**3GPP TSG CT WG3 Meeting #138 *C3-246140r1***

**Orlando, U.S; 18th – 22nd November 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.520** | **CR** | **0970** | **rev** | **1** | **Current version:** | **19.0.0** |  |
|  | | | | | | | | |
| *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:*** | Missing redirect case in modification procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc19 | | | | |  | ***Date:*** | | | 2024-11-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 3xx response code of PUT method on Individual NWDAF Roaming Data Subscription resource is supported, but it’s not reflected in corresponding procedure. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add missing procedure description for 3xx response code of PUT method.  Also correct the reference clause No. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incomplete procedure description. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.7.2.4.3, 4.8.2.2.3, 4.9.2.4.2, 5.7.5.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 does not have any impact in the OpenAPI specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

##### 4.7.2.4.3 Update of subscription for monitoring notifications

Figure 4.7.2.4.3-1 shows a scenario where the NF service consumer (i.e. NWDAF containing MTLF) sends a request to the NWDAF containing AnLF to update a subscription for event notification(s).



Figure 4.7.2.4.3-1: NF service consumer updates subscription to notifications

The NF service consumer shall invoke the Nnwdaf\_MLModelMonitor\_Subscribe service operation to update a subscription to event notification(s) by sending an HTTP PUT request with "{apiRoot}/nnwdaf-mlmodelmonitor/<apiVersion>/subscriptions/{subscriptionId}" as Resource URI representing the "Individual NWDAF ML model monitoring subscription", as shown in figure 4.7.2.4.3-1, step 1, to update this "Individual NWDAF ML model monitoring subscription" according to the information in message body. The MLModelMonitorSub data structure provided in the request body shall include the same contents as in clause 4.7.2.4.2.

Upon the reception of an HTTP PUT request with "{apiRoot}/nnwdaf-mlmodelmonitor/<apiVersion>/subscriptions{subscriptionId}" as Resource URI and MLModelMonitorSub data structure as request body, the NWDAF shall:

- update the subscription of corresponding subscriptionId; and

- store the subscription.

If the NWDAF succesfully update the "Individual NWDAF ML model monitoring Subscription" resource, the NWDAF shall respond with "200 OK" with the message body containing a representation of the created subscription, as shown in figure 4.7.2.4.3-1, step 2a, or with "204 No Content" as shown in figure 4.7.2.4.3-1, step 2b.

If the immediate reporting indication in the "immRep" attribute within the "eventReportReq" attribute sets to true in the request, the NWDAF shall include the reports of the events subscribed within "immReport" attribute, if available, in the HTTP PUT response.

If an error occurs when processing the HTTP PUT request, the NWDAF shall send an HTTP error response as specified in clause 5.6.7.

If the NWDAF determines that the received HTTP PUT request needs to be redirected, the NWDAF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [6].

\*\*\* 2nd Change \*\*\*

##### 4.8.2.2.3 Update of subscription for event notifications

Figure 4.8.2.2.3-1 shows a scenario where the NF service consumer sends a request to the RE-NWDAF to update a subscription for event notification(s).



Figure 4.8.2.2.3-1: NF service consumer updates subscription to notifications

The NF service consumer shall invoke the Nnwdaf\_RoamingData\_Subscribe service operation to update a subscription to event notification(s) by sending an HTTP PUT request with "{apiRoot}/nnwdaf-roamingdata/<apiVersion>/subscriptions/{subscriptionId}" as Resource URI representing the "Individual NWDAF Roaming Data Subscription", as shown in figure 4.8.2.2.3-1, step 1, to update this "Individual NWDAF Roaming Data Subscription" according to the information in message body. The RoamingDataSub data structure provided in the request body shall include the same contents as in clause 4.8.2.2.2.

Upon the reception of an HTTP PUT request with "{apiRoot}/nnwdaf-roamingdata/<apiVersion>/subscriptions{subscriptionId}" as Resource URI and RoamingDataSub data structure as request body, the RE-NWDAF shall:

- update the subscription of corresponding subscriptionId; and

- store the subscription.

If the RE-NWDAF succesfully update the "Individual NWDAF Roaming Data Subscription" resource, the RE-NWDAF shall respond with "200 OK" with the message body containing a representation of the created subscription, as shown in figure 4.8.2.2.3-1-1, step 2a, or with "204 No Content" as shown in figure 4.8.2.2.3-1-1, step 2b.

If an indication to perform immediate reporting is provided in the request, the RE-NWDAF shall include the reports of the events subscribed within "immReport" attribute, if available, in the HTTP PUT response.

If the RE-NWDAF does not accept the request upon missing the corresponding roaming agreements, the RE-NWDAF shall reject the request with an HTTP "403 Forbidden" response including the "cause" attribute set to "MISSING\_ROAMING\_AGREEMENT".

