**3GPP TSG-CT WG3 Meeting #135C3-243044**

**Hyderabad, India; 27th – 31st May 2024**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.522** | **CR** | **1277** | **rev** | **-** | **Current version:** | **18.5.0** |  |
|  |
| *For* [***HE***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)***LP*** *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** |

|  |
| --- |
|  |
| ***Title:***  | Addition of an attribute to Nnef\_TrafficInfluence API to support multiple traffic routing requirements in a single request |
|  |  |
| ***Source to WG:*** | CEWiT, Tejas Networks, IIT-Madras and IIT-Kanpur |
| ***Source to TSG:*** | CT 3 |
|  |  |
| ***Work item code:*** | TEI18 |  | ***Date:*** | 2024-05-14 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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:*** | Currently, an AF can provide a single set of traffic filters and the corresponding traffic routing requirements to request the NEF to trigger traffic influence for the traffic identified by the traffic filters based on the provided traffic routing requirements.The proposal in this CR provides a way for the AF to indicate more than one set of traffic filters and the corresponding traffic routing requirements as a signalling optimization. This would otherwise require the AF to send multiple requests and manage as many resources. |
|  |  |
| ***Summary of change:*** | 1. Addition of new attribute "trafficDataSets" with new data type trafficDataSet in the existing clause 5.4.3.2 TrafficInfluSub data type and clause 5.4.3.3 TrafficInfluSubPatch data type.2. Addition of TrafficDataSet data type in table 5.4.3.1-1 API specific data types 3. Addition of new feature MultiTrafficInflu in the Features used by TrafficInfluence API. |
|  |  |
| ***Consequences if not approved:*** | The proposal is related to optimization and if not approved, optimization is not achieved with respect to number of AF requests. |
|  |  |
| ***Clauses affected:*** | 5.4.3.1, 5.4.3.3.2, 5.4.3.3.3, 5.4.3.3.x(new), 5.4.4, A.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces a backward compatible new feature to the OpenAPI description of the TrafficInfluence API. |
|  |  |
| ***This CR's revision history:*** |  |

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

#### 5.4.3.1 General

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

Table 5.4.3.1-1 specifies the data types defined for the TrafficInfluence API.

Table 5.4.3.1-1: TrafficInfluence API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| AfAckInfo | 5.4.3.3.6 | Represents acknowledgement information of a traffic influence event notification. |  |
| AfResultInfo | 5.4.3.3.5 | Identifies the result of application layer handling. |  |
| AfResultStatus | 5.4.3.4.4 | Represents the status of application handling result. |  |
| EventNotification | 5.4.3.3.4 | Represents a traffic influence event notification. |  |
| SubscribedEvent | 5.4.3.4.3 | Represents the type of UP path management events for which the AF requests to be notified. |  |
| TrafficInfluSub | 5.4.3.3.2 | Represents a traffic influence subscription. |  |
| TrafficInfluSubPatch | 5.4.3.3.3 | Represents parameters to request the modification of a traffic influence subscription resource. |  |
| TrafficDataSet | 5.4.3.3.7 | Represents a set of traffic filters and the corresponding N6 traffic routing requirements. | MultiTrafficInflu |

\* \* \* Next 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 shall be relocated.- Set to "false" if it shall not be relocated.- 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 |  |
| trafficDataSets | map(TrafficDataSet) | O | 2..N | Contains Multiple sets of traffic filters with the corresponding N6 traffic routing requirements.The key of the map shall be the value of the "setId" attribute of the TrafficDataSet data structure.(NOTE 3, NOTE 11) | MultiTrafficInflu |
| 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, NOTE 11) |  |
| 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", "ethTrafficFilters" or “trafficDataSets” 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 "corrType" 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.NOTE 11: These attributes are mutually exclusive. Either one of them may be present. |

