Technical Specification Group Services and System Aspects
Meeting #14, Kyoto, Japan, 17-20 December 2001

TSGS#14(01)0611

Source: **SA WG3**

Title: **1 CR to 33.102: Configurability of cipher use (Rel-5 only)**

Document for: **Approval**

Agenda Item: **7.3.3**

Spec	CR	Rev	Phase	Cat	Subject	Version-Current	Version-New	Doc-2nd-Level
21.133	162		Rel-5	C	Configurability of cipher use	4.2.0	5.0.0	S3-010679

Note: This CR creates Release 5 of 33.102 to provide new configurability for non-ciphered connections acceptance / rejection.

3GPP TSG SA WG3 Security — S3#20 **S3-010679**

27 - 30 November, 2001, Sophia Antipolis, France

CR-Form-v3

CHANGE REQUEST

⌘ **33.102** **CR** **162** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Configurability of cipher use
Source:	⌘	SA WG3
Work item code:	⌘	Security visibility and configurability
Date:	⌘	2001-11-19
Category:	⌘	**C**
Release:	⌘	REL-5

Use one of the following categories:
F *(essential 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 one 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)

Reason for change:	⌘	The visibility and configurability features have never been accurately specified
Summary of change:	⌘	5.5.1 Visibility features are clarified. 5.5.2 Configurability features are clarified and the control functionality specified. 6.4.2 Editorial modification to make it clear that user can control not to accept non-ciphered calls
Consequences if not approved:	⌘	It is not clear how to interprete and implement the features described in 5.5 (requirements, options, examples?) User control mechanism is not specified. Terminal behaviour will be undefined, causing uncertainty for users.

Clauses affected:	⌘	5.5 and 6.4
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	UEA0 capability bit shall be user changeable and set to 0 as default

5.5 Security visibility and configurability

5.5.1 Visibility

Although in general the security features should be transparent to the user, for certain events and according to the user's concern, ~~greater~~ some user visibility of the operation of security features shall ~~should~~ be provided. This yields to a number of features that inform the user of security-related events, ~~such as~~:

- mandatory indication of access network encryption: the property that the user is informed whether the confidentiality of user data is protected on the radio access link, in particular when non-ciphered calls are set-up;
- indication of the level of security: the property that the user is informed on the level of security that is provided by the visited network, in particular when a user is handed over or roams into a network with lower security level (3G → 2G) This indication is optional from manufacturer.

5.5.2 Configurability

Configurability is the property that ~~that~~ the user can configure ~~whether~~ the use or the provision of ~~a service should depend on whether a~~ a certain security feature ~~is in operation. A service can only be used if all security features, which are relevant to that service and which are required by the configurations of the user, are in operation.~~ The following configurability features ~~are suggested~~shall be provided:

- Enabling/disabling user-USIM authentication: the user should be able to control the operation of user-USIM authentication~~, e.g., for some events, services or use.~~
- Accepting/rejecting ~~incoming~~ non-ciphered ~~calls~~connections: the user should be able to control via the MS user interface whether the user accepts or rejects ~~incoming~~ non-ciphered connections~~calls~~ with the following provisions~~;~~:
  - the user control for accepting/rejecting non-ciphered connections shall be pre-set to 'reject' in ME from manufacturer and shall return automatically to 'reject' position after a ciphered connection has been set up
  - if the terminal is in 'reject' position, and a ciphered connection can not be provided the connection attempt is rejected and the user should be informed of this and prompted if she wants to allow non-ciphered connections until ciphering is available
  - emergency calls shall override the reject of non-ciphered connections feature

~~- Setting up or not setting up non-ciphered calls: the user should be able to control whether the user sets up connections when ciphering is not enabled by the network;~~

- the user shall be able to disable the reject of non-ciphered connections feature so that non-ciphered connections will always be accepted (until further notice)

~~- Accepting/rejecting the use of certain ciphering algorithms: the user should be able to control which ciphering algorithms are acceptable for use.~~

6.4.2 Ciphering and integrity mode negotiation

When an MS wishes to establish a connection with the network, the MS shall indicate to the network in the MS/USIM Classmark which cipher and integrity algorithms the MS supports. This information itself must be integrity protected. As it is the case that the RNC does not have the integrity key IK when receiving the MS/USIM Classmark this information must be stored in the RNC. The data integrity of the classmark is performed, during the security mode set-up procedure by use of the most recently generated IK (see section 6.4.5).

The network shall compare its integrity protection capabilities and preferences, and any special requirements of the subscription of the MS, with those indicated by the MS and act according to the following rules:

1) If the MS and the network have no versions of the UIA algorithm in common, then the connection shall be released.

2) If the MS and the network have at least one version of the UIA algorithm in common, then the network shall select one of the mutually acceptable versions of the UIA algorithm for use on that connection.

The network shall compare its ciphering capabilities and preferences, ~~and any special requirements of the subscription of the MS,~~ with those indicated by the MS and act according to the following rules:

1) If the MS and the network have no versions of the UEA algorithm in common and the network or the MS is not prepared to use an unciphered connection, then the connection shall be released.

2) If the MS and the network have no versions of the UEA algorithm in common and both the ~~user~~ MS ~~(respectively the user's HE)~~ and the network are willing to use an unciphered connection, then an unciphered connection shall be used.

3) If the MS and the network have at least one version of the UEA algorithm in common, then the network shall select one of the mutually acceptable versions of the UEA algorithm for use on that connection.

Because of the separate mobility management for CS and PS services, one CN domain may, independent of the other CN, establish a connection to one and the same MS. Change of ciphering and integrity mode (algorithms) at establishment of a second MS to CN connection shall not be permitted. The preferences and special requirements for the ciphering and integrity mode setting shall be common for both domains. (e.g. the order of preference of the algorithms).