3GPP TSG SA WG3 Security — S3#20 **S3-010540**

16 - 19 October, 2001

Sydney, Australia

Source:	**TSG-SA WG3**
To:	**TSG-CN WG4**
Cc:	**TSG-SA WG2, TSG-CN WG1**
Title:	**Response to LS from CN4 (N4-010969) on signalling for user authentication**
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1. Answers to questions raised by CN4:

This LS contains the response from SA3 to N4-010969= S3-010412, an LS received from CN4 in SA3#19bis (14th September, 2001):

- Second bullet of N4-010969:

It is stated that concerns arose in CN4 because of the sentence in the liaison from SA3 (S3-010387) (= N4-010943) ".... that SA3 sees no need for Authentication Failure Reporting or Positive Authentication reporting back to the HSS". The following section is meant to clarify this:

Clarification:

The newly introduced flag in S3-010355 is needed: The reason for introducing this flag was the handling of mobile terminated calls while initial registration is still in progress and not successfully completed.

This flag shall be stored in the HSS together with the S-CSCF name. The aim of the flag is to indicate whether a particular public identity of the user is unregistered or registered at a particular S-CSCF or if the initial registration at a particular S-CSCF is pending. The HSS receives the information about this state (together with the S-CSCF name and the user identity) from the S-CSCF with which (re-) registration of the user is carried out only when a **Cx-Put** message is sent from the S-CSCF to the HSS. (This is at least the case when the state of the flag changes.)

In case of an initial registration this is necessary in message 8 of S3-010355, where the flag is set to "initial registration pending". But also in the **Cx-Put** message after successful / unsuccessful authentication, where the flag is reset to "registered" or "unregistered", respectively, resolving the "initial registration pending" state.

This is different for re-registration (cf. S3-010355, section3). Here, the flag will never be in the status "initial registration pending" as the user is already registered. Therefore, at the beginning of a re-registration (cf. S3-010355, figure 5) the state of the flag in the HSS is always "registered". Therefore message 6 and 7 are optional, as the S-CSCF may detect that this is a re-registration.

Whether the content of the flag has to be changed in the HSS in course of the re-registration procedure, depends on the policy of the home provider in the S-CSCF for the handling of an unsuccessful re-registration. There are two cases:

First case: User is de-registered after unsuccessful re-registration.
In this case the flag would be set to "unregistered" and an appropriate message would be sent from the S-CSCF to the HSS.

Second case: User remains registered after unsuccessful re-registration.

Then even in the case of an authentication failure, the flag in the HSS remains in the state “registered” and therefore no information has to be sent to the HSS.

- Third bullet of N4-010969:

It is asked for a clarification how the validation of public identities described in S3-010402 (= N4-010945) should be carried out.

It is proposed to validate the public identities in the HSS (i.e. alternative 2 of S3-010402 shall be used).

Clarification:

The current understanding of this issue in SA3 is in line with N4’s view expressed in the LS. This is explained in the following in more detail.

The underlying problem to be solved is that there is no security relation between the public user identity IMPU and the private user identity IMPI. Therefore it has to be checked if the IMPI and IMPU sent in a register message belong to the same user. The IMPI and all associated IMPUs for a certain user are stored in the HSS together with the appropriate service profiles.

In course of a (re-)registration the **Cx-Put** message which contains both the IMPI and the IMPU is sent by the S-CSCF to the HSS, (cf. S3-010355). In order to create the appropriate response message the HSS has to find the IMPI in its storage and subsequently the requested IMPU has to be found. Therefore the check, if IMPI and IMPU belong to the same user has to be carried out by the HSS anyhow. If IMPI and IMPU do not belong to the same user the response message from the HSS to the S-CSCF has to indicate the failure by an appropriate failure code.

2. Actions:

N4 is kindly requested to review this LS and inform S3 **if N4 disagrees** with the above statements.