\* \* \* 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.(NOTE 1) |  |
| trafficDataSets | map(TrafficDataSet) | O | 1..N | Contains one or several set(s) of traffic filters with the corresponding N6 traffic routing requirements.The key of the map shall be the value of the "setId" attribute of the TrafficDataSet data structure.(NOTE 4, NOTE 5) | MultiTrafficInflu |
| trafficFilters | array(FlowInfo) | O | 1..N | Identifies IP packet filters.(NOTE 5) |  |
| ethTrafficFilters | array(EthFlowDescription) | O | 1..N | Identifies Ethernet packet filters.(NOTE 5) |  |
| trafficRoutes | array(RouteToLocation) | O | 1..N | Identifies the N6 traffic routing requirement.(NOTE 1, NOTE 4) |  |
| 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 should not be correlated by a common DNAI.(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.(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.(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. | 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.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.NOTE 4: These attributes are mutually exclusiveNOTE 5: These attributes are mutually exclusive. |

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

##### 5.4.3.3.7 Type TrafficDataSet

Table 5.4.3.3.7-1: Definition of type TrafficDataSet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| setId | string | M | 1 | Identifies the traffic data component containing the ordinal number. |  |
| trafficFilters | array(FlowInfo) | C | 1..N | Contains IP packet filters.(NOTE) |  |
| ethTrafficFilters | array(EthFlowDescription) | C | 1..N | Contains Ethernet packet filters.(NOTE) |  |
| trafficRoutes | array(RouteToLocation) | M | 1..N | Contains the N6 traffic routing requirements. |  |
| NOTE: These attributes are mutually exclusive. Either one of them shall be present. |

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

### 5.4.4 Used Features

The table below defines the features applicable to the TrafficInfluence API. Those features are negotiated as described in clause 5.2.7 of 3GPP TS 29.122 [4].

Table 5.4.4-1: Features used by TrafficInfluence API

|  |  |  |
| --- | --- | --- |
| Feature number | Feature Name | Description |
| 1 | Notification\_websocket | The delivery of notifications over Websocket is supported as described in 3GPP TS 29.122 [4]. This feature requires that the Notification\_test\_event feature is also supported. |
| 2 | Notification\_test\_event | The testing of notification connection is supported as described in 3GPP TS 29.122 [4]. |
| 3 | URLLC | This feature indicates support of Ultra Reliable Low Latency Communication (URLLC) requirements (i.e. AF application relocation acknowledgement and UE address(es) preservation).  |
| 4 | MacAddressRange | Indicates the support of a set of MAC addresses with a specific range in the traffic filter. |
| 5 | AF\_latency | This feature indicates support for Edge relocation considering user plane latency. |
| 6 | EASDiscovery | This feature indicates the support of EAS (re)discovery. |
| 7 | EASIPreplacement | This feature indicates the support of provisioning of EAS IP replacement info.  |
| 8 | ExposureToEAS | This feature indicates support for the indication provided by the AF of direct event notification of QoS monitoring events from the UPF to the Local NEF or the AF in 5GC. |
| 9 | SimultConnectivity | This feature indicates support of temporary simultaneous connectivity over source and target PSA at edge relocation. |
| 10 | ULBuffering | This feature indicates support for Uplink buffering indication for edge relocation. |
| 11 | EDGEAPP | This feature controls the support of EDGE applications related functionalities (e.g. support the provisioning of event reporting requirements). |
| 12 | SFC | This feature indicates support for application function influence on service function chaining(s). |
| 13 | FinerGranUEs | This feature indicates support for handling of more granular set of UEs. |
| 14 | CommonEASDNAI | This feature controls the support of the common EAS/DNAI selection. |
| 15 | HR-SBO | This feature indicates the support of HR-SBO scenarios. |
| 16 | MultiTrafficInflu | This feature indicates the support for AF providing more than one set of traffic filters and the corresponding N6 traffic routing requirements for traffic influence.  |
| Feature: A short name that can be used to refer to the bit and to the feature, e.g. "Notification".Description: A clear textual description of the feature. |

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

# A.2 TrafficInfluence API

openapi: 3.0.0

info:

 title: 3gpp-traffic-influence

 version: 1.3.0-alpha.4

 description: |

 API for AF traffic influence

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externalDocs:

 description: >

 3GPP TS 29.522 V18.4.0; 5G System; Network Exposure Function Northbound APIs.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.522/'

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-traffic-influence/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 5.2.4 of 3GPP TS 29.122.

