

CR-Form-v7
CHANGE REQUEST
⌘ 33.203 CR CRNum ⌘ rev - ⌘ Current version: 5.5.0 ⌘

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘	Removing Cx-put and response procedure in failure cases
Source:	⌘	Nokia
Work item code:	⌘	IMS-ASEC
		Date: ⌘ 28/04/2003
Category:	⌘	F
		Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .
		Release: ⌘ Rel-5 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘	The original text suggests: "If the IMPU was not already registered, the S-CSCF shall send a Cx-Put to the HSS to set the registration-flag for that IMPU to unregistered. If the IMPU was already registered, the S-CSCF does not change the registration-flag." This introduces unnecessary procedure to correct the data stored in HSS.
Summary of change:	⌘	The CR suggests to remove redudant procedure: Cx Put and Put response between S-CSCF and HSS in both failures cases.
Consequences if not approved:	⌘	Waste of resources.

Clauses affected:	⌘	6.1.2								
Other specs affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ 24.229 Test specifications O&M Specifications	Y	N	X			X		X
Y	N									
X										
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Other comments:	⌘									

6.1.2.1 User authentication failure

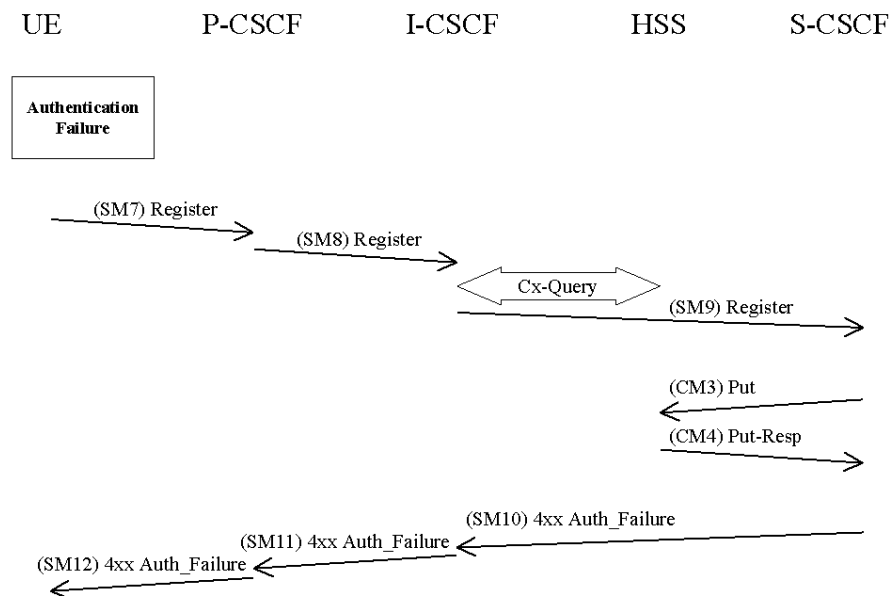
In this case the authentication of the user should fail at the S-CSCF due an incorrect response (received in SM9). However, if the response is incorrect, then the IK used to protect SM7 will normally be incorrect as well, which will normally cause the integrity check at the P-CSCF to fail before the response can be verified at S-CSCF. In this case SM7 is discarded by the IPsec layer at the P-CSCF.

If the integrity check passes but the response is incorrect, it is the SM7 containing the incorrect RES. ~~the~~ The message flows are identical up to and including SM9 as a successful authentication (c.f. clause 6.1.1). Once the S-CSCF detects the user authentication failure it should proceed in the same way as having received SM9 in a network authentication failure (see clause 6.1.2.2). The S-CSCF sends a 4xx Auth Failure in next message SM10 indicating the user authentication failure. No security parameters shall be included in this message.

SM10:
SIP/2.0 4xx Auth Failure

6.1.2.2 Network authentication failure

In this section the case when the authentication of the network is not successful is specified. When the check of the MAC in the UE fails the network can not be authenticated and hence registration fails. The flow is identical as for the successful registration in 6.1.1 up to SM6.



The UE shall send a Register message towards the HN including an indication of the cause of failure in SM7. The P-CSCF and the I-CSCF forward this message to the S-CSCF.

SM7:
REGISTER(Failure = *AuthenticationFailure*, IMPI)

Upon receiving SM9, which includes the cause of authentication failure, the S-CSCF shall set the registration flag in the HSS to *unregistered*, if the IMPU is not currently registered. To set the flag the S-CSCF sends in CM3 a Cx-Put to the HSS. If the IMPU is currently registered, the S-CSCF does not update the registration flag.

CM3:
Cx-AV-Put(IMPI, Clear S-CSCF name)

The HSS responds to CM3 with a Cx-Put-Resp in CM4.

In SM10 the S-CSCF sends a 4xx Auth_Failure towards the UE indicating that authentication has failed, no security parameters shall be included in this message.

Upon receiving SM10 the I-CSCF shall clear any registration information related to the IMPI.

6.1.2.3 Incomplete authentication

If the S-CSCF does not receive a response to an authentication within an acceptable time, it considers the authentication to have failed. [This may be caused by the abnormal cases such as network authentication failure, or re-transmission failure etc.](#) ~~If the IMPU was not already registered, the S-CSCF shall send a Cx-Put to the HSS to set the registration flag for that IMPU to unregistered (see message CM3 in clause 6.1.2.2). If the IMPU was already registered, the S-CSCF does not change the registration flag.~~