**3GPP TSG-CT WG3 Meeting #140** ***C3-251587***

**Wuhan, China, 7 - 11 April 2025 (Revision of C3-251175)**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **20** | **CR** | **1045** | **rev** | **1** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

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| --- |
|  |
| ***Title:***  | E2eDataVolTransTimePerUe Update |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | C3 |
|  |  |
| ***Work item code:*** | , AIMLsys |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | In Nnwdaf\_EventsSubscription API, 1) EventSubscription NOTE 7 is missing the specific attribute.  |
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| ***Summary of change:*** | 1. Event Subscription NOTE 7 is fixed with networkArea attribute
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| ***Consequences if not approved:*** | The clarity is missing in EventSubscription NOTE 7 for applicability of the attributes.  |
|  |  |
| ***Clauses affected:*** | 5.1.6.2.3 |
|  |  |
|  | **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 the OpenAPI descriptions defined in this specification. |
|  |  |
| ***This CR's revision history:*** |  |

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

##### 5.1.6.2.3 Type EventSubscription

Table 5.1.6.2.3-1: Definition of type EventSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| anySlice | AnySlice | C | 0..1 | Default is "false". (NOTE 1) |  |
| appIds | array(ApplicationId) | C | 1..N | Represents the Application Identifier(s) to which the subscription applies. The absence of appIds means subscription to all applications. (NOTE 8) (NOTE 15) (NOTE 16)  | ServiceExperienceUeCommunication AbnormalBehaviourDispersionDnPerformancePfdDeterminationE2eDataVolTransTime |
| deviations | array(Uinteger) | O | 1..N | Each element indicates an acceptable deviation from the threshold level included in "ranUeThrouThds" attribute or "qosFlowRetThds" attribute. This attribute may only be present if either the "ranUeThrouThds" attribute or "qosFlowRetThds" attribute is provided. | EnQoSSustainability |
| dnns | array(Dnn) | C | 1..N | Represents the DNN(s) to which the subscription applies. Each DNN is a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only.The absence of dnns means subscription to all DNNs. (NOTE 8) (NOTE 17) | ServiceExperience, AbnormalBehaviourUeCommunicationRedundantTransmissionExpDnPerformanceSMCCEPfdDeterminationPduSesTrafficE2eDataVolTransTimeRelativeProximity |
| dnais | array(Dnai) | O | 1..N | Represents the Data Network Access Identifier(s) of user plane access to DN(s) which the subscription applies. | ServiceExperienceDnPerformance |
| dataVlTrnsTmRqs | array(E2eDataVolTransTimeReq) | O | 1..N | Represents the E2E data volume transfer time requirements | E2eDataVolTransTime |
| event | NwdafEvent | M | 1 | Event that is subscribed. |  |
| extraReportReq | EventReportingRequirement | O | 0..1 | The extra event reporting requirement information.  |  |
| ladnDnns | array(Dnn) | O | 1..N | LADN DNN(s) to indicate the LADN service area(s) as the AoI(s). | UeMobilityExt |
| loadLevelThreshold | integer | C | 0..1 | Indicates that the NWDAF shall report the corresponding network slice load level to the NF service consumer where the load level of the network slice identified by snssais is reached. (NOTE 4)May be included when subscribed event is "SLICE\_LOAD\_LEVEL". Minimum = 0. Maximum = 100. |  |
| matchingDir | MatchingDirection | O | 0..1 | A matching direction may be provided alongside a threshold. If omitted, the default value is CROSSED. | NfLoad, QoSSustainability, UserDataCongestion, NetworkPerformance, NsiLoadExt |
| nfLoadLvlThds | array(ThresholdLevel) | C | 1..N | Shall be supplied in order to start reporting when an average load level is reached. (NOTE 4) | NfLoad |
| networkArea | NetworkAreaInfo | C | 0..1 | Identification of network area to which the subscription applies. The absence of "networkArea" and "fineGranAreas" means subscription to all network areas. (NOTE 7, NOTE 8, NOTE 20 , NOTE 22) | ServiceExperienceUeMobilityUeCommunicationQoSSustainabilityAbnormalBehaviourUserDataCongestionNetworkPerformance NsiLoadExtNfLoadExtDispersionRedundantTransmissionExpWlanPerformanceDnPerformancePduSesTrafficE2eDataVolTransTimeMovementBehaviourLocAccuracyRelativeProximitySignallingStorm |
