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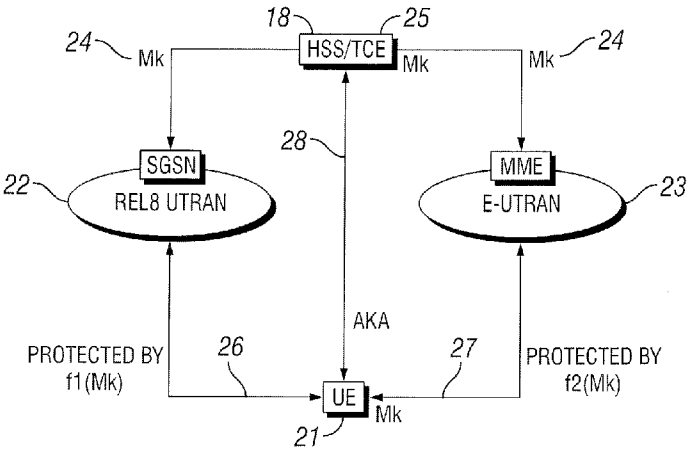
(54) Title: CRYPTOGRAPHIC KEY MANAGEMENT IN COMMUNICATION NETWORKS



(57) Abstract: An authentication server and a system and method for managing cryptographic keys across different combinations of user terminals, access networks, and core networks. A Transformation Coder Entity, TCE, (25) creates a master key, Mk, which is used to derive keys during the authentication procedure. During handover between the different access types, the Mk or a transformed Mk is passed between two authenticator nodes (42, 43, 44) that hold the key in the respective access networks when a User Equipment, UE, terminal (41, 51, 52, 53) changes access. The transformation of the Mk is performed via a one-way function, and has the effect that if the Mk is somehow compromised, it is not possible to automatically obtain access to previously used master keys. The transformation is performed based on the type of authenticator node and type of UE/identity module with which the transformed key is to be utilized. The Mk is never used directly, but is only used to derive the keys that are directly used to protect the access link.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: H04L, G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 20050254653 A1 (POTASHNIK, A ET AL), 17 November 2005 (17.11.2005), figure 3, paragraphs [0004],[0016]-[0019]	1-22
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Y	ERICSSON: "Requirements on SAE/LTE AKA", S3-060476, 3GPPP TSG SA WG3 Security - SA3#44, 11-14 July, 2006 Tallinn, Estonia, Retrieved from: http://www.3gpp.org [2008-04-11].3.3	1-22
	--	
A	NOKIA ET AL: "Updated version of "Rationale and track of security decisions in Long Term Evolved RAN/3GPP System Architecture Evolution", 3GPP TSG SA WG3 Security-SA3#44, S3-060564, 11-14 July, 2006, Tallin, Estonia, [10.1.4]	1-22
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[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
24 April 2008	28 -04- 2008
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Patrik Rydman/CC Telephone No. +46 8 782 25 00

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International application No.
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	NYBERG K : "Chryptographic algorithms for UMTS". In: European Congress on Computational Methods in Applied Sciences and Enginering 2004. Edited by Neittaanmäki et al. Jyväskylä 24-28 Juli 2004, System for distributing keys in a cell phone system, abstract -- --------	1-22

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H04L 9/08 (2006.01)

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Use the application number as username.
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Paper copies can be ordered at a cost of 50 SEK per copy from PRV InterPat (telephone number 08-782 28 85).

Cited literature, if any, will be enclosed in paper form.

INTERNATIONAL SEARCH REPORT
Information on patent family members

26/01/2008

International application No.
PCT/SE2007/050734

US	20050254653	A1	17/11/2005	WO	2005114897	A	01/12/2005