**3GPP TSG-SA WG6 Meeting #44 S6-211622**

**e-meeting, 12th – 20th July 2021 (revision of S6-21xxxx)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.434** | **CR** | **0075** | **rev** | **-** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Improved Event Monitoring Service | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eSEAL | | | | |  | ***Date:*** | | | 2021-07-01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The NRM service is enhanced with event monitoring (including analytics event) function for VAL server.  Such function in SEAL should provide more values to the consumer instead of simply re-exposing 3GPP CN services; otherwise the VAL server can directly call 3GPP CN services w/o delay in the additional message hop in NRM. Note that technically, keeping one subscription (with multiple sub-subscriptions within the parent subscription) in VAL server is not a big benefit comparing to that VAL server keeping multiple subscriptions for several 3GPP CN APIs.  The potential enhancements include:   * Support VAL UE group as alternative to a list of VAL users. * The VAL server can optionally include VAL service ID to indicate the VAL service (e.g. V2X platooning, IoT mobility). * temporal and/or spatial validity conditions (e.g. every Tuesday, 9:00am -10:00am in TA1 and TA2) which are controlled by the NRM server. * Capability of run-time configuration for event details and related profile id mapping.     In addition, the following aspects are fixed :   1. the subscription for 3GPP CN monitoring events and analytics events handled by the NRM server shall be based on actual received events from the VAL server, i.e. it is not mandatory for the VAL server to subscribe to **both** monitoring events and analytics events. 2. Timeout IE in the Monitoring Events Subscription Request says: A timeout period when subscription response is not received.   This is incorrect because a protocol level timeout for SEAL-S reference point should be supervised by the service consumer (VAL server) therefore such IE is not used by service producer (NRM server). | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Define VAL UE group as another option for target UE. * Define VAL service ID in the request message. * Define validity conditions in the request. * Define the dynamic mechanism of how to derive the event details if not provided explicitly. * Correct the event subscription and its corresponding notification descripition. * Remove Timeout IE in the subscription request. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | * lack of simplification for service re-exposure * Incorrect description for the event monitoring subscription. * Incorrect IE sent to NRM server for supervising service transaction. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 14.3.2.17, 14.3.2.18, 14.3.6.2.2, 14.3.6.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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's revision history:*** | |  | | | | | | | | |

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

#### 14.3.2.17 Monitoring Events Subscription Request

Table 14.3.2.17-1 describes the information flow from the VAL server to the NRM server for monitoring events subscription request.

Table 14.3.2.17-1: Monitoring Events Subscription request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Identities list | O (NOTE 1) | List of VAL users or VAL UEs whose events monitoring is requested. |
| VAL group ID | O (NOTE 1) | VAL group ID of the VAL UE group. |
| VAL service ID | O | VAL service ID. |
| Monitoring profile ID | O (NOTE 2) | The monitoring profile ID, which identifies a list of monitoring and/or analytics events. |
| Validity conditions | O | The temporal and/or spatial conditions applied for the events to be considered as valid. |
| Event Details | O (NOTE 2) | List of monitoring and/or analytics events that the VAL server is interested in. |
| NOTE 1: For identifying the target UE(s), either a list of VAL users/UEs or a group of VAL UEs shall be provided.  NOTE 2: Either Event Details or Monitoring profile ID shall be present. | | |

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

#### 14.3.2.18 Monitoring Events Subscription Response

Table 14.3.2.18-1 describes the information flow from the NRM server to the VAL server for Monitoring Events Subscription response.

Table 14.3.2.18-1: Monitoring Events Subscription response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Subscription status | M | It indicates the subscription result |
| Monitoring profile ID | O | It indicates the monitoring profile identifier. It is present when Event Details are provided in the Monitoring Events Subscription request. |

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

##### 14.3.6.2.2 Procedure

The procedure for VAL server subscribing to the NRM server, to monitor the VAL UE(s) related events is described in figure 14.3.6.2.2-1.

Pre-conditions:

- The NRM server is authorized to consume the core network services (Monitoring events as specified in 3GPP TS 23.502 [11] and Analytics services as specified in 3GPP TS 23.288 [34]);



Figure 14.3.6.2.2-1: Monitoring Events Subscription Procedure

1. The VAL server sends Monitoring Events Subscription request to the NRM server, requesting the NRM server to monitor the events related to the VAL UE(s) as per the subscription request, and shall include the information related to the events that the VAL server is interested in. The VAL server shall include either event details or a Monitoring profile ID for identifying the monitoring and/or analytics events. The VAL server may include VAL service ID, temporal and/or spatial validity conditions applied for the monitoring events.

2. The NRM server shall check if the VAL server is authorized to initiate the Monitoring Events Subscription request and if authorized, shall respond with Monitoring Events Subscription Response message, indicating the successful subscription status along with subscription information to the VAL server. If event details are not received, the NRM server derives the event details from the Monitoring profile ID based on local configuration then uses the derived information to consume the relevant core network services; otherwise, the NRM server uses the received event details to consume the relevant core network services and generates a Monitoring profile ID which is included in the Monitoring Event Subscription response. The VAL service ID may be used by the NRM server to derive event specific information in 3GPP core network services (e.g. QoS requirement in analytics event subscription), based on local configuration.

NOTE: The mapping between Monitoring profile ID and event details in the NRM server can be pre-configured and/or dynamically built based on VAL server request with explicitly sent event details.

3. Based on the events of interest information in the subscription request message, if applicable, the NRM server shall subscribe to the UE monitoring events (like, LOSS\_OF\_CONNECTIVITY, COMMUNICATION\_FAILURE etc.) for the set of UEs (VAL UEs) in the subscription request, as specified in 3GPP TS 23.502 [11].

4. Based on the events of interest information in the subscription request message, if applicable, the NRM server shall subscribe to the UE analytics events (like ABNORMAL\_BEHAVIOUR etc.) for the set of UEs (VAL UEs) in the subscription request, as specified in 3GPP TS 23.288 [34].

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

##### 14.3.6.3.2 Procedure

The procedure for NRM server notifying the VAL server with VAL UE(s) related events is described in figure 14.3.6.3.2-1.

Pre-conditions:

- The VAL server has subscribed with NRM server using Monitoring Events Subscription Procedure as specified in clause 14.3.6.2;



Figure 14.3.X.3.2-1: Monitoring Events Notification Procedure

1. If applicable, the NRM server receives the VAL UE related monitoring event notifications from the 3GPP core network as specified in 3GPP TS 23.502 [11].

2. If applicable, the NRM server receives the VAL UE related Analytics event notifications from the 3GPP core network as specified in 3GPP TS 23.288 [34].

3. The NRM server notifies the VAL server about the events related to the VAL UE in Notify Monitorng Events message. If multiple events are to be notified, then the NRM server may aggregate the notifications and send to the VAL server.

\* \* \* End of changes \* \* \* \*