paths:

 /{afId}/subscriptions:

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

get:

 summary: read all of the active subscriptions for the AF

 operationId: ReadAllSubscriptions

 tags:

 - Traffic Influence Subscription

 responses:

 '200':

 description: OK.

 content:

 application/json:

 schema:

 type: array

 items:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 post:

 summary: Creates a new subscription resource

 operationId: CreateNewSubscription

 tags:

 - Traffic Influence Subscription

 requestBody:

 description: Request to create a new subscription resource

 required: true

 content:

 application/json:

 schema:

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

 callbacks:

 notificationDestination:

 '{request.body#/notificationDestination}':

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

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

 callbacks:

 afAcknowledgement:

 '{request.body#/afAckUri}':

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: No Content (successful acknowledgement)

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 responses:

 '204':

 description: No Content (successful notification)

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 responses:

 '201':

 description: Created (Successful creation of subscription)

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: Contains the URI of the newly created resource.

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 /{afId}/subscriptions/{subscriptionId}:

 parameters:

 - name: afId

 in: path

 description: Identifier of the AF

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Identifier of the subscription resource

 required: true

 schema:

 type: string

 get:

 summary: read an active subscriptions for the SCS/AS and the subscription Id

 operationId: ReadAnSubscription

 tags:

 - Individual Traffic Influence Subscription

 responses:

 '200':

 description: OK (Successful get the active subscription)

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 put:

 summary: Fully updates/replaces an existing subscription resource

 operationId: FullyUpdateAnSubscription

 tags:

 - Individual Traffic Influence Subscription

 requestBody:

 description: Parameters to update/replace the existing subscription

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: OK (Successful update of the subscription)

 content:

 application/json:

 schema:

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

 '204':

 description: No Content

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 patch:

 summary: Partially updates/replaces an existing subscription resource

 operationId: PartialUpdateAnSubscription

 tags:

 - Individual Traffic Influence Subscription

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK. The subscription was modified successfully.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Deletes an already existing subscription

 operationId: DeleteAnSubscription

 tags:

 - Individual Traffic Influence Subscription

 responses:

 '204':

 description: No Content (Successful deletion of the existing subscription)

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

 TrafficInfluSub:

 description: Represents a traffic influence subscription.

 type: object

 properties:

 afServiceId:

 type: string

 description: Identifies a service on behalf of which the AF is issuing the request.

 afAppId:

 type: string

 description: Identifies an application.

 afTransId:

 type: string

 description: Identifies an NEF Northbound interface transaction, generated by the AF.

 afTransId:

 type: string

 description: Identifies an NEF Northbound interface transaction, generated by the AF.

 appReloInd:

 type: boolean

 description: >

 Identifies whether an application can be relocated once a location of

 the application has been selected.

 dnn:

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

 snssai:

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

 externalGroupId:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/ExternalGroupId'

 externalGroupIds:

 type: array

 items:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/ExternalGroupId'

 minItems: 1

 description: Each element identifies a group of users.

 extSubscCats:

 type: array

 items:

 type: string

 minItems: 1

 anyUeInd:

 type: boolean

 description: >

 Identifies whether the AF request applies to any UE. This attribute shall

 set to "true" if applicable for any UE, otherwise, set to "false".

 subscribedEvents:

 type: array

 items:

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

 minItems: 1

 description: Identifies the requirement to be notified of the event(s).

 gpsi:

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

 ipv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ipDomain:

 type: string

 ipv6Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv6Addr'

 macAddr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 dnaiChgType:

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

 notificationDestination:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Link'

 requestTestNotification:

 type: boolean

 description: >

 Set to true by the SCS/AS to request the NEF to send a test notification

 as defined in clause 5.2.5.3. Set to false or omitted otherwise.

 websockNotifConfig:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/WebsockNotifConfig'

 self:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Link'

 trafficDataSets:

 type: object

 additionalProperties:

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

 minProperties: 2

 description: >

 Contains multiple sets of traffic filters with the corresponding N6 traffic routing requirements. The key of the map shall be the value of the "setId" attribute of the TrafficDataSet data structure.

