**3GPP TSG-SA3 Meeting #103-e *draft\_S3-211551-r1***

**e-meeting, 17 – 28 May 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **33.535** | **CR** | **0072** | **rev** | **-** | **Current version:** | **17.1.0** |  |
|  |
| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_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 |
| ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***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:*** | 2, 4.2.5, 6.X(new), 7.4 |
|  |  |
|  | **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\*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[3] 3GPP TS 23.501: "System Architecture for the 5G System".

[4] 3GPP TS 33.220: "Generic Authentication Architecture (GAA); Generic Bootstrapping Architecture (GBA)".

[5] 3GPP TS 23.222: "Common API Framework for 3GPP Northbound APIs".

[6] IETF RFC 7542: "The Network Access Identifier".

[x] 3GPP TS 23.502: "Procedures for the 5G System (5GS)".

\*\*\* NEXT 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

If the AKMA subscription of the UE need to be cancelled or UE disconnects from the network, the UDM should initial a AAnF AKMA context removal procedure to delete the AKMA context in AAnF.



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

1. AKMA subscription of the UE is cancelled or UE disconnects from the network (e.g. purged).

2. UDM discovers the AAnF of the UE based on local configuration or via NRF base on RID, 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 a Naanf\_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\*\*\*

## 7.4 Services provided by UDM

UDM services related to AKMA key generation service are defined in TS 33.501 [2] clause 14.2.2.

UDM services related to AKMA context removal service are defined in TS 23.502 [x] clause 5.2.3.2.3.

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