**3GPP TSG-CT WG3 Meeting #112eC3-205342**

**E-Meeting, 04th – 13th November 2020**

(revision of CP-202254)

**Source: China Mobile Communications Group Co.,Ltd., Qualcomm Incorporated**

**Title: Revised WID on Authentication and key management for applications based on 3GPP credential in 5G**

**Document for: Endorsement**

**Agenda Item: 17.1.1**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>   
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

# Title: Authentication and key management for applications based on 3GPP credential in 5G

# Acronym: AKMA-CT

## Unique identifier: 890008

## Potential target Release: Rel-17

## 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  | X |  | X |  |
| **No** | X |  | X |  |  |
| **Don't know** |  |  |  |  |  |

## 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

This work item is a Building Block.

|  |  |
| --- | --- |
|  | Feature |
| X | Building Block |
|  | *Work Task* |
|  | Study Item |

### 2.2 Parent Work Item

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| AKMA | SA3 | 850021 | Authentication and key management for applications based on 3GPP credential in 5G |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| 800036 | Study on authentication and key management for applications based on 3GPP credential in 5G | The related SA3 study item. |

## 3 Justification

3GPP SA3 has finished the WID AKMA which has investigated new feature to allow only authentic UEs accessing to application servers, which follows the definition of 3GPP TS 33.535.

According to SA3 work item, normative work is required for the following features:

- Deriving the A-KID;

- Deriving AKMA key after primary authentication;

- Deriving AKMA Application Key for a specific AF;

- Request AKMA Application Key via NEF;

- Change of AKMA key;

NOTE: The Ua\* reference point between the UE and the AKMA AF is application specific. Specifying Ua\* protocol is not considered in current work item.

## 4 Objective

The objective is to study and then specify the 5GC aspects to support Authentication and key management for applications based on 3GPP credential in 5G

For CT3, the expected work will include analysis and the related normative work on:

a) Specify new service provided by AKMA Anchor Function (AAnF) to support registration of AKMA Key;

b) Specify new service provided by AKMA Anchor Function (AAnF) to support deriving AKMA Application Key;

c) Impacts on NEF to allow the outside AF requesting AKMA Application Key.

For CT4, the expected work will include analysis and the related normative work on:

a) Impacts on AUSF to provide AKMA key material;

b) Impacts on UDM/UDR to provide the AKMA indicator.

For CT1, the expected work will include analysis and the related normative work on:

a) Impacts on UE to support AKMA.

Coordination between CT1, CT3, CT4 and SA3 will be performed during the work.

## 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* | | | | | |
| Type | TS/TR number | Title | For info  at TSG# | For approval at TSG# | Rapporteur |
| TS | 29.535 | 5G System; AKMA Anchor Services | CT#91  (March 2021) | CT#92  (June 2021) | Huang Zhenning (China Mobile)  huangzhenning@chinamobile.com |

|  |  |  |  |
| --- | --- | --- | --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| 29.503 | Extensions of Unified Data Management Services for AKMA | CT#92  (June 2021) | CT4 responsibility |
| 29.510 | Extensions of NRF Services for AKMA | CT#92  (June 2021) | CT4 responsibility |
| 29.522 | Extensions of the APIs which are referred by NEF Northbound APIs for AKMA | CT#92  (June 2021) | CT3 responsibility |
| 29.571 | Common Data related this work item. | CT#92  (June 2021) | CT4 responsibility |
| 24.501 | Impacts on UE to support AKMA | CT#92  (June 2021) | CT1 responsibility |
| 29.509 | Impacts on AUSF to provide AKMA key material | CT#92  (June 2021) | CT4 responsibility |
| 29.505 | Extensions of AuthenticationSubscriptionData for AKMA | CT#92  (June 2021) | CT4 responsibility |

## 6 Work item Rapporteur(s)

Huang Zhenning (China Mobile)

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## 7 Work item leadership

CT3

## 8 Aspects that involve other WGs

None.

## 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| China Mobile |
| Ericsson |
| Huawei |
| Samsung |
| ZTE |
| Hewlett Packard Enterprise |
| Nokia |
| Nokia Shanghai Bell |
| Qualcomm Incorporated |
| CATT |
| MediaTek Inc. |
| Cisco Systems |