**3GPP TSG-SA3 Meeting #105-e *S3-220170***

**e-meeting, 14 - 25 February 2022 (revision of S3-yyxxxx)**

**Source: Huawei, HiSilicon**

**Title: New WID on Study of Security aspect of home network triggered primary authentication**

**Document for: Approval**

**Agenda Item: 4.18**

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: Study of Security aspect of home network triggered primary authentication

Acronym: FS\_HN\_Auth

Unique identifier:

{A number to be provided by MCC at the plenary}

Potential target Release: Rel-18

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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 Study Item

{Tick one box. "**Feature** / **Building Block** / Work Task" form a hierarchical structure. E.g. no Building Block can be proposed without a corresponding parent Feature. The full structure of all existing Work Items is shown in the 3GPP Work Plan in <ftp://ftp.3gpp.org/Information/WORK_PLAN>}

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

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| N/A | N/A | N/A | N/A |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| N/A | N/A | N/A |

**Dependency on non-3GPP (draft) specification:**

# 3 Justification

In SA3#104 meeting, Home network triggered primary authentication was discussed to address several issues, such as UPU/SoR COUNT wrap around, long lived key KAUSF and unavailability of valid key KAF. If the UPU/SoR COUNT is wrap around and if there is no mechanism to get a new KAUSF, then UPU/SoR feature cannot be used. KAF refresh is now dependend on the capability of application layer protocols, in case if the protocol cannot refresh the KAF (as there is no support for most of the protocols to refresh the shared secret, but supports refresh of session keys), then the AKMA service cannot be offered when the KAF in use becomes invalid for the associated UE and AF. This may become the bottleneck for the promotion of the AKMA.

Thus, a procedure of Home network triggered primary authentication is useful to reduce the shortcomings of those schemes, and it is also benefit to help the home network to gain more control of the UE to face the future architecture enhancement.

# 4 Objective

The objective of this study includes: follows:

1. Study the threats and the security requirement that needs HN initiated primary authentication triggered by a network function. Identifying which network function in the HN is better suitable to trigger the primary authentication, and corresponding procedures, and the potential impacts on existing visited and home network, and the running services of the UE.
2. Conclude on selected solutions for potential normative 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 |
| Internal TR | TR 33.8XX | Study of HN triggered primary authentication | TSG#96 | TSG#96 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| N/A | N/A | N/A | N/A |
|  |  |  |  |

# 6 Work item Rapporteur(s)

He Li, Huawei, LIHE2@HUAWEI.COM

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

SA2

CT4

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Huawei |
| HiSilicon |
| OPPO |
| China Mobile |
| LG Electronics |
| Deutsche Telekom AG |
| ZTE |
| NEC |