

Work Item Description - draft

Network-based end-to-end security

1 3GPP Work Area

X	Radio Access
X	Core Network
X	Services

2 Linked work items

There are five related work items in S3:

- User plane protection in access network
- Access security for IP-based services
- Core network security: full solution
- Lawful interception in the R00 architecture
- Visibility and configurability

3 Justification

The R00 system architecture may create new requirements and/or opportunities for extending user plane traffic security further back into the core network. In addition it may allow for security mechanisms to be applied on an end-to-end basis, providing that the necessary lawful interception requirements are addressed when encryption is applied. This work will take advantage of concepts and hooks for network-wide encryption which have been considered in R99.

4 Objective

The overall objective of this WI is to specify a network-based security architecture which provides security features to users on an end-to-end basis. The architecture is expected to be based on an evolution / re-use of the existing R99 security architecture.

The main security feature to be provided is expected to be encryption. However, the specification of other security features (e.g. authentication and integrity protection) will also be investigated.

The work may involve defining an appropriate key management architecture to support the end-to-end security mechanisms and the integration of these into the system architecture. Where possible this would be based on an evolution / re-use of the existing R99 authentication and key agreement mechanism. Some key management concepts for end-to-end security were presented in an old version of the R99 security architecture (33.102 v3.4.0).

The work may involve the specification of the end-to-end security mechanisms and the integration of these mechanisms into the system architecture. This work would involve the specification of an end-to-end security mode control mechanism which will handle algorithm selection, mode selection and user control. It would also involve the specification of any necessary end-to-end synchronisation mechanisms.

5 Service Aspects

Service requirements for end-to-end security need to be identified and addressed in conjunction with S1.

6 MMI-Aspects

Visibility and configurability of end-to-end security will be important. For example, the existing ciphering indicator may need to be enhanced to indicate whether or not the call is encrypted on an end-to-end basis.

7 Charging Aspects

End-to-end security may be considered to be a value-added service, especially if it is not, or cannot, be provided as a default.

8 Security Aspects

The main aspect of this work item is security.

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes	X	X	X	X	
No					X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

Meeting	Date	Activity
S3/CN joint meeting	13-14 June, 2000	Presentation by S2 to S3 of well-defined and understandable system architecture concepts and principles. Feedback from CN on feasibility of network-based end-to-end security.
S3#154	September 2000 August 1-4, 2000	Requirements capture and feature specification
S3#16	November 2000	Feature specification
S3#15	September 2000 January 2001	Feasibility study, including definition of Work Tasks and completion of the plan for this Feature
S3#16	November 2000 March, 2001	Outline of Definition of security architecture (e.g. first draft CRs). Concept presented to CN, RAN, T and GERAN. CRs approved
S3#17	January 2001	Integration of security architecture First draft CRs _____ March 2001 Complete CRs _____ April 2001 CRs approved at TSG level _____ May 2001 Review of complete CRs by S3 _____ June 2001 First corrective CRs prepared _____ July 2001 Corrections agreed at TSG level _____ August 2001
	April 2001	Concept presented to CN, RAN, T and GERAN
	July 2001	Integration of security architecture: First draft CRs
	October 2001	Integration of security architecture: Complete CRs
	December 2001	Integration of security architecture: CRs approved at TSG level

This table will be finalised when the plan for this feature is complete (see milestones above)

New specifications						
Spec No.	Title	Prime resp. WG	2ndary resp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
Affected existing specifications						
Spec No.	CR	Subject	Approved at plenary#		Comments	
33.102						
33.103						
33.105						

11 Work item rapporteurs

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12 Work item leadership

TSG SA WG3

13 Supporting Companies

Vodafone

Please mail me if your company is willing to support this work item.

14 Classification of the WI (if known)

<input checked="" type="checkbox"/>	Feature (go to 14a)
<input type="checkbox"/>	Building Block (go to 14b)
<input type="checkbox"/>	Work Task (go to 14c)