**3GPP TSG-SA WG6 Meeting #54-e S6-231255**

**17th – 26th April 2023 (revision of S6-23xxxx)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | SA6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eSEAL2 | | | | |  | ***Date:*** | | | 2023-04-11 |
|  |  | | | |  | |  | | |  |
| ***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 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | When creating the notification channel, the notification management client shall be able to specify the constrained mode of the UE if applicable. Based on the constrained mode the NMS can better handle the notifications targeted to the NMC which are operating in constained mode. How the notifications are handled in tandem with constrained mode of the UE is in scope of implementation | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the constrained mode attribute as part of the creation notification channel IF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Constrained mode of the UE would not be taken into account when delivering the notifications to the UE. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

### 17.3.3 Procedure for creating notification channel to receive notifications

Figure 17.3.3-1 below illustrates the procedure for receiving notifications from the notification management server by the notification management client.

Pre-conditions:

1. The notification management client does not have any notification channel open with the notification management server.



Figure 17.3.3-1: Receiving notifications from notification management server

1. The VAL client requests the notification management client to subscribe to and receive notifications from the VAL server.

2. The notification management client creates notification channels (i.e. endpoint URLs), if not created already, to be used by the VAL server to send notification messages. To create notification channel, the notification management client sends a create notification channel request to the notification management server. The desired validity duration for the channels to be used and the notification channel type (PUSH or PULL) are included in the request. The notification management client decides which type of the notification channel to be used based on the UE capability. The notification management client may also include UE constrained attributes in case if resource constraints are observed.

3. The notification management server authenticates the notification management client and authorizes its request.

4. The notification management server sends the notification management client the Create notification channel response with the endpoint URLs that will be used by the VAL server to send the notification messages and the notification management client to receive the notification messages. The notification management server also includes what is the valid duration for these endpoint URLs to be used and the channel ID to uniquely identify the channel created in the response. The notification management server shall store the UE constrained attributes if received in the create notification channel request and may assess the same while deciding to deliver the notifications.

NOTE 1: The actions taken by the notification management server based on the UE constrained mode while delivering the notifications (e.g. reduce notification rate by delaying the delivery of normal notifications and delivery of only emergency notifications) to the notification management client is left to the implementation.

5. If the notification type is PULL method, the notification management client sends the Open notification channel to the notification management server to start receiving the notification message. For certain PUSH method notification type (such as WebSockets) the notification management client requests the notification management server to start the PUSH notification service with its specific protocol that is outside the scope of this specification.

NOTE 2: This step is not required if the notification client wants to receive the notification messages via PUSH notification server.

6. The notification management client responds to the VAL client the status of its request as in step 1 to receive notifications from the VAL server. It also includes the callback URL which needs to be used by the VAL client while subscribing to the VAL server for receiving notifications.

7. The VAL client subscribes to the VAL server for receiving notifications. This request includes the subscription data and the callback URL returned from the notification management server in step 4.

NOTE 3: This step is outside the scope of this specification.

8. The VAL server generates the notification message for the subscription request from the VAL client.

9. The VAL server sends the notification message to the notification management server containing the VAL UE or VAL user ID, VAL service ID, VAL application ID and the notification data.

10. If the delivery method is PULL, the notification management server sends the notification message to the notification management client over the opened notification channel.

NOTE 4: If the delivery method is PUSH via PUSH notification server, the notification management server sends the notification message to the OEM Push server (not shown in the figure and is outside the scope of this specification) to deliver to the notification management client.

11. The notification management client delivers the received notification message to the appropriate VAL client based on the details as received in the notification message from the notification management server.

Editor's note: How to support different types of PULL and PUSH mechanisms for delivery of notification data is FFS.

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

#### 17.3.2.1 Create notification channel request

Table 17.3.2.1-1 describes the information flow create notification channel request from the notification management client to the notification management server.

Table 17.3.2.1-1: Create notification channel request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Requestor identity | M | Identity of the requesting notification management client |
| Channel type | M | Indicates PULL or PUSH method to be used for delivering the notification messages |
| PUSH channel details (see NOTE) | O | Carries the details of the type of PUSH delivery and its associated data |
| Validity Duration | M | How long the notification channel will last (i.e. channel lifetime) as requested by the notification management client. |
| UE constrained mode | O | Indicates whether the UE is operating in constrained mode and type of the constraints (e.g. power, memory, processing capacity etc.) |
| NOTE : This IE shall be present if the channel type is PUSH | | |