**3GPP TSG-SA3 Meeting #116 *S3-242509-r3***

Jeju, South Korea, 20th - 24th May 2024 (revision of S3-241961)

**Source: Huawei, HiSilicon**

**Title: User privacy protection**

**Document for: Approval**

**Agenda Item: 5.10**

# 1 Decision/action requested

***Approve the pCR to TR 33.700-32***

# 2 References

None

# 3 Rationale

This contribution proposes a solution to address the key issue #1 in TR 33.700-32.

# 4 Detailed proposal

pCR

\*\*\* Start of 1st Change \*\*\*

## 6.Y Solution #Y: User privacy protection

### 6.Y.1 Introduction

This solution addresses the key issue #2.

The solution protects a user identifier (UID) used in 3GPP system by replacing it with the concealed version, i.e. user identifier concealed (UIC). Since UID is not in the realm of 3GPP systems, the mapping between the UID and UIC is out of scope of 3GPP system, i.e. UIC and how UID is mapped to UIC is transparent to the 3GPP systems.

In addition, the mapping between UIC and UID is not fixed and changed from time to time to avoid the user being tracked or linked.

Editor’s note: ffs to clarify how and who to conceal UID

Editor’s note: In case of PDU session request, how we will ensure the privacy of the user ID considering the mobility scenario

### 6.Y.1 Solution details

A user authentication procedure is examplified below to illustrate how to use UIC, instead of UID to protect user privacy. It is notable that the authentication procedure is made generaic as much as possible to accomodate different authentication methods (this solution is not meant to address authentication procedure).

The examplified user identity authentication and authorization (UIAA) procedure with user privacy protection is as follows:

1.The UE sends a Registration Request to the AMF.

2. The AMF triggers the UIAA procedure.

3: The AMF sends the AAA-Server the UIAA message with GPSI included.

Editor's note: With the UIC transparent to the AMF, how the AMF determines whether, for whom, and how to trigger user authentication is FFS.

4. The AAA-S and the UE perform user authentication and authorization with respect to the user, e.g. the user is identifer as UIC between AAA-S and the UE. However, the UIC is transparent to the AMF. There can be multiple sessage exachanges between UE and AAA-S, depending on authenticaiton method used. The authenticaiton method is out of scope of 3GPP.

5. The AAA-S sends the authentication results to AMF, which stores the result identifying the user by UIC, the concealed version of UID. The UIC should be changed for every authentication to avoid being tracked or linked to previous authentication.

6. The AMF sends registration accept to the UE.



Figure 6.y.2-1 illustration of user privacy protection in a user authentication procedure

### 6.y.3 Evaluation

\*\*\* End of 1st Change\*\*\*