If an error occurs when processing the HTTP PUT request, the RE-NWDAF shall send an HTTP error response as specified in clause 5.7.7.

If the RE-NWDAF determines that the received HTTP PUT request needs to be redirected, the RE-NWDAF shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [6].

\*\*\* 3rd Change \*\*\*

##### 4.9.2.4.2 Notification about subscribed event

Figure 4.9.2.4.2-1 shows a scenario where the RE-NWDAF sends a request to the NF service consumer to notify for event notifications related to roaming UE(s).



Figure 4.9.2.4.2-1: RE-NWDAF notifies the subscribed event

The RE-NWDAF shall invoke the Nnwdaf\_RoamingAnalytics\_Notify service operation to notify the subscribed event related to roaming UE(s) by sending an HTTP POST request with the "{notifUri}" that was received in the Nnwdaf\_RoamingAnalytics\_Subscribe service operation as Resource URI, as shown in figure 4.9.2.4.2-1, step 1.

If both the repetition period ("repPeriod" or "repetitionPeriod") attribute and the "offsetPeriod" attribute were present in the subscription request for periodical notification, the RE-NWDAF shall produce a notification in every repetition period seconds, including the statistics in the past offset period if the "offsetPeriod" attribute value is negative, or including the prediction for the future offset period if the "offsetPeriod" attribute value is positive.

The RoamingAnalyticsNotification data structure provided in the request body shall include:

- the notification correlation identifier as "notifCorrId" attribute;

- a description of the notified event(s) as "roamEventNotifs" attribute with the same contents as specified for the "eventNotifications" attribute in clause 4.2.2.4.2 but excluding the attributes that are indicated as non applicable in Table 5.8.6.2.3-1.

NOTE: The features mentioned in clause 4.2.2.4.2 are not relevant here.

and may include:

- a cause for termination in the "termCause" attribute if the RE-NWDAF wants to request the termination of this subscription, i.e. to indicate that it will send no further notifications for it.

If the time when analytics information is needed has been provided (via the "timeAnaNeeded" attribute within the "extraReportReq" attribute) during the subscription for an event (via the "event" attribute within the EventSubscription data type), if the time when analytics information is needed is reached but the subscribed analytics information is not ready, the consumer does not need to wait for the analytics information any longer. In this case, the RE-NWDAF may send an HTTP POST request as shown in step 1 of figure 4.9.2.4.2-1, which shall only provide (within the EventNotification data type in the RoamingAnalyticsNotification data type) an indication of the failure event via the "event" attribute and the corresponding failure reason via a "failNotifyCode" attribute, and may also provide a minimum time interval recommended by the RE-NWDAF for the event via a "rvWaitTime" attribute which will be used by the NF service consumer to determine the time when analytics information is needed in similar future analytics subscriptions.

Upon the reception of an HTTP POST request with: "{notifUri}" as Resource URI and RoamingAnalyticsNotification data structure as request body, if the NF service consumer successfully processed and accepted the received HTTP POST request, the NF service consumer shall:

- store the notification; and

- respond with HTTP "204 No Content" status code.

If errors occur when processing the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 5.8.7.

If the NF service consumer determines that the received HTTP POST request needs to be redirected, the NF service consumer shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [6].

\*\*\* 4th Change \*\*\*

##### 5.7.5.2.2 Operation Definition

Callback URI: **{notificationUri}**

The operation shall support the callback URI variables defined in Table 5.7.5.2.2-1, the request data structures specified in table 5.7.5.2.2-2 and the response data structure and response codes specified in Table 5.7.5.2.2-3.

Table 5.7.5.2.2-1: Callback URI variables

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| notificationUri | Uri | The Notification Uri is assigned within the Individual NWDAF Roaming Data Subscription Resource and described within the RoamingDataSub data type (see table 5.7.6.2.2-1). |

Table 5.7.5.2.2-2: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| NnwdafDataManagementNotif | M | 1 | Provides data related to roaming UE(s). |

Table 5.7.5.2.2-3: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | The receipt of the Notification is acknowledged. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during the event notification.  (NOTE 2) |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during the event notification.  (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [6] also apply.  NOTE 2: The RedirectResponse data structure may be provided by an SEPP or SCP (cf. clause 6.10.9.1 of 3GPP TS 29.500 [6]). | | | | | |

Table 5.7.5.2.2-4: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification is redirected.  For the case where the notification is redirected to the same target via a different SEPP or SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [6]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected. |

Table 5.7.5.2.2-5: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification is redirected.  For the case where the notification is redirected to the same target via a different SEPP or SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [6]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected. |

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