~~Technical Specification Group Services and System Aspects~~   **~~TSGS#16(02)0387~~**

~~Meeting #16, Marco Island, Florida, 10-13 June 2002~~

Work Item Description

Source   **SA WG3** ~~(Modified by TSG SA #16)~~
Title   **Network Domain Security; Authentication Framework (NDS/AF)~~: Feasibility Study~~**

1   3GPP Work Area

	Radio Access
X	Core Network
	Services

2   Linked work items

- Network Domain Security; IP network layer security

3   Justification

For 3GPP systems there is a need for truly scaleable entity authentication framework since an increasing number of network elements and interfaces are covered by security mechanisms~~-~~. ~~The work item needs to be completed preferably in Release 6 time frame but no later than the Release 7 (more specifically, early 2004) timeframe.~~

4   Objective

The general objective is to~~of the feasibility study is to study the impacts of~~ develop~~ment of~~ a highly scaleable entity authentication framework for 3GPP network nodes. The framework will ~~to~~ be developed ~~would be~~ in the context of the Network Domain Security work items. This effectively limits the scope to the control plane entities of the core network.

The primary objective is for the ~~studied~~ authentication framework to provide entity authentication for the nodes that are using NDS/IP. This means that the authentication is developed to replace the (not so scaleable) default IPsec/IKE use of pre-shared secrets to authenticate the network elements. The authentication framework will therefore be based on profiled X.509v3 type of digital certificates and of profiled public key infrastructure technology and standards.

~~The Feasibility Study (FS) shall indicate the domains to which the NDS/AF will apply. Furthermore, the FS will specifically show the benefits of applying NDS/AF to the current NDS/IP domain. The consequences and alternatives are to be presented along with the pro's and con's.~~ It is included into the work~~study~~ how actual operator CA's are organized feasibly and what are the trust relationships between them. Thus, feasible ~~different~~ trust models and their effects are ~~studied~~covered more closely.

Additionally the work~~FS~~ will present ~~high level~~ requirements for the used protocols and certificate profiles, so as it is possible for operator IPsec and PKI implementations to interoperate.

~~This work may later be extended to the development of the authentication framework itself depending on the results of the feasibility study.~~

The scope of this work item will be in accordance with and base on the Feasibility study on NDS/AF (TR 33.810).

~~This work might also later be extended to provide entity authentication services to non-control plane nodes.~~

5 Service Aspects

None identified yet.

6 MMI-Aspects

None identified.

7 Charging Aspects

None identified yet.

8 Security Aspects

The work item is a security item.

9 Impacts

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

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

Meeting	Date	Activity
SA3#26	November, 2002~~TBD~~	Revised WID approved and work started.~~Work on NDS/AF general architecture and profiling of X509v3 certificates. Discussions on certificate distribution (and revocation) and the associated services and requirements.Work on profiling of digital certificates.~~ ~~Work on certificate distribution.~~ ~~Work on trust model, CA hierarchy and RA issues.~~ ~~Involve related 3GPP workgroups (if any).~~
SA3#27	~~TBD~~	Work on NDS/AF general architecture and profiling of X509v3

	(Feb~~ruary~~,/~~March~~ 2003~~?)~~	certificates. Discussions on certificate distribution (and revocation) and the associated services and requirements. Broad agreement on TOC and scope of NDS/AF TS.~~Agree on all top-level principles for the NDS/AF TS:.~~ ~~Work on trust model, CA hierarchy and RA issues~~ ~~Work on profiling of digital certificates.~~ ~~Work on certificate distribution (and revocation).~~ ~~Involve related 3GPP workgroups (if any).Continue work on actual specification. Finalize trust model.~~
SA3#28	~~TBD,~~ May,/~~June~~ 2003~~?~~	Progress work on NDS/AF TS:~~.~~ Work on trust model, CA hierarchy and RA issues Work on profiling of digital certificates. Work on certificate distribution (and revocation). Involve related 3GPP workgroups (if any). ~~Finalize trust model.~~ ~~Finalize certificate profile(s).~~
SA3#29	July~~TBD~~, ~~Aug/Sept~~ 2003~~?~~	Finalize trust model. Finalize certificate profile(s). Finalize certificate distribution. Prepare to submit NDS/AF TS to SA for information.
SA#21~~?~~	September,~~TBD, Oct.~~ 2003	NDS/AF TS submitted for information to SA plenary. Stage-3 work triggered in relevant groups (if needed).
SA3#30	October~~TBD~~, ~~Nov~~ 2003	Resolve any remaining issues. Submit NDS/AF TS for approval.
SA#22~~?~~	Dec~~ember~~, 2003	NDS/AF TS submitted for approval to SA plenary.
SA/CN #23~~?~~	March, 2004	First part of Stage-3 CR's approved.~~(if applicable) Stage-3 work approved~~
SA/CN #24	June, 2004	Remaining part of Stage-3 CR's approved.

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
33.xxx	NDS/AF	SA3		SA#21	SA#22	~~Whether a new spec is created depends on the outcome of the FS.~~

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11   Work item raporteurs

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12   **Work item leadership**

TSG SA WG3

13   **Supporting Companies**

Nokia, Telenor, T-Mobile, Siemens, SSH Communications Security Corp

14   **Classification of the WI (if known)**

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a   The WI is a Feature: List of building blocks under this feature

14b   The WI is a Building Block: