. | Notification\_websocket |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the list of Supported features used as described in clause 5.18.4.  This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| NOTE 1: Properties marked with a feature as defined in clause 5.18.4 are applicable as described in clause 5.2.7 of 3GPP TS 29.122 [4]. If no feature is indicated, the related property applies for all the features.  NOTE 2: If target to any non-roaming UE, then "anyUeInd" attribute together with "dnnSnssaiInfos" attribute or "afAppIds" attribute shall be included.  NOTE 3: One of individual UE identifier (i.e. "gpsi" attribute), External Group Identifier (i.e. "externalGroupId" attribute) or any UE indication (i.e. "anyUeInd" attribute) or any inbound roaming UEs PLMN ID (i.e. "roamUePlmnIds") shall be included.  NOTE 4: Any of the "highThruInd" attribute or "geoAreas" attribute shall be included.  NOTE 5: "roamUePlmnIds" attribute is applicable only in LBO roaming scenarios and if "afAppIds" attribute or "dnnSnssaiInfos" is provided. | | | | | |

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

5.18.3.3.3 Type: AmInfluSubPatch

This type represents AM influence subscription parameters provided by the AF to the NEF. The structure is used for HTTP PATCH request.

**Table 5.18.3.3.3-1: Definition of type AmInfluSubPatch**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| highThruInd | boolean | O | 0..1 | Indicates whether high throughput is desired for UE traffic. Set to "true" if high throughput is desired; Set to "false" if low throughput is desired; Otherwise, the default value is "false" if omitted and not previously provided. |  |
| geoAreas | array(GeographicalArea) | O | 1..N | Identifies geographical areas of the user where the UE is located.  (NOTE 1) |  |
| policyDuration | DurationSecRm | O | 0..1 | Indicates the time duration that the policy shall last.  (NOTE 1) |  |
| dnnSnssaiInfos | array(DnnSnssaiInformation) | O | 1..N | Each of the element identifies a combination of (DNN, S-NSSAI).  (NOTE 1) |  |
| subscribedEvents | array(AmInfluEvent) | O | 1..N | Identifies the requirement to be notified of the event(s).  (NOTE 1) |  |
| notificationDestination | LinkRm | O | 0..1 | Contains the Callback URL to receive the notification from the NEF.  (NOTE 1, NOTE 2) |  |
| afAppIds | array(string) | O | 1..N | Identifies application(s).  (NOTE 1) |  |
| NOTE 1: The value of the property shall be set to NULL for removal.  NOTE 2: The notificationDestination attribute set to NULL may be included only if the subscribedEvents attribute is included and set to NULL. | | | | | |

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

5.25.5.1 General

This clause specifies the application data model supported by the UEId API. Table 5.25.5.1-1 specifies the data types defined for the UEId API.

**Table 5.25.5.1-1: UEId service specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Clause defined** | **Description** | **Applicability** |
| UeIdReq | 5.25.5.2.2 | Represents the parameters to requestAF specific UE ID retrieval. |  |
| UeIdInfo | 5.25.5.2.3 | Represents AF specific UE ID information. |  |

Table 5.25.5.1-2 specifies data types re-used by the UEId API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the UEId API.

**Table 5.25.5.1-2: Re-used Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| Dnn | 3GPP TS 29.571 [8] | Identifies a DNN. |  |
| ExternalId | 3GPP TS 29.122 [4] | Represents an External Identifier. |  |
| IpAddr | 3GPP TS 29.571 [8] | Identifes an IP address. |  |
| MacAddr48 | 3GPP TS 29.571 [8] | Identifies a MAC address. |  |
| MtcProviderInformation | 3GPP TS 29.571 [8] | Indicates MTC provider information. |  |
| Port | 3GPP TS 29.122 [4] | Identifies a port, unsigned integer with valid values between 0 and 65535. | PortNumber |
| ProblemDetails | 3GPP TS 29.122 [4] | Represents error related information. |  |
| Snssai | 3GPP TS 29.571 [8] | Identifies the S-NSSAI. |  |
| SupportedFeatures | 3GPP TS 29.571 [8] | Represents the list of supported feature(s) and used to negotiate the applicability of the optional features. |  |
| Uinteger | 3GPP TS 29.571 [8] | Represents a unsigned integer. |  |

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