| location | GeoLocation | C | 0..1 | A location (i.e. geographical location or location in local coordinates) to which the subscription applies. (NOTE 22) | LocAccuracy |
| temporalGranSize | DurationSec | O | 0..1 | Indicates the minimum duration of each time slot for which the analytics are provided.(NOTE 18) | NetworkPerformanceExt\_eNAUeMobilityExt2\_eNAUserDataCongestionExt2\_eNAQoSSustainabilityExt\_eNADispersionExt\_eNAWlanPerfExt\_eNARedundantTransExpExt\_eNADnPerformanceExt\_eNA |
| spatialGranSizeTa | Uinteger | O | 0..1 | Indicates the maximum number of TAs used to define an area for which the analytics are provided.May be included when the "networkArea" attribute in the EventSubscription data type is provided.(NOTE 19) | NetworkPerformanceExt\_eNAUeMobilityExt2\_eNAUeCommunicationExt\_eNAQoSSustainabilityExt\_eNADispersionExt\_eNADnPerformanceExt\_eNA |
| spatialGranSizeCell | Uinteger | O | 0..1 | Indicates the maximum number of cells used to define an area for which the analytics are provided.May be included when the "networkArea" attribute in the EventSubscription data type is provided.(NOTE 19) | NetworkPerformanceExt\_eNAUeMobilityExt2\_eNAUeCommunicationExt\_eNAQoSSustainabilityExt\_eNADispersionExt\_eNADnPerformanceExt\_eNA |
| fineGranAreas | array(GeographicalArea) | O | 1..N | Indicates the fine granularity areas to which the subscription applies. (i.e. with a finer granularity than cell).(NOTE 7, NOTE 20) | ServiceExperienceExt2\_eNAUeMobilityExt2\_eNAQoSSustainabilityExt\_eNAMovementBehaviour |
| visitedAreas | array(NetworkAreaInfo) | O | 1..N | Indicates the visited network area(s) which the UEs had previously been in at least one of the Visited Area(s) of Interest.(NOTE 10) | UeMobilityExt |
| maxTopAppUlNbr | Uinteger | O | 0..1 | Indicates the requested maximum number of top applications that contribute the most to the traffic in Uplink direction. Minimum = 1.May be included when one of the elements in the "listOfAnaSubsets" attribute is set to LIST\_OF\_TOP\_APP\_UL. | UserDataCongestionExt |
| maxTopAppDlNbr | Uinteger | O | 0..1 | Indicates the requested maximum number of top applications that contribute the most to the traffic in Downlink direction. Minimum = 1.May be included when one of the elements in the "listOfAnaSubsets" attribute is set to LIST\_OF\_TOP\_APP\_DL. | UserDataCongestionExt |
| nfInstanceIds | array(NfInstanceId) | O | 1..N | Identification(s) of NF instance(s).(NOTE 23) | NfLoadSignallingStorm |
| nfSetIds | array(NfSetId) | O | 1..N | Identification(s) of NF instance set(s).(NOTE 23) | NfLoadSignallingStorm |
| nfTypes | array(NFType) | O | 1..N | Identification(s) of NF type(s). (NOTE 13) | NfLoadNsiLoadExt |
| notificationMethod | NotificationMethod | O | 0..1 | Indicate the notification method. (NOTE 2) |  |
| nsiIdInfos | array(NsiIdInfo) | O | 1..N | Each element identifies the S-NSSAI and the optionally associated network slice instance(s).May be included when subscribed event is "NSI\_LOAD\_LEVEL", "SERVICE\_EXPERIENCE" or "DN\_PERFORMANCE".(NOTE 1) | ServiceExperience NsiLoadDnPerformance |
| nsiLevelThrds | array(Uinteger) | O | 1..N | Identifies the load threshold for each S-NSSAI or S-NSSAI and the optionally associated network slice instance identified by the "nsiIds" attribute within the "nsiIdInfos" attribute. (NOTE 4) Minimum = 0. Maximum = 100. | NsiLoad  |
| qosRequ | QosRequirement | C | 0..1 | Indicates the QoS requirements. It shall be included when subscribed event is "QOS\_SUSTAINABILITY" or "E2E\_DATA\_VOL\_TRANS\_TIME". | QoSSustainabilityE2eDataVolTransTime |
| qosFlowRetThds | array(RetainabilityThreshold) | C | 1..N | Represents the QoS flow retainability thresholds. Shall be supplied for the 5QI ("5qi" in "qosRequ") or resource type ("resType" in "qosRequ") of GBR resource type. (NOTE 4) | QoSSustainability |
| ranUeThrouThds | array(BitRate) | C | 1..N | Represents the RAN UE throughput thresholds.Shall be supplied for the 5QI ("5qi" in "qosRequ") or resource type ("resType" in "qosRequ") of non-GBR resource type. (NOTE 4) | QoSSustainability |
| repetitionPeriod | DurationSec | C | 0..1 | Shall be supplied for notification method "PERIODIC" by the "notificationMethod" attribute. |  |
