**3GPP TSG-SA3 Meeting #103-e *draft\_S3-211551-r3***

**e-meeting, 17 – 28 May 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **33.535** | **CR** | **0072** | **rev** | **-** | **Current version:** | **17.1.0** |  |
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| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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:*** | UDM notifies AAnF AKMA context removal | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE, Samsung | | | | | | | | | |
| ***Source to TSG:*** | S3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | AKMA | | | | |  | ***Date:*** | | | 2021-04-30 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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:*** | | If KAF expires in AF, AF can still request a key refresh from AAnF. Since AAnF has no information as to whether UE has been purged from the network, it will allow refresh. AAnF need to delete the AKMA context. And in clause 4.5.3 of TS 23.502, it described how to purge the subscriber data in AMF. So it is necessary to clarify how to purge the subscriber data in AAnF.  There may be two solutions:  1. the UDM notifies the AAnF via AUSF to delete AKMA context.  2. The UDM directly instructs the AAnF to delete the AKMA context.  The disadvantage of Solution 1 is that it is necessary to add the new AAnF service and need the notification service via AUSF. Solution 2 directly adopts the existing UDM notification service and UDM can directly notify AAnF to delete the AKMA context when AAnF is faraway from UDM.  Therefore, it is recommended Solution 2. | | | | | | | | |
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| ***Summary of change:*** | | This CR proposes the following changes:   1. To add TS 23.502 to the References. 2. To add AAnF selection by UDM in clause 4.2.5. 3. To add a new clause 6.X to capture the procedure for AKMA context removal support in AKMA. 4. To modify the UDM services in clause 7.4. | | | | | | | | |
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| ***Consequences if not approved:*** | | Lack of proposed procedure/service leads to the misuse of AKMA services. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.5, 6.X(new),7.1.X(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\*\*\* 1st CHANGE\*\*\*

### 4.2.5 UDM

The UDM is defined in TS 23.501 [3] with the additional functions:

- UDM stores AKMA subscription data of the subscriber.

- UDM performs the AAnF selection.

\*\*\* NEXT CHANGE\*\*\*

## 6.X AAnF AKMA context removal

## 6.X.1 General

This procedure is used to remove the AKMA context in the AAnF. NF consumers may initiate this procedure due to local policy.



**Figure 6.X-1: AAnF AKMA context removal procedure**

1. NF initiates an AAnF AKMA context removal procedure to delete the AKMA context in AAnF.

2. NF discovers the AAnF of the UE, as specified in clause 6.X and sends a Naanf\_AKMA\_AnchorKey\_Deregistration request to AAnF to remove AKMA context for the UE.

3. AAnF shall delete AKMA Context (e.g. A-KID, KAKMA) from its local database.

4. AAnF sends aNaanf\_AKMA\_AnchorKey\_Deregistration response to NF.

## 6.X.2 AAnF AKMA context removal by the UDM

This procedure is used by UDM to delete the AKMA context in AAnF. The conditions under which the UDM initiates this procedures left to the UDM implementation (e.g., UE is no longer authorized to use AKMA).



Figure 6.X-2: AAnF AKMA context removal procedure by UDM

1. UDM initiates an AAnF AKMA context removal procedure to delete the AKMA context in AAnF.

2. UDM discovers the AAnF of the UE, as specified in clause 6.X, and sends a Naanf\_AKMA\_AnchorKey\_Deregistration request to AAnF to remove AKMA context for the UE.

3. AAnF shall delete AKMA Context (e.g. A-KID, KAKMA) from its local database.

4. AAnF sends aNaanf\_AKMA\_AnchorKey\_Deregistration response to UDM.

From this point onwards, any request to refresh KAF by the AF/NEF fails and UEs can no longer access to the application.

\*\*\* NEXT CHANGE\*\*\*

### 7.1.X Naanf\_AKMA\_AnchorKey\_Deregistration operation

**Service operation name:** Naanf\_AKMA\_AnchorKey\_Deregistration.

**Description:** The NF consumer requests the AAnF to remove the AKMA related key material.

**Input, Required:** SUPI

**Input, Optional:** None.

**Output, Required:** None.

**Output, Optional:** None.

\*\*\* END OF CHANGES\*\*\*