**3GPP TSG-CT WG6 Meeting #120-bis *draft-*C6-240681**

**Orlando, US, 19th Nov – 22nd Nov 2024**

Title: Reply LS on UE behaviour in case of SUCI calculation failure

Response to: Reply LS S3-245137/C6-240624 on UE behaviour in case of SUCI calculation failure

**Release: Rel-19**

**Work Item: 5GProtoc19**

Source: 3GPP CT WG6

To: 3GPP SA WG3

Cc: 3GPP CT WG1

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**Send any reply LS to: 3GPP Liaisons Coordinator,** [**mailto:3GPPLiaison@etsi.org**](mailto:3GPPLiaison@etsi.org)

Attachments: none

1 Overall description

**Request 1:** *SA3 asks CT6 to provide SA3 with details on what could lead to the incorrect configuration of the information required for the SUCI calculation in the USIM, e.g. when and how it happens and also why the error case is needed*.

When the USIM Application processes any APDU command (e.g. AUTHENTICATE), there may be scenarios where it cannot fulfil its function. In such cases, the USIM Application reports the malfunction with a status word indicating the cause of the error.

The GET IDENTITY command is not an exception. The purpose of C6-240155 (CR #1030 for TS 31.102) is to clarify the behavior when the information required for the SUCI calculation is not correctly configured in the USIM.

The information required for the SUCI calculation, as per clause 7.5.1.1 of TS 31.102, includes:

* Home network identifier
* Routing indicator
* Home network public key
* Home network public key identifier
* Protection scheme identifier
* SUPI

A configuration error occurs if the above information is either not correctly provisioned to the USIM (e.g. technical mechanism to provision the information has a failure, incomplete information is provided, etc.) or the provisioned information is inconsistent (e.g. mismatched Home network public key size, invalid protection scheme identifier).

Such errors prevent the USIM from calculating the SUCI. In such scenarios, the CR proposes to fail and return an error status word because the fallback to the “null” scheme, as defined in clause 6.12.2 of TS 33.501, is not accomplished:

*The UE shall generate a SUCI using "null-scheme" only in the following cases:*

*- if the UE is making an unauthenticated emergency session and it does not have a 5G-GUTI to the chosen PLMN, or*

*- if the home network has configured "null-scheme" to be used, or*

*- if the home network has not provisioned the public key needed to generate a SUCI.*

It is unrealistic for the CR to define an exhaustive list of scenarios where such misconfigurations occur because it depends on how the information required for the SUCI calculation is stored and managed by the USIM Application, which is beyond the scope of the specification as described in clause 7.5.1.1 of TS 31.102 (except for the Routing indicator and SUPI). It also depends on the implementation of the SUCI calculation by the USIM Application, where behaviors (for the parts that are beyond what is defined in the specification) may vary across different implementations.

**Request 2:** *CT6 are requested to let SA3 know on their view on the expected frequency of the error case.*

A configuration error as described above is considered an exceptional and rare situation because operators take the utmost care in configuring this information correctly by performing a validation process of the USIM configurations (including the information required for the SUCI calculation) that will be used on their UICCs. Such a validation process will easily detect a configuration error in the SUCI part.

The probability is equivalent to the risk that the information required for network authentication (e.g. K and OpC) is not correctly configured to the USIM.

2 Actions

**To SA3**

**ACTION:** CT6 asks SA3 to take into consideration the above information.

3 Dates of next TSG CT WG 6 meetings

3GPP TSG CT6#121 18 Feb - 21 Feb 2025 Athens, GR

3GPP TSG CT6#122 20 May - 23 May 2025 Bratislava, SK