| snssais | array(Snssai) | C | 1..N | Identification(s) of network slice(s) to which the subscription applies. (NOTE 1, NOTE 8) (NOTE 17) |  |
| tgtUe | TargetUeInformation | O | 0..1 | Identifies target UE information.(NOTE 3) |  |
| roamingInfo | RoamingInfo | O | 0..1 | Information about roaming analytics. When this attribute is provided, the request should contain only attributes that are applicable also in the Nnwdaf\_RoamingAnalytics service. | RoamingAnalytics |
| congThresholds | array(ThresholdLevel) | C | 1..N | Represents the congestion threshold levels. (NOTE 4) | UserDataCongestion |
| nwPerfRequs | array(NetworkPerfRequirement) | C | 1..N | Represents the network performance requirements. This attribute shall be included when subscribed event is "NETWORK\_PERFORMANCE". | NetworkPerformance |
| bwRequs | array(BwRequirement) | O | 1..N | Represents the bandwidth requirement for each application.It may only be present if "appIds" attribute is provided. | ServiceExperience |
| excepRequs | array(Exception) | C | 1..N | Represents a list of Exception Ids with associated thresholds. May only be present when subscribed event is "ABNORMAL\_BEHAVIOUR".(NOTE 5, NOTE 6, NOTE 8) | AbnormalBehaviour |
| exptAnaType | ExpectedAnalyticsType | C | 0..1 | Represents expected UE analytics type.It shall not be present if the "excepRequs" attribute is provided. (NOTE 6, NOTE 8) | AbnormalBehaviour |
| exptUeBehav | ExpectedUeBehaviourData | O | 0..1 | Represents expected UE behaviour. | AbnormalBehaviour |
| ratFreqs | array(RatFreqInformation) | O | 1..N | Identification(s) of the RAT type(s) and/or frequency(ies) of UE's serving cell(s) which the subscription applies. (NOTE 9) | ServiceExperienceExt |
| listOfAnaSubsets | array(AnalyticsSubset) | O | 1..N | The list of analytics subsets can be used to indicate the content of the analytics. | EneNA |
| disperReqs | array(DispersionRequirement) | O | 1..N | Represents the dispersion analytics requirements. | Dispersion |
| redTransReqs | array(RedundantTransmissionExpReq) | O | 1..N | Represents the redundant transmission experience analytics requirements. | RedundantTransmissionExp |
| wlanReqs | array(WlanPerformanceReq) | O | 1..N | Represents other WLAN performance analytics requirements. If the attribute contains no content, may take default handling action. | WlanPerformance |
| ueCommReqs | array(UeCommReq) | O | 1..N | Represents the UE communication requirements. This attribute may be included when the subscribed event is "UE\_COMMUNICATION". | UeCommunicationExt\_eNA |
| ueMobilityReqs | array(UeMobilityReq) | O | 1..N | Represents the UE mobility requirements. This attribute may be included when the subscribed event is "UE\_MOBILITY". | UeMobilityExt2\_eNA |
| upfInfo | UpfInformation | O | 0..1 | Identifies the UPF. (NOTE 12) | ServiceExperienceExtDnPerformance |
| userDataConOrderCri | UserDataConOrderCrit | O | 0..1 | The ordering criterion for the list of User Data Congestion analytics. (NOTE 14) | userDataConOrderCri |
| appServerAddrs | array(AddrFqdn) | C | 1..N | Each element represents the Application Server Instance (IP address/FQDN of the Application Server). (NOTE 11) | ServiceExperienceExtDnPerformance |
| dnPerfReqs | array(DnPerformanceReq) | O | 1..N | Represents the DN performance analytics requirements. | DnPerformance |
| pduSesInfos | array(PduSessionInfo) | C | 1..N | Represents combination of PDU Session parameter(s). (NOTE 15) | ServiceExperienceExt2\_eNA |
| useCaseCxt | string | O | 0..1 | Indicates the context of usage of the analytics.The value and format of this parameter are not standardized. | ENAExt |
| pduSesTrafReqs | array(PduSesTrafficReq) | C | 1..N | Represents the PDU Session traffic analytics requirements. This attribute shall be included when subscribed event is "PDU\_SESSION\_TRAFFIC". | PduSesTraffic |
| locAccReqs | array(LocAccuracyReq) | O | 1..N | Represents the Location Accuracy analytics requirements. This attribute may only be included when the subscribed event is "LOC\_ACCURACY". | LocAccuracy |
| locGranularity | LocInfoGranularity | O | 0..1 | The preferred granularity of UE location information.(NOTE 21) | ServiceExperienceExt2\_eNAUeMobilityExt2\_eNADispersionExt\_eNAMovementBehaviour |