 trafficFilters:

 type: array

 items:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/FlowInfo'

 minItems: 1

 description: Identifies IP packet filters.

 ethTrafficFilters:

 type: array

 items:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

 minItems: 1

 description: Identifies Ethernet packet filters.

 trafficRoutes:

 type: array

 items:

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

 minItems: 1

 description: Identifies the N6 traffic routing requirement.

 sfcIdDl:

 type: string

 description: >

 Reference to a pre-configured steering of user traffic to service function chain in

 downlink.

 sfcIdUl:

 type: string

 description: >

 Reference to a pre-configured steering of user traffic to service function chain in

 uplink.

 metadata:

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

 tfcCorrInd:

 type: boolean

 tempValidities:

 type: array

 items:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/TemporalValidity'

 validGeoZoneIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies a geographic zone that the AF request applies only to the traffic

 of UE(s) located in this specific zone.

 deprecated: true

 geoAreas:

 type: array

 items:

 $ref: 'TS29522\_AMPolicyAuthorization.yaml#/components/schemas/GeographicalArea'

 minItems: 1

 description: Identifies geographical areas within which the AF request applies.

 afAckInd:

 type: boolean

 addrPreserInd:

 type: boolean

 simConnInd:

 type: boolean

 description: >

 Indicates whether simultaneous connectivity should be temporarily

 maintained for the source and target PSA.

 simConnTerm:

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

 maxAllowedUpLat:

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

 easIpReplaceInfos:

 type: array

 items:

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

 minItems: 1

 description: Contains EAS IP replacement information.

 easRedisInd:

 type: boolean

 description: >

 Indicates the EAS rediscovery is required for the application if it is included

 and set to "true".

 eventReq:

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

 eventReports:

 type: array

 items:

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

 minItems: 1

 candDnaiInd:

 type: boolean

 description: >

 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 set to "false" or

 omitted.

 tfcCorreInfo:

 $ref: 'TS29519\_Application\_Data.yaml#/components/schemas/TrafficCorrelationInfo'

 plmnId:

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

 portNumber:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Port'

 suppFeat:

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

 allOf:

 - oneOf:

 - required: [afAppId]

 - required: [trafficFilters]

 - required: [ethTrafficFilters]

 - required: [trafficDataSets]

 - oneOf:

 - required: [ipv4Addr]

 - required: [ipv6Addr]

 - required: [macAddr]

 - required: [gpsi]

 - required: [externalGroupId]

 - required: [anyUeInd]

 anyOf:

 - not:

 required: [subscribedEvents]

 - required: [notificationDestination]

 TrafficInfluSubPatch:

 description: >

 Represents parameters to request the modification of a traffic influence

 subscription resource.

 type: object

 properties:

 appReloInd:

 type: boolean

 description: >

 Identifies whether an application can be relocated once a location of

 the application has been selected.

 nullable: true

 trafficDataSets:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Contains one or several set(s) of traffic filters with the corresponding N6 traffic routing requirements. The key of the map shall be the value of the "setId" attribute of the TrafficDataSet data structure.

 nullable: true

 trafficFilters:

 type: array

 items:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/FlowInfo'

 minItems: 1

 description: Identifies IP packet filters.

 ethTrafficFilters:

 type: array

 items:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

 minItems: 1

 description: Identifies Ethernet packet filters.

 trafficRoutes:

 type: array

 items:

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

 minItems: 1

 description: Identifies the N6 traffic routing requirement.

 sfcIdDl:

 type: string

 description: >

 Reference to a pre-configured steering of user traffic to service function chain in

 downlink.

 nullable: true

 sfcIdUl:

 type: string

 description: >

 Reference to a pre-configured steering of user traffic to service function chain in

 uplink.

 nullable: true

 metadata:

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

 tfcCorrInd:

 type: boolean

 nullable: true

 tempValidities:

 type: array

 items:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/TemporalValidity'

 minItems: 1

 nullable: true

 validGeoZoneIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies a geographic zone that the AF request applies only to the traffic

 of UE(s) located in this specific zone.

 nullable: true

 deprecated: true

 geoAreas:

 type: array

 items:

