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(54) Title: SYSTEMS, METHODS AND DEVICES FOR PERFORMING PASSCODE AUTHENTICATION

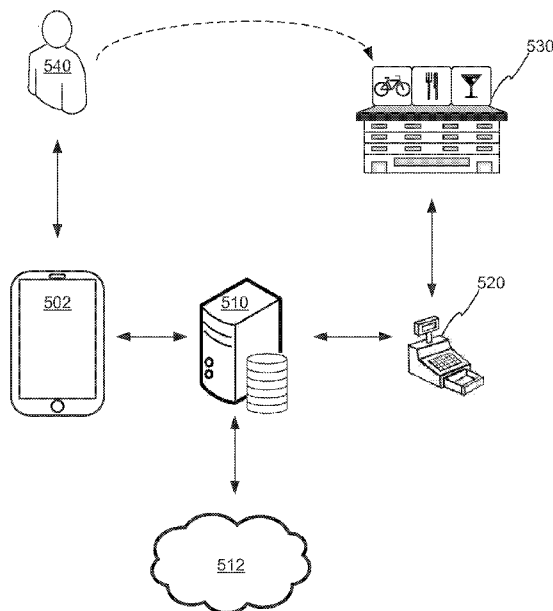


FIG. 5

(57) Abstract: The invention provides systems, methods and devices for performing passcode authentication. In one embodiment of the invention, a method of performing passcode authentication conducted at a mobile device is provided which comprises the steps of: receiving an authentication request from a security gateway; receiving a passcode entered by a user of the mobile device; comparing the entered passcode to a passcode offset securely stored in a hardware security module (HSM) coupled to the mobile device; and, if the entered passcode corresponds with the passcode offset, generating a secure authentication confirmation message and transmitting the confirmation message to the security gateway; or, if the entered passcode does not correspond with the passcode offset, generating a secure authentication denial message and transmitting the authentication denial message to the security gateway.



Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2014/059253**A. CLASSIFICATION OF SUBJECT MATTER****H04L 9/32(2006.01)i**

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)

H04L 9/32; H04L 9/08; H04L 9/00; H04W 12/08; H04W 80/00

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

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: encrypt, HSM, passcode, server

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008-0072048 A1 (MICHAEL K. BROWN et al.) 20 March 2008 See paragraphs [0022]-[0037]; and figures 1, 2.	1-29
A	WO 2013-013192 A2 (VISA INTERNATIONAL SERVICE ASSOCIATION) 24 January 2013 See paragraphs [0047]-[0065]; figures 3, 4; and claim 1.	1-29
A	US 2012-0110333 A1 (JARI JUHANI LUKKARILA et al.) 03 May 2012 See paragraphs [0047]-[0066]; and figures 1-5.	1-29
A	US 2009-0132813 A1 (NORMAN SCHIBUK) 21 May 2009 See paragraphs [0116]-[0177]; and figures 1-7.	1-29
A	US 2012-0278614 A1 (UNHO CHOI) 01 November 2012 See paragraphs [0037]-[0071]; and figures 1-4.	1-29

 Further documents are listed in the continuation of Box C. See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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