| locOrientation | LocationOrientation | O | 0..1 | Indicates the preferred orientation of location information. | MovementBehaviourUeMobilityExt2\_eNA |
| accuReq | AccuracyReq | O | 0..1 | Represents the analytics accuracy requirement information.May be included as indication to the NWDAF (containing an AnLF supporting Accuracy checking capability) to activate checking the analytics accuracy information of the event. | AnalyticsAccuracy |
| movBehavReqs | array(MovBehavReq) | O | 1..N | Represents the Movement Behaviour analytics requirements. | MovementBehaviour |
| relProxReqs | array(RelProxReq) | O | 1..N | Represents the Relative Proximity analytics requirements. | RelativeProximity |
| pauseFlg | boolean | O | 0..1 | Pause analytics consumption flag applicable on analytics ID level. Set to "true" to indicate the NWDAF to stop including analytics of this event type in its notifications (without cancelling the subscription), because the accuracy level needs to be increased.Default value is "false" if omitted.This attribute may be present in a update request message if the "pauseInd" attribute was provided in the notification. | AnalyticsAccuracy |
| resumeFlg | boolean | O | 0..1 | Resume analytics consumption flag applicable on analytics ID level. Set to "true" to indicate the NWDAF to resume sending the notifications of analytics because the accuracy has been improved.Default value is "false" if omitted.This attribute may be present in a update request message if the "resumeInd" attribute was provided in the notification. | AnalyticsAccuracy |
| feedback | AnalyticsFeedbackInfo | O | 0..1 | Analytics feedback information. It may only be provided in requests to update an existing analytics subscription for predictions. | AnalyticsAccuracy |
| sigStormReqs | array(SignalStormReq) | O | 1..N | Represents the signalling storm analytics requirements. This attribute may be included when the subscribed event is "SIGNALLING\_STORM". | SignallingStorm |
| NOTE 1: The "anySlice" attribute is not applicable to features "UeMobility" and "NetworkPerformance". The "snssais" attribute is not applicable to features "ServiceExperience", "NsiLoad", "UeMobility" and "NetworkPerformance". When subscribed event is "SLICE\_LOAD\_LEVEL", the identifications of network slices, either information about slice(s) identified by "snssais", or "anySlice" set to "true" shall be included. When subscribed event is "QOS\_SUSTAINABILITY", "NF\_LOAD", "UE\_COMMUNICATION", "ABNORMAL\_BEHAVIOUR", "USER\_DATA\_CONGESTION", "DISPERSION", "RED\_TRANS\_EXP", "PDU\_SESSION\_TRAFFIC", "PFD\_DETERMINATION", "RELATIVE\_PROXIMITY" or "SIGNALLING\_STORM", the identifications of network slices identified by "snssais" is optional. When subscribed event is "NSI\_LOAD\_LEVEL", "SERVICE\_EXPERIENCE" or "DN\_PERFORMANCE", either the "nsiIdInfos" attribute or "anySlice" set to "true" shall be included.NOTE 2: When notificationMethod is not supplied, the default value is "THRESHOLD".NOTE 3: Applicability is further described in the corresponding data type. All target UE(s) indicated by this attribute shall belong to the same PLMN. When the RoamingAnalytics feature is supported and the target UE(s) indicated by this attribute belong to a PLMN different than the PLMN of the NF service consumer, the request should contain only attributes that are applicable also in the Nnwdaf\_RoamingAnalytics service.NOTE 4: This property shall be provided if the "notifMethod" in "evtReq" is set to "ON\_EVENT\_DETECTION" or "notificationMethod" in "eventSubscriptions" is set to "THRESHOLD" or omitted. NOTE 5: Only "excepId" and "excepLevel" within the Exception data type apply to the "excepRequs" attribute within EventSubscription data type.NOTE 6: Either "excepRequs" or "exptAnaType" shall be provided if subscribed event is "ABNORMAL\_BEHAVIOUR".NOTE 7: For different events, the following rules apply: - For "NETWORK\_PERFORMANCE", "USER\_DATA\_CONGESTION" or "DN\_PERFORMANCE" event, the "networkArea" attribute shall be provided if the event applied for all UEs (i.e. "anyUe" attribute set to true within the "tgtUe" attribute).- For "QOS\_SUSTAINABILITY", at least one of "networkArea" and "fineGranAreas" attributes shall be provided.- For "E2E\_DATA\_VOL\_TRANS\_TIME" event, the "networkArea" attribute shall be provided if the event applied for single UE or group of UEs.