

CHANGE REQUEST

33.220 CR 034 rev - Current version: **6.2.0**

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

Title:	Adding a note about replay protection		
Source:	3		
Work item code:	SEC1-SC	Date:	16/11/2004
Category:	F	Release:	Rel-6
	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 .		Use <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7)

Reason for change:	For Ua protocols that have no intrinsic replay protection, implementers should be aware that GBA does not guarantee key freshness without forcing a re-run of AKA.
Summary of change:	A note that warns about the dangers of re-using keys with some Ua protocols is added.
Consequences if not approved:	An implementation of a Ua protocol without intrinsic replay protection may allow re-use of a key, which could lead to the replay attacks being possible.

Clauses affected:	4.2.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
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Other comments:											

4.2.2 Network application function (NAF)

After the bootstrapping has been completed, the UE and an operator-controlled NAF can run some application specific protocol where the authentication of messages will be based on those session keys generated during the mutual authentication between UE and BSF.

General assumptions for the functionality of an operator-controlled NAF are:

- there is no previous security association between the UE and the NAF;
- NAF shall be able to locate and communicate securely with the subscriber's BSF;
- NAF shall be able to acquire a shared key material established between UE and the BSF during the run of the application-specific protocol;
- NAF shall be able to acquire an (application-specific) user security setting from the HSS via the BSF;
- NAF shall be able to check lifetime of the shared key material.

NOTE: Without a NAF requesting a run of AKA, GBA on it own does not guarantee the freshness of the key, Ks(int/ext) NAF. A NAF that support a Ua protocol that does not provide replay protection over unconnected runs of the protocol, will need to take some action to avoid replay attacks if desired. A possible ways to achieve this is to store all used Ks(int/ext) NAF to ensure that the key has not been used. If the key has been used then the NAF should request a new run of AKA to generate a new Ks(int/ext).