3GPP TSG SA WG3 (Security) meeting #11
Mainz, 22-24 February, 2000

***Document* S3-000193**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

33.102	CR	0xx	Current Version:	3.3.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG SA #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM	X	ME	X	UTRAN / Radio	X	Core Network	X

Source: Vodafone **Date:** 2000-02-22

Subject: Cipher key and integrity key lifetime

Work item: Security

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: It is required to correct a potential weakness in the key lifetime control mechanism so that the authentication and key agreement procedure can be triggered by the UE during a connection if the maximum permitted hyperframe counter value is reached.

Clauses affected: 6.4.3

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:


help.doc

<--------- double-click here for help and instructions on how to create a CR.

6.4.3 Cipher key and integrity key lifetime

Authentication and key agreement which generates cipher/integrity keys is not mandatory at call set-up, and there is therefore the possibility of unlimited and malicious re-use of compromised keys. A mechanism is needed to ensure that a particular cipher/integrity key set is not used for an unlimited period of time, to avoid attacks using compromised keys. The USIM shall therefore contain a mechanism to limit the amount of data that is protected by an access link key set.

Each time an RRC connection is released the highest value of the hyperframe number (the current value of COUNT) of the bearers that were protected in that RRC connection is stored in the USIM. When the next RRC connection is established that value is read from the USIM and incremented by one.

The USIM shall trigger the generation of a new access link key set (a cipher key and an integrity key) if the counter reaches a maximum value set by the operator and stored in the USIM at the next RRC connection request message sent out or during an RRC connection.

This mechanism will ensure that a cipher/integrity key set cannot be reused ~~more times than~~beyond the limit set by the operator.