- For "SERVICE\_EXPERIENCE" event, if the event applied for all UEs (i.e. "anyUe" attribute set to true within the "tgtUe" attribute): at least one of "networkArea" or "fineGranAreas" attributes shall be provided.- For "MOVEMENT\_BEHAVIOUR" event, at least one of the "networkArea" or "fineGranAreas" attributes shall be provided.NOTE 8: For "ABNORMAL\_BEHAVIOUR" event with "anyUe" attribute in "tgtUe" attribute sets to true,- at least one of the "networkArea" and the "snssais" attribute should be included, if the expected analytics type via the"exptAnaType" attribute or the list of Exception Ids via the "excepRequs" attribute is mobility related;- at least one of the "networkArea", "appIds", "dnns" and "snssais" attribute should be included, if the expected analytics type via the"exptAnaType" attribute or the list of Exception Ids via the "excepRequs" attribute is communication related; - the expected analytics type via the"exptAnaType" attribute or the list of Exception Ids via "excepRequs" attribute shall not be requested for both mobility and communication related analytics at the same time.NOTE 9: If both the "allFreq" attribute and the "allRat" attribute are present within the RatFreqInformation data type, then only one instance of the RatFreqInformation data typeshall be present to indicate for all the RAT type and all the Frequency values the NWDAF has received for the application.NOTE 10: If this attribute is provided, the analytics target period shall be a past time period (i.e. only statistics is supported).NOTE 11: For service experience analytics, this parameter shall be provided when a consumer requires analytics for an edge application over a UP path.NOTE 12: For service experience analytics, this parameter may be provided when a consumer requires analytics for an edge application over a UP path, and it is only needed when the target of the service experience analytics is a specific UPF included in this UP path.NOTE 13: When subscribed event is "NSI\_LOAD\_LEVEL" and the NsiLoadExt feature is supported, and the NF service consumer provides the "nfTypes" attribute, then the NWDAF accounts only for the resource usage of the NF types included in "nfTypes" to derive the output analytics. If the "nfTypes" attribute is not provided, then NWDAF accounts for the resource usage of all NF types.NOTE 14: If the the value of "userDataConOrderCri" attribute is "APPLICABLE\_TIME\_WINDOW", the "ASCENDING" direction indicates that the list of User Data Congestion analytics are in chronological order and the "DESCENDING" direction indicates that the list of User Data Congestion analytics are in reverse chronological order.NOTE 15: When the "pduSesInfos" attribute is provided, the associated "appIds" attribute shall also be provided for the NWDAF to be able to compute the service experience per application.NOTE 16: When subscribed event is "PFD\_DETERMINATION" and the PfdDetermination feature is supported, the "appIds" attribute shall be included.NOTE 17: When the subscribed event is "PDU\_SESSION\_TRAFFIC" and the PduSesTraffic feature is supported, at least one of the "dnns" and/or "snssais" attributes as the route selection descriptor(s) for the URSP rule shall be included.NOTE 18: When this attribute is provided, the NWDAF shall provide the analytics per elementary time slot accordingly.NOTE 19: When this attribute is provided, the NWDAF shall provide the analytics per group of TAs or cells accordingly.NOTE 20: If both "networkArea" and "fineGranAreas" attributes are provided, the Area of Interest is interpreted as the intersection area indicated by these two attributes.NOTE 21: The "LON\_AND\_LAT\_LEVEL" value of "locGranularity" attribute is not applicable to features "DispersionExt\_eNA". The "TA\_LEVEL" or "CELL\_LEVEL" value of "locGranularity" attribute is not applicable to features "MovementBehaviour".NOTE 22: When the subscribed event is "LOC\_ACCURACY", only one of the "networkArea" attribute or "location" attribute shall be included.NOTE 23: If the "SignallingStorm" feature is supported, the "nfInstanceIds" and "nfSetIds" attributes indicate the NF instances and NF sets that may cause the signalling storm to the target NF. |

NOTE: Care needs to be taken to avoid excessive signalling.

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