**3GPP TSG- Meeting # *06***

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  | **52** | **CR** | **606** | **rev** | **1** | **Current version:** |  |  |
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| *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:***  | Add measurements related to NWDAF roaming analytics |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | NWDAF\_OAM\_Ph2 |  | ***Date:*** | 3 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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)* |
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| ***Reason for change:*** | In TS 23.288 (SA2), four service operations are specified under “NWDAF Roaming Analytics” that enables the consumer to request or to subscribe or to unsubscribe for roaming analytics generated by the RE-NWDAF. These service operations include the following:* *Nnwdaf\_RoamingAnalytics\_Subscribe service operation*
* *Nnwdaf\_RoamingAnalytics\_Unsubscribe service operation*
* *Nnwdaf\_RoamingAnalytics\_Notify service operation*
* *Nnwdaf\_RoamingAnalytics\_Request service operation*

The number of roaming analytics subscriptions, requests, notifications, and responses are some of the basic statistic information to monitor the performance of RE-NWDAF. These basic measurements can be used to derive the other performance of RE-NWDAF such as roaming analytics service successful and/or failed rate, etc. With these measurements, operators can analyze and evaluate the performance of the RE-NWDAF. Operators can use these measurements to take management actions for configuration, resource allocation, load balance and placement purposes. |
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| ***Summary of change:*** | 1. A new measurement “Number of roaming analytics service subscriptions received by RE-NWDAF” is introduced.2. A new measruement “Number of roaming analytics service requests received by RE-NWDAF” is introduced.3. A new measurement “Number of roaming analytics service notifications generated by RE-NWDAF” is introduced.4. A new measurement “Number of roaming analytics service responses generated by RE-NWDAF” is introduced.5. A new measurement “Number of failed roaming analytics service subscriptions” is introduced.6. A new measurement “Number of successful roaming analytics service subscriptions” is introduced.7. A new measurement “Time consumed by the RE-NWDAF to provide roaming analytics service information” |
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| ***Consequences if not approved:*** | Operator will not be able to monitor the performance of roaming analytics service operations and to take RE-NWDAF management actions for configuration, resource allocation, load balancing and placement purposes. |
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| ***Clauses affected:*** | 5.18 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | S5-246106 is a revision of S5-245497 |

***Start of First change***

## 5.18 Performance measurements for NWDAF

## 5.18.X Measurements related to RE-NWDAF roaming analytics

## 5.18.X.1 Number of roaming analytics service subscriptions received by RE-NWDAF

a) This measurement provides the number of roaming analytics service subscriptions received by the RE-NWDAF.

b) CC

c) On receiving the service subscription by the RE-NWDAF for analytics information about roaming analytics, each subscription is added to the corresponding counter. The measurement can be split into sub-counters per Analytics ID, per S-NSSAI and per PLMN.

d) It is an integer value

e) DANS.RoamingSerSubReceived

f) NWDAFFunction

g) Valid for packet switched traffic

h) 5GS

## 5.18.X.2 Number of roaming analytics service requests received by RE-NWDAF

a) This measurement provides the number of roaming analytics service requests received by the RE-NWDAF.

b) CC

c) On receiving the service request by the RE-NWDAF for analytics information about roaming analytics, each request is added to the corresponding counter. The measurement can be split into sub-counters per Analytics ID, per S-NSSAI and per PLMN.

d) It is an integer value

e) DANS.RoamingSerReqReceived

f) NWDAFFunction

g) Valid for packet switched traffic

h) 5GS

## 5.18.X.3 Number of roaming analytics service notifications generated by RE-NWDAF

a) This measurement provides the number of roaming analytics service notifications generated by the RE-NWDAF.

b) CC

c) On sending the notification by the RE-NWDAF corresponding to the roaming analytics service subscription, each sent notification is added to the corresponding counter. The measurement can be split into sub-counters per Analytics ID, per S-NSSAI and per PLMN.

d) It is an integer value

e) DANS.RoamingSerNotificationGenerated

f) NWDAFFunction

g) Valid for packet switched traffic

h) 5GS

## 5.18.X.4 Number of roaming analytics service responses generated by RE-NWDAF

a) This measurement provides the number of roaming analytics service responses generated by the RE-NWDAF.

b) CC

c) On sending the response by the RE-NWDAF corresponding to the roaming analytics service request, each sent response is added to the corresponding counter. The measurement can be split into sub-counters per Analytics ID, per S-NSSAI and per PLMN.

d) It is an integer value

e) DANS.RoamingSerResponseGenerated

f) NWDAFFunction

g) Valid for packet switched traffic

h) 5GS

## 5.18.X.5 Number of failed roaming analytics service subscriptions

a) This measurement provides the number of roaming analytics service subscriptions received and rejected by the RE-NWDAF.

b) CC

c) On receiving the subscription by the RE-NWDAF for the roaming analytics service, each rejected subscription is added to the corresponding counter. The measurement can be split into sub-counters per Analytics ID, per S-NSSAI and per PLMN. Furthermore, the measurement can be split into sub-counter per rejection cause (e.g. due to user consent for UE(s) revoked, due to RE-NWDAF overloading, out-of-coverage of roaming UE(s) from the serving RE-NWDAF, unavailable data related to roaming UE(s), roaming analytics not ready before the deadline, etc.).

d) It is an integer value

e) DANS.RoamingSerSubscriptionRejected

f) NWDAFFunction

g) Valid for packet switched traffic

h) 5GS

## 5.18.X.6 Number of successful roaming analytics service subscriptions

a) This measurement provides the number of roaming analytics service subscriptions received and accepted by the RE-NWDAF.

b) CC

c) On receiving the subscription by the RE-NWDAF for the roaming analytics service, each accepted subscription is added to the corresponding counter. The measurement can be split into sub-counters per Analytics ID, per S-NSSAI and per PLMN.

d) It is an integer value

e) DANS.RoamingSerSubscriptionAccepted

f) NWDAFFunction

g) Valid for packet switched traffic

h) 5GS

## 5.18.X.7 Time consumed by the RE-NWDAF to provide roaming analytics service information

a) This measurement provides the time consumed by the RE-NWDAF to generate and provide the roaming analytics service information.

b) DER(n=1)

c) This measurement is obtained by the following method:

 the time when the RE-NWDAF sends the notification related to the roaming analytics service subscription to the RE-NWDAF roaming analytics consumer, minus the time when the RE-NWDAF receives the corresponding roaming analytics service subscription from the RE-NWDAF roaming analytics consumer. In the case where there are multiple notifications for single subscription, this measurement is obtained by calculating the time when the RE-NWDAF sends the first notification related to the roaming analytics service subscription to the RE-NWDAF roaming analytics consumer, minus the time when the RE-NWDAF receives the corresponding roaming analytics service subscription from the RE-NWDAF roaming analytics consumer. The measurement can be per Analytics ID.

d) A real value in milliseconds

e) DANS.RoamingAnalyticsSerTimeCons

f) NWDAFFunction

g) Valid for packet switched traffic

h) 5GS

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| **End of change** |