 $ref: 'TS29522\_AMPolicyAuthorization.yaml#/components/schemas/GeographicalArea'

 minItems: 1

 description: Identifies geographical areas within which the AF request applies.

 nullable: true

 afAckInd:

 type: boolean

 nullable: true

 addrPreserInd:

 type: boolean

 nullable: true

 simConnInd:

 type: boolean

 description: >

 Indicates whether simultaneous connectivity should be temporarily maintained

 for the source and target PSA.

 simConnTerm:

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

 maxAllowedUpLat:

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

 easIpReplaceInfos:

 type: array

 items:

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

 minItems: 1

 description: Contains EAS IP replacement information.

 nullable: true

 easRedisInd:

 type: boolean

 description: >

 Indicates the EAS rediscovery is required for the application if it is included

 and set to "true".

 notificationDestination:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Link'

 eventReq:

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

 tfcCorreInfo:

 $ref: 'TS29519\_Application\_Data.yaml#/components/schemas/TrafficCorrelationInfo'

 EventNotification:

 description: Represents a traffic influence event notification.

 type: object

 properties:

 afTransId:

 type: string

 description: Identifies an NEF Northbound interface transaction, generated by the AF.

 dnaiChgType:

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

 sourceTrafficRoute:

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

 subscribedEvent:

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

 targetTrafficRoute:

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

 sourceDnai:

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

 targetDnai:

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

 candidateDnais:

 type: array

 items:

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

 minItems: 1

 description: The candidate DNAI(s) for the PDU Session.

 candDnaisPrioInd:

 type: boolean

 description: >

 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.

 easRediscoverInd:

 type: boolean

 description: >

 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. May be included for event "UP\_PATH\_CHANGE".

 gpsi:

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

 srcUeIpv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 srcUeIpv6Prefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 tgtUeIpv4Addr:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

 tgtUeIpv6Prefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 ueMac:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

 afAckUri:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Link'

 required:

 - dnaiChgType

 - subscribedEvent

 AfResultInfo:

 description: Identifies the result of application layer handling.

 type: object

 properties:

 afStatus:

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

 trafficRoute:

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

 upBuffInd:

 type: boolean

 description: >

 If present and set to "true" it indicates that buffering of uplink traffic

 to the target DNAI is needed.

 easIpReplaceInfos:

 type: array

 items:

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

 minItems: 1

 description: Contains EAS IP replacement information.

 required:

 - afStatus

 AfAckInfo:

 description: Represents acknowledgement information of a traffic influence event notification.

 type: object

 properties:

 afTransId:

 type: string

 ackResult:

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

 gpsi:

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

 required:

 - ackResult

 TrafficDataSet:

 description: >

Represents a set of traffic filters and the corresponding N6 traffic routing requirements.

 properties:

 SetId:

 type:string

 trafficFilters:

 type:array

 items:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/FlowInfo'

 minItems: 1

 description: Contains IP packet filters.

 ethTrafficFilters:

 type:array

 items:

 $ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

 minItems: 1

 description: Contains Ethernet packet filters.

 trafficRoutes:

 type: array

 items:

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

 minItems: 1

 description: Contains the N6 traffic routing requirements.

 SubscribedEvent:

 anyOf:

 - type: string

 enum:

 - UP\_PATH\_CHANGE

 - type: string

 description: >

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

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

 description: |

 Represents the type of UP path management events for which the AF requests to be notified.

 Possible values are:

 - UP\_PATH\_CHANGE: The AF requests to be notified when the UP path changes for

 the PDU session.

 AfResultStatus:

 anyOf:

 - type: string

 enum:

 - SUCCESS

 - TEMPORARY\_CONGESTION

 - RELOC\_NO\_ALLOWED

 - OTHER

 - type: string

 description: >

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

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

 description: |

 Represents the status of application handling result.

 Possible values are:

 - SUCCESS: The application layer is ready or the relocation is completed.

 - TEMPORARY\_CONGESTION: The application relocation fails due to temporary congestion.

 - RELOC\_NO\_ALLOWED: The application relocation fails because application relocation

 is not allowed.

 - OTHER: The application relocation fails due to other reason.

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